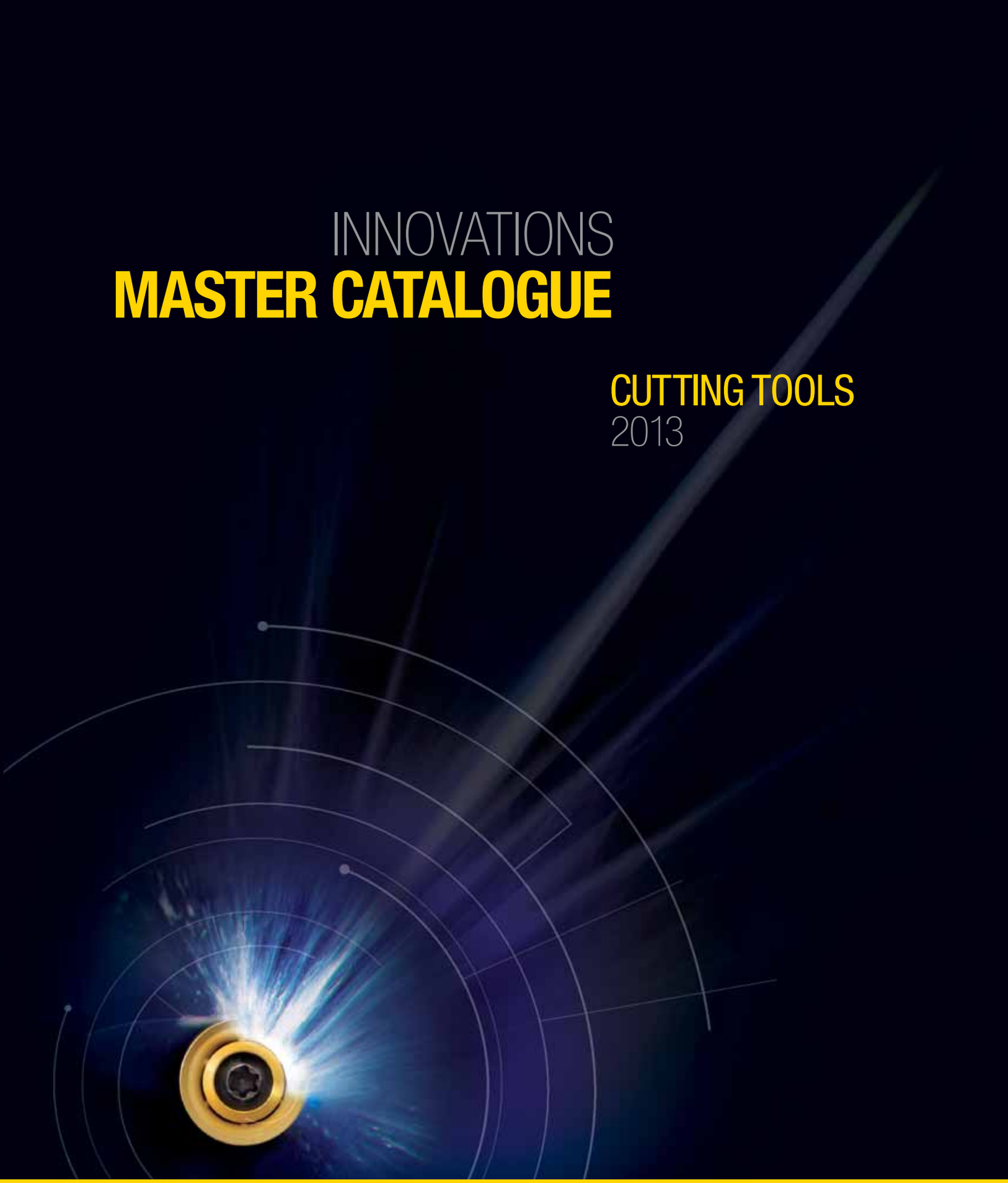
INNOVATIONS

MASTER CATALOGUE

CUTTING TOOLS
2013



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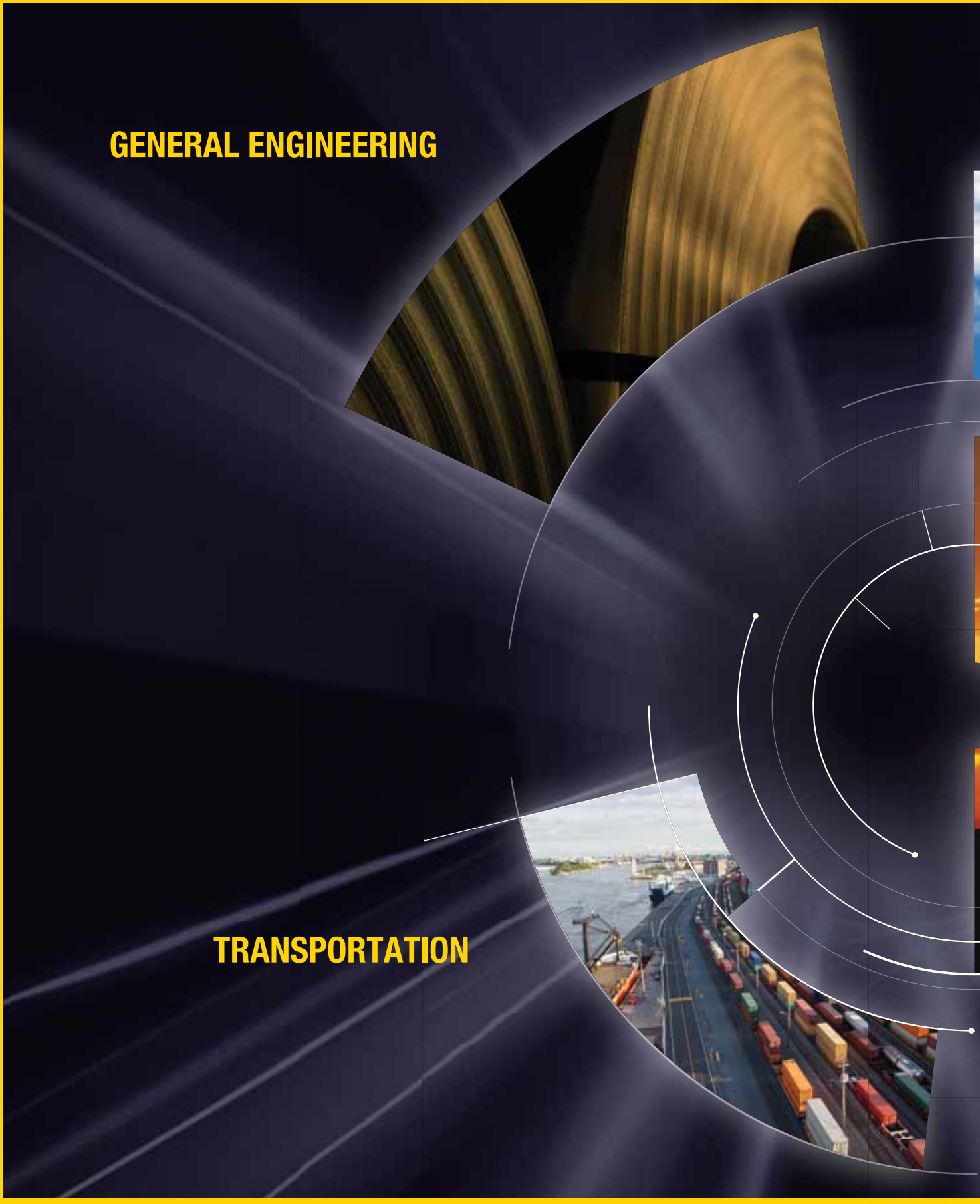
KENNAMETAL®



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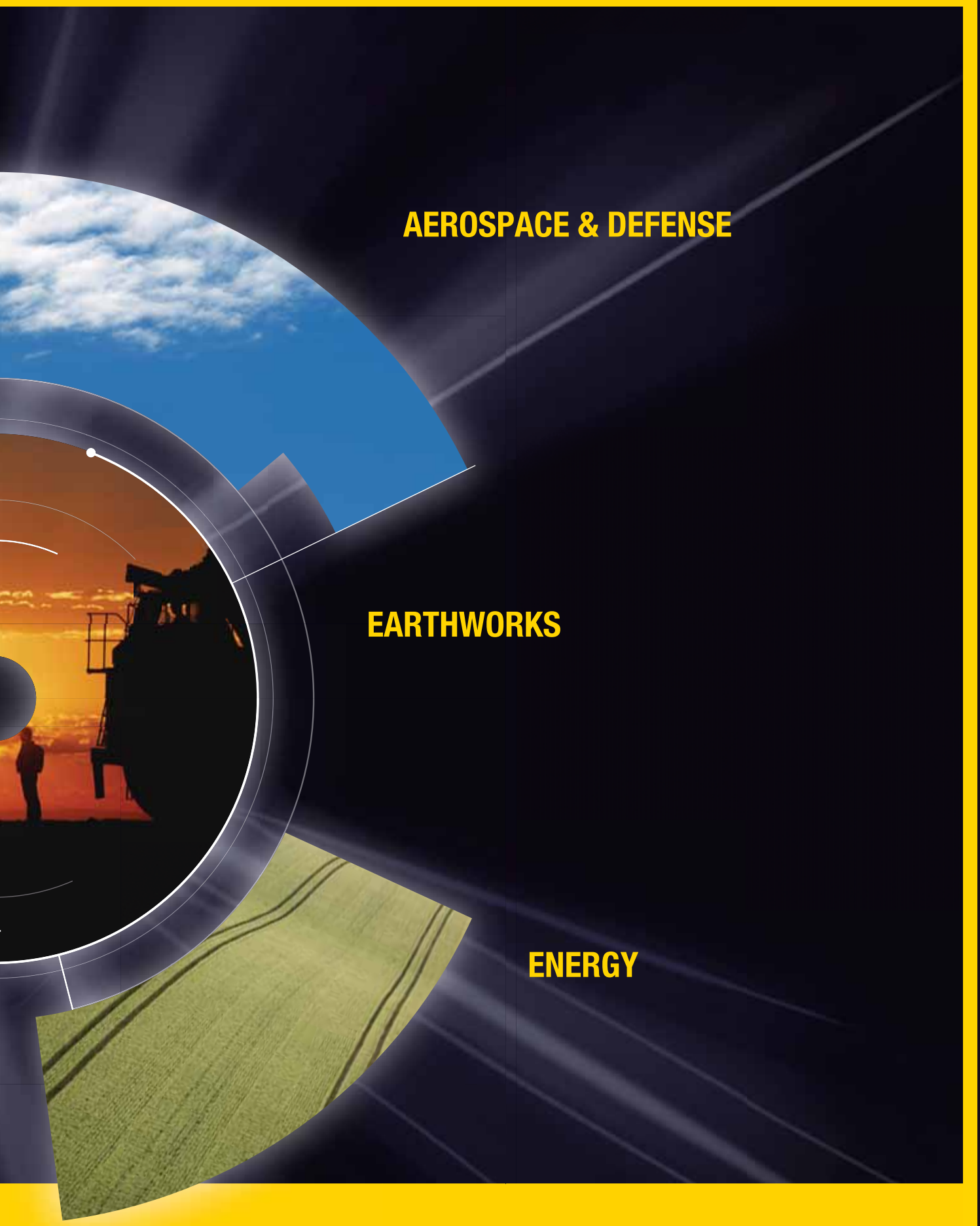

KENNAMETAL®

Since its inception in 1938, Kennametal has understood precisely how to improve manufacturing performance and profitability — by introducing unparalleled products and services to reduce operating costs and lead times.

These 2000+ pages bring you the latest in milling, holemaking, turning, and tooling systems products and superior services — all specifically engineered to enhance overall productivity, even in the most challenging metalworking applications. Rely on Kennametal to significantly boost manufacturing competitiveness. To learn more, contact your Kennametal Representative or Authorised Kennametal Distributor.

Visit us at www.kennametal.com.

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KENNAMETAL
Less
Environmental
Impact
To learn more about our sustainable solutions for your industry,
please contact your Kennametal Representative or
Authorised Kennametal Distributor, or visit www.kennametal.com.

Environment

Kennametal's intimate understanding of the energy marketplace — including customer processes and applications — allows us to proactively address production and sustainability concerns with solutions tailored to your needs. We deliver superior value because we listen closely to you, our customer, and innovate based on your feedback. Our goal is to help you be more competitive — both at home and on a global scale.

Best Practices in Productivity

As your trusted partner for optimised production, Kennametal offers customers a unique commitment to research and development excellence, continually delivering highly innovative ways to enhance productivity. Certification to ISO 9001, QS 9000 TES, and VDA 6.4 provides the highest possible quality standards.

Best Performance, Less Environmental impact

With technology, we can do both. Kennametal helps customers focus on the root causes of unsustainable behavior in highly complex manufacturing systems, while at the same time improving cost structure, quality, and performance. In addition to offering the latest in metalcutting tools and technology, our Advanced Engineering team will analyse your existing production processes and help identify new methods to improve your overall performance.

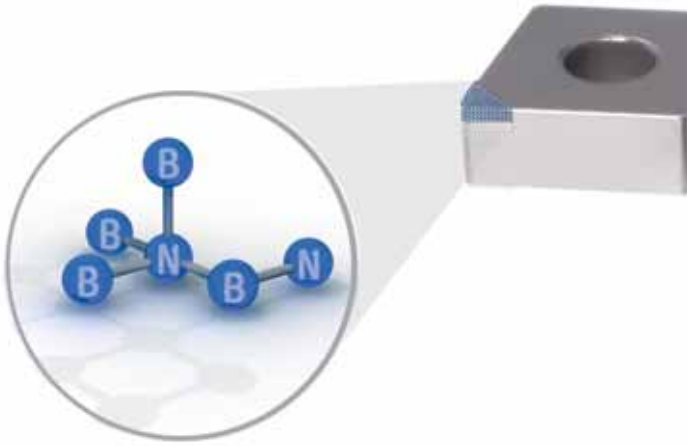
Turning

Product Highlights

Superhard Materials • PCBN and PCD

Abrasion resistance and toughness are the two most important properties in assessing the efficiency of cutting tool materials. Abrasion resistance is primarily a function of hardness, and, in this respect, diamond (PCD) and cubic boron nitride (CBN) are superior to all other known materials.

For more information, see pages B132–B197.



beyond™ BLAST™

Beyond BLAST™

An entirely different approach to machining high-temperature alloys. We determined that the most effective way to deliver coolant would be to channel it through the insert — ensuring that it hits exactly where it does the most good. That means, more efficient coolant delivery at a fraction of the cost of high-pressure coolant systems. By precisely controlling coolant application, Beyond BLAST enables you to lower your energy consumption, saving you even more money and reducing your impact on the environment.

For more information, see pages F2–F11.

Beyond™ PVD Grades

Advanced PVD coatings using Beyond technology are well suited to resist the high temperatures associated with machining tough alloys. By offering increased tool life (by 30–40%), the general engineering, transportation, aerospace, energy, and earthworks markets can experience benefits in their profitability. They can also realise benefits by utilising the strength of the new PVD coating in combination with the broad product offering to perform turning, grooving, and cut-off operations in a wide array of materials and applications while maintaining consistent chip control and minimising insert edge wear.

For more information, see pages B2–B115.

Grooving and Cut-Off : -CL and -GUP Geometries

The A2™ CL geometry maximises your cut-off productivity. The A2-CL geometry offers tighter chipbreaker capabilities when machining low-carbon steel, excellent chip evacuation in low-feed applications, and improved stability and rigidity. The A4-GUP geometry, available in moulded and precision-ground styles, provides a positive rake angle, enhanced chip control, and lower cutting forces. The -GUP geometry offers up to 180% longer tool life and higher productivity in steel, stainless steel, and high-temperature alloy materials.

For more information, see pages A2-CL: D13
A4-GUP: D70, D73–D74.

Kennametal Select

Kennametal Select products make it simple to get the most out of your inserts — and your money. Every insert is gold, which exposes wear as the tool continues to be used. This makes it easy to detect when an insert is ready to be changed — maximising the product's value and protecting the workpiece. Also, because Kennametal Select inserts can be used in most applications, a single insert can take on any number of tasks, thus reducing your inventory. Kennametal Select products are also reliable enough to cut steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.

For more information, see pages F106–F130.

Holemaking

Product Highlights

Hole Finishing with Kennametal

Only Kennametal is capable of offering you the best, customised solution for your application. Kennametal owns the entire process chain, from raw material, insert pressing, tool body design, brazing, sintering, grinding, coating, and so on, up to reconditioning. Kennametal is the only source in the metalworking industry from where you can get all types of hole finishing tooling, from reaming and fine boring to motion tooling, directly from one hand. Therefore, Kennametal can offer you the best-fitting solution for your machining challenge, giving you the choice of tooling without any limitations in regard to portfolio or capability.

For more information, see pages K1–K205.

Drill Fix™ DFS™

Drill Fix DFS combines the economical squared-outboard insert with the superior centring capabilities of the trigon inboard insert. The DFS indexable drills offer increased metal removal rates combined with high surface quality and hole straightness.

For more information, see pages J14–J22.

GOdrill™ • Kennametal's First Microdrill

The all new GOdrill addresses drilling operations in a diameter range of 1–12,7mm (.0394–.5") in a broad variety of materials and applications, such as fuel systems or medical components. Due to its very unique design, the GOdrill expands the advantages of modular drills into the small diameter range: high-end grades, wear-indicator coating, and new, patented geometries enable full utilisation of the drill's tool life capacity.

For more information, see pages G5–G14.

HP Beyond™ Drills for Steel and Stainless Steel

HP Beyond Series Solid Carbide Drills are designed specifically for stainless steel and steel applications, offering high performance and long tool life in regular steel, titanium, and iron materials. By combining unique Kennametal technologies, such as the HP point, flute geometry, and a new Beyond grade technology into one tool, the B2_HP Beyond is the ultimate high-volume production tool.

For more information, see pages G21–G37.

KSEM PLUS™ Modular Drill System

The KSEM PLUS drill concept is simple but effective. It combines the benefits of the KSEM™ modular drill (high feeds and length-to-diameter [L/D] ratios) with the benefits of an indexable drill (high speeds and low consumable costs).

For more information, see pages H36–H47.

Beyond™ High-Performance Solid Carbide Taps

Solid carbide taps offer higher productivity and outstanding performance in a wider range of materials than formerly possible. Get more production from a single tool and superior accuracy of product thread that surpasses the competition. Kennametal High-Performance Solid Carbide Taps are available in various specifications with enhanced precision and design, which translates into longer tool life, excellent performance, and exceptional wear resistance.

For more information, see pages L2–L29.

Solid End Milling

Product Highlights

HARVI™ High-Performance End Mills for Roughing and Finishing with One Tool

HARVI takes high-performance roughing, semi-finishing, slotting, and profiling to the next level. The line is designed to provide maximum metal removal rates and achieve supreme surface conditions. A wide range of diameters and corner radii are available from stock.

For more information, see pages M10–M25.

KenFeed™ End Mills for High-Feed Milling

A unique tool with new, 6-flute style for high productivity, the KenFeed end mill is specifically engineered to machine hardened steel up to 67 HRC at extreme speeds and feeds. Necked shanks provide extended reach in deep cavities and high feed rates up to 0,6mm per tooth on a 20mm tool. Machine hardened materials at 2–3x the metal removal rate of competitive end mills. Wide range of cutting diameters, down to 6mm for small- and medium-pocket work. Innovative new geometry maximises metal removal rates and lowers manufacturing costs.

For more information, see pages M26–M30.

KCN05™ Diamond Coated Carbide Routers

Kennametal has the correct milling solutions engineered for machining difficult CFRP (Carbon-Fibre Reinforced Polymer) and non-ferrous components. KCN05 solid carbide router products provide excellent tool life and produce smooth finishes with improved edge quality. The unique geometries are free cutting, reduce heat generation, and provide high-quality machined surfaces.

For more information, see pages M65–M71.

GOmill™ • The Economical Milling Cutter Line

The GOmill line is specifically engineered to work on short length-of-cut applications in multiple workpiece materials, like soft and hard steels up to 48 HRC, stainless steels, high-temperature alloys, and cast iron. With the very short overall length and soft cutting geometries, the line is made to conform to the growing market of mill-turn machines. The 3-flute sharp and 4-flute chamfer versions support roughing, semi-finishing, and finishing applications; the 3-flute ball nose tool supports roughing and semi-finishing applications; and the 2-flute ball nose version supports finishing applications. All three geometries work in slotting as well as side milling applications up to 1 x D depth of cut.

For more information, see pages M117, M122, M126, M130.

MaxiMet™ Carbide End Mills for High Metal Removal Rates and Superior Surface Finishes

Designed to significantly reduce machining time in aluminium! The innovative geometry designs include a wiper facet for superior surface finish on aluminium parts. MaxiMet takes roughing and finishing cuts with one tool. Slotting is effective up to full 1 x D axial depth. Side milling is effective up to 0,5 x D radial and 1,5 x D axial depth. The 3-flute series uses unequal flute spacing for chatter-free performance. Effective in a full range of machine speeds. Multiple corner radii and extended neck configurations are available as standard.

For more information, see pages M50–M53.

Indexable Milling

Product Highlights

Dodeka™ Series • Leader in Advanced Face Milling Applications

Dodeka Mini and Dodeka MAX™ are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost per edge and high productivity. With Beyond™ premium milling grades, you will see up to 30% higher Metal Removal Rates (MRR), 25% lower cutting forces due to real soft cutting action, and up to 35% better tool life in light to heavy machining.

For more information, see pages O2–O29.

MEGA Series • Superior Heavy-Duty Milling

With four true cutting edges per heavy-duty MEGA insert, you know you are getting the low cost per edge and high productivity you need and have come to expect from Kennametal. The soft cutting edge design enables 30% lower cutting forces, and the carbide shim provides protection to the cutter body. Choose MEGA inserts for all of your steel and cast iron indexable milling needs.

For more information, see pages O30–O47.

Beyond BLAST™ • More Than Just the Right Tool — The Ultimate Solution

The Beyond BLAST KSSM™ 45° and KSRM™ platforms utilise Precision Coolant Technology (PCT) to aggressively apply coolant directly to the cutting area. Not only does this reduce heat at the cutting edge, but it also assists with reducing tool and chip friction, increasing chip evacuation, and relieving shear stress.

For more information, see pages O48–O53.

Rodeka™ • The New Round Insert Generation

Kennametal introduces a new and revolutionary double-sided round milling insert capable to run in multiple types of milling operations and workpiece materials, providing the latest double-sided insert technology to boost your productivity with the most efficient cost per edge.

For more information, see pages R12–R19.

Mill 1™ • High-Performance Shoulder Milling Platform

The multifunctional Mill 1 platform works with all tool materials in shoulder, ramp, slot, plunge, and helical milling with one insert style to improve productivity and reduce inventory and machining costs. The super positive cutting rake, soft cutting action, and low cutting forces enable higher feed rates and spindle protection. Innovative insert and cutter body designs offer improved ramping capabilities.

For more information, see pages P2–P62.

Tooling Systems

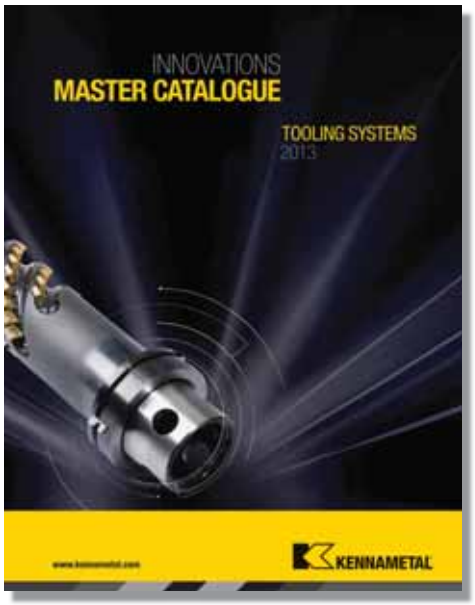
Product Highlights

New Catalogue

New Comprehensive Tooling Systems Catalogue

Kennametal is proud to present the latest Kennametal Tooling Systems catalogue with innovative products on more than 1,100 pages! In this catalogue, you will find information about KM Micro™, KM Mini™, KM™ Quick Change, KM4X™, HSK shank tools, BTKV and CVKV shank tools, BT shank tools, CV shank tools, DV shank tools, QC and R8 shank tools, straight shanks, collets and sleeves, and thermo shrinking machines.

To view the PDF, please go to www.kennametal.com



KM4X™ • The New Choice for Heavy-Duty Milling

KM4X is the latest version of the KM™ spindle interface targeted at heavy-duty machining operations and is a top choice for machining large, structural, tough-to-machine materials, like titanium, for the aerospace industry. The portfolio consists of rotating adaptors and static tooling to support the tough and heavy machining markets. Additional products include spindle component packages as well as static clamping units to support turning and mill-turn opportunities.

KM™ Quick Change

KM Quick Change Tooling is a central component in achieving dramatic improvement in machine and cutting tool use. It's the choice of manufacturers requiring maximum machine output. The necessary tasks of changing, setting up, and gaging tools create an excess of machine downtime. For small batch manufacturing operations requiring these frequent setups, KM Quick Change Tooling is the most efficient method for reducing lost time and improving the overall quality of the machining process by generating greater productivity and increasing profits.

HSK Shank Tools

ERICKSON™ HSK Face Contact short taper tooling is manufactured from premium materials and to the latest DIN/ISO specification standards. Form A versions are generally used in machining centres and milling machines with automatic tool changers.

Engineered Solutions

Coordinated global resources with world-class manufacturing process development and implementation capabilities.

Whether it's a single tailored tool required to address a specific part feature or the development of a comprehensive manufacturing process for use on existing or newly acquired production equipment, Kennametal's team can manage the development, personnel training, and successful implementation of the complete solution.

Global implies just that. Globally coordinated manufacturing process development, implementation, and optimisation support at machine tool builders, end user engineering or corporate offices, and end user production facilities, regardless of their respective geographies. Well-organised, highly linked staff reside in the Americas, Europe, and Asia/Pacific regions. Globally standardised design and manufacturing systems enable highly coordinated project management and implementation results.

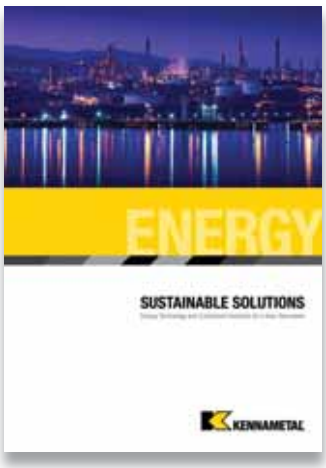
Key alliances with machine tool builders and other leading manufacturing technology enablers ensure a complete solution, optimising the entire process — not just portions of it. This results in the most effective and efficient manufacturing process possible, leading to low implementation time and cost and rapid return on investment.

For more information, please contact us at 1.866.646.7113.

Energy

Energy Engineered Solutions

Kennametal is more than a supplier of tooling solutions. With a thorough understanding of the energy segment's process and application challenges, we proactively address production concerns to deliver productivity to customers seeking peak performance in demanding environments. Kennametal's success is based on our capabilities — our ability to work with you on customised solutions to optimise your results and our willingness to engage with a broad spectrum of materials, metalworking solutions, application and custom component manufacturing, and supply expertise. Our drive for success, enabled through our advanced materials sciences, application knowledge, and commitment to a sustainable environment, results in a broad portfolio of innovative, custom, wear-resistant solutions.



Please also see the new Kennametal Energy catalogue (B-11-02786).

Engineered Solutions

Automotive

Automotive Engineered Solutions

Traditionally, Kennametal has been a strong player in the transportation field, pioneering innovative solutions with automotive, shipbuilding, and railroad customers. We deliver global services and products that exceed our customers' expectations and continually push the boundaries of science. In today's competitive world, no one can support our customers better, and in turn, deliver the continued service and quality that has become Kennametal's trademark.

Kennametal's global reach has helped our customers standardise processes and products to improve both cost and quality. We offer an intimate understanding of the economics of the automotive value chain and unparalleled customised solutions tailored to your needs. We can deliver superior value by listening closely and innovating based on what our customers say. Our goal is to help you be more competitive, at home and on a global scale.

If it rolls, floats, or flies,

Aerospace

Aerospace Engineered Solutions

From lightweight composite materials to exotic alloys, Kennametal is committed to reducing risks and costs in the manufacture of aerospace and defense programs. We partner with customers to implement standard and customised solutions with minimum cost per part and high repeatability in mind. Kennametal has unique capabilities and resources to cover the total manufacturing equation from roughing to automated deburring and finishing. Kennametal's best-in-class technologies and services deliver up to 30% cost reduction and 60% cycle time reduction.

Aerospace component surfaces are one of the key battlegrounds in environmentally friendly manufacturing. Surface treatments not only improve appearance of the part but also enhance wear resistance, provide corrosion protection, and improve friction control. These subtle manufacturing enhancements provide big dividends in the form of fuel efficiency, reliability, performance, and longer part life.

Kennametal has a solution that delivers innovation and productivity.

Service and Support

Kennametal Extrude Hone™

Precision Surface Management

- Fuel efficiency through fine flow tuning — Diesel Fuel System (DFS) and Gasoline Direct Injection (GDI).
- Emission reduction due to better spray shaping.
- Noise, friction, and wear reduction for automatic gearbox components.
- Air flow path enhancement to improve jet or helicopter turbine performance.
- Energy savings with centrifugal impeller pump increased efficiency.
- Surface stress relief on high-pressured thin wall component for extreme safety.

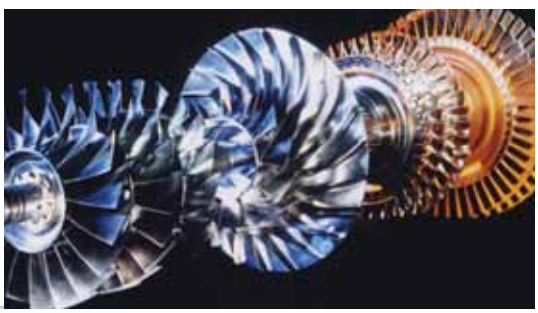
Core Technologies Offer

- **Electrochemical Machining (ECM): Generator, fixture, and cathodes**
  Radiusing, shaping, polishing, surface stress relief.
- **Abrasive Flow Machining (AFM): Media and fixture design**
  Radiusing, polishing, surface stress relief.
- **Thermal Energy Method (TEM): Controlled combustion**
  Minimising risk of hidden burrs and contamination.

Proven Solutions

Easy Access to Service and Support

- Engineering and Feasibility departments.
- Capital equipment solutions.
- Contract Shop activities (ramp up and production).
- Spare parts availability program.
- Metalcutting tooling combined with Precision Surface Management.
- Benefits of worldwide Kennametal logistics.
- Lean expertise to conduct global projects with customers.
- Cost per part solutions/Clic model for equipment.
- Parameters, cathodes, fixtures designs.
- Media design to part.
- Global Full Circle Program increases productivity resulting in less downtime of your equipment.



Service and Support

Kennametal Extrude Hone™

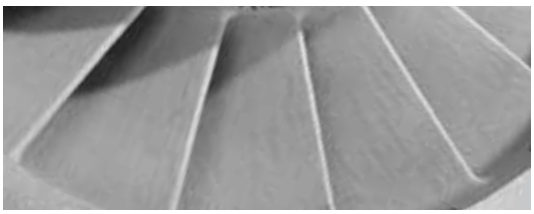
Proven Solution: Save Energy, Save Money

- Improving closed pump impellers inner flow passage roughness to increase up to 11% peak efficiency and lower energy consumption.
- A coal-powered plant equipped with six boiler feed pumps can reduce parasitic loss, representing at least $500,000 annual savings (driving the pumps) by 1% of the power generated.
- This process and savings can also be applied to natural gas centrifugal closed pump impellers.

Precision Surface Management Matters

Kennametal Extrude Hone Abrasive Flow Machining (AFM) surface and flow enhancement solutions provide the energy segment with significant savings in pump efficiency improvements.

- The AFM process is the method of choice for material removal at the area of greatest restriction and surface improvement of passages not accessible by other methods.
- AFM has documented efficiency proven solutions in the automotive and aerospace industries.
- Two-way flow AFM process is a natural fit for closed impellers and diffusers.
- Inner flow passages of the impellers and diffusers benefit from AFM's selective material removal as well as surface finish improvement — both contributing to improved pump efficiency.



Before

After

Proven Solutions
Delivering Results throughout the Value Chain

Working with You

We have a strong focus on customer solutions, which helps develop an accurate understanding of industry needs. This is achieved through collaborative work with key players throughout the value chain:

Original Equipment Manufacturer (OEM)
Our business expertise is providing OEMs with key components, such as pumps, that deliver greater efficiency.

Foundry
Kennametal Extrude Hone™ specialists can bring added value early in the manufacturing chain, so you can deliver more than just a key component and exceed expectations every time.

End User
Currently in the best position to measure efficiency improvements, end users understand the direct impact of savings — anywhere along the value chain. They help us measure performance of the processed component against non-processed, providing a better understanding of efficiency improvement related to the Kennametal Extrude Hone AFM operation. The AFM Center of Excellence, in Irwin, PA, can perform feasibility testing with customer-specific parts to provide the optimal media needed for each process.

Media Is the Edge

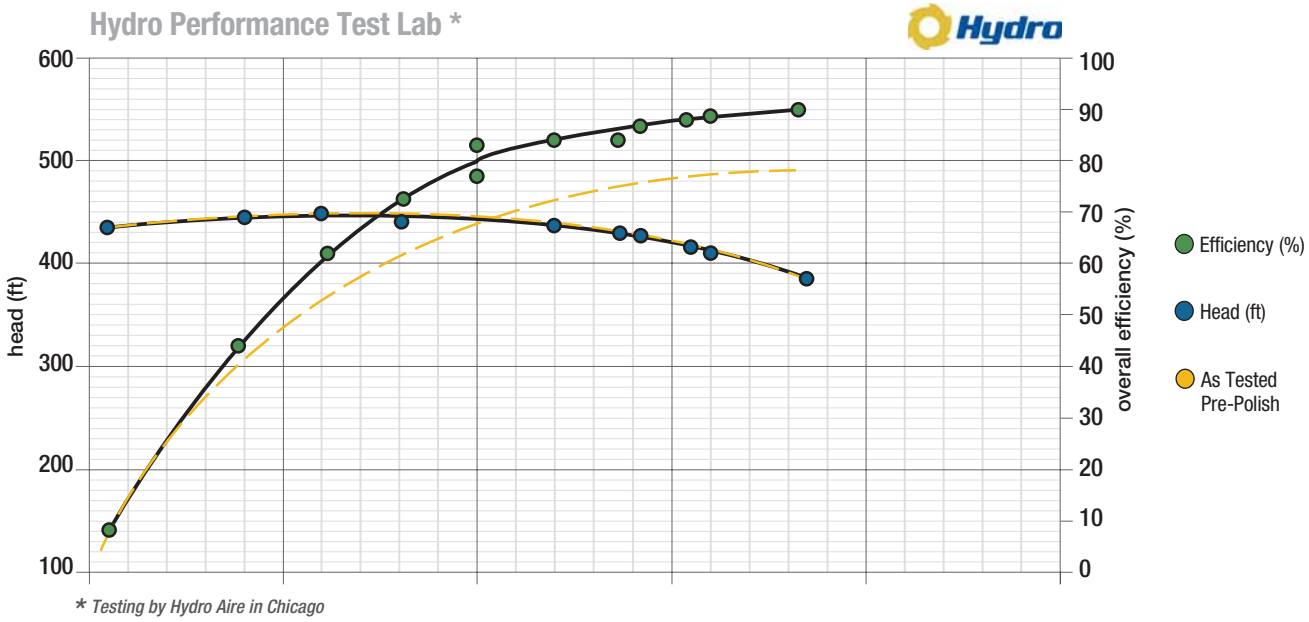
The Kennametal Extrude Hone lab provides the energy industry with specific, engineered medias that deliver the highest performance for closed impeller polishing. We also have specific media with dedicated characteristics to enhance productivity and quality when polishing a closed impeller.

Service and Support

Kennametal Extrude Hone™

Abrasive Flow Machining for Pump Market Validation Testing

Formed in 1969 by a small group of pump engineers in Chicago, Hydro Aire is now the largest independent pump rebuilder with service centers throughout the world. A complete 5000 hp, 42,000 GPM pump test stand, designed in compliance with Hydraulic Institute standard and API 610, is located in Chicago. This is the ONLY independent non-OEM facility with this capability able to generate pump efficiency curves using LabView software.



* *Testing by Hydro Aire in Chicago*

Proven Solutions
The Energy Story

Proving the Pump Efficiency Improvement from the AFM Process

We have selected a 100 hp 1,200 GPM, single impeller overhung process pump as an example to validate the potential efficiency improvement able to be achieved with the AFM process.

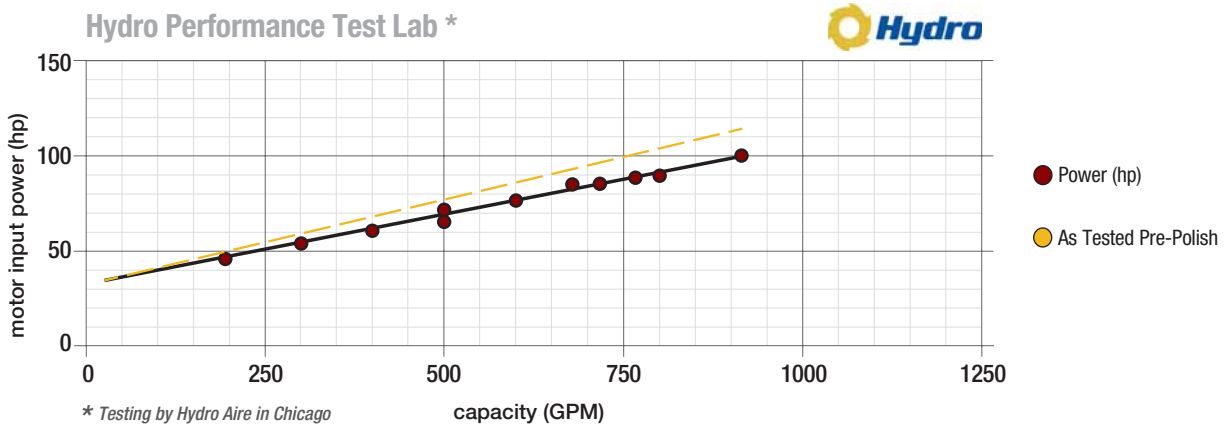
1) New PACO™ pump purchased, which is about 79% efficient according to the manufacturer's data.
2) Pump tested and performance curve generated to confirm initial efficiency pre-AFM. Manufacturer data confirmed by our "before AFM" testing.
3) Pump was disassembled and impeller removed to AFM process. Pump was then reassembled.
4) Re-tested pump and generated performance curve.

Results: **Peak efficiency gain of +11%,** bringing the pump to 90% total efficiency! Gains were realized over the full usable range of the pump with **significant power savings** at given pressure and flow rate.

Test Component

Pump Type:	ITT Goulds 12BF
Pump Size:	3 x 4–10
Serial No.:	G1162372
Stages:	1
SG:	1.00
NPSHr:	n/a
Speed:	3600 RPM

Hydro Performance Test Lab *



* *Testing by Hydro Aire in Chicago*

Service and Support

Kennametal ToolBOSS™

Kennametal ToolBOSS™

Secure, High-Capacity Solutions

ToolBOSS™ quickly and consistently delivers quantifiable savings in hundreds of metalworking companies worldwide. Much more than a vending unit, the Kennametal ToolBOSS system is a secure, electronically locked tool storage cabinet that can establish 24-hour tool control for high-value items. It issues tools, returns tools, sends to re-work, supports EDI ordering, and provides for multi-vendor security.

Efficiency
Multiple drawers can be selected in one transaction, minimising the time required to manage large stock volumes.

Future-Port
USB interface, as well as a DCS expansion port, for use with RFID and other ancillary equipment.

High-Speed Access
Rapid search and selection of an item is enhanced with LED identification system, guiding users to the correct drawer.

Traceability
Software provides a complete audit trail, tracking component usage details.

Expandability
Expandable up to 10 units per system, providing up to 1.121 secure locations.

To learn more about ToolBOSS, contact your local Authorised Distributor or visit **www.kennametal.com**

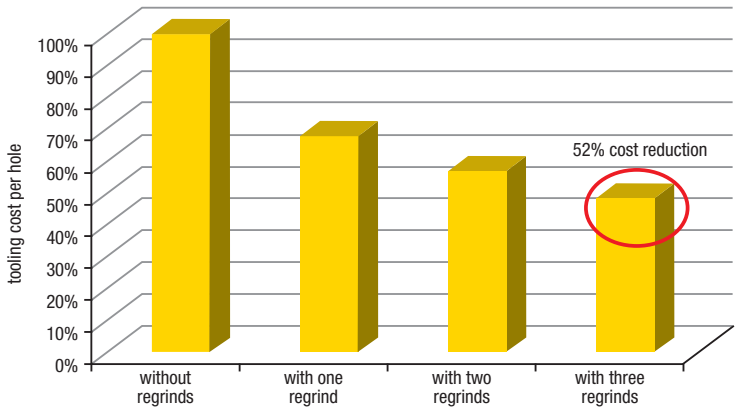
Reconditioning Services

Reconditioning Services

Our Reconditioning Services help optimise the total value of your metalcutting tools throughout their entire life cycle by giving the “like-new” performance characteristics — with rapid turnaround time — so the tools you need are always on-hand and perform just like new.

Reduce Tooling Cost by More than 50%

Example: 4" (10,5mm) HP-Drill B225A10500 KC7315 Material: Alloy steel 30 RC



Using Kennametal’s Reconditioning Services provides considerable savings throughout the life of your cutting tools and can reduce your overall tooling costs more than 50%.

For more information or to find the nearest reconditioning location, contact your local Authorised Distributor or visit www.kennametal.com

Service and Support

Carbide Recycling

Help Preserve and Protect Our Planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

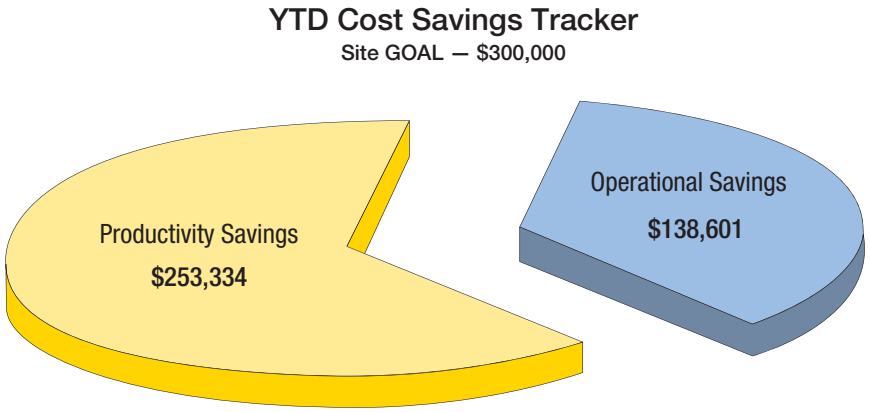
Program is not currently available in all geographical areas. For more information, please visit ***www.kennametal.com/carbiderecycling***

Service and Support

Cost per Part Services Program (CPP)

Build a Long-Term Relationship with the Leader in Metalworking Solutions that Provides:

- Monthly cost savings documented and captured in standardised KPI reports.
- Availability of Kennametal's latest technology to increase productivity and lower cost of operations.
- Onsite technical support available on a constant basis.
- Billing based on the output of your plant that eliminates inventory risk.



Cost per Part Services Programs Are Designed to Take Advantage of Our Wear Solutions Expertise by Outsourcing Your Metalworking Requirements that:

- Improve productivity.
- Reduce risk.
- Manage inventory.
- Lower operational costs.

For more information, contact your local Authorised Distributor or visit **www.kennametal.com**

Service and Support

Customer Application Support (CAS)

Customer Application Support

Get Fast and Reliable Answers to Your Toughest Metalcutting Problems

Our Customer Application Support (CAS) Team is the metalworking industry's leading help desk resource for tooling application solutions and problem resolution.

Easy Access to Proven Metalworking Expertise!

Kennametal Customer Application Engineers assist customers and engineering groups throughout the world with expert tool selection and application recommendations for the entire range of Kennametal tooling.

Service Level Excellence

- Fast telephone response.
- Quick technical solutions.
- Efficient case management.

Services

- Operating parameters.
- Process optimisation.
- Hardware support.
- Tooling selection.
- Troubleshooting.

Best-in-Class Support Tools and Technology

- Materials database.
- Application calculators.
- Tooling performance experts.

Convenient Access Options:

Originating Country	Language	Phone	Fax	E-mail
Australia	English	1800 674037	724-539-6830	ap-kmt.techsupport@kennametal.com
Austria	German	0800 202873 *	0800 202874	eu-kmt.techsupport@kennametal.com
Belgium	English/French	0800 80850 *	80080868	eu-kmt.techsupport@kennametal.com
China	Chinese	440-889-2238	21-5834-2200	k-cn.techsupport@kennametal.com
Denmark	English	80889298	80889296	na-kmt.techsupport@kennametal.com
Finland	English	0800919412 *	0800919414	na-kmt.techsupport@kennametal.com
France	French	805540367	805540028	eu-kmt.techsupport@kennametal.com
Germany	German	0800 0006651 *	0800 0006649	eu-kmt.techsupport@kennametal.com
India	English	724-539-8862	724-539-6830	ap-kmt.techsupport@kennametal.com
Israel	English	1809 449889	1809 449918	na-kmt.techsupport@kennametal.com
Italy	Italian	800 916561 *	800 917505	eu-kmt.techsupport@kennametal.com
Japan	English	0120 225429	724-539-6830	ap-kmt.techsupport@kennametal.com
Korea (South)	English	080 728 0880	724-539-6830	ap-kmt.techsupport@kennametal.com
Malaysia	English	1800 812 990 *	724-539-6830	ap-kmt.techsupport@kennametal.com
Netherlands	English	0800 0201130 *	0800 0201132	eu-kmt.techsupport@kennametal.com
New Zealand	English	0800 450941 *	0800 450921	ap-kmt.techsupport@kennametal.com
Norway	English	80010080 *	80010082	na-kmt.techsupport@kennametal.com
Poland	Polish	00800 4411887 *	00800 4411888	eu-kmt.techsupport@kennametal.com
Singapore	English	1800 6221031	724-539-6830	ap-kmt.techsupport@kennametal.com
South Africa	English	0800 981643 *	0800 981946 *	na-kmt.techsupport@kennametal.com
Sweden	English	020799246	020795474	na-kmt.techsupport@kennametal.com
Taiwan	English	0800 666 197 *	724-539-6830	ap-kmt.techsupport@kennametal.com
Thailand	English	1800 4417820 *	724-539-6830	ap-kmt.techsupport@kennametal.com
United Kingdom	English	0800 032 8339 *	0800 028 5803 *	na-kmt.techsupport@kennametal.com
USA	English	800-835-3668 *	724-539-6830	na-kmt.techsupport@kennametal.com

* *Toll-free number.*

QR Codes

Kennametal QR Codes

Looking for More Products or Product Information?

Use your smartphone or tablet to scan the QR codes throughout this catalogue.

Throughout the Kennametal Innovations Master Catalogue, you will find codes like the shown here that will activate links containing more information about various products and services offered.

The QR codes that you will find within this catalogue are designed to relate to the products or product families on the page where they are found. These codes will link you to expanded product information, such as application videos, informative drawings and animations, extra product charts and graphs, or simply to an expanded online catalogue of products offered by Kennametal for all your drilling, turning, and milling needs.

Helpful Information to Get You Scanning

QR codes are activated when scanned with a dedicated QR scanning application using the onboard camera of your smartphone or tablet.

If you currently have a QR scanner on your smartphone or tablet, look for codes to learn more information about our products. Don't have a QR scanner on your device? It's simple to get one. Just go to your device's application store, and search for a "QR code scanner". Follow your application store's directions on downloading an application, and then launch your QR scanner.

- With your scanner, centre the QR code in the camera window of your application.
- When the scanner locks onto the image, you will be on your way to the embedded information in the QR code.
- Once the webpage, video, or other information linked to the QR code opens or loads, you can freely interact.

When you need information quickly on a product or an extended product catalogue, skip the web search and long website URLs and scan the provided QR codes in this catalogue.

Scan the code at the top of the page to visit our website and online product catalogue.

QR Code is a registered trademark of Denso Wave Incorporated.

Service and Support

Merchandise

Merchandise

New Merchandise Available! Place Your Order Today!

Introducing a new line of Kennametal merchandise. Place an order for any of the following quality products with your Authorised Kennametal Distributor or visit www.kennametal.com.

Solid Performance Polo

100% polyester. No curl/rib-knit jacquard collar. Antimicrobial.

- Colour: charcoal

Windbreaker Jacket

Comfortable fit with a water-repellent shell and mesh lining, lower front pockets for added convenience. 100% polyester. Features elasticised cuffs and an open bottom with a drawstring cord.

- Colour: black

Extreme Colorblock Polo

100% polyester. Moisture wicking, antimicrobial, and raglan sleeves.

- Colour: black/gold

Extreme Cap

Extreme Cap is a classic unstructured cap made of soft laundered cotton for a casual, comfortable feel. Pre-curved visor and six sewn eyelets give this cap the look of a traditional baseball cap. Fabric strap with slide buckle.

- Colour: black and camo

Titleist® DT SoLo® Golf Balls

The new DT SoLo golf ball will appeal to a broad range of golfers seeking the combination of long distance, exceptional feel, responsive short game control, and cut-proof cover durability.

- Colour: white

Hanes® TAGLESS® T-Shirt

100% cotton. Pre-shrunk.

- Colour: black

12 oz. Ceramic Tumbler

Silicone lid. Double-wall ceramic tumbler. 5.5" tall without the lid. Fits in most corporate coffee machines. Includes 1-piece gift box. 11 oz.

- Colour: black with black lid

Majestic Ballpoint Pen

Majestic metal ballpoint pen with chrome trim and coloured centre band.

- Colour: black metal with chrome trim

Dakota Multi-Tool

4" closed. Silver anodised aluminium handles. Features spring-action needle nose and regular pliers, serrated knife blade, straight-edge knife blade, can/bottle opener, file, 2 screwdrivers, Phillips head screwdriver, and more. Comes with nylon belt pouch. Boxed.

- Colour: grey

Jupiter Flashlight

Metal, 17" white LED flashlight. Push button power switch. Wrist strap. Three AAA batteries included (not inserted).

- Colour: black

Bottle Opener

Contemporary design, aluminium bottle opener/ key tag. Ergonomic, curved construction improves handling and safely opens metal bottle caps.

- Colour: black

Collapsible Koozie

Fits 16 oz. water bottles and longnecks.

- Colour: black

Notebook Combo

6-1/4" x 8-1/2". Double spiral binding, elastic pen loop on cover. 80 white-lined sheets (non-refillable).

- Colour: yellow

Aluminium Bottle

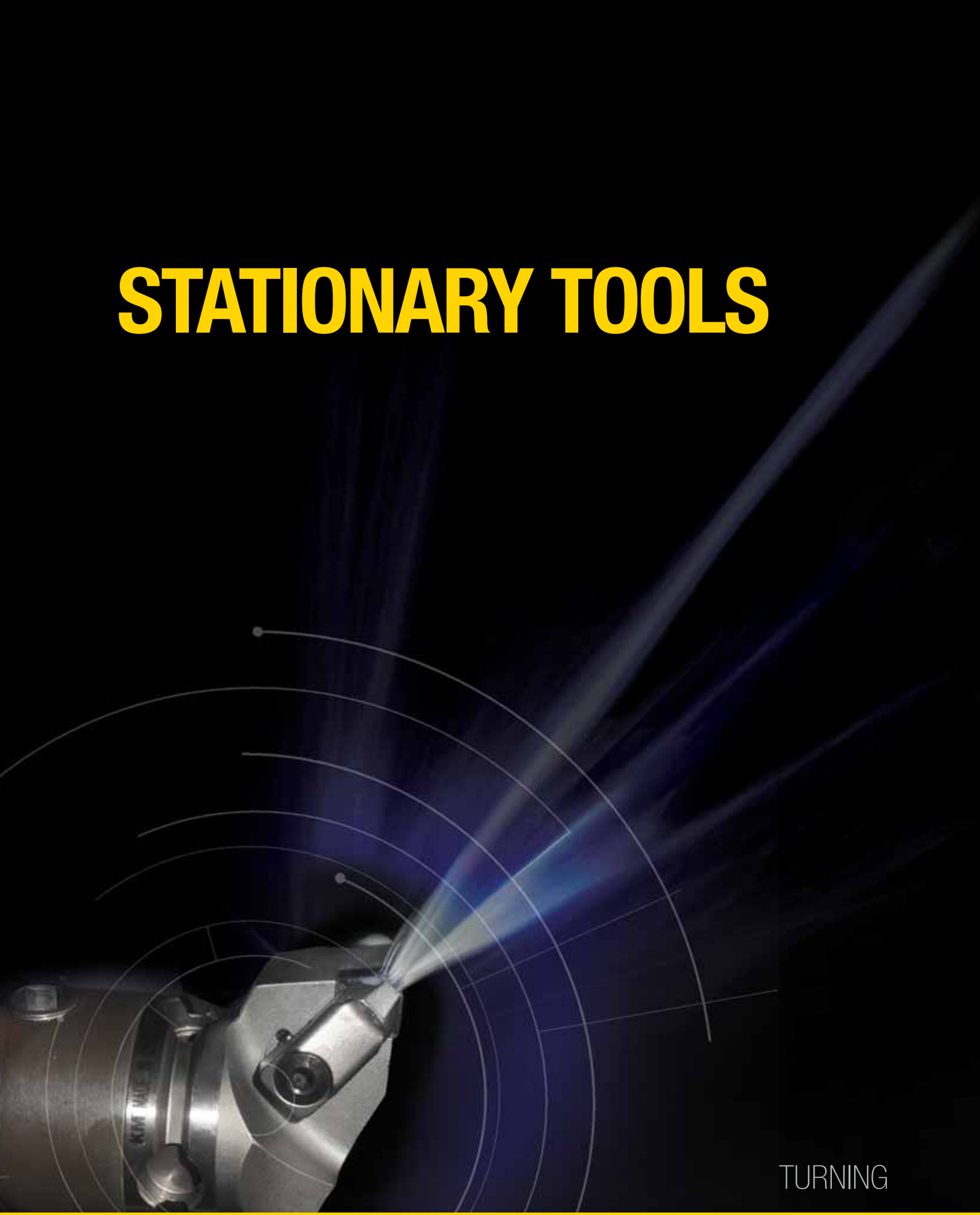
The ribbed aluminium bottle is BPA free and has a silicone color band with a matching drinking spout and lid.

- Colour: metal/black/yellow

Visit **www.kennametal.com** to see all available merchandise and for ordering details.

KENNAMETAL

STATIONARY TOOLS



TURNING

www.kennametal.com

KENNAMETAL®

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Threading E0–E103

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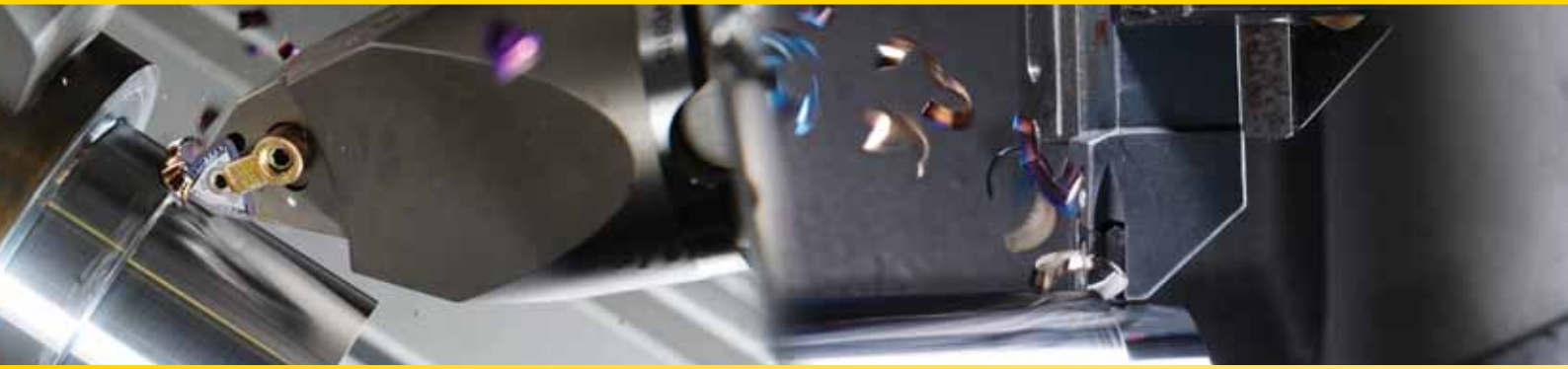
KENNAMETAL®

STATIONARY TOOLS

Turning Products

Our latest Metalcutting Innovations are designed to deliver higher productivity, longer tool life, and increased application versatility.



ISO INSERTS

See Section B for more details.

Carbide Inserts

NEW! Beyond™ Technology
- PVD Grades KCU10™/KCU25™
- CVD Grades

Ceramic Inserts

NEW! Beyond Technology
- KYK10 and KYK25 Ceramic Grades for CI
- KYS25 and KYS30 Ceramic Grades for High-Temp

Superhard Inserts
- CBN Inserts with Chipbreaker

Kennametal Select Insert Line

TOOLHOLDERS

See Section C for more details.

Toolholders
- Kenclamp™
- Kenloc™
- Kenlever™
- Kendex™

Boring Bars
- Kenclamp
- Kenloc
- Kenlever
- Kendex

For more information about the latest products and services from Kennametal, please contact your Kennametal Representative or Authorised Kennametal Distributor, or visit www.kennametal.com.

THREADING, GROOVING, AND CUT-OFF (TG&C)

See Sections D and E for more details.

A2™, A3™, and A4™

NEW! Beyond™ Technology
- KCU25™ PVD Grade

- CBN Inserts
- A4 Clubhead Toolholders

Top Notch™ Grooving and Threading

NEW! Beyond Technology
- KCU25 PVD Grade

- CBN Inserts

LT Threading

APPLICATION SPECIFIC

See Section F for more details.

Beyond BLAST™

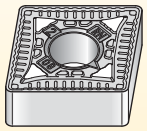
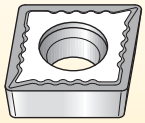
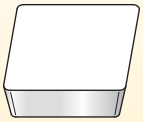
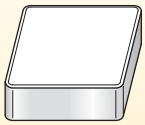
Fix-Perfect™

Top Notch Profiling

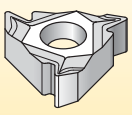
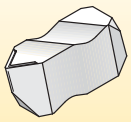
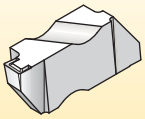
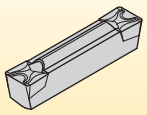
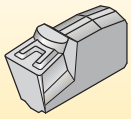
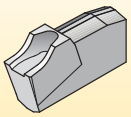
Tooling for Railroad

ISO Turning Inserts

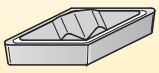
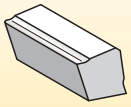
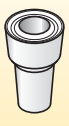
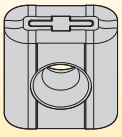
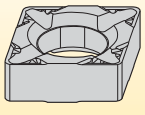
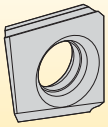
Step 1 • Select Insert Style

		 Kenloc™	 Screw-On	 Kendex™ Positive	 Kendex Negative
C		Carbide: B38–B47 Ceramic: B116 Superhard: B172–B174	Carbide: B86–B93 Superhard: B185–B188	Carbide: B82 Superhard: B183	Ceramic: B120 Superhard: B180–B181
D		Carbide: B47–B56 Ceramic: B117 Superhard: B174–B176	Carbide: B93–B98 Superhard: B189–B192	–	Ceramic: B121 Superhard: B181
R		Carbide: B56–B57 Ceramic: B117	Carbide: B98–B100	Carbide: B82–B83 Ceramic: B126–B127	Ceramic: B122 Superhard: B180
S		Carbide: B57–B64 Ceramic: B118 Superhard: B176–B177	Carbide: B101–B104	Carbide: B83–B84 Ceramic: B127–B128	Ceramic: B123–B124 Superhard: B180, B182
T		Carbide: B64–B71 Ceramic: B118 Superhard: B177–B179	Carbide: B104–B110 Superhard: B192–B194	Carbide: B84–B85 Ceramic: B128 Superhard: B183–B184	Ceramic: B124 Superhard: B182
V		Carbide: B72–B76 Ceramic: B118 Superhard: B178–B179	Carbide: B111–B112 Superhard: B194–B195	–	Ceramic: B124
W		Carbide: B76–B81 Ceramic: B119 Superhard: B179	Carbide: B112–B113	–	Ceramic: B125

Threading, Grooving, and Cut-Off

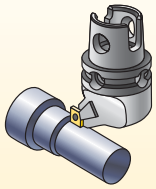
	 LT	 Top Notch™ Threading	 Top Notch Grooving	 A4™	 A3™	 A2™
inserts	E40–E64	E8–E21	D116–D131	D68–D79	D30–D33	D12–D16
toolholders	E66–E71	E22–E34	D132–D139	D80–D107	D34–D57	D18–D24

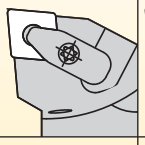
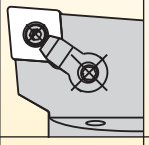
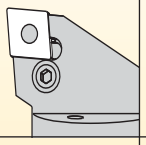
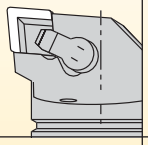
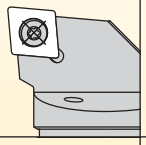
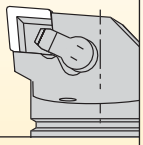
Application Specific

	 Top Notch Profiling	 Kendex Mini	 K-Lock™	 Railroad/Bar Peeling	 Beyond BLAST™	 Fix-Perfect™
inserts	F39–F44	F63	F59	F80–F83, F91–F93, F103–F105	F6–F9	F14–F28
toolholders	F45–F46	F64–F65	F60–F61	F68–F79, F85–F90, F95–F102	F10–F11	F30–F37

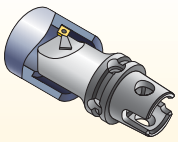
Step 2 • Select Application and Clamping System

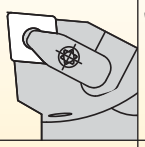
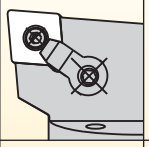
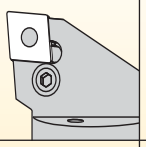
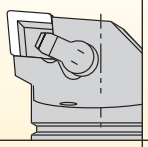
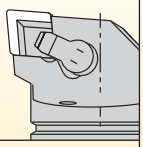
External Machining

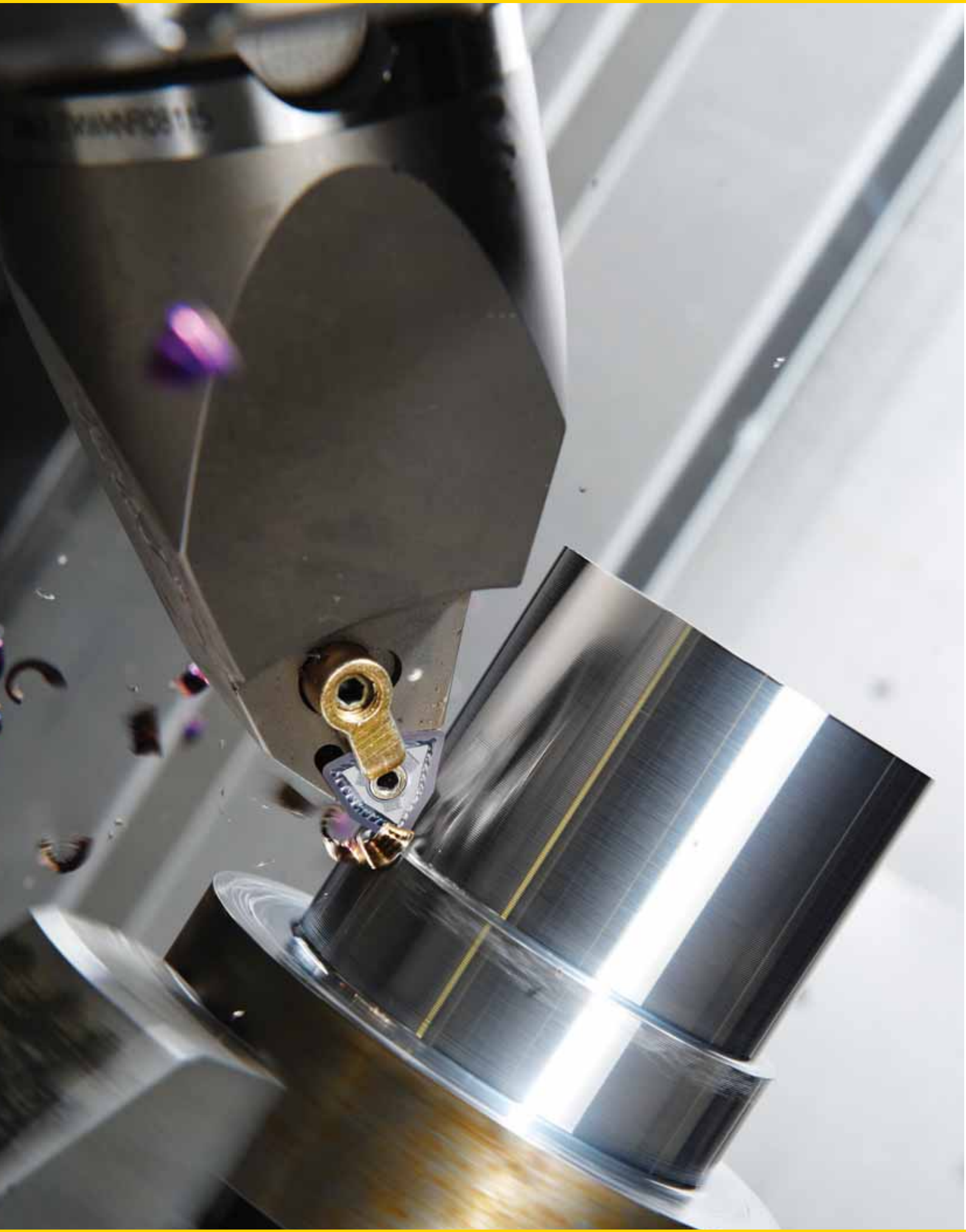


			Kenclamp™	Kenloc™	Kenlever™	Kendex™ Negative	Screw-On	Kendex Positive
								
C	80°	conventional	C6–C8	C24–C26	C15–C17	C36	C42–C47	–
D	55°	conventional	C8–C9	C26–C27	C183	–	C47–C49	–
R		conventional	C9	C27	–	–	C50–C51	–
S	90°	conventional	C10–C12	C28–C30	C19–C20	C36–C37	C51–C53	C38–C39
T	60°	conventional	C12–C13	C30–C32	C21	–	C53–C54	C40
V	35°	conventional	C13–C14	C32–C33	–	–	C55–C57	–
W	80°	conventional	C14–C15	C33	C22	C37	C57	–

Internal Machining



			Kenclamp	Kenloc	Kenlever	Kendex Negative	Screw-On	Kendex Positive
								
C	80°	conventional	C78	C82	C105	C107	C87–C94	–
D	55°	conventional	C78–C79	C82	–	C107–C108	C94–C97	–
R		conventional	–	–	–	–	–	–
S	90°	conventional	C80	C83	C105	C108–C109	C97–C98	C85
T	60°	conventional	C80	C83	C106	–	C98–C102	C85–C86
V	35°	conventional	C81	C83	–	–	C102–C103	–
W	80°	conventional	C81	C84	C106	C109	C103–C104	–



ISO Inserts

Kennametal Inserts B2–B23

Grades and Grade Descriptions B24–B31

Chip Control Geometries B32–B37

ISO Carbide Inserts B38–B115

ISO Ceramic Inserts B116–B130

Superhard Materials • PCBN/PCD Inserts B133–B197

Inserts for Every Turning Operation

Kennametal, the trusted innovator in metalcutting technology, offers a complete range of indexable inserts for general turning operations. From roughing to finishing, Kennametal has the correct insert.

Plus, Kennametal offers the next generation in tooling with Beyond™. Harnessing advanced science and exceptional experience, our Beyond inserts deliver unparalleled levels of productivity, efficiency, dependability, and profitability.

Features and Benefits

Up to 30% Higher Productivity and Profitability

- Achieve higher metal removal rates (speed, feed, and depth of cut).
- Gain longer tool life.

Versatility

- Products can be applied across a wide range of applications.
- Can be used in low- to high-speed applications.

Reliability

- Deliver uniform wear for predictable tool life.
- Achieve reduced depth-of-cut notching.
- Virtually eliminate chip flow damage.

Complete Portfolio

- The Beyond product portfolio can be used in a complete range of steel, cast iron, and stainless steel ISO turning workpieces.

Technical Details • Features

Post-Coat Treatment

- Improves edge toughness.
- Long predictable tool life.
- Reduces depth-of-cut notching.
- Wide range of applications.
- Reduces stresses.
- Reduces microchipping.
- Improves coating adhesion.

Fine-Grained Alumina Layer

- Provides coating integrity at elevated speeds.
- Higher productivity and dependability at high cutting temperatures.

Micro-Polished Edges

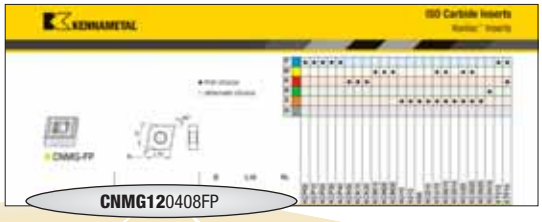
- Improves edge toughness.
- Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

Post-Coat Grinding — Bottom

- Provides secure seating surface.

How Do Catalogue Numbers Work?

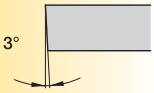
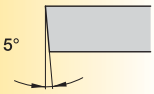
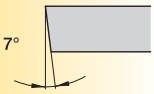
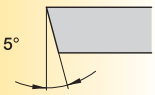
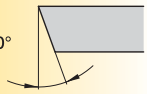
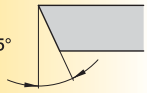
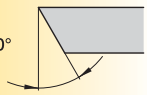
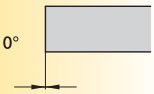
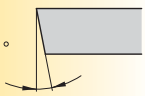
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



C — Insert Shape

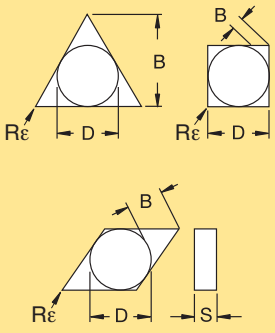
H	Hexagon 120°	
O	Octagon 135°	
P	Pentagon 108°	
R	Round —	
S	Square 90°	
T	Triangular 60°	
C D E M V	Rhomboid 80° 55° 75° 86° 35°	
W	Trigon 80° with enlarged corner angles	
L	Rectangular 90°	
A B N/K	Parallelogram 85° 82° 55°	

N — Insert Clearance Angle

A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	
O	Indicated for other clearance angles requiring descriptions.	

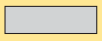
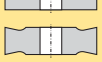
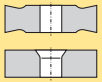
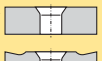
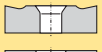
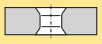
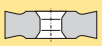
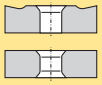
M — Tolerance Class

Tolerances apply prior to edge prep and coating



D = Theoretical diameter of the insert inscribed circle
S = Thickness
B = See figures below

G — Insert Features

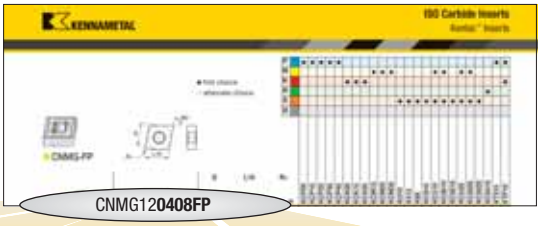
N	
R	
F	
A	
M	
G	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special Design

12 — Size

	"D"	Code for inch cutting edge length "L10"						
inch	mm	C	D	R	S	T	V	W
1.2 (5)	3,97	S4	04	03	03	06	–	–
1.5 (6)	4,76	04	05	04	04	08	08	S3
1.8 (7)	5,56	05	06	05	05	09	09	03
–	6,00	–	–	06	–	–	–	–
2	6,35	06	07	06	06	11	11	04
2.5	7,94	08	09	07	07	13	13	05
–	8,00	–	–	08	–	–	–	–
3	9,52	09	11	09	09	16	16	06
–	10,00	–	–	10	–	–	–	–
3.5	11,11	11	13	11	11	19	19	07
–	12,00	–	–	12	–	–	–	–
4	12,70	12	15	12	12	22	22	08
4.5	14,29	14	17	14	14	24	24	09
5	15,88	16	19	15	15	27	27	10
–	16,00	–	–	16	–	–	–	–
5.5	17,46	17	21	17	17	30	30	11
6	19,05	19	23	19	19	33	33	13
–	20,00	–	–	20	–	–	–	–
7	22,22	22	27	22	22	38	38	15
–	25,00	–	–	25	–	–	–	–
8	25,40	25	31	25	25	44	44	17
10	31,75	32	38	31	31	54	54	21
–	32,00	–	–	32	–	–	–	–

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±0,025	±0,013	±0,025
H	±0,013	±0,013	±0,025
E	±0,025	±0,025	±0,025
G	±0,025	±0,025	±0,013
M	See tables on the next page		±0,013
U	See tables on the next page		±0,013

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



04
Thickness S

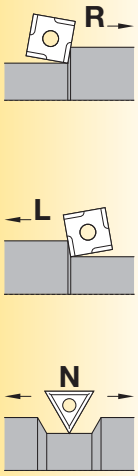
symbol mm	thickness mm
–	0,79
T0	1,00
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
9	9,52
11	11,11
12	12,70

08
Corner Radius "Rε"

symbol mm	corner radius mm
X0	0,04
01	0,1
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
28	2,8
32	3,2
00	round insert
M0	

Hand of Insert *(optional)*

R = Right hand
L = Left hand
N = Neutral



Cutting Edge *(optional)*

F Sharp
E Rounded
T Chamfered
S Chamfered and Rounded
K Double-Chamfered
P Double-Chamfered and Rounded

FP
Chipbreaker *(optional)*

F = Sharp
FF = Fine Finishing
FN = Finishing Negative
MN = Medium Negative
RN = Roughing Negative
UN = Universal Medium
FP = Finishing Positive
MP = Medium Positive
RP = Roughing Positive
RM = Roughing Medium
RH = Roughing Heavy
FW = Finishing Wiper
MW = Medium Wiper
FS = Finishing Sharp
MS = Medium Sharp
RW = Roughing Wiper
HP = High Positive
UP = Universal Positive
K = Light-Feed Chip Control
UF = Ultra-Fine Finishing
LF = Light Finishing
MF = Medium Finishing
E = Hone Only
T = Negative Land
S = Negative Land Plus Hone
MP-K = Medium Positive
MG-P = Medium Positive

"D" mm	± Tolerance on "D"			
	Class M Tolerance		Class U Tolerance	
	Shapes S, T, C, R, & W mm	Shape D mm	Shape V mm	Shapes S, T, & C mm
3,97	0,05	–	–	–
4,76	0,05	–	–	0,06
5,56	0,05	0,05	0,05	0,06
6,35	0,05	0,05	0,05	0,06
7,94	0,05	0,05	0,05	0,06
9,52	0,05	0,05	0,05	0,06
11,11	0,06	0,06	0,06	0,13
12,70	0,06	0,06	0,06	0,13
14,29	0,06	0,06	0,06	0,13
15,88	0,10	0,10	0,10	0,18
17,46	0,10	0,10	0,10	0,18
19,05	0,10	0,10	0,10	0,18
22,22	0,13	–	–	0,25
25,40	0,13	–	–	0,25
31,75	0,15	–	–	0,25

"D" mm	± Tolerance on "B"			
	Class M Tolerance		Class U Tolerance	
	Shapes S, T, C, R, & W mm	Shape D mm	Shape V mm	Shapes S, T, & C mm
3,97	0,06	–	–	–
4,76	0,06	–	–	0,13
5,56	0,06	0,11	–	0,13
6,35	0,06	0,11	–	0,13
7,94	0,06	0,11	–	0,13
9,52	0,06	0,11	0,18	0,13
11,11	0,13	0,15	–	–
12,70	0,13	0,15	0,25	0,20
14,29	0,13	0,15	–	–
15,88	0,15	0,18	–	0,27
17,46	0,15	0,18	–	0,27
19,05	0,15	0,18	–	0,27
22,22	0,15	–	–	0,38
25,40	0,18	–	–	0,38
31,75	0,20	–	–	0,38

A system of grades, geometries, and application guidelines to provide optimal solutions for your metalcutting needs. It's easy to determine which Kennametal chip-control cutting tool will work best in your specific workpiece materials and applications!

Grade • Beyond™

K	C	P	M	25	A
Brand	Insert Material	Primary Workpiece Material (ISO 513)	Secondary Workpiece Material *(optional)*	Application Range	Future Upgrades *(optional)*

K = Kennametal

Blank = Carbide, uncoated
C = Carbide, coated
T = Cermet
Y = Ceramic
D = PCD
B = PCBN
S = Steel

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

U = Universal Machining

Hardest

5	fine finishing
10	finishing
15 20	medium to roughing
25 30 35	roughing
40 45 50	heaviest roughing

Toughest

A = Generation 1
B = Generation 2
C = Generation 3
etc.

NOTE: Application range does not apply to PCBN grades.

Grade • Kenna Perfect™

K	C	9	2	25
		Coating Type	Material Group	Wear Application Range/Toughness Range

9 = CVD (Chemical Vapor Deposition)
5 = PVD (Physical Vapor Deposition)

1 =	P	Steel
2 =	M	Stainless Steel
3 =	K	Cast Iron
4 =	N	Non-Ferrous Materials
5 =	S	High-Temp Alloys
6 =	H	Hardened Materials

0 = Universal Machining

Hardest

10	highly wear resistant
to	
50	extremely tough

Toughest

NOTE: Application range does not apply to PCBN grades.

Positive Inserts

Screw-On Inserts

- Screw-On inserts are your first choice for I.D. turning of all materials and O.D. turning on small to medium lathes.
- Available in flat-top and chip-control geometries with both moulded and ground peripheries. Suitable for all workpiece materials.

See pages:
Carbide: B88–B115
Superhard: B187–B197

Kendex™ and V-Bottom Inserts

- Kendex positive and V-bottom inserts are your first choice for productive machining of high-temperature alloys on medium to large lathes.
- Available in flat-top geometries with ground periphery.

See pages:
Carbide: B84–B87
Ceramic: B128–B130
Superhard: B185–B186

See pages B128–B129 for V-bottom product listing.

Top Notch™ Profiling Inserts

- First choice for high-production profiling.
- Unique insert clamping design offers superior rigidity.
- Available in chip-control geometries with both moulded and ground peripheries. Suitable for all workpiece materials.

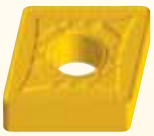
See pages F39–F44 for product listing.

K-Lock™ Inserts

- K-Lock inserts are ideal for deep grooving and profiling.
- A unique insert clamping system allows for unimpeded chip flow.
- Available in moulded and ground peripheries.

See page F59 for product listing.

Negative Inserts



Kenloc™ Inserts

- Kenloc inserts are your first choice for general machining of all materials on medium to large lathes.
- Kenloc inserts offer the best economy for high metal removal rates.
- Available in flat-top and chip-control geometries with both moulded and ground peripheries. Suitable for all workpiece materials.

See pages:
Carbide: B40–B83
Ceramic: B118–B121
Superhard: B187–B197

Kendex Inserts

- Ceramic Kendex inserts are a great choice for productive machining of high-temp alloys.
- Kendex negative rake inserts are also recommended for the machining of hardened materials and cast irons.
- Available in flat-top geometries with moulded and ground peripheries.
- Wide selection of standard toolholders are offered.

See pages B122–B127 for product listing.

Top Notch Turning Inserts

- Ceramic Top Notch Turning inserts are your first choice for high-speed roughing and finishing of cast iron parts.
- Available in flat-top geometries with moulded and ground peripheries.

See pages B122–B127 for product listing.

Insert Selection System

How to Use

Kennametal's three-step insert selection system makes choosing and applying the most productive tool as easy as 1, 2, 3. Tool recommendations are based on six workpiece material groups, optimising selection accuracy.

Example:
Six workpiece material groups

Step 1 • Select the insert geometry

Given: depths of cut = 1mm
feed = 0,4mm
Unknown: insert geometry
Solution: -MN

Step 2 • Select the grade

Given: cutting conditions:
lightly interrupted cut
Geometry: -MN
Unknown: grade
Solution: KCP25

Step 3 • Select the cutting speed

Given: grade KCP25
cutting conditions
material CK15
Unknown: cutting speed
Solution: 280 m/min

Need help in selecting a product?
Additional information can be obtained by contacting Kennametal's Customer Application Support Team.
Go to www.kennametal.com for your country's phone number.

Step 1 • Select the insert geometry

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

beyond™

Negative Inserts

-RN

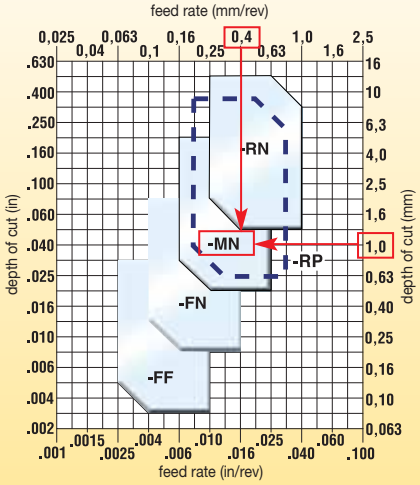
-RP* (positive)

Roughing

-FN Finishing

-MN Medium Machining

-FF Fine Finishing



*-RP – Supplemental geometry for high-strength materials

Step 2 • Select the grade

cutting condition	-FF	-FN	-MN	-RN	-RP	-11	-UF	-LF	-FP	-MF	-MP
heavily interrupted cut	KCP10	KCP25	KCP30	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCU25/KCP25	KCP40	KCM25
lightly interrupted cut	KCP10	KCP25	KCP25	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin	KCP05/KT315	KCP10	KCP10	KCP30/KCP40	KCP30/KCP40	KT315	KCP10	KCP10	KCP10	KCP10	KCP10

Step 3 • Selecting the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel — **speed — m/min (SFM)** — **starting conditions**

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P1	KCP05/KTP10							◁▷			435	1450
	KCP10							◁▷			395	1320
	KCP25				◆						275	925
	KCP30/KCP40			◁▷							210	700

New Beyond™ Material Group Selection Guide:
To optimise speed recommendations, Beyond material subgroups have been added to each of the six workpiece material groups.

material	material group ISO code	number of material subgroups
steel	P	1–6
stainless steel	M	1–3
cast iron	K	1–3
non-ferrous materials	N	1–8
high-temp alloys	S	1–4
hardened materials	H	1

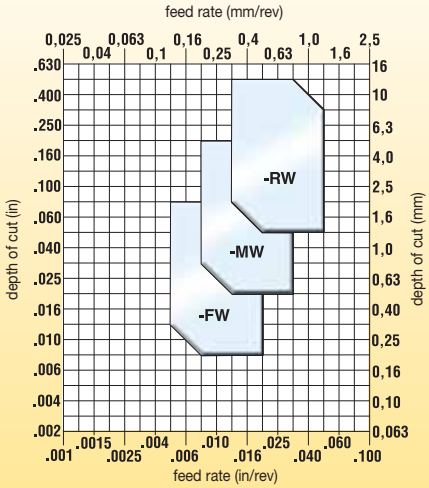
Step 1 • Select the insert geometry

Negative Wiper Inserts

-RW
Rough Wiper

-MW
Medium Wiper

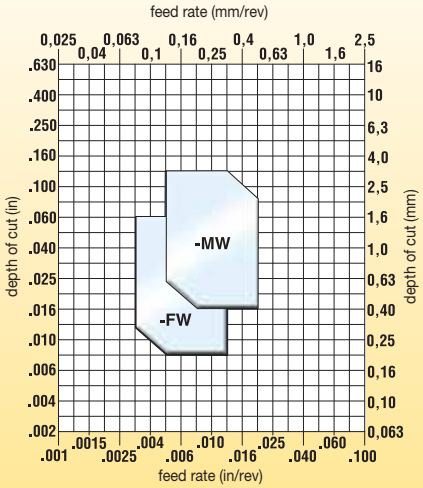
-FW
Finishing Wiper



Positive Wiper Inserts

-MW
Medium Wiper

-FW
Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FW	Negative Insert Geometry -MW	Negative Insert Geometry -RW	Positive Insert Geometry -FW	Positive Insert Geometry -MW
heavily interrupted cut		–	–	KCP25	–	KCP25
lightly interrupted cut		KCP10	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin		KCP05/KT315	KCP10	KCP10	KCP10/KCK20	KCP10/KCK20
smooth cut, pre-turned surface		KCP05/KT315	KCP05	KCP10	KCP10/KT315	KT315/KT315

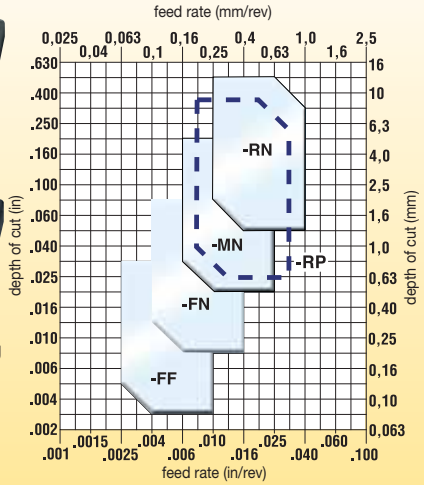
Step 1 • Select the insert geometry

Negative Inserts

-RN -RP* (positive)
Roughing

-FN Finishing
-MN Medium Machining

-FF
Fine Finishing



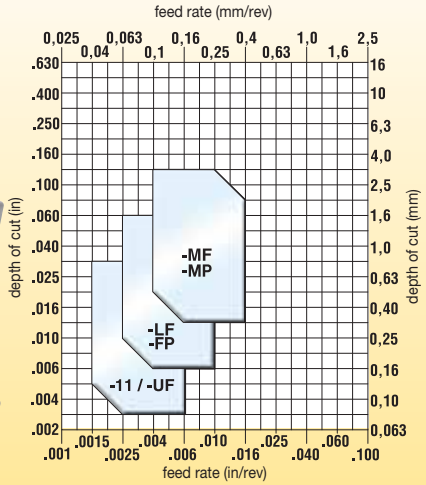
*-RP – Supplemental geometry for high-strength materials

Positive Inserts

-MF -MP Positive
Medium Machining

-LF -FP Positive
Finishing

-11 -UF
Fine Finishing



Step 2 • Select the grade

cutting condition		-FF	-FN	-MN	-RN	-RP	-11	-UF	-LF	-FP	-MF	-MP
heavily interrupted cut		KCP10	KCP25	KCP30	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCU25/KCP25	KCP40	KCM25
lightly interrupted cut		KCP10	KCP25	KCP25	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin		KCP05/KT315	KCP10	KCP10	KCP30/KCP40	KCP30/KCP40	KT315	KCP10	KCP10	KCP10	KCP10	KCP10
smooth cut, pre-turned surface		KCP05/KT315	KCP05	KCP05	KCP30/KCP40	KCP30/KCP40	KT315	KCP05	KCP05/KT315	KCP05/KTP10	KCP05	KCP05

Step 3 • Select the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P0/P1	KCP05/KTP10								◁▷		435	1450
	KCP10							◁▷			395	1320
	KCP25				◁▷						275	925
	KCP30/KCP40		◁▷								210	700
	KT315								◁▷		440	1450
	KCU10/KC5010			◁▷							280	925

Medium- and High-Carbon Steels (>0,3% C) — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P2	KCP05/KTP10				◁▷						240	800
	KCP10			◁▷							265	880
	KCP25			◁▷							195	650
	KCP30/KCP40		◁▷								150	500
	KT315				◁▷						270	880
	KCU10/KC5010	◁▷									200	650

Alloy Steels and Tool Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P3	KCP05/KTP10		◁▷								205	680
	KCP10		◁▷								190	630
	KCP25	◁▷									155	510
	KCP30/KCP40	◁▷									120	400
	KT315		◁▷								210	680
	KCU10/KC5010		◁▷								155	510

Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	60 (200)	90 (300)	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	m/min	SFM
P4	KCP05/KTP10				◁▷						160	530
	KCP10				◁▷						145	480
	KCP25			◁▷							105	360
	KCP30/KCP40		◁▷								95	325
	KT315				◁▷						210	530
	KCU10/KC5010			◁▷							110	360

Ferritic, Martensitic, and PH Stainless Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	330 (1100)	360 (1200)	m/min	SFM
P5	KCP05/KTP10					◁▷					240	800
	KCP10				◁▷						215	720
	KCP25				◁▷						195	650
	KCP30/KCP40	◁▷									135	450
	KT315					◁▷					250	800
	KCU10/KC5010				◁▷						200	660

Ferritic, Martensitic, and PH Stainless Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	105 (350)	135 (450)	165 (550)	195 (650)	225 (750)	255 (850)	285 (950)	315 (1050)	345 (1150)	m/min	SFM
P6	KCP05/KTP10				◁▷						200	660
	KCP10				◁▷						180	600
	KCP25			◁▷							150	500
	KCP30/KCP40	◁▷									105	350
	KT315				◁▷						200	660
	KCU10/KC5010			◁▷							150	500

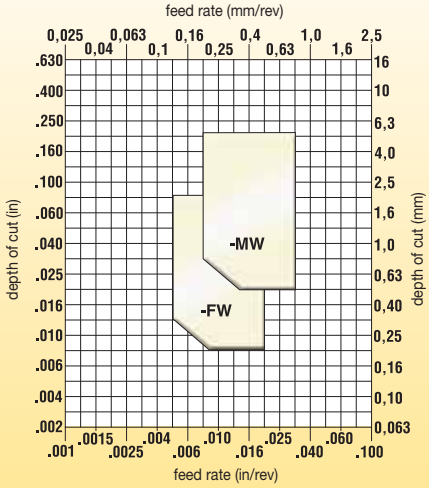
Step 1 • Select the insert geometry

Wiper technology beyond

Negative Wiper Inserts

-MW
Medium Wiper

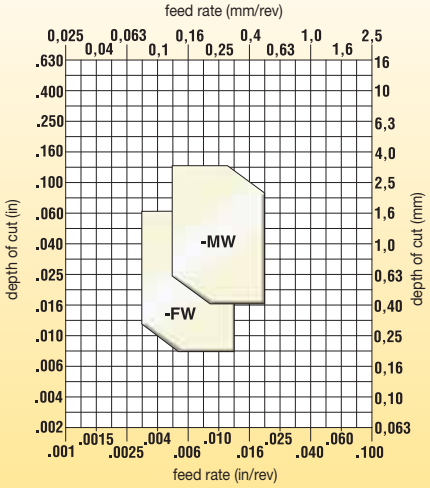
-FW
Finishing Wiper



Positive Wiper Inserts

-MW
Medium Wiper

-FW
Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FW	Negative Insert Geometry -MW	Positive Insert Geometry -FW	Positive Insert Geometry -MW
heavily interrupted cut		—	—	—	—
lightly interrupted cut		KCM15	KCM25	KCM15	KCM15
varying depth of cut, casting, or forging skin		KCM15/KCU10/KC5010	KCM15	KCU10/KC5010	KCU10/KC5010
smooth cut, pre-turned surface		KCM15/KT315	KCM15	KT315	KT315

Step 1 • Select the insert geometry

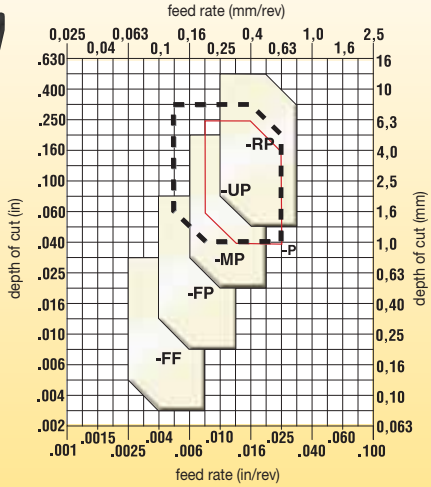
beyond

Negative Inserts

-RP -P
Roughing

-MP -UP
Medium Machining

-FP -FF
Finishing

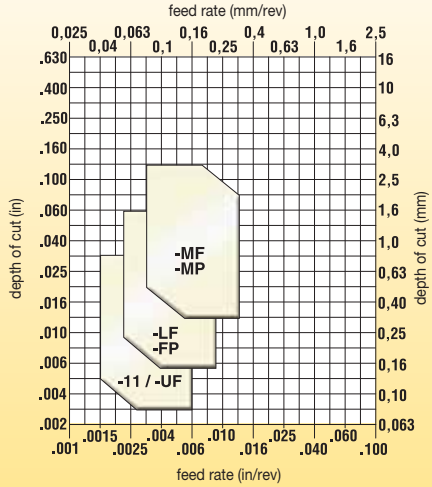


Positive Inserts

-MP
Medium Machining

-LF ..GT-LF
Finishing

-11 -UF
Fine Finishing



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FF	-FP	-MP/-UP	-P/-RP
heavily interrupted cut		KCU10/KC5010	KCM15	KCM35	KCM35
lightly interrupted cut		KCU10/KC5010	KCM15	KCM25	KCM25
varying depth of cut, casting, or forging skin		KT315	KCM15/KC5010	KCM15	KCM15/KCM25
smooth cut, pre-turned surface		KT315	KCM15/KT315	KCM15/KU10	KCU10

(continued)

Step 2 • Select the grade *(continued)*

cutting condition		Positive Insert Geometry -11	-UF	-LF	-MP/-MF	-FP
heavily interrupted cut		—	KCU25/KC5025	KCM35	KCM25	KCU25/KCM25
lightly interrupted cut		—	KCU10/KC5010	KCM25	KCM25	KCM15
varying depth of cut, casting, or forging skin		KT315	—	KCM15/KCU10	KCM15	KCU10
smooth cut, pre-turned surface		KT315	—	KCM15/KT315	KCM15	KTP10

Step 3 • Select the cutting speed

Austenitic Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M1	KCM15			◁▷							180	600
	KCM25			◁▷							150	500
	KCM35		◁▷								120	400
	KT315				◁▷						230	750
	KCU10/KC5010				◁▷						215	700
	KCU25/KC5025			◁▷							180	550

Austenitic Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M2	KCM15			◁▷							165	550
	KCM25		◁▷								140	450
	KCM35	◁▷									105	350
	KT315				◁▷						215	700
	KCU10/KC5010			◁▷							200	650
	KCU25/KC5025		◁▷								165	500

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M3	KCM15			◁▷							150	500
	KCM25		◁▷								120	400
	KCM35	◁▷									90	300
	KT315			◁▷							200	650
	KCU10/KC5010			◁▷							185	600
	KCU25/KC5025		◁▷								150	450

Step 1 • Select the insert geometry

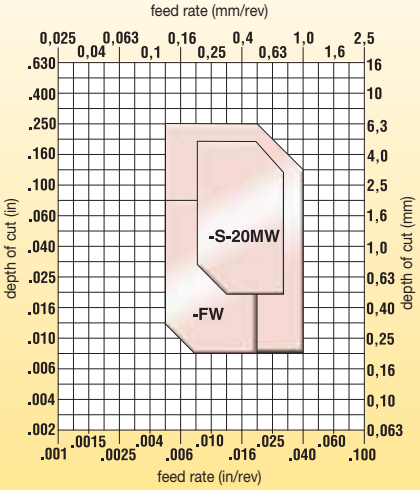
Negative Wiper Inserts

-MW -S...MW

Medium Wiper

-FW -FW -T-20FW

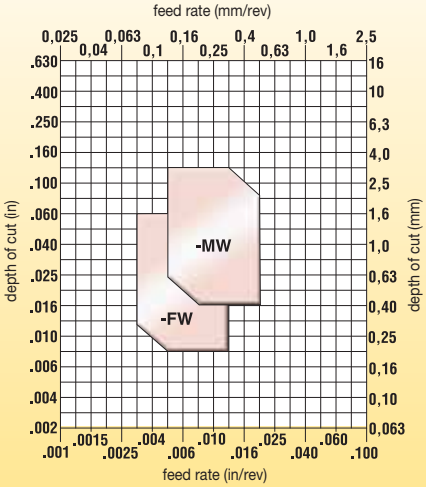
-FW -T-20FW Finishing Wiper



Positive Wiper Inserts

..MW Medium Wiper

-FW Finishing Wiper



Step 2 • Select the grade

Grey Iron

cutting condition	Negative Insert Geometry			Positive Insert Geometry	
	-FW	-T-20FW	-S...MW...	-FW	-MW
heavily interrupted cut	—	KY3500	KB1345	—	KCK20
lightly interrupted cut	KCK15	KY3500	KB1345	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCK05/KT315	KYK10	KB1345	KCK20	KCK20
smooth cut, pre-turned surface	KCK05/KT315	KYK25	KB1345	KCK20/KT315	KT315/KCK20

Ductile Iron

cutting condition	Negative Insert Geometry		Positive Insert Geometry	
	-FW	-T-20FW-	-FW	-MW
heavily interrupted cut	—	—	—	—
lightly interrupted cut	KCK15	KY3500	KCK20	KCK20
varying depth of cut casting, or forging skin	KCK05/KT315	KYK10	KCK20	KCK20
smooth cut, pre-turned surface	KCK05/KT315	KYK25	KCK20/KT315	KCK20/KT315

Step 3 • Select the cutting speed

Grey Cast Iron — speed — m/min (SFM) — starting conditions

material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K1	KCK05										450	1500
	KCK15										360	1200
	KCK20										300	1000
	KT315										275	900

Ductile, Compacted Graphite, and Malleable Cast Irons (<80 KSI tensile strength) — speed — m/min (SFM) — starting conditions

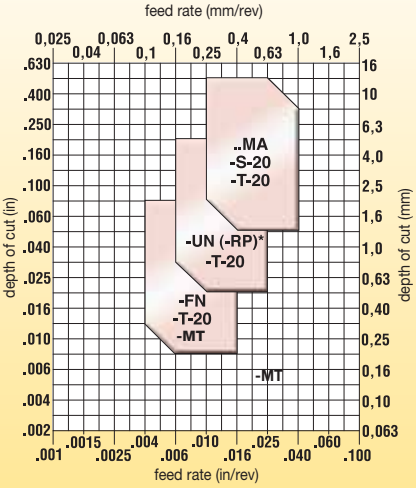
material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K2	KCK05										360	1200
	KCK15										270	900
	KCK20										240	800
	KT315										275	900

Ductile, Compacted Graphite, and Malleable Cast Irons (>80 KSI tensile strength) — speed — m/min (SFM) — starting conditions

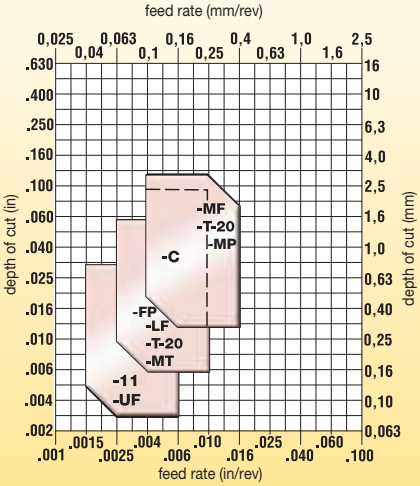
material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K3	KCK05										240	800
	KCK15										215	725
	KCK20										210	700
	KT315										230	750

Step 1 • Select the insert geometry

Negative Inserts



Positive Inserts



* Geometry can be used in medium machining operations to reduce tool pressure in high-strength metals.

Step 2 • Select the grade

Carbide Grades

Grey Iron

		Negative Insert Geometry			Positive Insert Geometry				
cutting condition		**-FN**	**-UN(-RP)**	**-MA**	**-LF**	**-FP**	**-MF**	**-MP**	**-MW**
heavily interrupted cut		KCK15	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20
lightly interrupted cut		KCK15	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20
varying depth of cut, casting, or forging skin		KCK05/KT315	KCK15	KCK15	KCK15	KCK20	KCK15	KCK20	KCK20
smooth cut, pre-turned surface		KCK05/KT315	KCK05	KCK05	KCK05	KCK20	KCK15	KCK20	KCK20

Ductile Iron

	Negative Insert Geometry		
cutting condition	**-FN**	**-UN(-RP)**	**-MA**
heavily interrupted cut	KCK15	KCK20	KCK20
lightly interrupted cut	KCK15	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCK05/KT315	KCK15	KCK15
smooth cut, pre-turned surface	KCK05/KT315	KCK05	KCK05

	Positive Insert Geometry					
cutting condition	**-11/-UF**	**-LF**	**-MF**	**-FP**	**-MP**	**-MW**
heavily interrupted cut	—	KCK20	KCK20	KCK20	KCK20	KCK20
lightly interrupted cut	KCU10/KC5010	KCK20	KCK20	KCK20	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCU10/KC5010	KCK15	KCK15	KCK20	KCK20	KCK20
smooth cut, pre-turned surface	KT315	KCU10/KC5010	KCK15	KCK20	KCK20	KCK20

(continued)

Step 2 • Select the grade *(continued)*

Ceramic and PCBN Grades

Grey Iron

	Negative Insert Geometry				
cutting condition	-T-20 Finishing	MT	-T-20 Medium	-T-20 Roughing	-S20
heavily interrupted cut	KY3500	KCK20	KY3500	KY3500	KB1340
lightly interrupted cut	KY3500	KB1345	KYK10	KY3500	KB1340
varying depth of cut, casting, or forging skin	KYK10	KB1345	KYK10	KYK10	KB1340
smooth cut, pre-turned surface	KYK25	KB1345	KYK25	KYK25	KB1340

	Positive Insert Geometry			
cutting condition	-T-20 Fine Finishing	-T-20 Medium	MT	C
heavily interrupted cut	—	KY3500	KB1630/KB1345	KB1630/KB1345
lightly interrupted cut	—	KY3500	KB1630/KB1345	KB1630/KB1345
varying depth of cut, casting, or forging skin	KY3500	KY3500	KB1630/KB1345	KB1630/KB1345
smooth cut, pre-turned surface	KY3500	KY3500	KB1630/KB1345	KB1630/KB1345

Ductile Iron

	Negative Insert Geometry			Positive Insert Geometry		
cutting condition	-T-20 Finishing	-T-20 Medium	-T-20 Roughing	-T-20 Fine Finishing	-T-20 Finishing	-T-20 Medium
heavily interrupted cut	—	KY3500	KY3500	—	KY3500	KY3500
lightly interrupted cut	—	KYK25	KYK25	—	KYK25	KYK25
varying depth of cut, casting, or forging skin	KYK25	KYK25	KYK25	KYK25	KYK25	KYK25
smooth cut, pre-turned surface	KYK25	KYK25	KYK25	KYK25	KYK25	KYK25

Step 3 • Select the cutting speed (Optimal speed depends on casting quality and disposition.)

Grey Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	180 (600)	305 (1000)	430 (1400)	550 (1800)	675 (2200)	800 (2600)	920 (3000)	1040 (3400)	1160 (3800)	m/min	SFM
K1	KT315		◁▷									275	900
	KB1340/KB1345							◁▷				760	2500
	KYK25							◁▷				760	2500
	KY3500							◁▷				760	2500
	KYK10							◁▷				760	2500
	KCK05				◁▷							450	1500
	KCK15				◁▷							360	1200
	KCK20				◁▷							300	1000

Ductile, Compacted Graphite, and Malleable Cast Irons (<600 MPa tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	500 (1650)	550 (1800)	600 (1950)	m/min	SFM
K2	KT315					◁▷								275	900
	KCU10/KC5010				◁▷									200	650
	KYK25								◁▷					430	1400
	KY3500							◁▷						365	1200
	KYK10							◁▷						365	1200
	KCK05						◁▷							360	1200
	KCK15					◁▷								270	900
	KCK20				◁▷									240	800

Ductile, Malleable, and Austempered Cast Irons (>600 MPa tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	500 (1650)	550 (1800)	600 (1950)	m/min	SFM
K3	KT315				◁▷									230	750
	KCU10/KC5010			◁▷										150	500
	KYK25						◁▷							365	1200
	KCK05				◁▷									240	800
	KCK15			◁▷										215	725
	KCK20		◁▷											210	700

Step 1 • Select the insert geometry

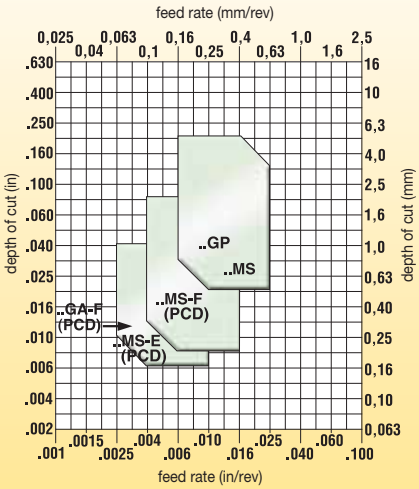
beyond

Negative Wiper Inserts

..GP ..MS
Medium Finishing

..MS-E (PCD) ..GA-F (PCD)
Finishing

..GA-E (PCD)
Fine Finishing

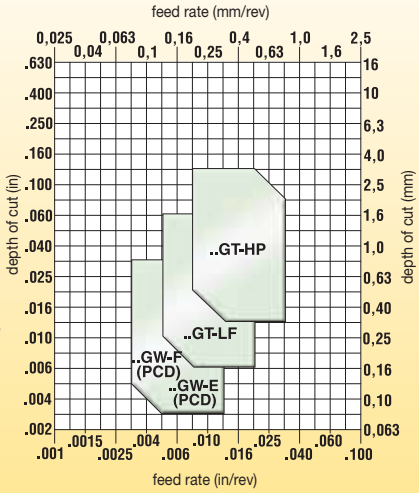


Positive Wiper Inserts

..GT-HP
Medium Finishing

..GT-LF
Finishing

..GW-F (PCD) ..GW-E (PCD)



Step 2 • Select the grade

		Negative Insert Geometry					Positive Insert Geometry			
cutting condition		..GA-E (PCD)	..MS-E (PCD)	..GA-F (PCD)	..GP	..MS	..GW-E (PCD)	..GW-F (PCD)	..GT-LF	..GT-HP
heavily interrupted cut		—	—	KD1400	KC5410/K313	KC5410	—	KD1400	—	KC5410
lightly interrupted cut		KD1405	KD1405	KD1400	KC5410/K313	KC5410	KD1405	KD1400	KC5410	KC5410
varying depth of cut, casting, or forging skin		KD1405	KD1405	KD1425	KC5410/K313	KC5410	KD1405	KD1425	KC5410	KC5410
smooth cut, pre-turned surface		KD1405	KD1405	KD1425	KC5410/K313	KC5410	KD1405	KD1425	KC5410	KC5410

Step 3 • Select the cutting speed

Low-Silicon Aluminium Alloys
(hypoeutectic <12,2% Si) and Magnesium Alloys

speed — m/min (SFM) | starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	2250 (7200)	2500 (8000)	m/min	SFM
N2	KC5410		◁▷									550	1800
	KD1400			◁▷								765	2500

High-Silicon Aluminium Alloys
(hypereutectic >12,2% Si) and Magnesium Alloys

speed — m/min (SFM) | starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N3	KD1405		◁▷			580	2000
	KD1425		◁▷			520	1700

Additional Cutting Speed Recommendations for Miscellaneous Workpiece Materials

Copper-, Brass-, Zinc-Based on a Machinability Index Range of 70–100 — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N4	KD1400/ KD1405		◁▷			520	1700
	KD1425	◁▷				500	1600
	KC5410	◁▷				275	900
	K313	◁▷				260	850

Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass, and Glass — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N5	KD1400/ KD1405	◁▷				400	1300
	KD1425	◁▷				365	1200
	KC5410	◁▷				170	550

Carbon and Graphite Composites: Brush Alloys, Kevlar, and Graphite (280–400 HB) (30–43 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N6	KD1400/ KD1405			◁▷		760	2500
	KC5410	◁▷				200	650

MMCs (Aluminium-Based Metal Matrix Composites) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N7	KD1405		◁▷			460	1500
	KD1400		◁▷			365	1200

Tin Alloys, Cast: ASTM 823, Alloys 1, 2, 3, 11 — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N	KC5410	◁▷				215	700
	K313	◁▷				180	600

Step 1 • Select the insert geometry

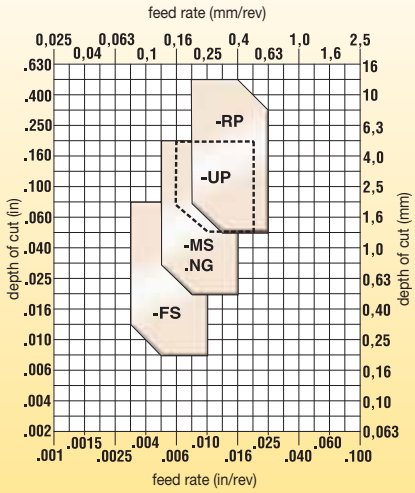
Negative Inserts

-RP
Roughing

-MS .NG

-UP
Medium Machining

-FS
Finishing

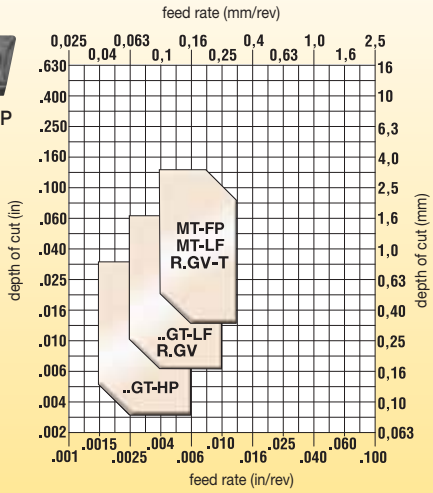


Positive Inserts

MT-LF R.GV-T MT-FP
Medium Machining

..GT-LF R.GV

..GT-HP
Fine Finishing



Step 2 • Select the grade

Negative Insert Geometry

cutting condition		-FS	.NG	-MS	-UP	-RP
heavily interrupted cut		KCU25/KC5525	—	KCU25/KC5525	KCM35	KCM25/KCM35
lightly interrupted cut		KCU10/KC5510	KYS30/KY1540	KCU25/KC5525	KCM25	KCM15KC5525
varying depth of cut, casting, or forging skin		KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300	KCU10/KC5510	KCM15	KCU25/KC5525
smooth cut, pre-turned surface		KCU10/KC5510/ K313	KYS25/KY4300	KCU10/KC5510 K313	KCU10/KC5510	KCU10/KC5510

Positive Insert Geometry

cutting condition		-FP	..GT-HP	MT-LF	R.GV-T	..GT-LF	R.GV
heavily interrupted cut		KCU25	—	KCU25/KC5025	—	KCU25/KC5025	—
lightly interrupted cut		KCU25	KCU25/KC5025	KCU25/KC5025	KYS30/KY1540	KCU25/KC5025	KYS30/KY1540
varying depth of cut, casting, or forging skin		KCU10/KU10	KCU10/KC5510	KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300	KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300
smooth cut, pre-turned surface		KCU10/KU10	KCU10/KC5510 K313	KCU10/KC5510 K313	KYS25/KY4300	KCU10/KC5510 K313	KYS25/KY4300

Step 3 • Select the cutting speed

Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S1	K313/KU10		◁▷												30	100
	KCU10/KC5510/KC5010			◁▷											55	180
	KCU25/KC5525/KC5025		◁▷												40	125
	KYS25/KY4300							◁▷							200	650
	KYS30/KY1540						◁▷								170	550
	KCM15			◁▷											55	180
	KCM25/KCM35		◁▷												40	125

Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S2	K313/KU10		◁▷												35	110
	KC5510/KC5010			◁▷											60	195
	KC5525/KC5025		◁▷												30	100
	KYS25/KY4300							◁▷							220	720
	KYS30/KY1540						◁▷								185	600
	KCM15			◁▷											60	195
	KCM25/KCM35		◁▷												30	100

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S3	K313/KU10		◁▷												40	125
	KCU10/KC5510/KC5010			◁▷											70	225
	KCU25/KC5525/KC5025		◁▷												40	125
	KYS25/KY4300							◁▷							250	820
	KYS30/KY1540							◁▷							215	700
	KCM15			◁▷											70	225
	KCM25/KCM35		◁▷												40	125

Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S4	K313/KU10			◁▷											45	150
	KC5510/KC5010/KC9225				◁▷										70	225
	KC5525/KC50225/KC9240			◁▷											55	175
	KCM15				◁▷										70	225
	KCM25/KCM35		◁▷												55	175

Step 1 • Select the insert geometry

Negative Wiper Inserts

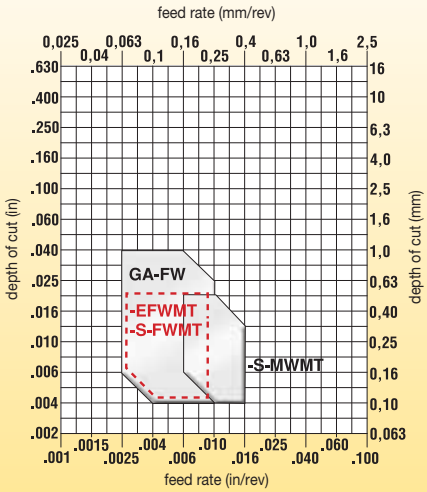
-S..MWMT
(multitipped)
Medium Wiper

-EFWMT
(multitipped)

-S..FWMT
(multitipped)

GA-FW

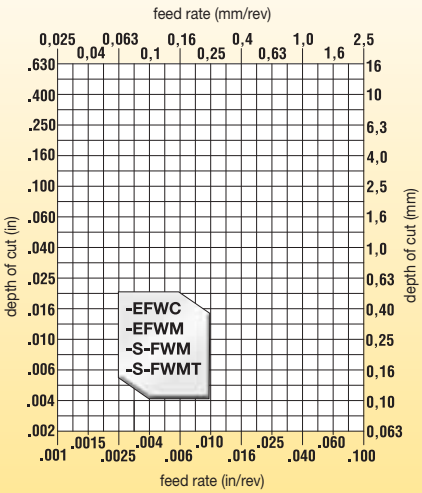
Finishing Wiper



Positive Wiper Inserts

-EFWC (full face)
-EFWM (single tipped)
Finishing Wiper

-S..FWM
(single tipped)
-S..FWMT
(multitipped)
Fine Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry GA-FW	-S..FWMT	-EFWMT	Positive Insert Geometry -S..FWM -S..FWMT	-S..FWMT	-EFWC -EFWM
heavily interrupted cut		—	KB5630	KB1625	—	—	—
lightly interrupted cut		—	KB1610/KB5610	KB5625	KB9610	KB1610	KB5610
varying depth of cut, casting, or forging skin		KY4400	KB1610/KB5610	KB1610/KB5610	KB9610	KB1610	KB5610
smooth cut, pre-turned surface		KY4400	KB9610	KB9610	KB9610	KB9610	KB9610

Step 1 • Select the insert geometry

Negative Inserts

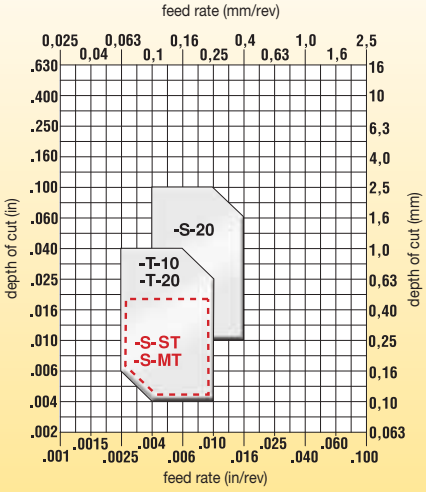
-S-20
Medium Machining

-S..ST (single tipped)
-S..MT (multitipped)
Finishing

-T..10
-T.20

-T.10
-T.20

Fine Finishing



Positive Inserts

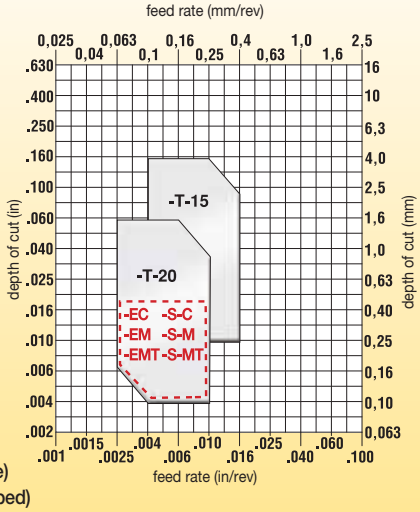
-T-15
Medium Machining

-EC (full-face)
-EM (single tipped)
-EMT (multitipped)
Finishing

-T-20

-S....C (full face)
-S....M (single tipped)
-S....MT (multitipped)

Fine Finishing

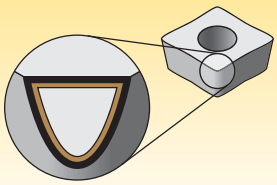


Step 2 • Select the grade

cutting condition		Negative Insert Geometry -T.10 -T.20	-S..ST -S..MT	-S-20	Positive Insert Geometry -S..C/-S..M -S..MT	-T-20	-EC/-EM -EMT	-T-15
heavily interrupted cut		—	KB1630/KB5630	KB1340	KB1630/KB5630	—	KB1630/KB5630	—
lightly interrupted cut		—	KB1625/KB5625	KB1340	KB1625/KB5625	KY4400	KB1625/KB5625	KY1615
varying depth of cut, casting, or forging skin		KY1615/KY4400	KB1625/KB5625	—	KB1625/KB5625	KY4400	KB1625/KB5625	KY1615
smooth cut, pre-turned surface		KY1615/KY4400	KB1610/KB5610	—	KB1610/KB5610	KY4400	KB1610/KB5610	KY1615

Step 3 • Select the cutting speed

material group	grade	speed — m/min (SFM) 15 (50)	45 (150)	75 (250)	110 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	starting conditions m/min	SFM
H1	KY4400					◁▷					135	450
	KY1615				◁▷						100	325
	KB1610					◁▷					140	460
	KB1625				◁▷						110	360
	KB1630			◁▷							90	295
	KB5610					◁▷					150	490
	KB5625				◁▷						120	400
	KB5630			◁▷							105	345

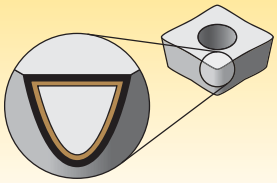


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

	Coating	Grade Description	05	10	15	20	25	30	35	40	45
Uncoated Carbide Grades	KU10 C3	**Composition:** A hard, low binder content, WC/Co fine-grain grade. **Application:** The KU10 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys. Use as a general-purpose grade for non-ferrous materials. beyond		M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
	K313 C3–C4	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temp alloys. Superior thermal deformation and depth-of-cut notch resistance. The grain structure is well controlled for minimal pits and flaws, which contributes to long, reliable service.		M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
	K68 C3	**Composition:** A hard, low binder content, alloyed grade WC/Co fine-grain grade. **Application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and as an alternative to the K313 grade on most high-temperature alloys. Use as a general-purpose grade for non-ferrous materials.		M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
PVD-Coated Carbide Grades	KCU10 C3–C4	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10 grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability. beyond		P	P	P					
				M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
				H	H						
	KCU25 C2, C6	**Composition:** An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25 grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials in a wide range of speeds and feeds with improved edge toughness for interrupted cut and high feed rates. beyond		P	P	P	P	P	P		
				M	M	M	M	M	M		
				K	K	K	K	K	K		
				N	N	N	N	N	N		
				S	S	S	S	S	S		
	KC5010 C3–C4	**Composition:** An advanced PVD AlTiN coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating enables speeds to be increased by 50–100%. **Application:** The KC5010 grade is ideal for finishing to general machining of most workpiece materials at higher speeds. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys under stable conditions. It also performs well machining hardened and short chipping materials.		P	P	P					
				M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
				H	H						



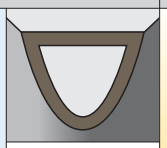
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

PVD-Coated Carbide Grades

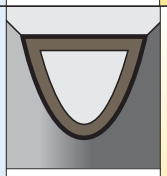
KC5025



C2, C6

Composition: An advanced PVD-AlTiN-coated grade with a tough, ultra-fine-grain unalloyed substrate.
Application: For general-purpose machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium and will handle interruptions and high feed rates.

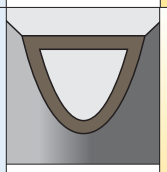
KC5410



C3–C4

Composition: A PVD TiB_2 coating over a very deformation-resistant unalloyed substrate.
Application: Designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12,2% Si) aluminium, aluminium alloys, and magnesium alloys. The TiB_2 coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow, and outstanding wear resistance. Built-up edge is prevented because this coating has a very low affinity for aluminium. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Moulded inserts have a light hone.

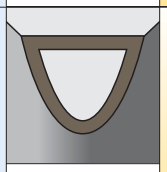
KC5510



C3–C4

Composition: An advanced PVD AlTiN-coated fine-grain tungsten carbide grade.
Application: The KC5510 grade is specifically engineered for the productive machining of high-temp alloys. The fine-grain tungsten carbide 6% cobalt substrate has excellent toughness and deformation resistance while the advanced PVD coating enables metalcutting speeds double those of conventional PVD-coated cutting tools.

KC5525

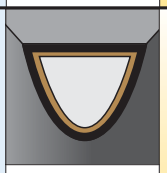


C2–C6

Composition: Advanced PVD AlTiN-coated fine-grain high-cobalt carbide grade.
Application: The KC5525 grade utilises the same advanced PVD coating as the KC5510 grade in conjunction with a fine-grained tungsten carbide 10% cobalt substrate. The higher cobalt enables added security in interrupted cuts while the fine-grained WC maintains hardness-resisting deformation at higher speeds. Designed for medium to heavy interruptions in high-temp alloys.

CVD-Coated Carbide Grades

KCP05

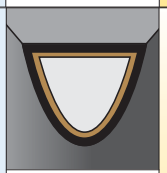


C3–C4

Composition: An innovative, highly deformation-resistant, cobalt-enriched substrate with a specially designed, adherent MTCVD-TiCN-Al_2O_3 coating.
Application: For finishing to semi-finishing of most steels, ferritic, martensitic, and PH stainless steels and cast irons. Provides excellent combination of deformation resistance and insert edge strength. The new coating combined with a state-of-the-art post-coat treatment provides high-productivity with long predictable tool life and superior workpiece surface finish.

beyond

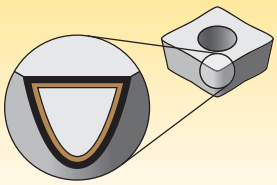
KCP10



C3, C7

Composition: A specially engineered cobalt-enriched carbide grade with thick MTCVD-TiCN-Al_2O_3 coating for maximum wear resistance.
Application: An excellent finishing to medium machining grade for a variety of workpiece materials, including most steels, ferritic, martensitic, and PH stainless steels, and cast irons. The cobalt-enriched substrate offers a balanced combination of deformation resistance and edge toughness, while the thick coating layers offer outstanding abrasion resistance and crater wear resistance for high-speed machining. Smooth coating provides resistance to edge build-up and microchipping and produces excellent surface finishes.

beyond

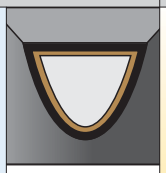
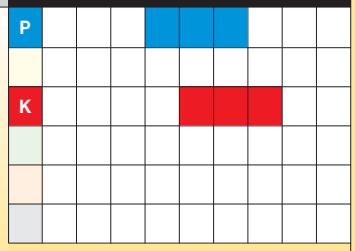
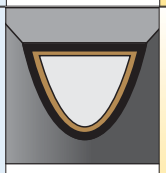
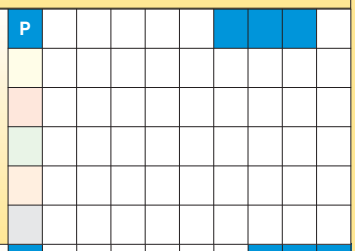
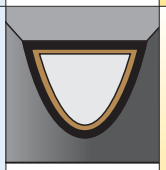
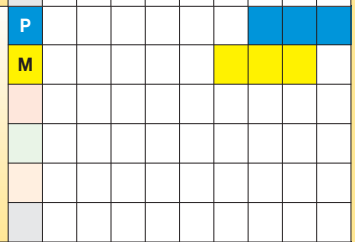
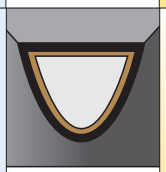
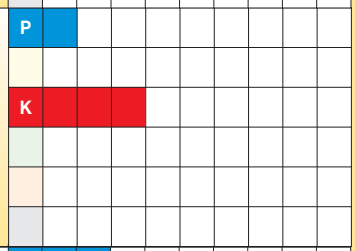
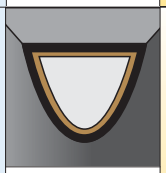
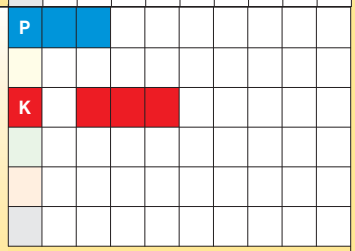
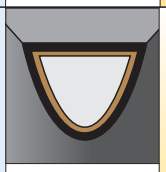
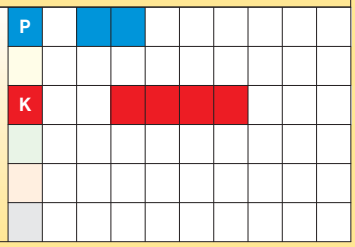


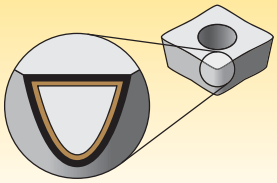
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

CVD-Coated Carbide Grades

Coating	Grade Description	05 10 15 20 25 30 35 40 45
KCP25  C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer MTCVD-TiCN-Al_2O_3 coating with superior interlayer adhesion. **Application:** Best general-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance with excellent insert edge strength. Coating layers offer good wear resistance over a wide range of machining conditions and the post-coat treatment minimises microchipping and improves coating adhesion to substrate leading to long tool life and improved workpiece finishes. beyond	
KCP30  C5–C6	**Composition:** A newly engineered, tough cobalt-enriched carbide grade with an advanced multilayer TiN-MT-TiCN-Al_2O_3 coating. **Application:** For medium to rough machining of all carbon, alloy, and stainless steels. The substrate design provides superior insert strength that is required for this application, and the multilayer coating adds wear resistance to the insert resulting in long tool life. beyond	
KCP40  C5–C6	**Composition:** A tough carbide grade with a moderately thick TiN-MT-TiCN-Al_2O_3 coating. **Application:** For heavy roughing of carbon, alloy, and stainless steels. The substrate-coating combination provides unbelievable toughness and operational security allowing high metal removal rates even in most demanding interrupted cuts. beyond	
KCK05  C3–C4	**Composition:** A multilayered coating with moderately thick MTCVD TiCN-Al_2O_3 layers over a highly deformation-resistant carbide substrate. **Application:** Designed for high-speed machining of grey and ductile irons. The substrate and coating architecture together with CW5 post-coat treatment ensure a tremendous tool life advantage, especially when cutting higher tensile strength ductile and grey irons where workpiece size consistency and reliability of tool life are critical. Excellent both in straight and varied depths of cut. beyond	
KCK15  C3–C4	**Composition:** A multilayered coating with thick MTCVD TiCN-Al_2O_3 layers applied over a carbide substrate specifically engineered for cast irons. **Application:** Delivers consistent performance in high-speed machining of grey and ductile irons. The substrate design permits the insert to stay in the cut for a long time at high speeds with minimum deformation. The thick CVD coating and post-coat treatment provide superior wear resistance ensuring long and consistent tool life. Can be applied both in straight and lightly interrupted cuts. beyond	
KCK20  C2–C3	**Composition:** A specially toughened MTCVD-TiCN-Al_2O_3 coating over a wear-resistant substrate. **Application:** The KCK20 grade is specifically engineered to maximise coating adhesion and edge strength making this grade ideal in wet interrupted cutting of grey and ductile irons. It can be used in a wide range of applications from finishing to roughing to maximise productivity wherever strength and reliability are needed. beyond	

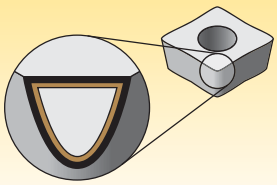


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

	Coating	Grade Description	05	10	15	20	25	30	35	40	45
CVD-Coated Carbide Grades	KCM15 C2–C3	**Composition:** A multilayer MTCVD-TiCN-Al_2O_3 coated carbide grade. **Application:** An excellent finishing to medium machining grade for austenitic stainless steels at higher speeds and covers a broad range of steel applications in the P20–25 range. KCM15 grade in combination with unique geometries have been designed to resist depth-of-cut notching and minimise burr formation. The post-coat treatment reduces coating stresses, improves coating adhesion, minimises microchipping and edge build-up, and improves workpiece finish. beyond	P			■	■	■				
			M		■	■	■					
	KCM25 C1–C2	**Composition:** A multilayer CVD coating comprised of TiN-MT-TiCN-Al_2O_3 layers over a tough, cobalt-enriched carbide substrate. **Application:** This CVD-coated grade is designed for general-purpose machining of austenitic stainless steels at moderate speeds and feeds. KCM25 inserts offer an extraordinary combination of toughness, built-up edge resistance, and wear resistance in stainless steel applications. beyond	P				■	■	■			
			M			■	■	■				
	KCM35 C1–C2	**Composition:** A multilayer TiN-MT-TiCN-Al_2O_3 CVD coating over a super-tough substrate. **Application:** The KCM35 grade is engineered to take on the most brutal cast stainless steel machining applications. The substrate withstands heavy interruptions, while the coating provides the wear resistance needed for long tool life. The polished surface resists edge build-up, even at slow cutting speeds. KCM35 grade is available in insert sizes and geometries appropriate for heavy feeds and large depths of cut. beyond	P						■	■	■	
			M					■	■	■		
PVD-Coated Cermet Grades	KT315 C3, C7	**Composition:** A multilayer PVD-TiN/TiCN/TiN-coated cermet turning grade. **Application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications, too. Provides long and consistent tool life and will produce excellent workpiece finishes.	P	■	■							
			M		■	■						
			K		■	■						
	KTP10 C3, C7	**Composition:** A multilayer, PVD-TiN/TiCN/TiN-coated cermet turning grade. **Application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications, too. Provides long and consistent tool life and will produce excellent workpiece finishes.	P	■	■							
			M		■	■						
			K		■	■						

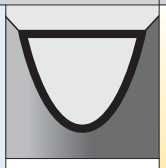
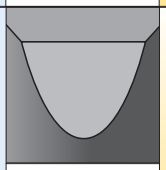
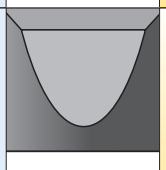
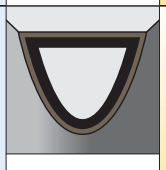


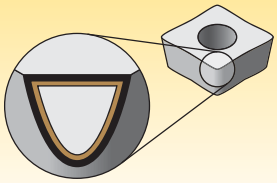
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Ceramic Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KYS25  C4	**Composition:** SiAlON ceramic with a multi-layered alumina-TiCN CVD coating. **Application:** Compliments the KYS30 grade when machining high-temp and nickel-based alloys and cast materials with high Brinell hardness. This advanced CVD coating provides excellent chemical and depth-of-cut notch resistance compared to whisker ceramics. beyond									
KYS30  C4	**Composition:** Latest and most advanced sialon material developed. **Application:** Combines excellent wear properties, fracture toughness, and thermal shock resistance for general-purpose to finish machining of high-temp alloys. Provides superior depth-of-cut notch resistance compared to whisker ceramics. beyond									
KYK10  —	**Composition:** An advanced sialon ceramic grade. **Application:** Provides maximum wear resistance. Use for high-speed continuous turning of grey cast iron, including through scale. beyond									
KYK25  C3	**Composition:** Pure silicon nitride ceramic with an alumina CVD coating. **Application:** Excellent combination of toughness and edge wear resistance. Used for general-purpose machining of grey, ductile, or nodular cast irons. beyond									

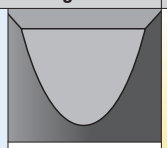
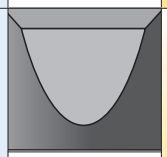
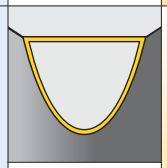


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

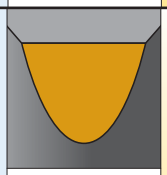
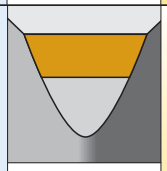
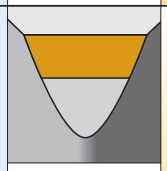
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

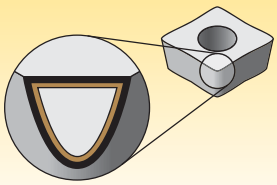
wear resistance ⟷ toughness

Ceramic Grades

Coating	Grade	Grade Description	05	10	15	20	25	30	35	40	45
 C4	KY4300	**Composition:** Whisker ceramic with a matrix of Al_2O_3 + SiCW. **Application:** The SiC whiskers embedded in the micro structure give this ceramic excellent toughness for cutting high-temp alloys and cast materials with high Brinell hardness.									
 C2	KY3500	**Composition:** Pure silicon nitride grade. **Application:** Maximum toughness. Used at high feed rates for rough machining of grey cast iron, including machining through interruptions.									
 C4, C8	KY4400	**Composition:** A PVD TiN coating over an aluminium oxide and titanium carbonitride composite ceramic (Al_2O_3/TiCN). **Application:** Used for finish turning of hardened steels and irons (greater than 45 HRC). Where possible, use under dry conditions in smooth or varied depths of cut. Can also be applied in finish turning of nickel alloys, cobalt alloys, and powder metals.									

PCBN – Polycrystalline Cubic Born Nitride Grades

Coating	Grade	Grade Description	05	10	15	20	25	30	35	40	45
 —	KB1340	**Composition:** A high CBN content, solid PCBN insert having multiple cutting edges. **Application:** Applied in roughing to finishing of fully pearlitic grey cast iron, chilled irons, high-chrome alloyed steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. The solid PCBN insert offers better security and shock resistance compared to tipped PCBN inserts, while also enabling deeper depth-of-cut capabilities.									
 —	KB1345	**Composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **Application:** Applied in roughing to finishing of fully pearlitic grey cast iron, chilled irons, high-chrome alloyed steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. The tipped PCBN insert is available in a wide range of insert styles including positive rake geometries that are ideally suited for boring applications.									
 —	KB1610	**Composition:** A low CBN content, PCBN tip brazed onto a carbide insert. **Application:** Designed for precision finishing in smooth cuts on hardened steels (>45 HRC) where optimal surface finish is needed. Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case hardened steels, carburised and nitrided irons, and some hard coatings. Do not apply on soft steel.									

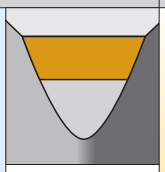
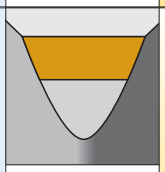
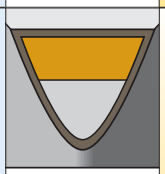
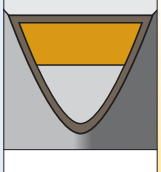
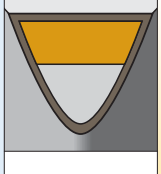


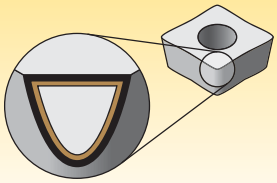
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

PCBN – Polycrystalline Cubic Born Nitride Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KB1625  —	**Composition:** A medium CBN content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing of hardened steels (>45 HRC) where optimal surface finish is needed. It can be used in continuous to interrupted cutting of bearing steel, hot and cold work tool steels, high-speed steels, die steels, case-hardened steels, carburised and nitrided irons, and some hard coatings.									
KB1630  —	**Composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing in interrupted cuts on hardened steels (>45 HRC). It can also be applied on grey cast iron, chilled irons, high-chrome alloyed steels, and sintered powdered metals. The tipped PCBN insert is available in a wide range of insert styles, including positive rake geometries, that are ideally suited for boring applications.									
KB5610  C4, C8	**Composition:** A low content PCBN grade with a PVD TiAlN coating for added wear resistance. **Application:** Designed for the precision machining of hardened steels (>45 HRC). The PVD coating offers improved wear resistance and excellent surface finish capabilities. It can be very effectively applied on bearing steels, hot and cold work tool steels, high-speed steels, die steels, case-hardened steels, carburised and nitrided irons, and some hard coatings. Available in a multitip format with a tremendous breadth of edge preps, insert styles, and wiper geometries.									
KB5625  C4, C8	**Composition:** A PVD TiAlN coating over a medium content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing of hardened steels (>45 HRC). Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case-hardened steels, carburised and nitrided irons, and some hard coatings.									
KB5630  C4, C8	**Composition:** A high content PCBN grade with a PVD AlTiN coating for added wear resistance. **Application:** Designed for roughing to finishing in hardened steels (>45 HRC), abrasive workpiece materials such as sintered valve seat materials, powder metallurgy tool steels, and hard high-alloy cast irons. The PVD coating provides resistance to crater wear and increased resistance to chipping. The tipped PCBN insert is available in a wide range of insert styles, including positive rake geometries, that are ideally suited for boring applications.									

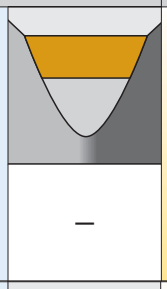
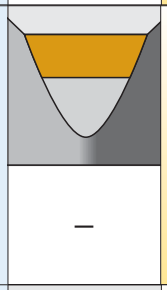
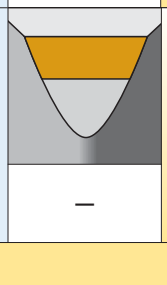


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

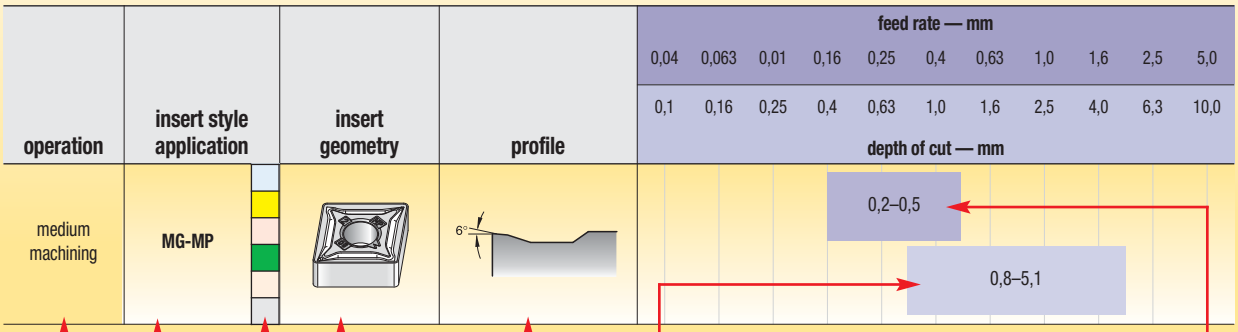
wear resistance ⟷ toughness

PCD – Polycrystalline Diamond Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KD1400 	**Composition:** An ultra-fine-grain, polycrystalline diamond (PCD) tip brazed onto a carbide substrate. **Application:** Designed for general-purpose turning of primarily non-ferrous materials. It can be applied over a wide range of continuous to interrupted cuts where superior surface finish is needed. Use on low to medium silicon-content aluminium alloys, non-metallics, copper, and brass- and zinc-based alloys. The ultra-fine-grain diamond particle size enables superior surface finishes while ensuring the best mechanical shock resistance of any PCD cutting tool.									
KD1405 	**Composition:** A pure CVD-deposited diamond-sheet tool brazed directly to a carbide substrate. **Application:** KD1405 is Kennametal's most abrasion-resistant tool material for non-ferrous and non-metallic materials. Best applied when abrasion resistance is the desired benefit.									
KD1425 	**Composition:** A multimodal PCD grade with a range of grain sizes brazed onto a carbide substrate. **Application:** Engineered for extreme abrasion resistance, combined with good edge strength for demanding applications. An ideal choice for high-silicon aluminium alloys, bi-metallic (AL/GCI) materials, MMC, carbon-fibre reinforced plastics, and other abrasive non-metallic materials.									

Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials



Feed Rate Range —
for best results, use the centre 60% of the range

Depth-of-Cut Range —
for all inserts in the program, select smaller inserts for lighter cuts and larger inserts for heavy cuts

Pictorial View of Insert

Chipbreaker Geometry —
section is through nose radius of insert

Primary Workpiece Material Group

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

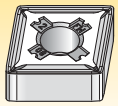
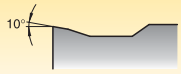
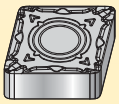
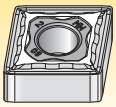
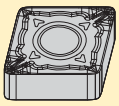
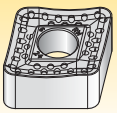
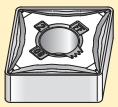
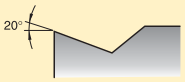
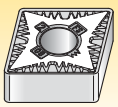
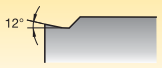
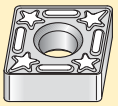
Chip Control Geometry Designation —
example: MG-MP = CNMG-432MP

Machining Operation —
for what the insert geometry is designed

NOTE: For detailed grade and geometry recommendations, reference the Kennametal Beyond™ Selection System on pages B8–B23.

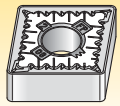
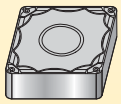
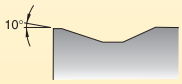
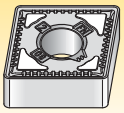
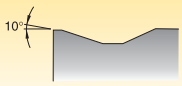
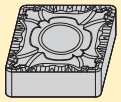
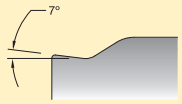
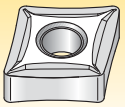
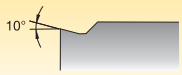
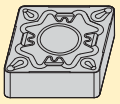
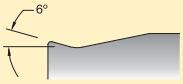
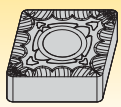
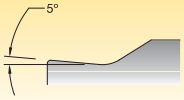
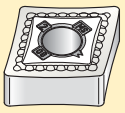
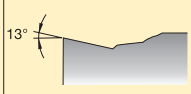
Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
wiper finishing	**MG-FW**			0,2–2,0 0,3–2,0
	MG-FW1			0,1–1,5 0,1–1,5
wiper medium machining	**MG-MW**			0,3–0,6 0,8–5,1
	MG-MW1			0,15–0,5 0,5–3
wiper roughing	**MM-RW**			0,3–1,3 1,3–12,7
fine finishing	**MG-FF**			0,1–0,3 0,1–2,0
finishing sharp	**GG-FS** precision ground			0,07–0,25 0,20 - 2,0
finishing	**GG-LF** precision ground			0,1 - 0,5 0,5–3,0

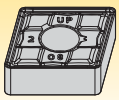
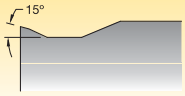
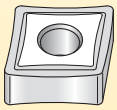
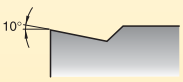
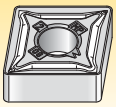
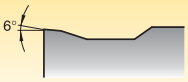
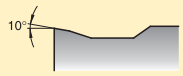
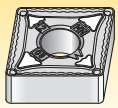
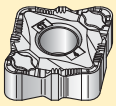
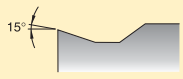
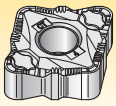
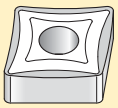
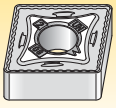
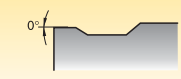
Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
finishing	MG-FP			0,1–0,3 0,3–2,5
	MG-FH			0,05–0,25 0,25–1
	MG-FN			0,1–0,3 0,3–2,5
	MG-FX			0,07–0,22 0,2–1
	MP-K			0,1–0,3 0,2–2,5
medium machining	MG-MH			0,15–0,5 0,3–2
	MG-MX			0,15–0,35 0,5–1,5
medium sharp	MG-MS			0,12–0,35 0,76–5,0

Select the geometry — based on feed rate and depth of cut

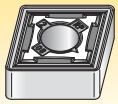
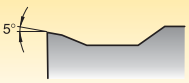
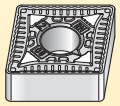
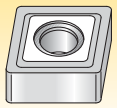
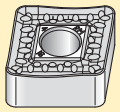
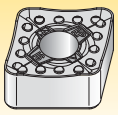
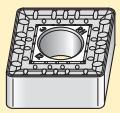
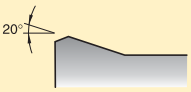
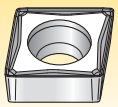
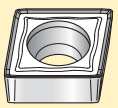
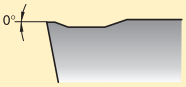
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
medium machining	**MG-UP**			0,2–0,6 1,0–6,4
	__GP*			0,3–0,5 0,5–3,2
	MG-MP			0,2–0,5 0,8–5,1
	MG-P			0,15–0,5 0,75–5,0
	MG-MN			0,2–0,5 0,5–5,1
	MG-CT O.D. turning			0,13–0,5 1,0–3,0
	MG-CT outward facing			0,25–0,5 0,25–1,0
	-MS single sided			0,2–0,4 0,6–2,3
	MG-UN			0,2–0,5 0,8–3,8

*35° and 55° geometries are single sided.

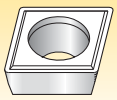
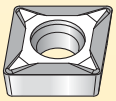
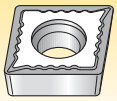
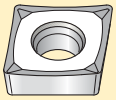
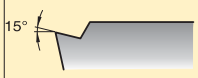
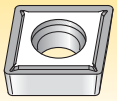
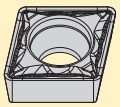
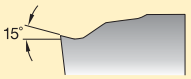
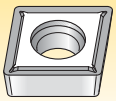
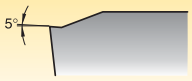
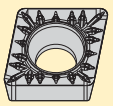
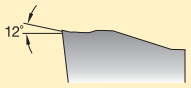
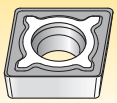
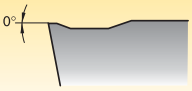
Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
roughing	**MG-RP**			0,2–0,6 1,1–6,4
	MG-RN			0,3–.025 1,1–6,4
heavy roughing	**MG**			0,3–0,8 1,1–5,7
	MM-RM single sided			0,3–1,0 1,3–12,7
	MM-RP			0,2–1,0 1,3–10,0
	MM-RH single sided			0,4–1,3 1,3–12,7
wiper finishing	**MT-FW**			0,1–0,3 0,2–1,5
wiper, medium finishing	**MT-MW**			0,1–0,5 0,4–3,3

Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
fine finishing	**__GM** precision ground			0,1–0,2 0,2–1,0
	MT-11			0,1–0,3 0,2–1,3
	.MT-UF			0,1–0,3 0,1–1,3
finishing	**GT-HP** precision ground			0,2–0,4 0,6–2,3
	GT-LF precision ground			0,2–0,4 0,8–2,3
	MT-FP			0,063–0,25 0,16–1,6
	MT-LF			0,2–0,4 0,8–2,3
medium machining	**MT-MP**			0,01–0,4 0,4–2,3
	MT-MF			0,2–0,4 1,1–2,3

Carbide Inserts

Primary Application

Kennametal offers a complete portfolio of ISO-/ANSI-style inserts. Positive, negative, CVD, PVD, or uncoated, we have the insert to help increase productivity and achieve greater savings.

Plus, our carbide insert line contains Beyond™ technology. Beyond inserts offer you greater versatility, reliability, and up to 30% higher productivity.

Beyond™ CVD Grades

- Higher productivity and profitability — up to 300% higher.
- Lower cutting forces — Increase speeds and reduce cycle time.
- Extended tool life.
- Predictable tool life / Uniform wear.
- Resists chip flow damage.
- Consistent surface finish.
- Products can be applied across a wide range of applications.
- Use it in low speed to high speed applications.
- For finish to rough turning of steel, cast iron, stainless steel, and high temp alloy turning.

Beyond™ PVD Grades

KCU10™

- PVD-coated grade with superior wear resistance at elevated temperatures, allowing higher metal cutting speeds.
- For use in all materials, especially stainless steels and high-temp alloys.
- Improved depth-of-cut notch resistance.
- Increase speed by 20–30% or feed by 10–15%.
- Use in finishing to medium applications.

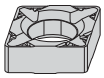
KCU25™

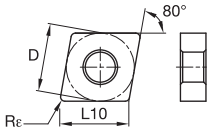
- PVD-coated grade with superior edge toughness and excellent wear resistance. Medium to roughing applications.
- Use in all materials.
- Increase speed, feed, and depth of cut by 10–20%.

● first choice
○ alternate choice

beyond BLAST™

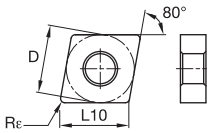
CNGG-FBB





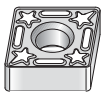
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGG120404FBB	12,70	12,90	0,4																●								
CNGG120408FBB	12,70	12,90	0,8												●				●								

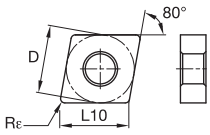
CNGG-FS



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGG120401FS	12,70	12,90	0,1																●		●						
CNGG120402FS	12,70	12,90	0,2																●		●	●		●			
CNGG120404FS	12,70	12,90	0,4													●			●		●	●		●			
CNGG120408FS	12,70	12,90	0,8													●			●		●	●		●			
CNGG120412FS	12,70	12,90	1,2																●		●						

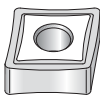
CNGG-LF

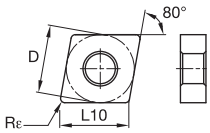




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGG120401LF	12,70	12,90	0,1													●			●	●							
CNGG120402LF	12,70	12,90	0,2													●			●	●							
CNGG120404LF	12,70	12,90	0,4													●			●	●							
CNGG120408LF	12,70	12,90	0,8																●	●							
CNGG120412LF	12,70	12,90	1,2																●	●							
CNGG160608LF	15,88	16,12	0,8																●	●							
CNGG160612LF	15,88	16,12	1,2																●	●							

CNGP

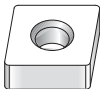


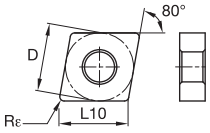


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGP120401	12,70	12,90	0,1																●	●					●		
CNGP120402	12,70	12,90	0,2																●	●					●		
CNGP120404	12,70	12,90	0,4													●	●		●	●					●		
CNGP120408	12,70	12,90	0,8													●	●		●	●					●		
CNGP120412	12,70	12,90	1,2													●			●	●					●		
CNGP120416	12,70	12,90	1,6													●			●	●					●		

● first choice
○ alternate choice

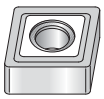
CNMA

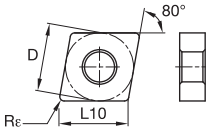




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S															●	●	●	●	●	●	●	●	●	●			
H																											
CNMA120404	12,70	12,90	0,4						●	●	●																
CNMA120408	12,70	12,90	0,8						●	●	●					●	●										
CNMA120412	12,70	12,90	1,2						●	●	●					●											
CNMA120416	12,70	12,90	1,6						●	●	●																
CNMA160608	15,88	16,12	0,8							●	●																
CNMA160612	15,88	16,12	1,2						●	●	●																
CNMA160616	15,88	16,12	1,6						●	●	●																
CNMA190608	19,05	19,34	0,8						●		●																
CNMA190612	19,05	19,34	1,2						●	●	●						●										
CNMA190616	19,05	19,34	1,6						●		●						●										

CNMG





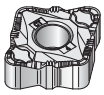
ISO catalogue number	D mm	L10 mm	Rε mm
CNMG120404B	12,70	12,90	0,4
CNMG120408	12,70	12,90	0,8
CNMG120412	12,70	12,90	1,2
CNMG160612	15,88	16,12	1,2
CNMG190608	19,05	19,34	0,8
CNMG190612	19,05	19,34	1,2
CNMG190616	19,05	19,34	1,6
CNMG250924	25,40	25,79	2,4

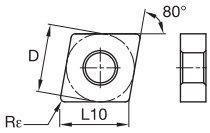
				beyond		
C2–C71	C72–C109	C110–C115	C116–C147	B10–B23	B24–B31	B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S													●	●	●	●	●	●	●	●	●			
H																								

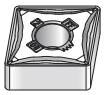
■ CNMG-CT

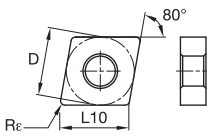




ISO catalogue number	D mm	L10 mm	Rε mm
CNMG120408CT	12,70	12,90	0,8
CNMG120412CT	12,70	12,90	1,2
CNMG120416CT	12,70	12,90	1,6

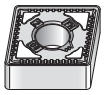
■ CNMG-FF

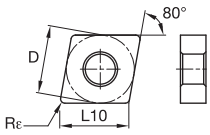




ISO catalogue number	D mm	L10 mm	Rε mm
CNMG090304FF	9,53	9,67	0,4
CNMG090308FF	9,53	9,67	0,8
CNMG120404FF	12,70	12,90	0,4
CNMG120408FF	12,70	12,90	0,8

■ CNMG-FN



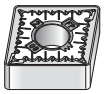


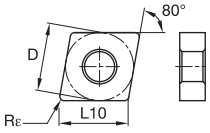
ISO catalogue number	D mm	L10 mm	Rε mm
CNMG090304FN	9,53	9,67	0,4
CNMG090308FN	9,53	9,67	0,8
CNMG120402FN	12,70	12,90	0,2
CNMG120404FN	12,70	12,90	0,4
CNMG120408FN	12,70	12,90	0,8
CNMG120412FN	12,70	12,90	1,2
CNMG120416FN	12,70	12,90	1,6

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●											●	●						●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S														●	●	●	●	●	●	●	●	●			
H																									

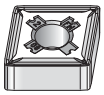
CNMG-FP

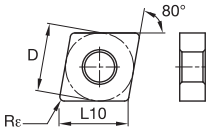




ISO catalogue number	D mm	L10 mm	Rε mm
CNMG120404FP	12,70	12,90	0,4
CNMG120408FP	12,70	12,90	0,8
CNMG120412FP	12,70	12,90	1,2

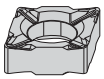
CNMG-FW

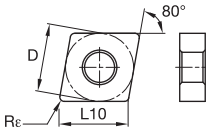




ISO catalogue number	D mm	L10 mm	Rε mm
CNMG120404FW	12,70	12,90	0,4
CNMG120408FW	12,70	12,90	0,8
CNMG120412FW	12,70	12,90	1,2

CNMG-MBB





beyond BLAST™

ISO catalogue number	D mm	L10 mm	Rε mm
CNMG120404MBB	12,70	12,90	0,4
CNMG120408MBB	12,70	12,90	0,8

C2–C71

C72–C109

C110–C115

C116–C147

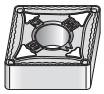
beyond
B10–B23

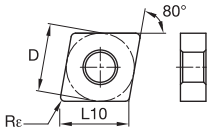
B24–B31

B32–B37

● first choice
○ alternate choice

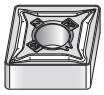
CNMG-MN

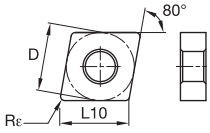




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG090304MN	9,53	9,67	0,4		●	●	●																				
CNMG090308MN	9,53	9,67	0,8		●	●	●																				
CNMG090312MN	9,53	9,67	1,2			●																					
CNMG120404MN	12,70	12,90	0,4	●	●	●	●																				
CNMG120408MN	12,70	12,90	0,8	●	●	●	●	●																			
CNMG120412MN	12,70	12,90	1,2	●	●	●	●	●																			
CNMG120416MN	12,70	12,90	1,6		●	●																					
CNMG160608MN	15,88	16,12	0,8		●	●	●																				
CNMG160612MN	15,88	16,12	1,2	●	●	●	●																				
CNMG160616MN	15,88	16,12	1,6		●	●																					
CNMG190608MN	19,05	19,34	0,8		●	●	●																				
CNMG190612MN	19,05	19,34	1,2		●	●	●	●																			
CNMG190616MN	19,05	19,34	1,6		●	●	●																				

CNMG-MP

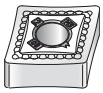


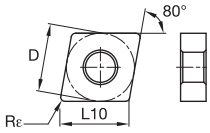


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG090308MP	9,53	9,67	0,8									●	●						●	●							
CNMG120404MP	12,70	12,90	0,4									●	●	●					●	●							
CNMG120408MP	12,70	12,90	0,8		●	●						●	●	●					●	●		●	●				
CNMG120412MP	12,70	12,90	1,2		●	●						●	●	●					●	●		●	●				
CNMG120416MP	12,70	12,90	1,6									●	●						●	●							
CNMG160608MP	15,88	16,12	0,8									●	●	●					●	●							
CNMG160612MP	15,88	16,12	1,2									●	●	●					●	●		●	●				
CNMG160616MP	15,88	16,12	1,6										●	●					●	●							
CNMG190608MP	19,05	19,34	0,8									●	●						●	●							
CNMG190612MP	19,05	19,34	1,2									●	●	●					●	●		●	●				
CNMG190616MP	19,05	19,34	1,6									●	●						●	●							

● first choice
○ alternate choice

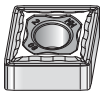
CNMG-MS

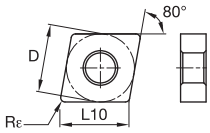




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S																●	●	●	●	●	●	●	●	●			
H																											
CNMG120401MS	12,70	12,90	0,1																●		●	●		●			
CNMG120402MS	12,70	12,90	0,2													●			●		●	●		●			
CNMG120404MS	12,70	12,90	0,4													●			●		●	●		●			
CNMG120408MS	12,70	12,90	0,8													●			●		●	●		●			
CNMG120412MS	12,70	12,90	1,2													●			●		●	●		●			
CNMG120416MS	12,70	12,90	1,6																●		●	●		●			
CNMG160608MS	15,88	16,12	0,8																●		●	●		●			
CNMG160612MS	15,88	16,12	1,2													●			●		●	●		●			
CNMG190608MS	19,05	19,34	0,8																●		●	●		●			
CNMG190612MS	19,05	19,34	1,2													●			●		●	●		●			
CNMG190616MS	19,05	19,34	1,6																●		●	●		●			

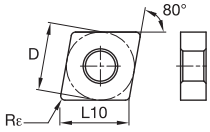
CNMG-MW





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408MW	12,70	12,90	0,8	●	●	●																					
CNMG120412MW	12,70	12,90	1,2	●	●	●																					

CNMG-P



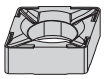
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404P	12,70	12,90	0,4													●			●	●							
CNMG120408P	12,70	12,90	0,8													●			●	●					●		
CNMG120412P	12,70	12,90	1,2													●			●	●							
CNMG120416P	12,70	12,90	1,6													●			●	●							
CNMG190612P	19,05	19,34	1,2																●	●							

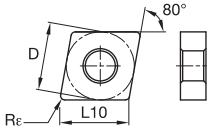
C2–C71 | C72–C109 | C110–C115 | C116–C147 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

P	● ● ● ● ●
M	● ● ● ● ● ●
K	● ● ● ●
N	●
S	● ● ● ● ● ● ● ● ●
H	

CNMG-RBB

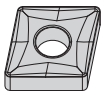


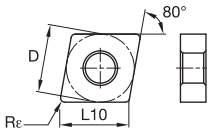


beyond BLAST™

ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408RBB	12,70	12,90	0,8												●				●								

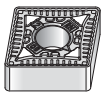
CNMG-RM

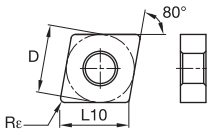




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG190612RM	19,05	19,34	1,2			●		●											●								
CNMG190616RM	19,05	19,34	1,6			●	●	●											●								
CNMG250924RM	25,40	25,79	2,4			●	●	●											●								

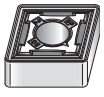
CNMG-RN

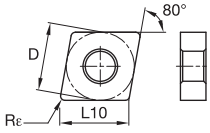




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408RN	12,70	12,90	0,8	●	●	●	●	●																			
CNMG120412RN	12,70	12,90	1,2	●	●	●	●	●																			
CNMG120416RN	12,70	12,90	1,6	●	●	●	●	●																			
CNMG160608RN	15,88	16,12	0,8		●	●	●																				
CNMG160612RN	15,88	16,12	1,2		●	●	●	●																			
CNMG160616RN	15,88	16,12	1,6		●	●		●																			
CNMG190608RN	19,05	19,34	0,8		●	●		●																			
CNMG190612RN	19,05	19,34	1,2		●	●	●	●																			
CNMG190616RN	19,05	19,34	1,6		●	●	●	●																			
CNMG190624RN	19,05	19,34	2,4		●	●	●																				

CNMG-RP

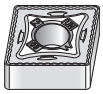


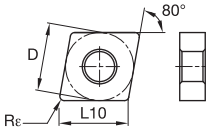


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404RP	12,70	12,90	0,4		●	●					●	●	●						●	●	●	●		●			
CNMG120408RP	12,70	12,90	0,8	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
CNMG120412RP	12,70	12,90	1,2	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
CNMG120416RP	12,70	12,90	1,6		●	●				●	●	●	●	●					●	●	●	●		●			
CNMG160608RP	15,88	16,12	0,8		●	●					●	●							●	●	●	●		●			
CNMG160612RP	15,88	16,12	1,2		●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
CNMG160616RP	15,88	16,12	1,6		●	●	●				●		●						●	●		●		●			
CNMG190612RP	19,05	19,34	1,2		●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
CNMG190616RP	19,05	19,34	1,6		●	●	●	●			●	●	●	●					●	●	●	●		●			

● first choice
○ alternate choice

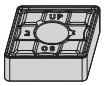
CNMG-UN

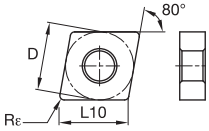




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404UN	12,70	12,90	0,4						●	●	●																
CNMG120408UN	12,70	12,90	0,8						●	●	●																
CNMG120412UN	12,70	12,90	1,2						●	●	●																
CNMG120416UN	12,70	12,90	1,6						●	●	●																
CNMG160608UN	15,88	16,12	0,8						●	●	●																
CNMG160612UN	15,88	16,12	1,2						●	●	●																
CNMG160616UN	15,88	16,12	1,6						●	●	●																
CNMG190608UN	19,05	19,34	0,8						●	●	●																
CNMG190612UN	19,05	19,34	1,2						●	●	●																
CNMG190616UN	19,05	19,34	1,6						●	●	●																

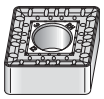
CNMG-UP

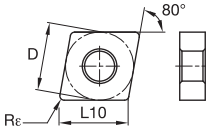




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404UP	12,70	12,90	0,4									●	●							●							
CNMG120408UP	12,70	12,90	0,8									●	●	●					●	●							
CNMG120412UP	12,70	12,90	1,2									●	●	●					●	●							
CNMG160608UP	15,88	16,12	0,8									●	●	●						●							
CNMG160612UP	15,88	16,12	1,2									●	●	●					●	●							
CNMG190608UP	19,05	19,34	0,8									●	●														
CNMG190612UP	19,05	19,34	1,2									●	●	●													
CNMG190616UP	19,05	19,34	1,6									●	●	●													

CNMM-RH





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM190612RH	19,05	19,34	1,2		●	●	●	●																			
CNMM190616RH	19,05	19,34	1,6		●	●	●	●																			
CNMM190624RH	19,05	19,34	2,4		●	●	●																				
CNMM250924RH	25,40	25,79	2,4		●	●	●	●																			

C2–C71

C72–C109

C110–C115

C116–C147

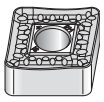
B10–B23

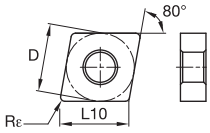
B24–B31

B32–B37

● first choice
○ alternate choice

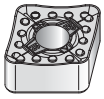
CNMM-RM

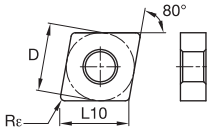




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM120408RM	12,70	12,90	0,8		●	●	●																				
CNMM120412RM	12,70	12,90	1,2		●	●	●	●																			
CNMM120416RM	12,70	12,90	1,6			●		●																			
CNMM160612RM	15,88	16,12	1,2		●	●	●																				
CNMM160616RM	15,88	16,12	1,6		●	●	●																				
CNMM160624RM	15,88	16,12	2,4		●	●																					
CNMM190612RM	19,05	19,34	1,2		●	●	●	●																			
CNMM190616RM	19,05	19,34	1,6		●	●	●	●																			
CNMM190624RM	19,05	19,34	2,4			●	●																				
CNMM250924RM	25,40	25,79	2,4		●	●	●	●																			

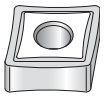
CNMM-RP

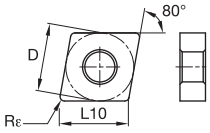




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM120408RP	12,70	12,90	0,8	●	●	●	●	●				●	●														
CNMM120412RP	12,70	12,90	1,2	●	●	●	●	●				●	●	●													
CNMM120416RP	12,70	12,90	1,6		●	●	●	●				●															
CNMM160608RP	15,88	16,12	0,8			●		●																			
CNMM160612RP	15,88	16,12	1,2	●	●	●	●	●				●	●	●													
CNMM160616RP	15,88	16,12	1,6	●	●	●	●	●				●	●														
CNMM190612RP	19,05	19,34	1,2		●	●	●	●				●	●														
CNMM190616RP	19,05	19,34	1,6		●	●	●	●				●	●	●													
CNMM190624RP	19,05	19,34	2,4		●	●						●															
CNMM250924RP	25,40	25,79	2,4			●		●																			

CNMP

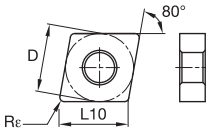




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMP120404	12,70	12,90	0,4													●	●								●		
CNMP120408	12,70	12,90	0,8													●	●								●		
CNMP120412	12,70	12,90	1,2														●										
CNMP160608	15,88	16,12	0,8														●										
CNMP160612	15,88	16,12	1,2														●								●		
CNMP190608	19,05	19,34	0,8														●										
CNMP190612	19,05	19,34	1,2													●	●								●		

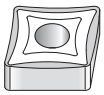
● first choice
○ alternate choice

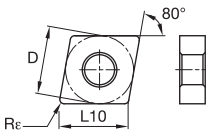
CNMP-K



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMP120404K	12,70	12,90	0,4			●																					
CNMP120408K	12,70	12,90	0,8		●	●																					
CNMP120412K	12,70	12,90	1,2			●																					

CNMS





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMS120408	12,70	12,90	0,8														●								●		
CNMS160608	15,88	16,12	0,8														●								●		
CNMS190608	19,05	19,34	0,8														●								●		
CNMS190612	19,05	19,34	1,2														●										

C2–C71

C72–C109

C110–C115

C116–C147

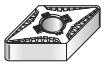
beyond
B10–B23

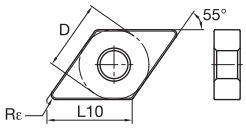
B24–B31

B32–B37

● first choice
○ alternate choice

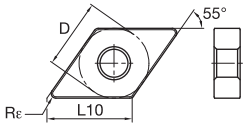
DNGG-FS





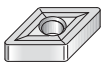
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNGG110402FS	9,52	11,63	0,2																●		●	●		●			
DNGG110404FS	9,52	11,63	0,4																●		●						
DNGG110408FS	9,52	11,63	0,8																●		●						
DNGG150401FS	12,70	15,50	0,1																●		●						
DNGG150402FS	12,70	15,50	0,2																●		●	●		●			
DNGG150604FS	12,70	15,50	0,4																●		●	●		●			
DNGG150404FS	12,70	15,50	0,4																●		●	●		●			
DNGG150608FS	12,70	15,50	0,8																●		●						
DNGG150408FS	12,70	15,50	0,8																●		●	●		●			
DNGG150412FS	12,70	15,50	1,2																●		●						
DNGG150416FS	12,70	15,50	1,6																●		●						

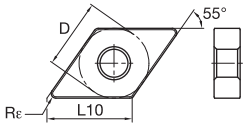
DNGG-LF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNGG150402LF	12,70	15,50	0,2																●	●							
DNGG150404LF	12,70	15,50	0,4													●			●	●							
DNGG150408LF	12,70	15,50	0,8																●	●							

DNGP

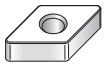


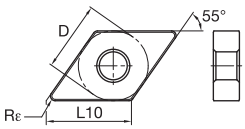


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNGP150401	12,70	15,50	0,1																●	●					●		
DNGP150402	12,70	15,50	0,2																●	●					●		
DNGP150404	12,70	15,50	0,4													●			●	●					●		
DNGP150408	12,70	15,50	0,8													●			●	●					●		
DNGP150604	12,70	15,50	0,4													●			●	●					●		
DNGP150608	12,70	15,50	0,8													●			●	●					●		
DNGP150612	12,70	15,50	1,2													●											

● first choice
○ alternate choice

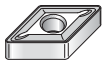
DNMA

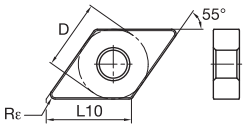




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMA110408	9,53	11,63	0,8						●		●																
DNMA110412	9,53	11,63	1,2								●																
DNMA150408	12,70	15,50	0,8						●	●	●																
DNMA150412	12,70	15,50	1,2						●	●	●																
DNMA150416	12,70	15,50	1,6								●																
DNMA150608	12,70	15,50	0,8						●	●	●																
DNMA150612	12,70	15,50	1,2						●	●	●																
DNMA150616	12,70	15,50	1,6								●																

DNMG





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150404B	12,70	15,50	0,4														●										
DNMG150408B	12,70	15,50	0,8													●	●										
DNMG150412B	12,70	15,50	1,2														●										
DNMG150608B	12,70	15,50	0,8													●											

C2–C71

C72–C109

C110–C115

C116–C147

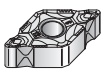
B10–B23

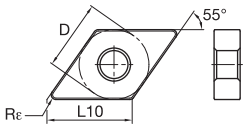
B24–B31

B32–B37

● first choice
○ alternate choice

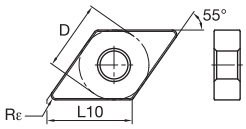
DNMG-CT





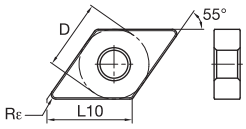
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404CT	9,53	11,63	0,4																	●							
DNMG110408CT	9,53	11,63	0,8	●	●															●							
DNMG150404CT	12,70	15,50	0,4	●	●	●													●	●							
DNMG150408CT	12,70	15,50	0,8	●	●	●													●	●							
DNMG150412CT	12,70	15,50	1,2		●														●	●							
DNMG150604CT	12,70	15,50	0,3		●															●							
DNMG150608CT	12,70	15,50	0,7	●	●	●													●	●							
DNMG150612CT	12,70	15,50	1,1	●	●	●													●	●							

DNMG-FF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FF	9,53	11,63	0,4	●	●														●	●						●	
DNMG110408FF	9,53	11,63	0,8	●	●														●	●						●	
DNMG150404FF	12,70	15,50	0,4	●	●														●	●						●	
DNMG150408FF	12,70	15,50	0,8	●	●														●	●						●	
DNMG150604FF	12,70	15,50	0,4	●	●														●	●						●	
DNMG150608FF	12,70	15,50	0,8	●	●														●	●						●	

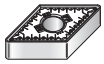
DNMG-FN

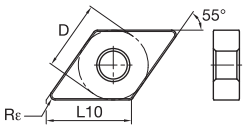


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FN	9,53	11,63	0,4	●	●	●			●																	●	
DNMG110408FN	9,53	11,63	0,8	●	●	●			●																	●	
DNMG110412FN	9,53	11,63	1,2	●	●																					●	
DNMG150404FN	12,70	15,50	0,4	●	●	●			●																	●	
DNMG150408FN	12,70	15,50	0,8	●	●	●			●																	●	
DNMG150412FN	12,70	15,50	1,2	●	●				●																	●	
DNMG150604FN	12,70	15,50	0,4	●	●	●			●																	●	
DNMG150608FN	12,70	15,50	0,8	●	●	●			●																	●	
DNMG150612FN	12,70	15,50	1,2	●	●	●			●																	●	

● first choice
○ alternate choice

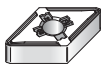
DNMG-FP

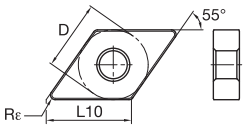




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FP	9,53	11,63	0,4									●							●	●						●	
DNMG110408FP	9,53	11,63	0,8		●							●							●	●						●	
DNMG150404FP	12,70	15,50	0,4									●							●	●						●	
DNMG150408FP	12,70	15,50	0,8		●	●						●							●	●						●	
DNMG150412FP	12,70	15,50	1,2									●							●	●							
DNMG150604FP	12,70	15,50	0,4									●							●	●						●	
DNMG150608FP	12,70	15,50	0,8		●	●						●							●	●						●	
DNMG150612FP	12,70	15,50	1,2									●							●	●						●	

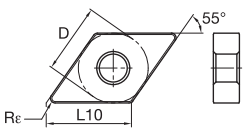
DNMG-FW





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FW	9,53	11,63	0,4	●	●														●	●						●	
DNMG110408FW	9,53	11,63	0,8	●	●															●						●	
DNMG150404FW	12,70	15,50	0,4		●														●	●						●	
DNMG150408FW	12,70	15,50	0,4	●	●														●	●						●	
DNMG150604FW	12,70	15,50	0,4	●	●														●	●						●	
DNMG150608FW	12,70	15,50	0,4	●	●														●	●						●	

DNMG-MN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404MN	9,53	11,63	0,4	●	●	●	●																				
DNMG110408MN	9,53	11,63	0,8	●	●	●	●																				
DNMG110412MN	9,53	11,63	1,2		●	●																					
DNMG150404MN	12,70	15,50	0,4	●	●	●	●																				
DNMG150408MN	12,70	15,50	0,8	●	●	●	●	●																			
DNMG150412MN	12,70	15,50	1,2	●	●	●		●																			
DNMG150416MN	12,70	15,50	1,6		●	●																					
DNMG150604MN	12,70	15,50	0,4	●	●	●	●																				
DNMG150608MN	12,70	15,50	0,8	●	●	●	●	●																			
DNMG150612MN	12,70	15,50	1,2	●	●	●		●																			
DNMG150616MN	12,70	15,50	1,6		●																						
DNMG190612MN	15,88	19,38	1,2		●		●																				

C2–C71

C72–C109

C110–C115

C116–C147

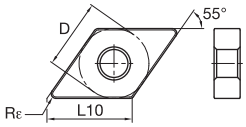
B10–B23

B24–B31

B32–B37

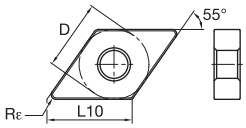
● first choice
○ alternate choice

DNMG-MP



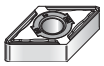
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408MP	9,53	11,63	0,8									●	●						●	●							
DNMG110412MP	9,53	11,63	1,2									●	●							●							
DNMG150404MP	12,70	15,50	0,4									●	●	●					●	●							
DNMG150408MP	12,70	15,50	0,8		●	●						●	●	●					●	●							
DNMG150412MP	12,70	15,50	1,2									●	●						●	●							
DNMG150604MP	12,70	15,50	0,4									●	●	●					●	●							
DNMG150608MP	12,70	15,50	0,8		●	●						●	●	●					●	●		●	●				
DNMG150612MP	12,70	15,50	1,2		●							●	●						●	●		●	●				

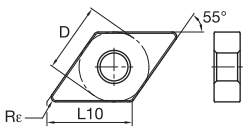
DNMG-MS



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408MS	9,53	11,63	0,8													●			●		●	●		●			
DNMG150401MS	12,70	15,50	0,1																●		●						
DNMG150402MS	12,70	15,50	0,2																●		●	●		●			
DNMG150404MS	12,70	15,50	0,4													●			●		●	●		●			
DNMG150604MS	12,70	15,50	0,4													●			●		●	●		●			
DNMG150608MS	12,70	15,50	0,8													●			●		●	●		●			
DNMG150408MS	12,70	15,50	0,8													●			●		●	●		●			
DNMG150412MS	12,70	15,50	1,2																●		●	●		●			
DNMG150612MS	12,70	15,50	1,2													●			●		●	●		●			

DNMG-MW



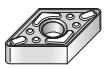


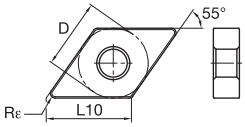
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150408MW	12,70	15,50	0,4	●	●	●																					
DNMG150412MW	12,70	15,50	1,2	●	●	●																					
DNMG150608MW	12,70	15,50	0,4	●	●	●																					
DNMG150612MW	12,70	15,50	1,2	●	●	●																					

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●											●	●						●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S														●	●	●	●	●	●	●	●	●			
H																									

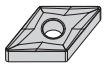
DNMG-P

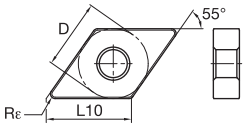




ISO catalogue number	D mm	L10 mm	Rε mm
DNMG150404P	12,70	15,50	0,4
DNMG150408P	12,70	15,50	0,8
DNMG150604P	12,70	15,50	0,4
DNMG150608P	12,70	15,50	0,8

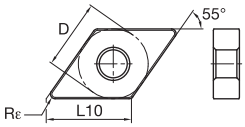
DNMG-RM





ISO catalogue number	D mm	L10 mm	Rε mm
DNMG190608RM	15,88	19,38	0,8
DNMG190612RM	15,88	19,38	1,2

DNMG-RN



ISO catalogue number	D mm	L10 mm	Rε mm
DNMG150408RN	12,70	15,50	0,8
DNMG150412RN	12,70	15,50	1,2
DNMG150416RN	12,70	15,50	1,6
DNMG150608RN	12,70	15,50	0,8
DNMG150612RN	12,70	15,50	1,2
DNMG150616RN	12,70	15,50	1,6
DNMG190608RN	15,88	19,38	0,8
DNMG190612RN	15,88	19,38	1,2

C2–C71

C72–C109

C110–C115

C116–C147

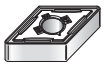
beyond
B10–B23

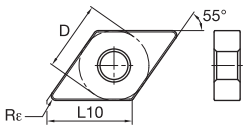
B24–B31

B32–B37

● first choice
○ alternate choice

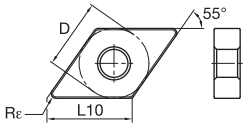
DNMG-RP





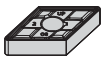
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408RP	9,53	11,63	0,8		●	●					●	●							●	●	●	●		●			
DNMG110412RP	9,53	11,63	1,2		●	●					●	●															
DNMG150408RP	12,70	15,50	0,8		●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
DNMG150412RP	12,70	15,50	1,2	●	●	●	●	●		●	●		●	●					●	●	●	●		●			
DNMG150416RP	12,70	15,50	1,6								●								●	●	●						
DNMG150608RP	12,70	15,50	0,8	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
DNMG150612RP	12,70	15,50	1,2	●	●	●	●	●	●	●	●	●	●	●					●	●		●		●			
DNMG150616RP	12,70	15,50	1,6		●	●	●				●									●		●		●			

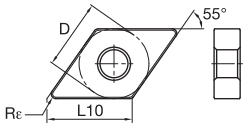
DNMG-UN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408UN	9,53	11,63	0,8						●	●	●																
DNMG110412UN	9,53	11,63	1,2						●	●	●																
DNMG150408UN	12,70	15,50	0,8							●	●																
DNMG150412UN	12,70	15,50	1,2						●	●	●																
DNMG150416UN	12,70	15,50	1,6							●	●																
DNMG150608UN	12,70	15,50	0,8						●	●	●																
DNMG150612UN	12,70	15,50	1,2						●	●	●																
DNMG150616UN	12,70	15,50	1,6							●	●																

DNMG-UP

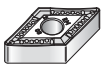


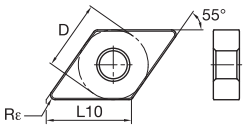


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408UP	9,53	11,63	0,8									●	●						●	●							
DNMG110412UP	9,53	11,63	1,2									●	●							●							
DNMG150404UP	12,70	15,50	0,4									●	●						●	●							
DNMG150408UP	12,70	15,50	0,8									●	●	●					●	●							
DNMG150412UP	12,70	15,50	1,2									●	●	●					●	●							
DNMG150604UP	12,70	15,50	0,4									●	●							●							
DNMG150608UP	12,70	15,50	0,8									●	●	●					●	●							
DNMG150612UP	12,70	15,50	1,2									●	●	●						●							

● first choice
○ alternate choice

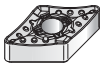
DNMM-RM

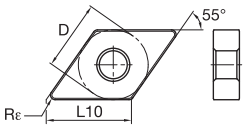




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMM150408RM	12,70	15,50	0,8			●																					
DNMM150412RM	12,70	15,50	1,2			●																					
DNMM150608RM	12,70	15,50	0,8		●	●	●																				
DNMM150612RM	12,70	15,50	1,2		●	●	●	●																			
DNMM150616RM	12,70	15,50	1,6		●	●																					

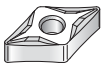
DNMM-RP

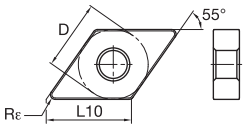




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMM150608RP	12,70	15,50	0,8		●	●							●														
DNMM150612RP	12,70	15,50	1,2		●	●							●														
DNMM150616RP	12,70	15,50	1,6		●	●																					

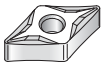
DNMP

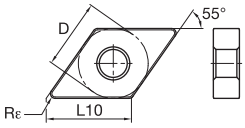




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMP150404	12,70	15,50	0,4													●	●										
DNMP150408	12,70	15,50	0,8													●	●										
DNMP150412	12,70	15,50	1,2														●										

DNMP-K





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMP110408K	9,53	11,63	0,8		●																						
DNMP150404K	12,70	15,50	0,4			●											●										
DNMP150408K	12,70	15,50	0,8		●	●											●										
DNMP150412K	12,70	15,50	1,2			●																					
DNMP190608K	15,88	19,38	0,8													●											

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

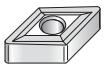
B24–B31

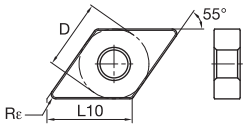
B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																	●		●
M									●	●	●				●	●		●	●					
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

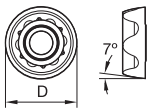
DNMS





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMS150408	12,70	15,50	0,8														●								●		

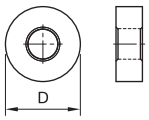
RCGX-LF



beyond BLAST™

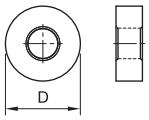
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGX190600ELF	19,05	–	–												●				●								

RNMA



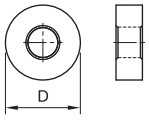
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMA090300	9,53	–	–														●										
RNMA120400	12,70	–	–						●	●	●						●										
RNMA150600	15,88	–	–														●										
RNMA190600	19,05	–	–														●										
RNMA250900	25,40	–	–														●										

RNMG



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMG190600	19,05	–	–			●		●								●											
RNMG250900	25,40	–	–					●																			

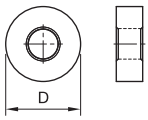
RNMG-RN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMG090300RN	9,53	–	–		●	●																					
RNMG120400RN	12,70	–	–		●	●	●												●	●	●						
RNMG150600RN	15,88	–	–		●	●	●																				
RNMG190600RN	19,05	–	–		●	●	●												●	●							
RNMG250900RN	25,40	–	–		●	●	●																				

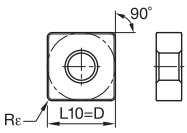
● first choice
○ alternate choice

RNMG-UN



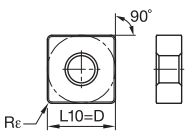
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●											●	●		●	●		●	●	
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S															●	●	●	●	●	●	●	●	●	●			
H																											
RNMG120400UN	12,70	—	—						●	●	●																

SNGG-FS



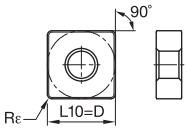
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGG090308FS	9,53	9,53	0,8																●			●					
SNGG120408FS	12,70	12,70	0,8																●		●						

SNGG-LF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGG090308LF	9,53	9,53	0,8													●			●	●							
SNGG120408LF	12,70	12,70	0,8													●				●							
SNGG150612LF	15,88	15,88	1,2																	●							

SNGP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGP120404	12,70	12,70	0,4																●	●					●		
SNGP120408	12,70	12,70	0,8																●	●					●		

C2–C71

C72–C109

C110–C115

C116–C147

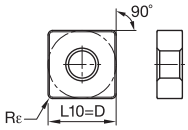
B10–B23

B24–B31

B32–B37

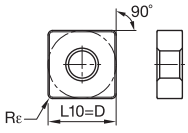
● first choice
○ alternate choice

SNMA



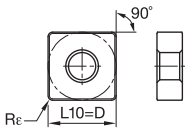
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMA120408	12,70	12,70	0,8						●	●	●						●										
SNMA120412	12,70	12,70	1,2						●	●	●																
SNMA120416	12,70	12,70	1,6						●	●	●																
SNMA150612	15,88	15,88	1,2						●	●	●																
SNMA150616	15,88	15,88	1,6						●		●																
SNMA190612	19,05	19,05	1,2						●	●	●						●										
SNMA190616	19,05	19,05	1,6						●	●	●						●										

SNMG



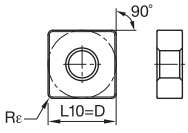
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408	12,70	12,70	0,8													●	●										
SNMG120412	12,70	12,70	1,2														●										
SNMG120416B	12,70	12,70	1,6														●										
SNMG190612	19,05	19,05	1,2			●		●									●		●	●							
SNMG190616B	19,05	19,05	1,6			●		●									●		●	●							
SNMG250924	25,40	25,40	2,4			●		●											●	●							

SNMG-FF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG090304FF	9,53	9,53	0,4		●														●	●						●	
SNMG090308FF	9,53	9,53	0,8		●														●	●						●	
SNMG120404FF	12,70	12,70	0,4		●														●	●						●	
SNMG120408FF	12,70	12,70	0,8		●														●	●						●	

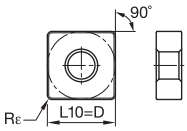
SNMG-FN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG090304FN	9,53	9,53	0,4		●	●			●																	●	
SNMG090308FN	9,53	9,53	0,8		●	●			●																		
SNMG120404FN	12,70	12,70	0,4	●	●				●																	●	
SNMG120408FN	12,70	12,70	0,8	●	●	●			●																	●	
SNMG120412FN	12,70	12,70	1,2		●	●			●																	●	
SNMG120416FN	12,70	12,70	1,6		●				●																		

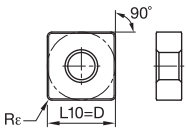
● first choice
○ alternate choice

SNMG-FP



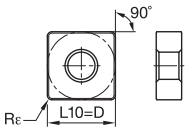
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S																●	●	●	●	●	●	●	●	●			
H																											
SNMG120404FP	12,70	12,70	0,4									●							●	●							
SNMG120408FP	12,70	12,70	0,8									●							●	●						●	
SNMG120412FP	12,70	12,70	1,2									●							●	●							

SNMG-FW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408FW	12,70	12,70	0,8	●	●																					●	
SNMG120412FW	12,70	12,70	1,2	●	●																					●	

SNMG-MN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG090304MN	9,53	9,53	0,4			●																					
SNMG090308MN	9,53	9,53	0,8		●	●	●																				
SNMG090312MN	9,53	9,53	1,2		●	●																					
SNMG120404MN	12,70	12,70	0,4		●	●	●																				
SNMG120408MN	12,70	12,70	0,8		●	●	●	●																			
SNMG120412MN	12,70	12,70	1,2		●	●	●	●																			
SNMG120416MN	12,70	12,70	1,6		●	●																					
SNMG150612MN	15,88	15,88	1,2		●	●		●																			
SNMG150616MN	15,88	15,88	1,6			●																					
SNMG190612MN	19,05	19,05	1,2		●	●		●																			
SNMG190616MN	19,05	19,05	1,6			●																					

C2–C71

C72–C109

C110–C115

C116–C147

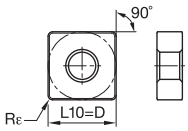
beyond
B10–B23

B24–B31

B32–B37

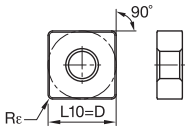
● first choice
○ alternate choice

SNMG-MP



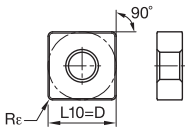
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MP	12,70	12,70	0,8									●	●	●					●	●							
SNMG120412MP	12,70	12,70	1,2									●	●	●					●	●		●	●				
SNMG120416MP	12,70	12,70	1,6										●	●					●	●							
SNMG150608MP	15,88	15,88	0,8									●	●														
SNMG150612MP	15,88	15,88	1,2									●	●						●	●							
SNMG150616MP	15,88	15,88	1,6										●						●	●							
SNMG190612MP	19,05	19,05	1,2									●	●	●					●	●							
SNMG190616MP	19,05	19,05	1,6										●	●					●	●							

SNMG-MS



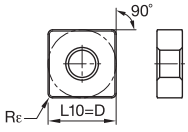
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MS	12,70	12,70	0,8													●			●		●	●		●			
SNMG120412MS	12,70	12,70	1,2																●		●	●		●			
SNMG150608MS	15,88	15,88	0,8																			●		●			
SNMG150612MS	15,88	15,88	1,2																			●		●			
SNMG190612MS	19,05	19,05	1,2																●		●	●		●			

SNMG-MW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MW	12,70	12,70	0,8		●	●																					
SNMG120412MW	12,70	12,70	1,2		●	●																					

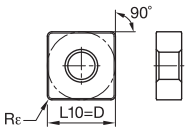
SNMG-P



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408P	12,70	12,70	0,8																●	●							
SNMG120412P	12,70	12,70	1,2																●	●							

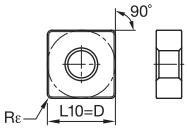
● first choice
○ alternate choice

SNMG-RM



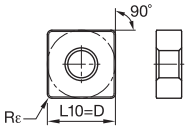
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG190612RM	19,05	19,05	1,2			●		●											●								
SNMG190616RM	19,05	19,05	1,6			●	●	●											●								
SNMG250924RM	25,40	25,40	2,4			●		●												●							

SNMG-RN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG090412RN	9,53	9,53	1,2		●																						
SNMG120408RN	12,70	12,70	0,8		●	●	●	●																			
SNMG120412RN	12,70	12,70	1,2		●	●	●	●																			
SNMG120416RN	12,70	12,70	1,6		●	●	●	●																			
SNMG150608RN	15,88	15,88	0,8		●	●																					
SNMG150612RN	15,88	15,88	1,2		●	●	●	●																			
SNMG150616RN	15,88	15,88	1,6		●	●	●	●																			
SNMG190608RN	19,05	19,05	0,8			●	●																				
SNMG190612RN	19,05	19,05	1,2		●	●	●	●																			
SNMG190616RN	19,05	19,05	1,6		●	●	●	●																			
SNMG190624RN	19,05	19,05	2,4			●	●																				
SNMG250924RN	25,40	25,40	2,4				●																				

SNMG-RP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408RP	12,70	12,70	0,8	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
SNMG120412RP	12,70	12,70	1,2	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
SNMG120416RP	12,70	12,70	1,6		●						●								●		●			●			
SNMG150612RP	15,88	15,88	1,2		●	●	●	●		●		●	●	●					●	●		●		●			
SNMG150616RP	15,88	15,88	1,6		●	●	●				●	●	●						●			●		●			
SNMG190612RP	19,05	19,05	1,2		●	●	●	●			●	●	●	●					●	●	●	●	●	●			
SNMG190616RP	19,05	19,05	1,6		●	●		●			●		●	●					●	●	●	●		●			

C2–C71

C72–C109

C110–C115

C116–C147

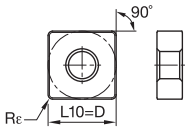
beyond
B10–B23

B24–B31

B32–B37

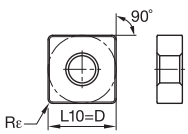
● first choice
○ alternate choice

SNMG-UN



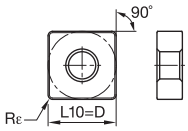
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408UN	12,70	12,70	0,8						●	●	●																
SNMG120412UN	12,70	12,70	1,2						●	●	●																
SNMG120416UN	12,70	12,70	1,6						●	●	●																
SNMG150612UN	15,88	15,88	1,2						●	●	●																
SNMG150616UN	15,88	15,88	1,6						●	●	●																
SNMG190612UN	19,05	19,05	1,2						●	●	●																
SNMG190616UN	19,05	19,05	1,6						●	●	●																

SNMG-UP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408UP	12,70	12,70	0,8									●	●	●						●							
SNMG120412UP	12,70	12,70	1,2									●	●	●						●							
SNMG120416UP	12,70	12,70	1,6									●	●	●													
SNMG150612UP	15,88	15,88	1,2									●	●	●					●	●							
SNMG190612UP	19,05	19,05	1,2									●	●	●													

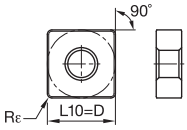
SNMM-RH



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMM190612RH	19,05	19,05	1,2		●	●	●																				
SNMM190616RH	19,05	19,05	1,6		●	●	●	●																			
SNMM190624RH	19,05	19,05	2,4		●	●	●	●																			
SNMM250724RH	25,40	25,40	2,4		●	●	●	●																			
SNMM250732RH	25,40	25,40	3,2				●																				
SNMM250924RH	25,40	25,40	2,4		●	●	●	●																			

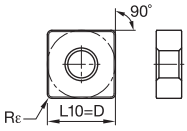
● first choice
○ alternate choice

SNMM-RM



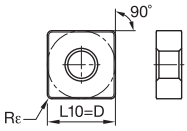
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S															●	●	●	●	●	●	●	●	●	●			
H																											
SNMM120408RM	12,70	12,70	0,8			●	●																				
SNMM120412RM	12,70	12,70	1,2			●																					
SNMM120416RM	12,70	12,70	1,6			●	●																				
SNMM150612RM	15,88	15,88	1,2		●	●																					
SNMM150616RM	15,88	15,88	1,6		●	●	●																				
SNMM190612RM	19,05	19,05	1,2		●	●	●	●																			
SNMM190616RM	19,05	19,05	1,6		●	●	●																				
SNMM190624RM	19,05	19,05	2,4			●	●																				
SNMM250724RM	25,40	25,40	2,4		●	●	●																				
SNMM250924RM	25,40	25,40	2,4		●	●	●	●																			

SNMM-RP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMM120408RP	12,70	12,70	0,8			●		●				●	●	●													
SNMM120412RP	12,70	12,70	1,2			●		●				●	●														
SNMM150612RP	15,88	15,88	1,2			●		●					●														
SNMM150616RP	15,88	15,88	1,6		●								●														
SNMM190612RP	19,05	19,05	1,2			●		●					●														
SNMM190616RP	19,05	19,05	1,6			●		●					●														
SNMM190624RP	19,05	19,05	2,4			●							●														
SNMM250724RP	25,40	25,40	2,4			●		●					●														
SNMM250924RP	25,40	25,40	2,4			●							●														

SNMP



ISO catalogue number	D mm	L10 mm	Rε mm
SNMP120408	12,70	12,70	0,8
SNMP150612	15,88	15,88	1,2
SNMP190612	19,05	19,05	1,2

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

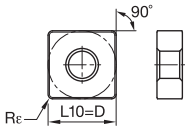
B24–B31

B32–B37

● first choice
○ alternate choice

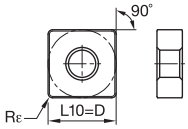
		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

SNMP-K



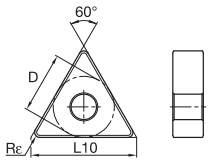
ISO catalogue number	D mm	L10 mm	Rε mm
SNMP120408K	12,70	12,70	0,8

SNMS



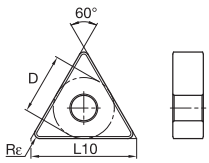
ISO catalogue number	D mm	L10 mm	Rε mm
SNMS120408	12,70	12,70	0,8
SNMS120412	12,70	12,70	1,2
SNMS190612	19,05	19,05	1,2

TNGG-FS



ISO catalogue number	D mm	L10 mm	Rε mm
TNGG160402FS	9,53	16,50	0,2
TNGG160404FS	9,53	16,50	0,4
TNGG160408FS	9,53	16,50	0,8
TNGG220408FS	12,70	22,00	0,8

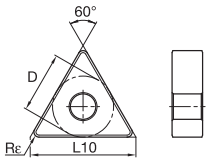
TNGG-LF



ISO catalogue number	D mm	L10 mm	Rε mm
TNGG160402LF	9,53	16,50	0,2
TNGG160404LF	9,53	16,50	0,4
TNGG160408LF	9,53	16,50	0,8

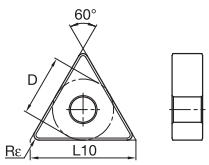
● first choice
○ alternate choice

TNGP



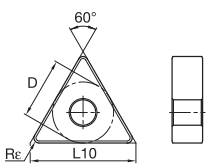
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																			●	●
M												●	●	●					●	●		●	●				
K									●	●	●																	●
N																									●		
S																●	●	●	●	●	●	●	●	●				
H																												
TNGP160402	9,53	16,50	0,2																●	●					●		
TNGP160404	9,53	16,50	0,4																●	●					●		
TNGP160408	9,53	16,50	0,8																●	●					●		

TNMA



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMA160408	9,53	16,50	0,8						●	●	●						●										
TNMA160412	9,53	16,50	1,2						●	●	●																
TNMA160416	9,53	16,50	1,6							●	●																
TNMA220408	12,70	22,00	0,8						●	●	●						●										
TNMA220412	12,70	22,00	1,2						●	●	●						●										
TNMA220416	12,70	22,00	1,6							●	●																
TNMA270616	15,88	27,50	1,6							●	●						●										

TNMG



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408B	9,53	16,50	0,8														●										
TNMG160412	9,53	16,50	1,2														●										
TNMG220408	12,70	22,00	0,8														●										
TNMG220412	12,70	22,00	1,2														●										
TNMG220416	12,70	22,00	1,6														●										
TNMG330924	19,05	33,00	2,4			●		●												●							

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

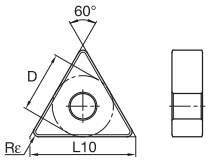
B24–B31

B32–B37

Inserts

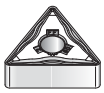
● first choice
○ alternate choice

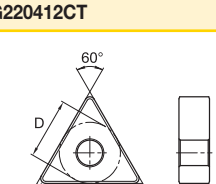
TNMG-CT



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG220408CT	12,70	22,00	0,8		●															●							
TNMG220412CT	12,70	22,00	1,2	●	●															●							

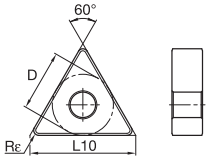
TNMG-FF





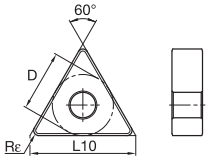
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG110304FF	6,35	11,00	0,4																●	●							
TNMG110308FF	6,35	11,00	0,8																	●							
TNMG160404FF	9,53	16,50	0,4	●	●															●						●	
TNMG160408FF	9,53	16,50	0,8	●	●															●						●	

TNMG-FN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG110304FN	6,35	11,00	0,4		●	●			●																	●	
TNMG110308FN	6,35	11,00	0,8		●	●																					
TNMG160404FN	9,53	16,50	0,4	●	●	●			●																	●	
TNMG160408FN	9,53	16,50	0,8	●	●	●			●																	●	
TNMG160412FN	9,53	16,50	1,2	●	●	●			●																	●	
TNMG220404FN	12,70	22,00	0,4		●	●			●																	●	
TNMG220408FN	12,70	22,00	0,8	●	●	●																				●	
TNMG220412FN	12,70	22,00	1,2		●	●																					

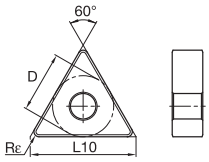
TNMG-FP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404FP	9,53	16,50	0,4		●							●							●	●						●	
TNMG160408FP	9,53	16,50	0,8		●							●							●	●						●	
TNMG160412FP	9,53	16,50	1,2									●							●	●							
TNMG220404FP	12,70	22,00	0,4									●							●	●						●	
TNMG220408FP	12,70	22,00	0,8									●							●	●						●	

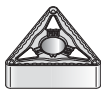
● first choice
○ alternate choice

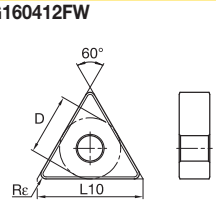
TNMG-FW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404FW	9,53	16,50	0,2	●	●														●	●						●	
TNMG160408FW	9,53	16,50	0,4	●	●														●	●						●	
TNMG160412FW	9,53	16,50	1,2	●	●															●						●	

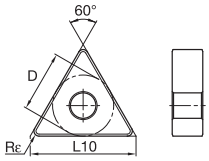
TNMG-MN





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404MN	9,53	16,50	0,4	●	●	●	●																				
TNMG160408MN	9,53	16,50	0,8	●	●	●	●																				
TNMG160412MN	9,53	16,50	1,2	●	●	●	●	●																			
TNMG220404MN	12,70	22,00	0,4		●	●	●																				
TNMG220408MN	12,70	22,00	0,8		●	●	●	●																			
TNMG220412MN	12,70	22,00	1,2		●	●	●	●																			
TNMG220416MN	12,70	22,00	1,6			●																					

TNMG-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404MP	9,53	16,50	0,4									●	●	●					●	●							
TNMG160408MP	9,53	16,50	0,8		●	●						●	●	●					●	●							
TNMG160412MP	9,53	16,50	1,2									●	●						●	●							
TNMG220408MP	12,70	22,00	0,8									●	●						●	●							
TNMG220412MP	12,70	22,00	1,2									●	●						●	●							
TNMG220416MP	12,70	22,00	1,6										●						●	●							

C2–C71

C72–C109

C110–C115

C116–C147

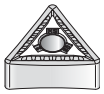
B10–B23

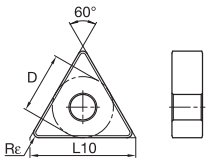
B24–B31

B32–B37

● first choice
○ alternate choice

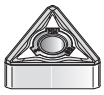
TNMG-MS

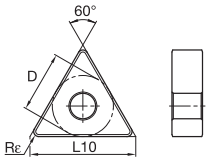




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160402MS	9,53	16,50	0,2																●		●	●		●			
TNMG160404MS	9,53	16,50	0,4													●			●		●	●		●			
TNMG160408MS	9,53	16,50	0,8																●		●	●		●			
TNMG220404MS	12,70	22,00	0,4																●		●	●		●			
TNMG220408MS	12,70	22,00	0,8													●			●		●	●		●			
TNMG220412MS	12,70	22,00	1,2													●			●		●	●		●			
TNMG270608MS	15,88	27,50	0,8													●						●		●			
TNMG270616MS	15,88	27,50	1,6													●											

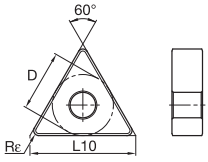
TNMG-MW





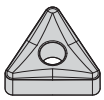
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408MW	9,53	16,50	0,8	●	●	●																					
TNMG160412MW	9,53	16,50	1,2	●	●	●																					

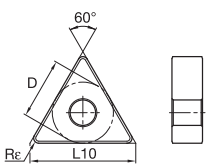
TNMG-P



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404P	9,53	16,50	0,4																●	●							
TNMG160408P	9,53	16,50	0,8													●			●	●							
TNMG220404P	12,70	22,00	0,4																●	●							
TNMG220408P	12,70	22,00	0,8																●	●							
TNMG220412P	12,70	22,00	1,2																●	●					●		

TNMG-RM

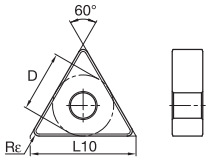




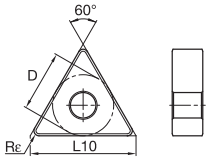
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG330924RM	19,05	32,99	2,4			●	●												●								

● first choice
○ alternate choice

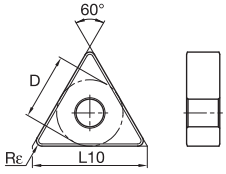
TNMG-RN



TNMG-RP



TNMG-UN

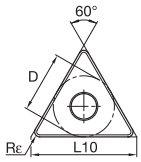


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408RN	9,53	16,50	0,8		●	●	●																				
TNMG160412RN	9,53	16,50	1,2		●	●	●																				
TNMG220408RN	12,70	22,00	0,8		●	●	●	●																			
TNMG220412RN	12,70	22,00	1,2		●	●	●	●																			
TNMG220416RN	12,70	22,00	1,6		●	●																					
TNMG270608RN	15,88	27,50	0,8		●	●	●																				
TNMG270612RN	15,88	27,50	1,2		●	●	●	●																			
TNMG270616RN	15,88	27,50	1,6		●	●	●																				
TNMG330924RN	19,05	33,00	2,4		●	●	●	●																			
TNMG160408RP	9,53	16,50	0,8	●	●	●	●		●	●	●	●	●						●	●	●	●		●			
TNMG160412RP	9,53	16,50	1,2	●	●	●					●		●	●								●		●			
TNMG160416RP	9,53	16,50	1,6		●						●		●							●							
TNMG220408RP	12,70	22,00	0,8		●	●	●	●		●	●	●	●						●	●	●	●		●			
TNMG220412RP	12,70	22,00	1,2		●	●	●	●		●	●	●	●						●	●	●	●		●			
TNMG220416RP	12,70	22,00	1,6		●	●				●	●		●						●		●	●		●			
TNMG220432RP	12,70	22,00	3,2			●	●				●								●		●						
TNMG270612RP	15,88	27,50	1,2		●	●					●	●	●	●					●	●	●	●		●			
TNMG270616RP	15,88	27,50	1,6			●					●	●	●	●													
TNMG330924RP	19,05	33,00	2,4			●		●			●		●							●							
TNMG160408UN	9,53	16,50	0,8						●	●	●																
TNMG160412UN	9,53	16,50	1,2						●	●	●																
TNMG160416UN	9,53	16,50	1,6						●	●	●																
TNMG220408UN	12,70	22,00	0,8						●	●	●																
TNMG220412UN	12,70	22,00	1,2						●	●	●																
TNMG220416UN	12,70	22,00	1,6							●	●																

C2–C71 | C72–C109 | C110–C115 | C116–C147 | B10–B23 | B24–B31 | B32–B37

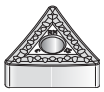
● first choice
○ alternate choice

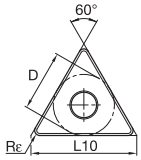
TNMG-UP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404UP	9,53	16,50	0,4									●	●							●							
TNMG160408UP	9,53	16,50	0,8									●	●							●							
TNMG160412UP	9,53	16,50	1,2									●	●							●							
TNMG220408UP	12,70	22,00	0,8									●	●	●						●							
TNMG220412UP	12,70	22,00	1,2									●	●	●						●							

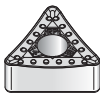
TNMM-RM

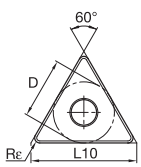




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMM160408RM	9,53	16,50	0,8		●	●	●																				
TNMM160412RM	9,53	16,50	1,2			●																					
TNMM220408RM	12,70	22,00	0,8			●	●																				
TNMM220412RM	12,70	22,00	1,2			●	●																				
TNMM220416RM	12,70	22,00	1,6		●	●																					
TNMM270612RM	15,88	27,50	1,2			●	●																				
TNMM270616RM	15,88	27,50	1,6			●	●																				

TNMM-RP

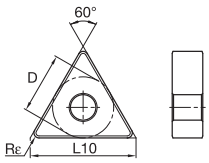




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMM160408RP	9,53	16,50	0,8		●	●																					
TNMM160412RP	9,53	16,50	1,2		●																						
TNMM220408RP	12,70	22,00	0,8		●							●															
TNMM220412RP	12,70	22,00	1,2		●	●						●	●	●													
TNMM220416RP	12,70	22,00	1,6		●	●																					
TNMM270616RP	15,88	27,50	1,6			●																					

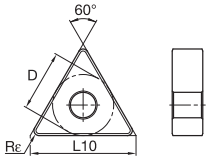
● first choice
○ alternate choice

TNMP



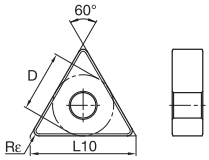
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMP160404	9,53	16,50	0,4													●	●										
TNMP160408	9,53	16,50	0,8													●	●										
TNMP160416	9,53	16,50	1,6														●										
TNMP220404	12,70	22,00	0,4														●										
TNMP220408	12,70	22,00	0,8													●	●								●		
TNMP220412	12,70	22,00	1,2														●										
TNMP220416	12,70	22,00	1,6														●										
TNMP220424	12,70	22,00	2,4														●										

TNMP-K



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMP160404K	9,53	16,50	0,4			●																					
TNMP160408K	9,53	16,50	0,8		●	●																					
TNMP220408K	12,70	22,00	0,8			●																					

TNMS



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMS160404	9,53	16,50	0,4														●								●		
TNMS160408	9,53	16,50	0,8														●								●		
TNMS220404	12,70	22,00	0,4														●								●		
TNMS220408	12,70	22,00	0,8														●								●		
TNMS220412	12,70	22,00	1,2														●										
TNMS270608	15,88	27,50	0,8														●								●		

C2–C71

C72–C109

C110–C115

C116–C147

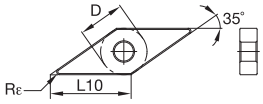
B10–B23

B24–B31

B32–B37

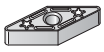
● first choice
○ alternate choice

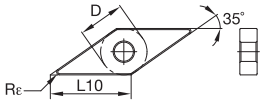
VNGG-FS



ISO catalogue number	D mm	L10 mm	Rε mm	P	M	K	N	S	H
VNGG160401FS	9,53	16,61	0,1						
VNGG160402FS	9,53	16,61	0,2						
VNGG160404FS	9,53	16,61	0,4						
VNGG160408FS	9,53	16,61	0,8						
VNGG160412FS	9,53	16,61	1,2						

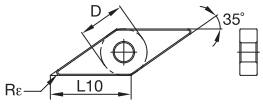
VNGG-LF





ISO catalogue number	D mm	L10 mm	Rε mm	P	M	K	N	S	H
VNGG160402LF	9,53	16,61	0,2						
VNGG160404LF	9,53	16,61	0,4						
VNGG160408LF	9,53	16,61	0,8						
VNGG220408LF	12,70	22,14	0,8						

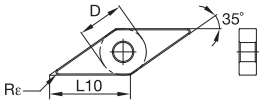
VNGP



ISO catalogue number	D mm	L10 mm	Rε mm	P	M	K	N	S	H
VNGP160401	9,53	16,61	0,1						
VNGP160402	9,53	16,61	0,2						
VNGP220404	12,70	22,14	0,4						
VNGP220408	12,70	22,14	0,8						
VNGP220412	12,70	22,14	1,2						

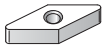
● first choice
○ alternate choice

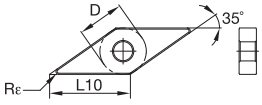
VNGP-K



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNGP160404K	9,53	16,61	0,4													●											
VNGP160408K	9,53	16,61	0,8													●											

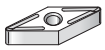
VNMA

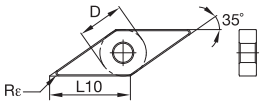




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMA160408	9,53	16,61	0,8						●	●	●																

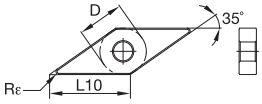
VNMG





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408	9,53	16,61	0,8														●										
VNMG160412	9,53	16,61	1,2														●										
VNMG220408	12,70	22,14	0,8														●										
VNMG220412	12,70	22,14	1,2														●										

VNMG-FF

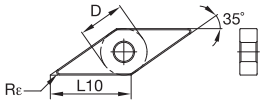


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404FF	9,53	16,61	0,4	●	●														●	●						●	
VNMG160408FF	9,53	16,61	0,8	●	●														●	●						●	

C2–C71 | C72–C109 | C110–C115 | C116–C147 | B10–B23 | B24–B31 | B32–B37

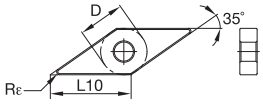
● first choice
○ alternate choice

VNMG-FN



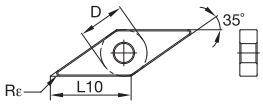
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404FN	9,53	16,61	0,4	●	●	●			●																	●	
VNMG160408FN	9,53	16,61	0,8	●	●	●			●																	●	

VNMG-FP



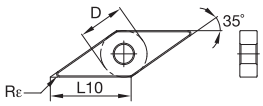
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404FP	9,53	16,61	0,4									●							●	●						●	
VNMG160408FP	9,53	16,61	0,8		●							●							●	●						●	

VNMG-MN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404MN	9,53	16,61	0,4	●	●	●	●																				
VNMG160408MN	9,53	16,61	0,8	●	●	●	●																				
VNMG160412MN	9,53	16,61	1,2		●	●	●																				

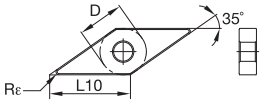
VNMG-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404MP	9,53	16,61	0,4									●	●	●					●	●							
VNMG160408MP	9,53	16,61	0,8									●	●	●					●	●							
VNMG160412MP	9,53	16,61	1,2									●	●						●	●							

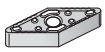
● first choice
○ alternate choice

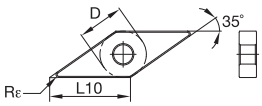
VNMG-MS



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160401MS	9,53	16,61	0,1													●			●		●	●		●			
VNMG160402MS	9,53	16,61	0,2													●			●		●	●		●			
VNMG160404MS	9,53	16,61	0,4													●			●		●	●		●			
VNMG160408MS	9,53	16,61	0,8													●			●		●	●		●			
VNMG220404MS	12,70	22,14	0,4																●		●	●		●			
VNMG220408MS	12,70	22,14	0,8																●		●	●		●			

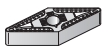
VNMG-P

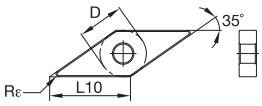




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404P	9,53	16,61	0,4													●			●	●							
VNMG160408P	9,53	16,61	0,8													●			●	●							

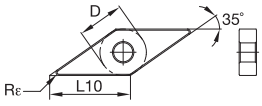
VNMG-RN





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408RN	9,53	16,61	0,8		●	●																					
VNMG160412RN	9,53	16,61	1,2		●	●																					
VNMG220408RN	12,70	22,14	0,8		●	●	●	●																			
VNMG220412RN	12,70	22,14	1,2		●	●	●																				

VNMG-RP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408RP	9,53	16,61	0,8		●	●				●	●	●							●	●	●	●		●			
VNMG160412RP	9,53	16,61	1,2		●	●			●	●	●	●	●						●	●	●	●		●			

C2–C71

C72–C109

C110–C115

C116–C147

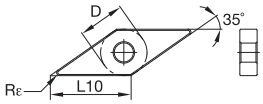
B10–B23

B24–B31

B32–B37

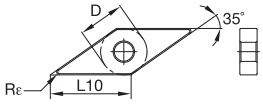
● first choice
○ alternate choice

VNMG-UN



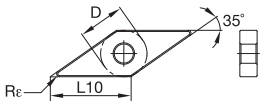
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404UN	9,53	16,61	0,4						●	●	●																
VNMG160408UN	9,53	16,61	0,8						●	●	●																

VNMG-UP



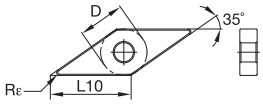
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404UP	9,53	16,61	0,4									●	●						●	●							
VNMG160408UP	9,53	16,61	0,8									●	●						●	●							
VNMG160412UP	9,53	16,61	1,2									●	●							●							

VNMP



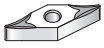
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMP160404	9,53	16,61	0,4													●	●										
VNMP160408	9,53	16,61	0,8													●	●										

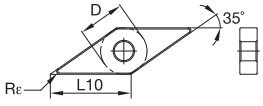
VNMP-K



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMP160404K	9,53	16,61	0,4			●											●										
VNMP160408K	9,53	16,61	0,8		●	●											●										

VNMS

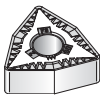


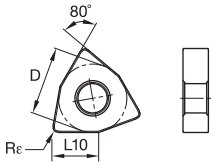


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMS160404	9,53	16,61	0,4														●								●		
VNMS160408	9,53	16,61	0,8														●								●		

● first choice
○ alternate choice

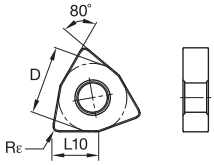
WNGG-FS





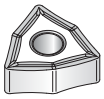
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGG080404FS	12,70	8,69	0,4																●		●						
WNGG080408FS	12,70	8,69	0,8																●		●						

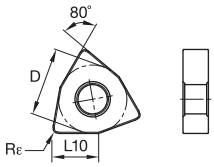
WNGG-LF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGG080401LF	12,70	8,69	0,1																●	●							
WNGG080402LF	12,70	8,69	0,2																●	●							
WNGG080404LF	12,70	8,69	0,4																●	●							
WNGG080408LF	12,70	8,69	0,8																●	●							

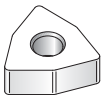
WNGP-K

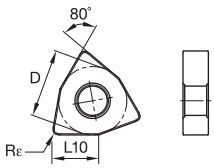




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGP080408K	12,70	8,69	0,8																						●		

WNMA





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMA060408	9,53	6,52	0,8						●	●	●																
WNMA060412	9,53	6,52	1,2							●	●																
WNMA080408	12,70	8,69	0,8						●	●	●																
WNMA080412	12,70	8,69	1,2						●	●	●																
WNMA080416	12,70	8,69	1,6						●	●	●																

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

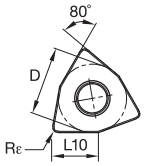
B24–B31

B32–B37

Inserts

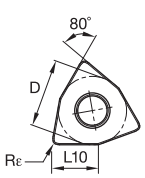
● first choice
○ alternate choice

WNMG-FF



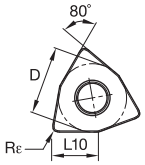
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404FF	9,53	6,52	0,4		●														●	●						●	
WNMG060408FF	9,53	6,52	0,8		●														●	●						●	
WNMG080404FF	12,70	8,69	0,4		●														●	●						●	
WNMG080408FF	12,70	8,69	0,8		●														●	●						●	

WNMG-FN



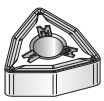
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404FN	9,53	6,52	0,4		●				●																	●	
WNMG060408FN	9,53	6,52	0,8		●	●			●																	●	
WNMG080404FN	12,70	8,69	0,4	●	●	●			●																	●	
WNMG080408FN	12,70	8,69	0,8	●	●	●			●																	●	
WNMG080412FN	12,70	8,69	1,2																							●	

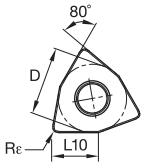
WNMG-FP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404FP	9,53	6,52	0,4									●							●	●						●	
WNMG060408FP	9,53	6,52	0,8		●							●							●	●						●	
WNMG080404FP	12,70	8,69	0,4		●	●						●							●	●						●	
WNMG080408FP	12,70	8,69	0,8		●	●						●							●	●						●	
WNMG080412FP	12,70	8,69	1,2									●							●	●							

WNMG-FW

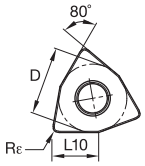




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404FW	9,53	6,52	0,4	●	●														●	●						●	
WNMG060408FW	9,53	6,52	0,8	●	●														●	●						●	
WNMG060412FW	9,53	6,52	1,2	●	●															●							
WNMG080404FW	12,70	8,69	0,4	●	●														●	●						●	
WNMG080408FW	12,70	8,69	0,8	●	●														●	●						●	
WNMG080412FW	12,70	8,69	1,2	●	●															●						●	

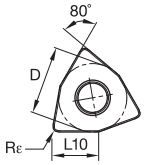
● first choice
○ alternate choice

WNMG-MN



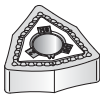
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404MN	9,53	6,52	0,4		●	●																					
WNMG060408MN	9,53	6,52	0,8		●	●	●																				
WNMG060412MN	9,53	6,52	1,2		●	●																					
WNMG080408MN	12,70	8,69	0,8	●	●	●	●	●																			
WNMG080412MN	12,70	8,69	1,2	●	●	●		●																			
WNMG080416MN	12,70	8,69	1,6			●																					

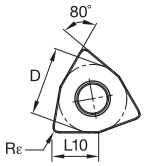
WNMG-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404MP	9,53	6,52	0,4									●	●						●	●							
WNMG060408MP	9,53	6,52	0,8		●	●						●	●	●					●	●							
WNMG060412MP	9,53	6,52	1,2										●														
WNMG080408MP	12,70	8,69	0,8		●	●						●	●	●					●	●							
WNMG080412MP	12,70	8,69	1,2		●							●	●	●					●	●							

WNMG-MS





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408MS	9,53	6,52	0,8													●			●		●	●		●			
WNMG080401MS	12,70	8,69	0,1																●		●						
WNMG080402MS	12,70	8,69	0,2																●		●	●		●			
WNMG080404MS	12,70	8,69	0,4													●			●		●	●		●			
WNMG080408MS	12,70	8,69	0,8													●			●		●	●		●			

C2–C71

C72–C109

C110–C115

C116–C147

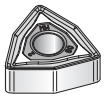
B10–B23

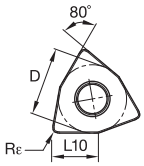
B24–B31

B32–B37

● first choice
○ alternate choice

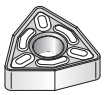
WNMG-MW

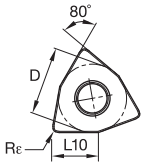




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408MW	9,53	6,52	0,8	●	●	●																					
WNMG060412MW	9,53	6,52	1,2		●	●																					
WNMG080408MW	12,70	8,69	0,8	●	●	●																					
WNMG080412MW	12,70	8,69	1,2	●	●	●																					

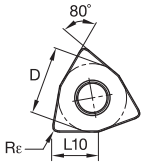
WNMG-P





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG080404P	12,70	8,69	0,4																●	●							
WNMG080408P	12,70	8,69	0,8																●	●					●		

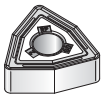
WNMG-RN

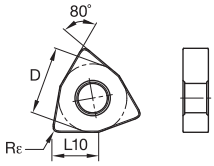


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408RN	9,53	6,52	0,8		●	●																					
WNMG060412RN	9,53	6,52	1,2		●	●																					
WNMG080408RN	12,70	8,69	0,8	●	●	●	●	●																			
WNMG080412RN	12,70	8,69	1,2	●	●	●	●	●																			
WNMG080416RN	12,70	8,69	1,6		●	●	●																				

● first choice
○ alternate choice

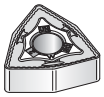
WNMG-RP

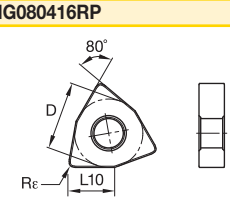




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408RP	9,53	6,52	0,8		●	●					●	●	●						●	●	●	●		●			
WNMG060412RP	9,53	6,52	1,2		●	●					●																
WNMG080408RP	12,70	8,69	0,8	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
WNMG080412RP	12,70	8,69	1,2	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
WNMG080416RP	12,70	8,69	1,6	●	●	●	●				●								●		●	●		●			

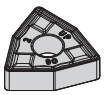
WNMG-UN

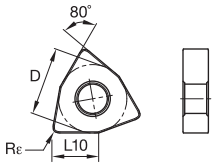




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404UN	9,53	6,52	0,4						●	●	●																
WNMG060408UN	9,53	6,52	0,8						●	●	●																
WNMG060412UN	9,53	6,52	1,2						●	●	●																
WNMG080404UN	12,70	8,69	0,4						●	●	●																
WNMG080408UN	12,70	8,69	0,8						●	●	●																
WNMG080412UN	12,70	8,69	1,2						●	●	●																
WNMG080416UN	12,70	8,69	1,6							●	●																

MG-UP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408UP	9,53	6,52	0,8									●	●							●							
WNMG080408UP	12,70	8,69	0,8									●	●	●					●	●							
WNMG080412UP	12,70	8,69	1,2									●	●	●					●	●							

C2–C71

C72–C109

C110–C115

C116–C147

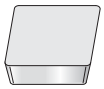
beyond
B10–B23

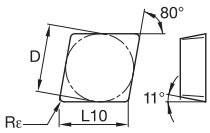
B24–B31

B32–B37

● first choice
○ alternate choice

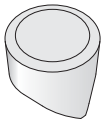
CPGN

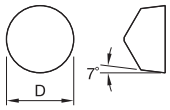




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGN120304	12,70	12,90	0,4													●	●		●								
CPGN120308	12,70	12,90	0,8													●	●		●								

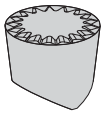
RCGV

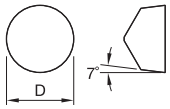




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGV060400	6,35	–	–													●			●	●							
RCGV090700	9,53	–	–													●			●	●							
RCGV120700	12,70	–	–													●			●	●							

RCGV-MP



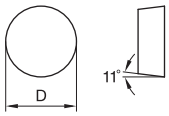


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGX060400MP	6,35	–	–															●									
RCGX090700MP	9,53	–	–															●									
RCGX120700MP	12,70	–	–															●									

● first choice
○ alternate choice

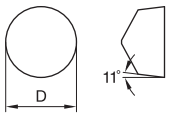
		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

RPGN



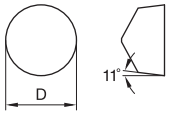
ISO catalogue number	D mm	L10 mm	Rε mm
RPGN120300	12,70	–	–

RPGV



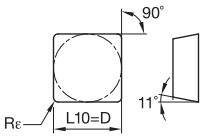
ISO catalogue number	D mm	L10 mm	Rε mm
RPGV060400	6,35	–	–
RPGV090700	9,53	–	–
RPGV120700	12,70	–	–

RPGV-MP



ISO catalogue number	D mm	L10 mm	Rε mm
RPGX060400MP	6,35	–	–
RPGX090700MP	9,53	–	–
RPGV120700MP	12,70	–	–

SPGN



ISO catalogue number	D mm	L10 mm	Rε mm
SPGN090304	9,53	9,53	0,4
SPGN090308	9,53	9,53	0,8
SPGN090312	9,53	9,53	1,2
SPGN120304	12,70	12,70	0,4
SPGN120308	12,70	12,70	0,8
SPGN120312	12,70	12,70	1,2
SPGN120316	12,70	12,70	1,6
SPGN120412	12,70	12,70	1,2
SPGN190408	19,05	19,05	0,8
SPGN190412	19,05	19,05	1,2
SPGN190416	19,05	19,05	1,6

C2–C71

C72–C109

C110–C115

C116–C147

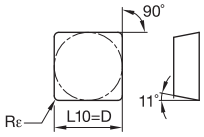
beyond
B10–B23

B24–B31

B32–B37

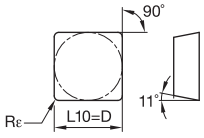
● first choice
○ alternate choice

SPGR–K



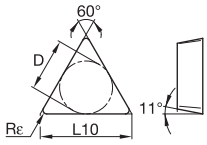
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPGR090308K	9,53	9,53	0,8																●	●							
SPGR120308K	12,70	12,70	0,8																	●							

SPUN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPUN120304	12,70	12,70	0,4														●										
SPUN120308	12,70	12,70	0,8														●										
SPUN120312	12,70	12,70	1,2														●										
SPUN190412	19,05	19,05	1,2														●										

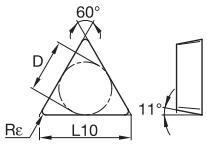
TPGN



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPGN060104	3,97	6,88	0,4														●										
TPGN110304	6,35	11,00	0,4													●	●		●	●							
TPGN110308	6,35	11,00	0,8													●	●		●	●							
TPGN160302	9,53	16,50	0,2													●	●		●	●							
TPGN160304	9,53	16,50	0,4													●	●		●	●							
TPGN160308	9,53	16,50	0,8													●	●		●	●							
TPGN160312	9,53	16,50	1,2													●	●		●	●							
TPGN160316	9,53	16,50	1,6													●	●		●	●							
TPGN220404	12,70	22,00	0,4													●	●		●	●							
TPGN220408	12,70	22,00	0,8													●	●		●	●							
TPGN220412	12,70	22,00	1,2													●	●		●	●							
TPGN220416	12,70	22,00	1,6														●		●	●							
TPGN220432	12,70	22,00	3,2														●										

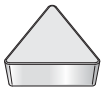
● first choice
○ alternate choice

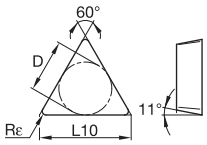
TPGR–K



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S																●	●	●	●	●	●	●	●	●			
H																											
TPGR110304K	6,35	11,00	0,4																●	●							
TPGR110308K	6,35	11,00	0,8																●	●							
TPGR160304K	9,53	16,50	0,4														●		●	●							
TPGR160308K	9,53	16,50	0,8																●	●							
TPGR220404K	12,70	22,00	0,4														●		●	●							
TPGR220408K	12,70	22,00	0,8																●	●							

TPUN





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPUN110304	6,35	11,00	0,4														●										
TPUN110308	6,35	11,00	0,8														●										
TPUN160304	9,53	16,50	0,4														●										
TPUN160308	9,53	16,50	0,8														●										
TPUN220408	12,70	22,00	0,8														●										
TPUN220412	12,70	22,00	1,2														●										

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

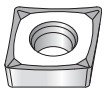
B24–B31

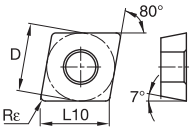
B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●								●			●	●		●	●		●	●	
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S													●	●	●	●	●	●	●	●	●			
H																								

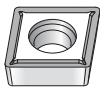
■ CCGT-HP

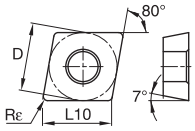




ISO catalogue number	D mm	L10 mm	Rε mm
CCGT060202HP	6,35	6,45	0,2
CCGT060204HP	6,35	6,45	0,4
CCGT060208HP	6,35	6,45	0,8
CCGT09T302HP	9,53	9,67	0,2
CCGT09T304HP	9,53	9,67	0,4
CCGT09T308HP	9,53	9,67	0,8
CCGT09T316HP	9,53	9,67	1,6
CCGT120401HP	12,70	12,90	0,1
CCGT120402HP	12,70	12,90	0,2
CCGT120404HP	12,70	12,90	0,4
CCGT120408HP	12,70	12,90	0,8

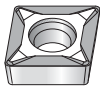
■ CCGT-LF

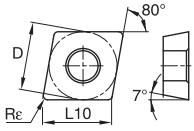




ISO catalogue number	D mm	L10 mm	Rε mm
CCGT0602X0LF	6,35	6,45	0,0
CCGT060201LF	6,35	6,45	0,1
CCGT060202LF	6,35	6,45	0,2
CCGT060204LF	6,35	6,45	0,4
CCGT060208LF	6,35	6,45	0,8
CCGT09T3X0LF	9,53	9,67	0,0
CCGT09T301LF	9,53	9,67	0,1
CCGT09T302LF	9,53	9,67	0,2
CCGT09T304LF	9,53	9,67	0,4
CCGT09T308LF	9,53	9,67	0,8

■ CCMT-11

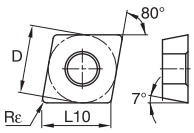




ISO catalogue number	D mm	L10 mm	Rε mm
CCMT06020411	6,35	6,45	0,4
CCMT09T30411	9,53	9,67	0,4
CCMT09T30811	9,53	9,67	0,8
CCMT12040411	12,70	12,90	0,4
CCMT12040811	12,70	12,90	0,8

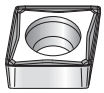
● first choice
○ alternate choice

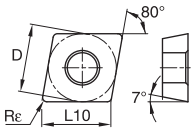
CCMT-FP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060202FP	6,35	6,45	0,2		●	●							●		●				●			●					●
CCMT060204FP	6,35	6,45	0,4	●	●	●					●	●	●		●				●			●					●
CCMT060208FP	6,35	6,45	0,8	●	●	●					●	●	●						●			●					●
CCMT09T302FP	9,53	9,67	0,2			●							●		●				●			●					●
CCMT09T304FP	9,53	9,67	0,4	●	●	●					●	●	●		●				●			●					●
CCMT09T308FP	9,53	9,67	0,8	●	●	●					●	●	●		●				●			●					●
CCMT120404FP	12,70	12,90	0,4	●	●	●					●	●	●						●			●					
CCMT120408FP	12,70	12,90	0,8	●	●	●					●	●	●						●			●					
CCMT120412FP	12,70	12,90	1,2	●	●	●					●		●														

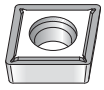
CCMT-FW

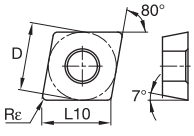




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060202FW	6,35	6,45	0,2																●	●						●	
CCMT060204FW	6,35	6,45	0,4			●					●								●	●						●	
CCMT060208FW	6,35	6,45	0,8			●					●								●	●						●	
CCMT09T304FW	9,53	9,67	0,4			●					●								●	●						●	
CCMT09T308FW	9,53	9,67	0,8			●					●								●	●						●	

CCMT-LF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060202LF	6,35	6,45	0,2													●				●			●			●	
CCMT060204LF	6,35	6,45	0,4	●	●	●	●		●	●	●	●	●	●		●	●			●			●			●	
CCMT060208LF	6,35	6,45	0,8	●	●	●	●		●	●	●	●	●							●			●			●	
CCMT09T302LF	9,53	9,67	0,2													●				●			●			●	
CCMT09T304LF	9,53	9,67	0,4	●	●	●	●		●	●	●	●	●	●		●	●			●			●			●	
CCMT09T308LF	9,53	9,67	0,8	●	●	●	●		●	●	●	●	●	●		●	●			●						●	
CCMT120404LF	12,70	12,90	0,4		●	●	●		●		●	●	●							●			●			●	
CCMT120408LF	12,70	12,90	0,8	●	●	●	●		●	●	●	●	●	●		●				●			●			●	
CCMT120412LF	12,70	12,90	1,2		●	●			●		●		●							●							

C2–C71

C72–C109

C110–C115

C116–C147

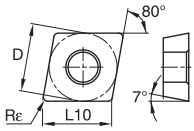
beyond
B10–B23

B24–B31

B32–B37

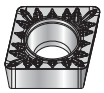
● first choice
○ alternate choice

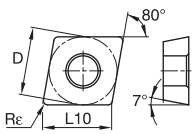
CCMT-MF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204MF	6,35	6,45	0,4		●	●	●			●	●	●	●	●													
CCMT09T304MF	9,53	9,67	0,4		●	●	●			●	●	●	●	●													
CCMT09T308MF	9,53	9,67	0,8		●	●	●			●	●	●	●	●									●				
CCMT09T312MF	9,53	9,67	1,2		●	●				●	●		●														
CCMT120408MF	12,70	12,90	0,8		●	●	●			●	●	●	●	●													
CCMT120412MF	12,70	12,90	1,2		●	●				●	●	●	●										●				

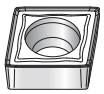
CCMT-MP

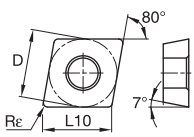




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204MP	6,35	6,45	0,4		●	●					●	●	●						●								
CCMT09T304MP	9,53	9,67	0,4		●	●					●	●	●						●								
CCMT09T308MP	9,53	9,67	0,8		●	●					●	●	●						●								
CCMT09T312MP	9,53	9,67	1,2			●							●														
CCMT120408MP	12,70	12,90	0,8		●	●					●	●	●						●								
CCMT120412MP	12,70	12,90	1,2			●					●	●	●														

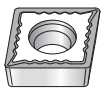
CCMT-MW

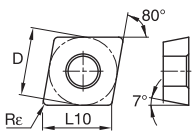




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT09T304MW	9,53	9,67	0,40			●					●								●	●						●	
CCMT09T308MW	9,53	9,67	0,80			●					●								●	●						●	
CCMT120404MW	12,70	12,90	0,40			●					●								●	●						●	
CCMT120408MW	12,70	12,90	0,80			●					●								●	●							

CCMT-UF

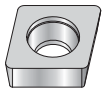


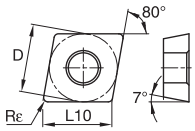


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204UF	6,35	6,45	0,4	●	●	●														●							
CCMT09T302UF	9,53	9,67	0,2	●	●															●							
CCMT09T304UF	9,53	9,67	0,4	●	●	●														●							
CCMT09T308UF	9,53	9,67	0,8	●	●	●														●							

● first choice
○ alternate choice

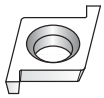
CCMW

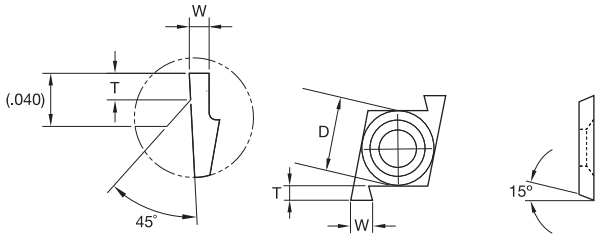




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMW060204	6,35	6,45	0,4								●																
CCMW09T304	9,53	9,67	0,4								●																
CCMW09T308	9,53	9,67	0,8								●																
CCMW120408	12,70	12,90	0,8								●																
CCMW120412	12,70	12,90	1,2								●																

CDG

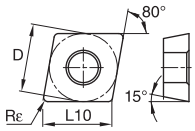




Detail of 0,38mm (0,015") insert.

ISO catalogue number	D mm	T mm	W mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
right hand																											
CDG127050R	3,96	0,64	0,51																	●							
CDG127064R	3,96	1,02	0,64																	●							
CDG127076R	3,96	1,02	0,76																●	●							
CDG127102R	3,96	1,02	1,02																●	●							

CDHB



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CDHBS4T0S0	3,97	4,03	0,1																	●		●	●			●	
CDHBS4T0X0	3,97	4,03	0,1																●								
CDHBS4T002	3,97	4,03	0,2													●			●	●		●	●			●	
CDHBS4T004	3,97	4,03	0,4													●			●	●		●	●			●	

C2–C71

C72–C109

C110–C115

C116–C147

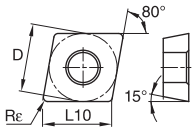
beyond
B10–B23

B24–B31

B32–B37

● first choice
○ alternate choice

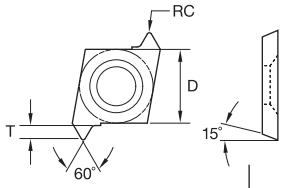
CDHH



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
right hand																											
CDHHS4T002R	3,97	4,03	0,2																●	●		●	●			●	
CDHHS4T004R	3,97	4,03	0,4																●	●		●	●				
left hand																											
CDHHS4T002L	3,97	4,03	0,2																●	●		●	●			●	
CDHHS4T004L	3,97	4,03	0,4																●	●		●	●				

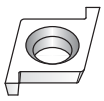
NOTE: Right-hand insert uses left-hand bars. Left-hand insert uses right-hand bars.

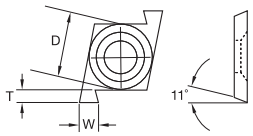
CDT



ISO catalogue number	D mm	T mm	RC mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
right hand																											
CDT127005R	3,96	0,64	0,05																●	●							

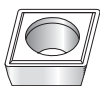
CPG

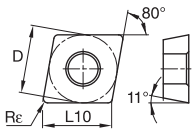




ISO catalogue number	D mm	T mm	W mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
right hand																											
CPG190150R	6,35	1,65	1,52																●								
left hand																											
CPG190150L	6,35	1,65	1,52																●								

CPGH (T)

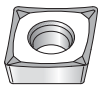


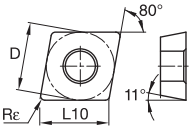


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060202K	6,35	6,45	0,2													●	●										
CPGT060204K	6,35	6,45	0,4													●	●								●		
CPGT060208K	6,35	6,45	0,8													●	●										
CPGH09T301	9,53	9,67	0,1																●	●		●	●			●	
CPGH09T302	9,53	9,67	0,2													●	●		●	●		●	●			●	
CPGH09T304	9,53	9,67	0,4													●	●		●	●		●	●			●	
CPGH09T308	9,53	9,67	0,8													●	●		●	●		●	●		●	●	

● first choice
○ alternate choice

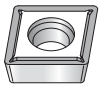
CPGT-HP

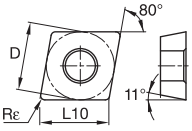




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060202HP	6,35	6,45	0,2																●	●		●	●		●		
CPGT060204HP	6,35	6,45	0,4																●	●		●	●		●		
CPGT060208HP	6,35	6,45	0,8																●	●		●	●		●		
CPGT09T302HP	9,53	9,67	0,2													●			●	●		●	●		●		
CPGT09T304HP	9,53	9,67	0,4													●			●	●		●	●		●		
CPGT09T308HP	9,53	9,67	0,8																●	●		●	●		●		

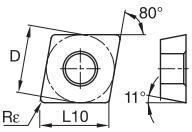
CPGT-LF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060201LF	6,35	6,45	0,1													●			●	●			●		●		
CPGT060202LF	6,35	6,45	0,2																●	●			●		●		
CPGT060204LF	6,35	6,45	0,4													●	●		●	●			●		●		
CPGT060208LF	6,35	6,45	0,8													●			●	●			●		●		
CPGT09T302LF	9,53	9,67	0,2																●	●			●		●		
CPGT09T304LF	9,53	9,67	0,4													●			●	●			●		●		
CPGT09T308LF	9,53	9,67	0,8																●	●			●		●		

CPMT-FP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT050202FP	5,56	5,65	0,2																●			●					
CPMT050204FP	5,56	5,65	0,4		●	●									●				●			●					
CPMT060202FP	6,35	6,45	0,2		●	●							●						●			●					●
CPMT060204FP	6,35	6,45	0,4	●	●	●					●	●	●		●				●			●					●
CPMT060208FP	6,35	6,45	0,8		●	●					●	●	●						●			●					●
CPMT09T302FP	9,53	9,67	0,2										●						●			●					●
CPMT09T304FP	9,53	9,67	0,4		●	●					●	●	●		●				●			●					●
CPMT09T308FP	9,53	9,67	0,8		●	●					●	●	●		●				●			●					●

C2–C71

C72–C109

C110–C115

C116–C147

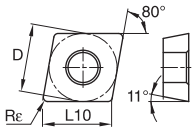
beyond
B10–B23

B24–B31

B32–B37

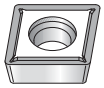
● first choice
○ alternate choice

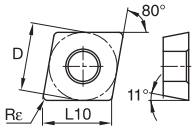
CPMT-FW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060202FW	6,35	6,45	0,2																●	●			●			●	
CPMT060204FW	6,35	6,45	0,4			●					●								●	●			●			●	
CPMT060208FW	6,35	6,45	0,8			●					●								●	●						●	
CPMT09T304FW	9,53	9,67	0,4			●					●								●	●						●	
CPMT09T308FW	9,53	9,67	0,8			●					●								●	●						●	

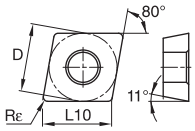
CPMT-LF





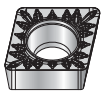
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT050202LF	5,56	5,65	0,2																	●			●				
CPMT050204LF	5,56	5,65	0,4													●				●			●			●	
CPMT060202LF	6,35	6,45	0,2													●				●			●				
CPMT060204LF	6,35	6,45	0,4	●	●	●	●		●	●	●	●	●			●	●			●			●			●	
CPMT060208LF	6,35	6,45	0,8	●	●	●	●		●	●	●	●	●			●				●			●			●	
CPMT09T302LF	9,53	9,67	0,2													●				●			●			●	
CPMT09T304LF	9,53	9,67	0,4	●	●	●	●		●	●	●	●	●			●	●			●			●			●	
CPMT09T308LF	9,53	9,67	0,8	●	●	●	●		●	●	●	●	●			●	●			●			●			●	

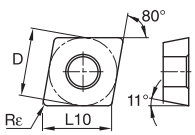
CPMT-MF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060208MF	6,35	6,45	0,8		●	●				●	●	●	●														
CPMT09T308MF	9,53	9,67	0,8		●	●	●			●	●	●	●	●													
CPMT09T312MF	9,53	9,67	1,2		●	●					●	●	●														

CPMT-MP



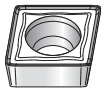


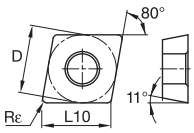
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060208MP	6,35	6,45	0,8		●	●						●	●						●								
CPMT09T308MP	9,53	9,67	0,8		●	●					●	●	●						●								
CPMT09T312MP	9,53	9,67	1,2									●															

● first choice
○ alternate choice

P		●	●	●	●	●																					●	●
M										●	●	●						●	●		●	●					
K							●	●	●																			●
N																										●		
S															●	●	●	●	●	●	●	●	●					
H																												

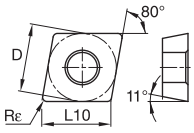
CPMT-MW





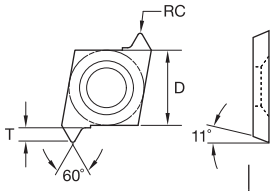
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT09T304MW	9,53	9,67	0,4			●					●								●	●							
CPMT09T308MW	9,53	9,67	0,8			●					●								●	●						●	

CPMT-UF



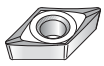
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060204UF	6,35	6,45	0,4	●	●	●														●							
CPMT09T304UF	9,53	9,67	0,4	●	●	●														●							

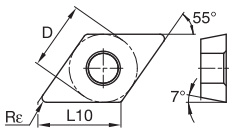
CPT



ISO catalogue number	D mm	T mm	RC mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
right hand CPT190013R	6,35	1,65	0,13																●	●							
left hand CPT190013L	6,35	1,65	0,13																●	●							

DCGT-HP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCGT070202HP	6,35	7,75	0,2													●			●	●		●	●		●		
DCGT070204HP	6,35	7,75	0,4													●			●	●		●	●		●		
DCGT070208HP	6,35	7,75	0,8																●	●		●	●		●		
DCGT11T302HP	9,53	11,63	0,2													●			●	●		●	●		●		
DCGT11T304HP	9,53	11,63	0,4													●	●		●	●		●	●		●		
DCGT11T308HP	9,53	11,63	0,8													●	●		●	●		●	●		●		

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

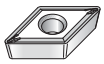
B24–B31

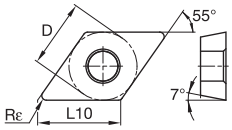
B32–B37

Inserts

● first choice
○ alternate choice

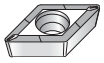
DCGT-LF

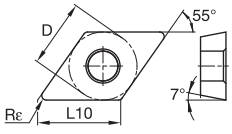




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCGT0702X0LF	6,35	7,75	0,0																				●				
DCGT070201LF	6,35	7,75	0,1																●	●			●				
DCGT11T3X0LF	9,53	11,63	0,0																				●				
DCGT11T301LF	9,53	11,63	0,1																●	●			●				
DCGT150408LF	12,70	15,50	0,8																●	●			●				

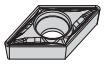
DCMT-11

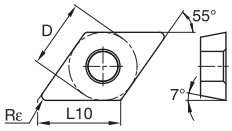




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT07020211	6,35	7,75	0,2																							●	
DCMT07020411	6,35	7,75	0,4																							●	
DCMT11T30411	9,53	11,63	0,4																							●	
DCMT11T30811	9,53	11,63	0,8																							●	

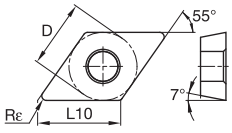
DCMT-FP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT070202FP	6,35	7,75	0,2			●							●		●				●			●					●
DCMT070204FP	6,35	7,75	0,4	●	●	●					●	●	●		●				●			●					●
DCMT070208FP	6,35	7,75	0,8	●		●							●						●								
DCMT11T302FP	9,53	11,63	0,2		●	●							●						●			●					●
DCMT11T304FP	9,53	11,63	0,4	●	●	●					●	●	●		●				●			●					●
DCMT11T308FP	9,53	11,63	0,8	●	●	●					●	●	●		●				●			●					●
DCMT11T312FP	9,53	11,63	1,2		●														●								
DCMT150404FP	12,70	15,50	0,4		●	●							●						●								
DCMT150408FP	12,70	15,50	0,8	●	●	●					●		●						●								

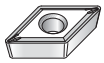
DCMT-FW

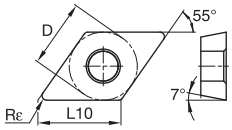


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT11T304FW	9,53	11,63	0,2			●					●								●	●						●	
DCMT11T308FW	9,53	11,63	0,8			●					●								●	●						●	

● first choice
○ alternate choice

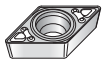
DCMT-LF

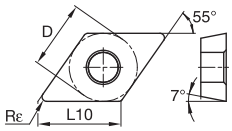




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT070202LF	6,35	7,75	0,2													●				●			●				
DCMT070204LF	6,35	7,75	0,4	●	●	●	●		●		●	●	●	●		●				●			●			●	
DCMT11T302LF	9,53	11,63	0,2													●				●			●			●	
DCMT11T304LF	9,53	11,63	0,4	●	●	●	●		●	●	●	●	●	●		●	●			●			●			●	
DCMT11T308LF	9,53	11,63	0,8	●	●	●	●		●	●	●	●	●	●		●			●	●			●			●	
DCMT11T312LF	9,53	11,63	1,2		●	●			●		●									●						●	
DCMT150404LF	12,70	15,50	0,4		●	●					●									●			●			●	
DCMT150408LF	12,70	15,50	0,8		●	●			●		●									●			●				

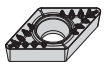
DCMT-MF

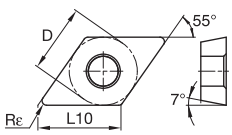




ISO catalogue number	D mm	L10 mm	Rε mm	KCP10	KCP25	KCP30	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT11T304MF	9,53	11,63	0,4	●	●	●		●	●	●	●														
DCMT11T308MF	9,53	11,63	0,8	●	●	●		●	●	●	●	●													
DCMT11T312MF	9,53	11,63	1,2	●	●			●	●	●	●														

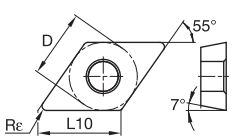
DCMT-MP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP10	KCP25	KCP30	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT11T304MP	9,53	11,63	0,4	●	●				●								●								
DCMT11T308MP	9,53	11,63	0,8	●	●				●	●	●						●								
DCMT11T312MP	9,53	11,63	1,2	●	●												●								

DCMT-MW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP25	KCP30	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCMT11T304MW	9,53	11,63	0,4	●				●								●	●							
DCMT11T308MW	9,53	11,63	0,8	●				●								●	●						●	

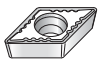
C2–C71 | C72–C109 | C110–C115 | C116–C147 | B10–B23 | B24–B31 | B32–B37

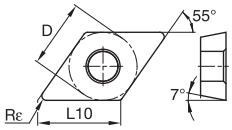
Inserts

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

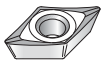
DCMT-UF

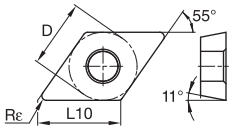




ISO catalogue number	D mm	L10 mm	Rε mm
DCMT070204UF	6,35	7,75	0,4
DCMT11T302UF	9,53	11,63	0,2
DCMT11T304UF	9,53	11,63	0,4
DCMT11T308UF	9,53	11,63	0,8

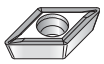
DPGT-HP

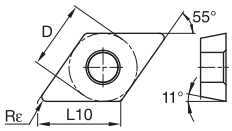




ISO catalogue number	D mm	L10 mm	Rε mm
DPGT070202HP	6,35	7,75	0,2
DPGT070204HP	6,35	7,75	0,4
DPGT070208HP	6,35	7,75	0,8
DPGT11T304HP	9,53	11,63	0,4
DPGT11T308HP	9,53	11,63	0,8

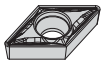
DPGT-LF

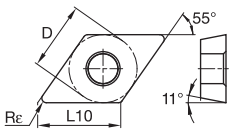




ISO catalogue number	D mm	L10 mm	Rε mm
DPGT070201LF	6,35	7,75	0,1
DPGT070202LF	6,35	7,75	0,2
DPGT070204LF	6,35	7,75	0,4
DPGT11T301LF	9,53	11,63	0,1
DPGT11T302LF	9,53	11,63	0,2
DPGT11T304LF	9,53	11,63	0,4
DPGT11T308LF	9,53	11,63	0,8

DPMT-FP

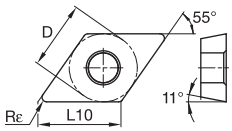




ISO catalogue number	D mm	L10 mm	Rε mm
DPMT070202FP	6,35	7,75	0,2
DPMT070204FP	6,35	7,75	0,4
DPMT070208FP	6,35	7,75	0,8
DPMT11T302FP	9,53	11,63	0,2
DPMT11T304FP	9,53	11,63	0,4
DPMT11T308FP	9,53	11,63	0,8

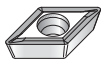
● first choice
○ alternate choice

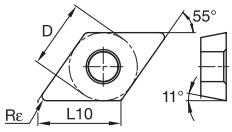
DPMT-FW



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT070204FW	6,35	7,75	0,4			●														●							
DPMT070208FW	6,35	7,75	0,8			●					●								●	●							
DPMT11T304FW	9,53	11,63	0,2			●																					
DPMT11T308FW	9,53	11,63	0,8								●																

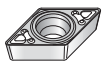
DPMT-LF

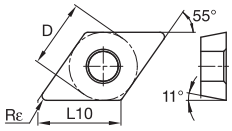




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT070202LF	6,35	7,75	0,2																	●			●				
DPMT070204LF	6,35	7,75	0,4		●	●	●		●		●	●	●							●			●			●	
DPMT11T302LF	9,53	11,63	0,2																	●			●			●	
DPMT11T304LF	9,53	11,63	0,4	●	●	●	●		●		●	●	●							●			●			●	
DPMT11T308LF	9,53	11,63	0,8	●	●	●	●		●		●	●	●							●			●				

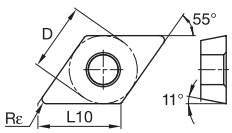
DPMT-MF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT11T308MF	9,53	11,63	0,8		●	●				●	●	●	●	●													

DPMT-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT11T308MP	9,53	11,63	0,8			●					●								●								

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

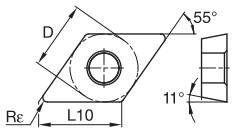
B24–B31

B32–B37

Inserts

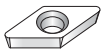
● first choice
○ alternate choice

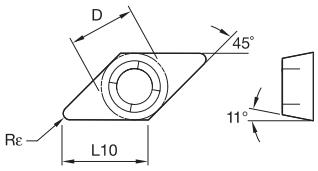
DPMT-UF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT070204UF	6,35	7,75	0,4		●	●														●							
DPMT11T304UF	9,53	11,63	0,4		●															●							
DPMT11T308UF	9,53	11,63	0,8		●																						

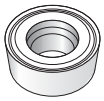
GPCD

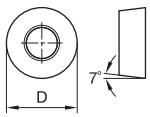




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
GPCD050102	3,97	5,61	0,2																			●	●				
GPCD050104	3,97	5,61	0,4																			●	●				

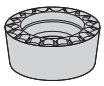
RCGH

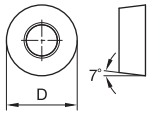




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGH120400	12,70	–	–																●		●						

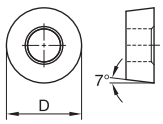
RCGH-MP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGH09T300MP	9,53	–	–															●									
RCGH120400MP	12,70	–	–															●									

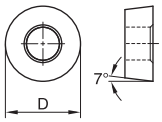
RCGT-HP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGT0803M0HP	8,00	–	–													●	●		●	●		●	●		●		
RCGT10T3M0HP	10,00	–	–													●			●	●		●	●		●		
RCGT1204M0HP	12,00	–	–													●			●	●		●	●		●		

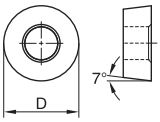
● first choice
○ alternate choice

RCGT-MS



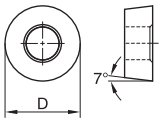
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGT0803M0MS	8,00	–	–																●	●		●	●				
RCGT1204M0MS	12,00	–	–																●	●		●	●				
RCGT1606M0MS	16,00	–	–																●	●		●	●				
RCGX1003M0MS	10,00	–	–																	●		●	●				

RCGT-RP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGT0803M0RP	8,00	–	–			●	●																				
RCGT1204M0RP	12,00	–	–			●																					
RCGX1003M0RP	10,00	–	–			●																					
RCMT1204M0RP	12,00	–	–		●	●				●	●																
RCMT1606M0RP	16,00	–	–		●	●				●																	
RCMT2006M0RP	20,00	–	–			●					●		●														
RCMX1003M0RP	10,00	–	–		●	●	●																				
RCMX2507M0RP	25,00	–	–			●	●																				
RCMX3209M0RP	32,00	–	–			●																					

RCMT



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCMT0602M0	6,00	–	–			●	●				●		●			●	●		●	●							
RCMT0803M0	8,00	–	–			●	●				●		●			●			●	●							
RCMT10T3M0	10,00	–	–			●	●				●		●			●			●	●							
RCMT1204M0	12,00	–	–				●				●		●			●			●	●							
RCMT1605M0	16,00	–	–			●					●		●			●			●	●							
RCMT2006M0	20,00	–	–			●	●				●		●			●	●		●	●							
RCMT060200	6,35	–	–			●							●						●	●							
RCMT09T300	9,53	–	–			●					●		●			●			●	●					●		
RCMT120400	12,70	–	–								●		●														

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

B24–B31

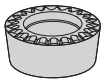
B32–B37

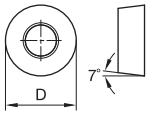
Inserts

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●										●								●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

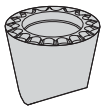
RCMT-MP

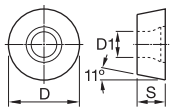




ISO catalogue number	D mm	L10 mm	Rε mm
RCMT0602M0MP	6,00	–	–
RCMT0803M0MP	8,00	–	–
RCMT10T3M0MP	10,00	–	–
RCMT1204M0MP	12,00	–	–
RCMT1606M0MP	16,00	–	–
RCMT060200MP	6,35	–	–
RCMT120400MP	12,70	–	–

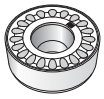
RPGT-MP

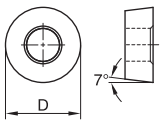




ISO catalogue number	D mm	L10 mm	Rε mm
RPGT060400MP	6,35	–	–
RPGT090700MP	9,53	–	–
RPGT120700MP	12,70	–	–

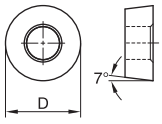
RCMT-RH





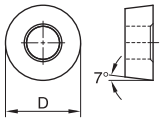
ISO catalogue number	D mm	L10 mm	Rε mm
RCMT2006M0RH	20,00	–	–
RCMX2507M0RH	25,00	–	–
RCMX3209M0RH	32,00	–	–

RCMT-RM



ISO catalogue number	D mm	L10 mm	Rε mm
RCMT2006M0RM	20,00	–	–

RCMT-RP

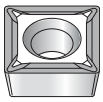


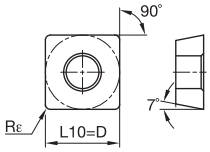
ISO catalogue number	D mm	L10 mm	Rε mm
RCGT0803M0RP	8,00	–	–
RCMT1204M0RP	12,00	–	–
RCMT1606M0RP	16,00	–	–
RCMT2006M0RP	20,00	–	–
RCMX1003M0RP	10,00	–	–
RCMX2507M0RP	25,00	–	–
RCMX3209M0RP	32,00	–	–

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●											●	●		●	●			●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

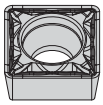
SCMT-11

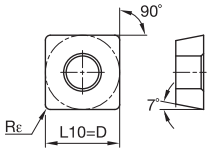




ISO catalogue number	D mm	L10 mm	Rε mm
SCMT09T30411	9,53	9,53	0,4
SCMT09T30811	9,53	9,53	0,8
SCMT12040411	12,70	12,70	0,4
SCMT12040811	12,70	12,70	0,8

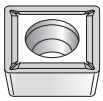
SCMT-FP

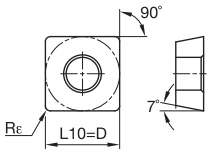




ISO catalogue number	D mm	L10 mm	Rε mm
SCMT09T304FP	9,53	9,53	0,4
SCMT09T308FP	9,53	9,53	0,8
SCMT120404FP	12,70	12,70	0,4
SCMT120408FP	12,70	12,70	0,8
SCMT120412FP	12,70	12,70	1,2

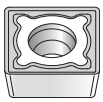
SCMT-LF

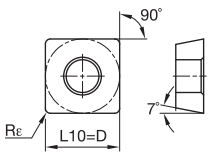




ISO catalogue number	D mm	L10 mm	Rε mm
SCMT09T304LF	9,53	9,53	0,4
SCMT09T308LF	9,53	9,53	0,8
SCMT120404LF	12,70	12,70	0,4
SCMT120408LF	12,70	12,70	0,8
SCMT120412LF	12,70	12,70	1,2

SCMT-MF





ISO catalogue number	D mm	L10 mm	Rε mm
SCMT09T308MF	9,53	9,53	0,8
SCMT120408MF	12,70	12,70	0,8
SCMT120412MF	12,70	12,70	1,2

C2–C71

C72–C109

C110–C115

C116–C147

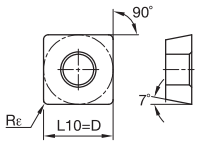
B10–B23

B24–B31

B32–B37

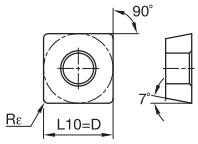
● first choice
○ alternate choice

SCMT-MP



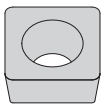
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SCMT09T304MP	9,53	9,53	0,4			●					●	●	●						●								
SCMT09T308MP	9,53	9,53	0,8		●	●					●	●	●						●								
SCMT120404MP	12,70	12,70	0,4								●	●	●						●								
SCMT120408MP	12,70	12,70	0,8		●	●					●	●	●						●								
SCMT120412MP	12,70	12,70	1,2			●					●	●	●														

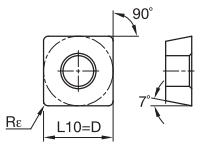
SCMT-UF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SCMT09T308UF	9,53	9,53	0,8	●	●															●							

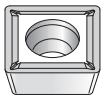
SCMW

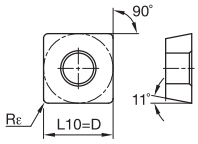




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SCMW09T304	9,53	9,53	0,4								●																
SCMW09T308	9,53	9,53	0,8								●																
SCMW120408	12,70	12,70	0,8								●																
SCMW120412	12,70	12,70	1,2								●																

SPGH

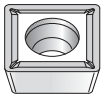


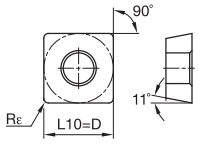


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPGH070208	7,94	7,00	0,8																						●		
SPGH090308	9,53	9,53	0,8																						●		

● first choice
○ alternate choice

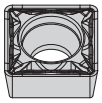
SPGT-LF

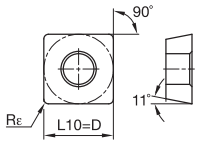




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S															●	●	●	●	●	●	●	●	●	●			
H																											
SPGT09T304LF	9,53	9,53	0,4																●	●			●		●		
SPGT09T308LF	9,53	9,53	0,8																●	●			●		●		

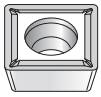
SPMT-FP

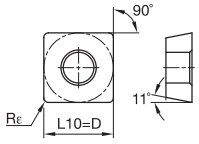




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T304FP	9,53	9,53	0,4		●	●					●		●						●			●					
SPMT09T308FP	9,53	9,53	0,8	●	●	●					●				●				●			●					●

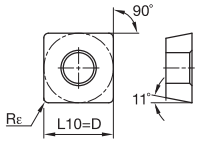
SPMT-LF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T304LF	9,53	9,53	0,4		●	●					●									●			●			●	
SPMT09T308LF	9,53	9,53	0,8		●	●			●	●	●						●			●			●			●	

SPMT-MF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T308MF	9,53	9,53	0,8		●	●				●	●	●	●														
SPMT120408MF	12,70	12,70	0,8		●	●	●			●	●	●	●														

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

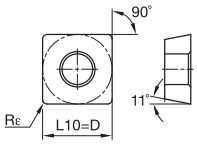
B24–B31

B32–B37

Inserts

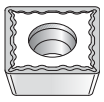
● first choice
○ alternate choice

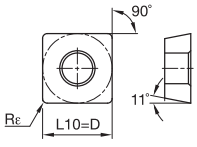
SPMT-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T308MP	9,53	9,53	0,8			●					●	●							●								
SPMT120408MP	12,70	12,70	0,8			●					●								●								

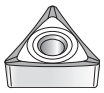
SPMT-UF

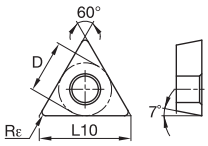




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T304UF	9,53	9,53	0,4		●															●							

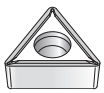
TCGT-HP

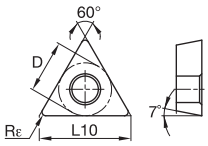




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCGT110202HP	6,35	11,00	0,2																●	●		●	●		●		
TCGT110204HP	6,35	11,00	0,4													●			●	●		●	●		●		
TCGT110208HP	6,35	11,00	0,8																●	●		●	●		●		
TCGT16T302HP	9,53	16,50	0,2																●	●		●	●				
TCGT16T304HP	9,53	16,50	0,4													●			●	●		●	●		●		
TCGT16T308HP	9,53	16,50	0,8													●			●	●		●	●		●		

TCGT-LF

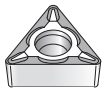


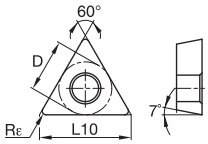


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCGT1102X0LF	6,35	11,00	0,0																				●				
TCGT110201LF	6,35	11,00	0,1																●	●			●				
TCGT110204LF	6,35	11,00	0,4																●	●			●				
TCGT16T301LF	9,53	16,50	0,1																	●			●				
TCGT16T302LF	9,53	16,50	0,2																●	●							
TCGT16T304LF	9,53	16,50	0,4																●	●			●		●		
TCGT16T308LF	9,53	16,50	0,8																●	●							

● first choice
○ alternate choice

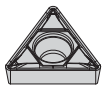
TCMT-11

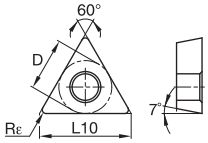




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT11020411	6,35	11,00	0,4																							●	
TCMT16T30411	9,53	16,50	0,4																							●	
TCMT16T30811	9,53	16,50	0,8																							●	

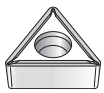
TCMT-FP

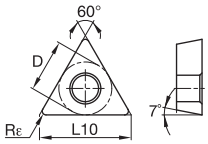




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT090204FP	5,56	9,63	0,4																●			●					
TCMT090208FP	5,56	9,63	0,8																●			●					
TCMT110202FP	6,35	11,00	0,2										●						●			●					●
TCMT110204FP	6,35	11,00	0,4	●	●	●					●	●	●		●				●			●					●
TCMT110208FP	6,35	11,00	0,8		●	●					●	●	●						●			●					●
TCMT110304FP	6,35	11,00	0,4	●															●			●					
TCMT110308FP	6,35	11,00	0,8	●															●			●					
TCMT110312FP	6,35	11,00	1,2	●															●								
TCMT16T302FP	9,53	16,50	0,2																●			●					●
TCMT16T304FP	9,53	16,50	0,4	●	●	●					●	●	●						●			●					●
TCMT16T308FP	9,53	16,50	0,8		●	●					●	●	●						●			●					●
TCMT16T312FP	9,53	16,50	1,2		●								●						●			●					
TCMT220408FP	12,70	22,00	0,8	●	●	●					●		●						●			●					

TCMT-LF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT110202LF	6,35	11,00	0,2																	●			●			●	
TCMT110204LF	6,35	11,00	0,4	●	●	●	●		●	●	●	●	●				●			●			●			●	
TCMT110208LF	6,35	11,00	0,8	●	●	●	●		●	●	●	●	●							●			●			●	
TCMT16T302LF	9,53	16,50	0,2																	●			●				
TCMT16T304LF	9,53	16,50	0,4	●	●	●	●		●	●	●	●	●	●						●			●			●	
TCMT16T308LF	9,53	16,50	0,8	●	●	●	●		●	●	●	●	●	●						●			●				
TCMT16T312LF	9,53	16,50	1,2			●			●	●	●		●							●			●				
TCMT220408LF	12,70	22,00	0,8		●	●			●		●									●			●				

C2–C71

C72–C109

C110–C115

C116–C147

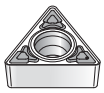
B10–B23

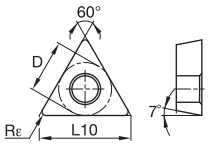
B24–B31

B32–B37

● first choice
○ alternate choice

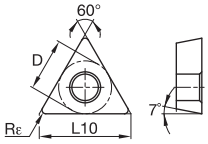
TCMT-MF





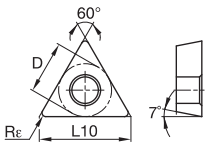
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT110208MF	6,35	11,00	0,8		●	●				●	●	●	●														
TCMT16T308MF	9,53	16,50	0,8		●	●	●			●	●	●	●	●													
TCMT16T312MF	9,53	16,50	1,2		●	●				●	●		●	●													

TCMT-MP



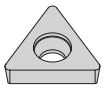
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT110208MP	6,35	11,00	0,8			●					●								●								
TCMT16T304MP	9,53	16,50	0,4			●					●	●	●						●								
TCMT16T308MP	9,53	16,50	0,8		●	●					●	●	●						●								
TCMT16T312MP	9,53	16,50	1,2			●					●		●														

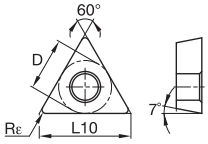
TCMT-UF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMT110204UF	6,35	11,00	0,4		●	●														●							
TCMT110208UF	6,35	11,00	0,8		●	●														●							
TCMT16T308UF	9,53	16,50	0,8		●	●														●							

TCMW



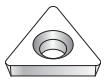


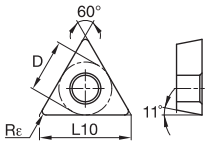
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCMW16T304	9,53	16,50	0,4								●																
TCMW16T308	9,53	16,50	0,8								●																

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●											●	●		●	●			●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S														●	●	●	●	●	●	●	●	●			
H																									

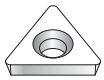
TPCB

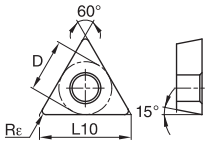




ISO catalogue number	D mm	L10 mm	Rε mm
TPCB160302	9,53	16,50	0,2
TPCB160304	9,53	16,50	0,4
TPCB160308	9,53	16,50	0,8
TD6P	9,53	16,50	0,8

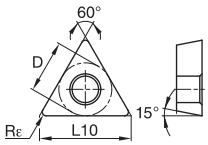
TDHB





ISO catalogue number	D mm	L10 mm	Rε mm
TDHB07T12S0	4,06	7,04	0,1
TDHB07T1202	4,06	7,04	0,2
TDHB07T1204	4,06	7,04	0,4
TDHB07T1208	4,06	7,04	0,8

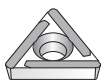
TDHH

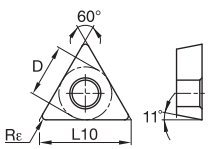


ISO catalogue number	D mm	L10 mm	Rε mm
right hand TDHH07T1202R	4,06	7,04	0,2
TDHH07T1204R left hand	4,06	7,04	0,4
TDHH07T1202L	4,06	7,04	0,2
TDHH07T1204L	4,06	7,04	0,4

NOTE: Right-hand insert uses left-hand bars. Left-hand insert uses right-hand bars.

TPCG





ISO catalogue number	D mm	L10 mm	Rε mm
TPCG110202L	6,35	11,00	0,2
TPCG110204L	6,35	11,00	0,4
TPCG110208L	6,35	11,00	0,8

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

B24–B31

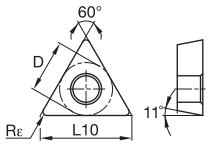
B32–B37

Inserts

● first choice
○ alternate choice

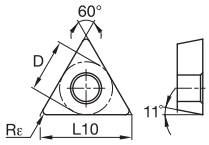
	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

■ TPCH



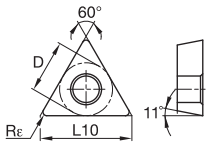
ISO catalogue number	D mm	L10 mm	Rε mm
TPCH110202	6,50	11,26	0,2
TPCH110204	6,50	11,26	0,4

■ TPGH



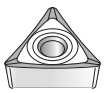
ISO catalogue number	D mm	L10 mm	Rε mm
TPGH160304	9,53	16,50	0,4
TPGH160308	9,53	16,50	0,8

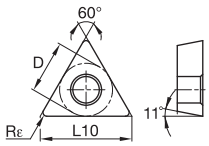
■ TPGM



ISO catalogue number	D mm	L10 mm	Rε mm
TPGT110204K	6,35	11,00	0,4
TPGT110208K	6,35	11,00	0,8
TPGH16T304	9,53	16,50	0,4

■ TPGT-HP

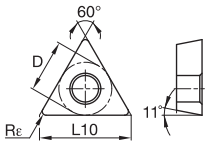




ISO catalogue number	D mm	L10 mm	Rε mm
TPGT110202HP	6,35	11,00	0,2
TPGT110204HP	6,35	11,00	0,4
TPGT110208HP	6,35	11,00	0,8
TPGT16T302HP	9,53	16,50	0,2
TPGT16T304HP	9,53	16,50	0,4
TPGT16T308HP	9,53	16,50	0,8

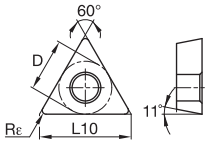
● first choice
○ alternate choice

TPGT-LF



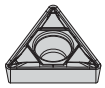
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPGT090202LF	5,56	9,63	0,2																●	●			●		●		
TPGT090204LF	5,56	9,63	0,4																●	●			●		●		
TPGT110201LF	6,35	11,00	0,1																●	●			●				
TPGT110202LF	6,35	11,00	0,2																●	●			●		●		
TPGT110204LF	6,35	11,00	0,4																●	●			●		●		
TPGT110208LF	6,35	11,00	0,8																●	●			●		●		
TPGT16T304LF	9,53	16,50	0,4																●	●			●		●		
TPGT16T308LF	9,53	16,50	0,8																●	●			●		●		

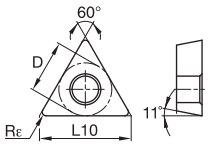
TPHB



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPHB110202	6,35	11,00	0,2																●								
TPHB160304	9,53	16,50	0,4																●								

TPMT-FP





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT090204FP	5,56	9,63	0,4																●								
TPMT090208FP	5,56	9,63	0,8		●	●						●	●		●				●			●					●
TPMT110202FP	6,35	11,00	0,2																●			●					
TPMT110204FP	6,35	11,00	0,4		●	●					●	●	●		●				●			●					
TPMT110208FP	6,35	11,00	0,8		●	●					●	●	●						●								●
TPMT110304FP	6,35	11,00	0,4																●			●					
TPMT110308FP	6,35	11,00	0,8																●								
TPMT16T304FP	9,53	16,50	0,4		●	●					●		●						●			●					●
TPMT16T308FP	9,53	16,50	0,8	●	●	●					●		●						●			●					●
TPMT16T312FP	9,53	16,50	1,2																●								●
TPMT220408FP	12,70	22,00	0,8			●													●								

C2–C71

C72–C109

C110–C115

C116–C147

B10–B23

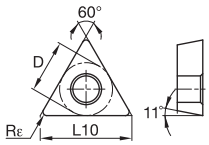
B24–B31

B32–B37

Inserts

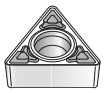
● first choice
○ alternate choice

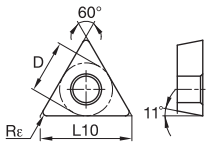
TPMT-LF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT090202LF	5,56	9,63	0,2																	●			●			●	
TPMT090204LF	5,56	9,63	0,4	●	●	●			●	●		●	●			●	●			●			●			●	
TPMT110202LF	6,35	11,00	0,2																	●			●			●	
TPMT110204LF	6,35	11,00	0,4	●	●	●			●	●	●	●	●			●	●			●			●			●	
TPMT110208LF	6,35	11,00	0,8	●	●	●			●	●	●	●	●							●			●			●	
TPMT16T304LF	9,53	16,50	0,4		●	●			●	●	●	●	●							●			●			●	
TPMT16T308LF	9,53	16,50	0,8	●	●	●			●	●	●	●	●	●						●			●			●	
TPMT16T312LF	9,53	16,50	1,2						●											●						●	
TPMT220408LF	12,70	22,00	0,8						●		●									●			●				

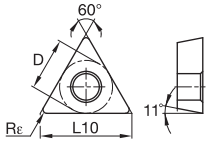
TPMT-MF





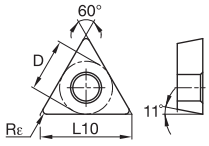
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT110208MF	6,35	11,00	0,8		●	●				●	●		●														
TPMT16T308MF	9,53	16,50	0,8		●	●	●			●	●	●	●														
TPMT16T312MF	9,53	16,50	1,2			●				●	●		●														

TPMT-MP



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT110208MP	6,35	11,00	0,8			●					●								●								
TPMT16T308MP	9,53	16,50	0,8			●					●																
TPMT16T312MP	9,53	16,50	1,2			●					●																

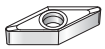
TPMT-UF

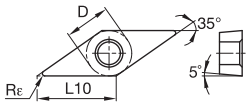


ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT110202UF	6,35	11,00	0,2	●																●							
TPMT110204UF	6,35	11,00	0,4	●	●															●							
TPMT16T304UF	9,53	16,50	0,4		●															●							
TPMT16T308UF	9,53	16,50	0,8		●															●							

● first choice
○ alternate choice

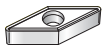
VBGT-HP

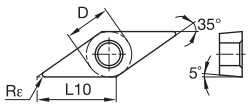




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBGT110302HP	6,35	11,07	0,2																●	●		●	●		●		
VBGT110304HP	6,35	11,07	0,4																●	●		●	●		●		
VBGT160404HP	9,53	16,61	0,4													●	●		●	●		●	●		●		
VBGT160408HP	9,53	16,61	0,8													●	●		●	●		●	●		●		

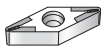
VBGT-LF

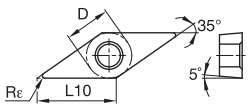




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBGT1103X0LF	6,35	11,07	0,0																				●				
VBGT110301LF	6,35	11,07	0,1																●	●			●		●		
VBGT110302LF	6,35	11,07	0,2														●		●	●			●		●		
VBGT110304LF	6,35	11,07	0,4													●			●	●			●		●		
VBGT1604X0LF	9,53	16,61	0,0																				●				
VBGT160401LF	9,53	16,61	0,1																●	●			●		●		
VBGT160402LF	9,53	16,61	0,2													●			●	●			●		●		
VBGT160404LF	9,53	16,61	0,4																●	●			●		●		

VBMT-11





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBMT11030211	6,35	11,07	0,2																							●	
VBMT11030411	6,35	11,07	0,4																							●	
VBMT16040411	9,53	16,61	0,4																							●	
VBMT16040811	9,53	16,61	0,8																							●	

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

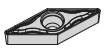
B24–B31

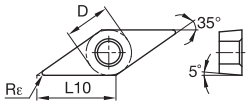
B32–B37

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

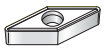
VBMT-FP

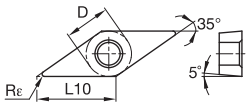




ISO catalogue number	D mm	L10 mm	Rε mm
VBMT110302FP	6,35	11,07	0,2
VBMT110304FP	6,35	11,07	0,4
VBMT110308FP	6,35	11,07	0,8
VBMT160402FP	9,53	16,61	0,2
VBMT160404FP	9,53	16,61	0,4
VBMT160408FP	9,53	16,61	0,8
VBMT160412FP	9,53	16,61	1,2

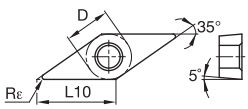
VBMT-LF





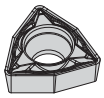
ISO catalogue number	D mm	L10 mm	Rε mm
VBMT110302LF	6,35	11,07	0,2
VBMT110304LF	6,35	11,07	0,4
VBMT110308LF	6,35	11,07	0,8
VBMT160402LF	9,53	16,61	0,2
VBMT160404LF	9,53	16,61	0,4
VBMT160408LF	9,53	16,61	0,8
VBMT160412LF	9,53	16,61	1,2

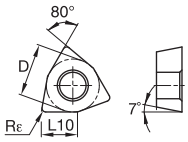
VBMT-MP



ISO catalogue number	D mm	L10 mm	Rε mm
VBMT160404MP	9,53	16,61	0,4
VBMT160408MP	9,53	16,61	0,8

WCMT-FP



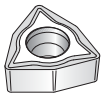


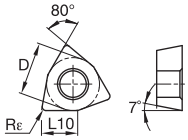
ISO catalogue number	D mm	L10 mm	Rε mm
WCMT040204FP	6,35	4,34	0,4
WCMT06T308FP	9,53	6,52	0,8

● first choice
○ alternate choice

P		●	●	●	●	●																							●	●
M										●	●	●							●	●		●	●							
K							●	●	●																						●
N																													●		
S														●	●	●	●	●	●	●	●	●	●	●							
H																															

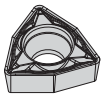
WCMT-LF

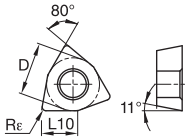




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WCMT040204LF	6,35	4,34	0,4																	●			●				
WCMT06T308LF	9,53	6,52	0,8																	●			●			●	

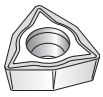
WPMT-FP

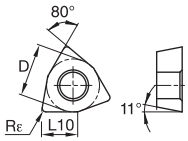




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPMTS3T104FP	4,76	3,25	0,4			●							●						●								
WPMT040204FP	6,35	4,34	0,4			●							●						●								
WPMT06T304FP	9,53	6,52	0,4		●							●	●						●								
WPMT06T308FP	9,53	6,52	0,8		●	●							●						●								

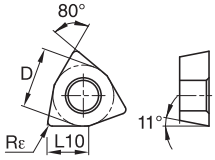
WPGT-UF





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPGTS30101UF	4,76	3,26	0,1																●	●							
WPGTS30102UF	4,76	3,26	0,2																●	●							
WPGT040202UF	6,35	4,34	0,2																●								

WPMT-LF



ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPMTS3T104LF	4,76	3,25	0,4																	●			●				
WPMT040204LF	6,35	4,34	0,4		●				●		●									●			●				
WPMT06T304LF	9,53	6,52	0,4		●	●					●	●	●							●							
WPMT06T308LF	9,53	6,52	0,8		●	●			●		●	●	●							●			●				

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

B24–B31

B32–B37

Ceramic Inserts

Primary Application

Kennametal's advanced materials, utilising Beyond™ technology, offer greater wear resistance and toughness, depending on the job.

KYK ceramic inserts are the first choice for high speed, continuous, and lightly interrupted turning applications in cast iron materials. Benefits include improved fracture toughness, better wear resistance, and extended application range. Combining KYK10™ and CVD-coated KYK25™ with our other ceramic grades for cast iron, Kennametal provides a complete, high-performance ceramic portfolio that can reduce machining cycle times and lower manufacturing costs.

KYS ceramic inserts are the first choice for high-speed applications in high-temp alloys. The multilayer coating offers enhanced chemical wear resistance versus uncoated grades. A superior sialon ceramic substrate provides excellent depth of cut notching resistance versus whisker-reinforced ceramics.

Features and Benefits

KYK10

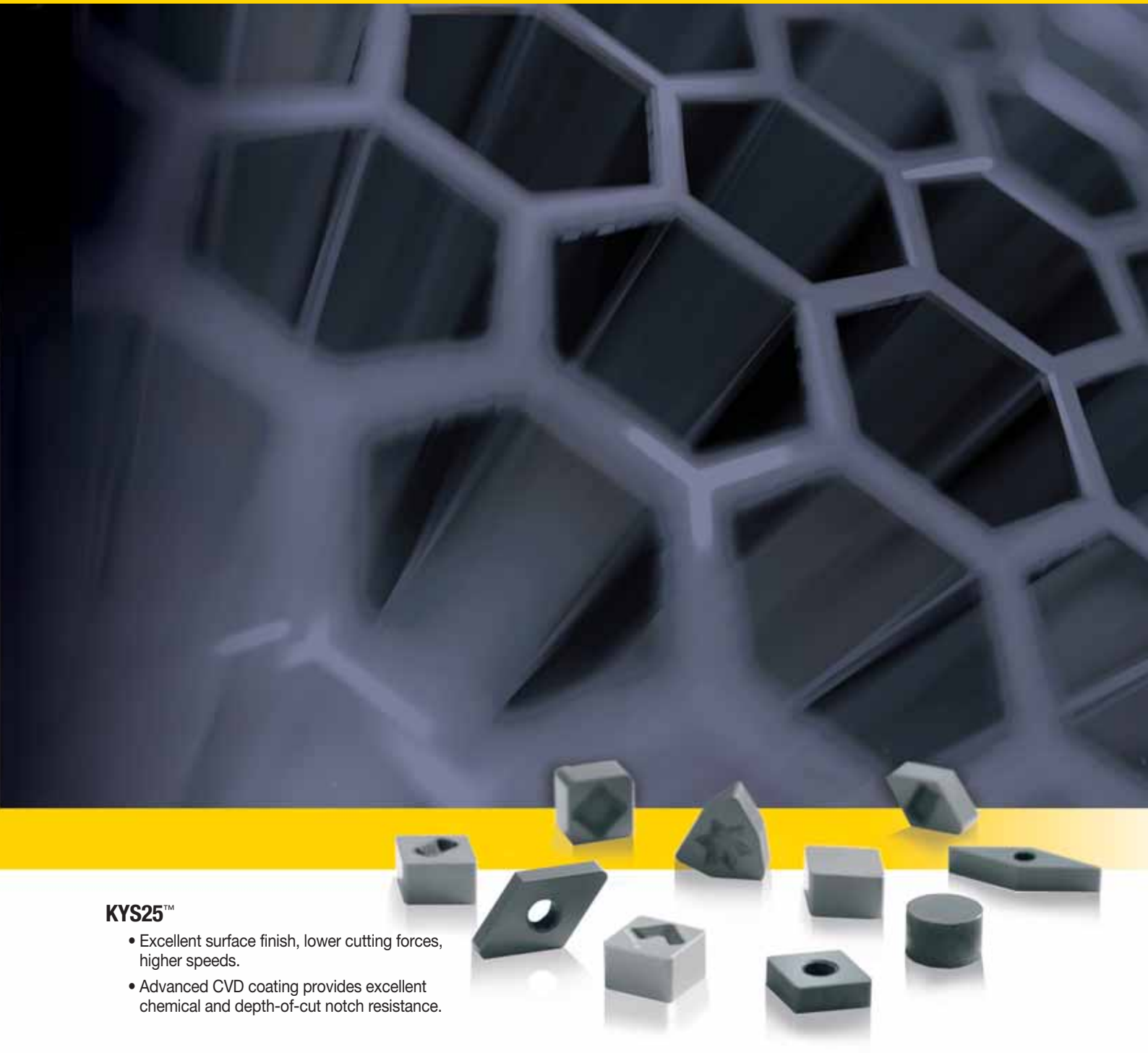
- Improved wear resistance and toughness with 20% longer tool life than current KY1310™.
- Best suited for continuous turning of cast iron materials and in lightly interrupted cuts.
- Available in Kenloc,™ Kendex,™ and Top Notch™ turning insert styles.

KYK25

- 12 micron thick coating provides excellent wear resistance and pre-coat treatment allows for very consistent tool life and performance in cast iron applications.
- Up to 30% longer tool life vs. competitors' CVD-coated ceramic grades.
- Available in Kenloc, Kendex, and Top Notch turning insert styles.

KY3500™

- The industry standard for high-speed turning.
- Excellent for roughing to finishing operations in wet or dry cuts with speeds up to 1.040 m/min.
- Performs well in difficult interrupted cuts in ductile or malleable cast iron (<70 KSI tensile strength) at speeds of 275–500 m/min.



KYS25™

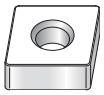
- Excellent surface finish, lower cutting forces, higher speeds.
- Advanced CVD coating provides excellent chemical and depth-of-cut notch resistance.

KYS30™

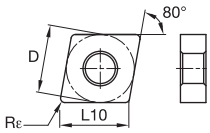
- Long, consistent tool life.
- Excellent toughness and depth-of-cut notch resistance.
- Performs in a wide variety of machining conditions, including interrupted cuts and applications involving scale.

● first choice
○ alternate choice

P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

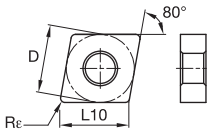


CNGA



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGA120404E	12,70	12,90	0,4							●
CNGA120408E	12,70	12,90	0,8	●	●					
CNGA120408T01020	12,70	12,90	0,8	●	●	●				
CNGA120408T02020	12,70	12,90	0,8				●	●	●	
CNGA120412E	12,70	12,90	1,2							●
CNGA120412E	12,70	12,90	1,2	●	●					
CNGA120412T01020	12,70	12,90	1,2	●	●					●
CNGA120412T02020	12,70	12,90	1,2				●	●	●	
CNGA120416E	12,70	12,90	1,6	●	●					
CNGA120416T01020	12,70	12,90	1,6							●
CNGA120416T02020	12,70	12,90	1,6				●	●	●	
CNGA160612T01020	15,88	16,12	1,2							●
CNGA160612T02020	15,88	16,12	1,2					●	●	
CNGA160616T02020	15,88	16,12	1,6					●	●	
CNGA190612T01020	19,05	19,34	1,2	●	●					
CNGA190612T02020	19,05	19,34	1,2			●		●	●	
CNGA190616T01020	19,05	19,34	1,6							●
CNGA190616T02020	19,05	19,34	1,6					●	●	

CNGA-FW

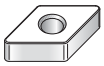


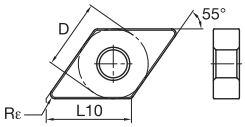
ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404EFW	12,70	12,90	0,4
CNGA120408EFW	12,70	12,90	0,8
CNGA120408T01020FW	12,70	12,90	0,8
CNGA120412EFW	12,70	12,90	1,2
CNGA120412T01020FW	12,70	12,90	1,2
CNGA120412T02020FW	12,70	12,90	1,2
CNGA120416T01020FW	12,70	12,90	1,6

● first choice
○ alternate choice

	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

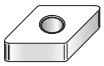
DNGA

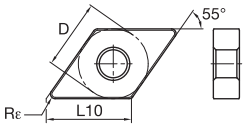




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGA150404E	12,70	15,50	0,4							●
DNGA150404T01020	12,70	15,50	0,4							●
DNGA150408E	12,70	15,50	0,8							●
DNGA150408T01020	12,70	15,50	0,8	●	●	●				●
DNGA150408T02020	12,70	15,50	0,8				●	●	●	
DNGA150412T01020	12,70	15,50	1,2	●	●					●
DNGA150412T02020	12,70	15,50	1,2				●	●	●	
DNGA150416T01020	12,70	15,50	1,6							●
DNGA150416T02020	12,70	15,50	1,6				●	●	●	
DNGA150424T01020	12,70	15,50	2,4			●				
DNGA150608T01020	12,70	15,50	0,8							●
DNGA150608T02020	12,70	15,50	0,8						●	
DNGA150612T01020	12,70	15,50	1,2							●
DNGA150612T02020	12,70	15,50	1,2						●	
DNGA150616T01020	12,70	15,50	1,6							●
DNGA150616T02020	12,70	15,50	1,6						●	

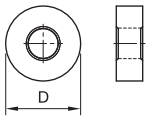
DNGA-FW





ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGA150408EFW	12,70	15,50	0,8							●
DNGA150412EFW	12,70	15,50	1,2							●

RNGA



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RNGA120400T01525	12,70	–	–							●

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

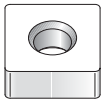
B24–B31

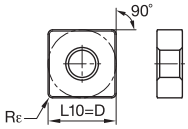
B32–B37

● first choice
○ alternate choice

P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

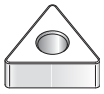
SNGA

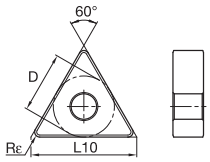




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGA120408T01020	12,70	12,70	0,8							●
SNGA120408T02020	12,70	12,70	0,8				●	●	●	
SNGA120412T01020	12,70	12,70	1,2	●	●					●
SNGA120412T02020	12,70	12,70	1,2				●	●	●	
SNGA120416T01020	12,70	12,70	1,6							●
SNGA120416T02020	12,70	12,70	1,6					●	●	
SNGA150612T02020	15,88	15,88	1,2						●	
SNGA150612T02020	15,88	15,88	1,2					●		
SNGA150616T02020	15,88	15,88	1,6						●	
SNGA190612T02020	19,05	19,05	1,2						●	
SNGA190616T02020	19,05	19,05	1,6						●	

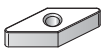
TNGA

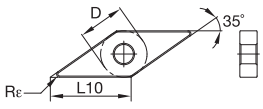




ISO catalogue number	D mm	L10 mm	Rε mm							
TNGA160404E	9,53	16,50	0,4							●
TNGA160404T01020	9,53	16,50	0,4							●
TNGA160408E	9,53	16,50	0,8							●
TNGA160408T01020	9,53	16,50	0,8							●
TNGA160408T02020	9,53	16,50	0,8				●		●	
TNGA160412T01020	9,53	16,50	1,2							●
TNGA160412T02020	9,53	16,50	1,2						●	
TNGA160416T02020	9,53	16,50	1,6					●	●	
TNGA220408T01020	12,70	22,00	0,8							●
TNGA220412T01020	12,70	22,00	1,2							●
TNGA220412T02020	12,70	22,00	1,2					●		
TNGA220416T02020	12,70	22,00	1,6						●	

VNGA



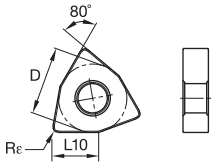


ISO catalogue number	D mm	L10 mm	Rε mm							
VNGA160404T01020	9,53	16,61	0,4							●
VNGA160408T01020	9,53	16,61	0,8							●
VNGA160408T02020	9,53	16,61	0,8						●	
VNGA220408T02020	12,70	22,14	0,8					●		

● first choice
○ alternate choice

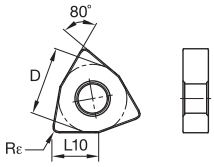
		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

WNGA



ISO catalogue number	D mm	L10 mm	Rε mm
WNGA080404T01020	12,70	8,69	0,4
WNGA080408EFW	12,70	8,69	0,8
WNGA080408T01020	12,70	8,69	0,8
WNGA080408T01020FW	12,70	8,69	0,8
WNGA080408T02020	12,70	8,69	0,8
WNGA080412EFW	12,70	8,69	1,2
WNGA080412T01020	12,70	8,69	1,2
WNGA080412T01020FW	12,70	8,69	1,2
WNGA080412T02020	12,70	8,69	1,2
WNGA080416T01020	12,70	8,69	1,6
WNGA080416T02020	12,70	8,69	1,6

WNGA-FW



ISO catalogue number	D mm	L10 mm	Rε mm
WNGA080408EFW	12,70	8,69	0,8
WNGA080408T01020FW	12,70	8,69	0,8
WNGA080412EFW	12,70	8,69	1,2
WNGA080412T01020FW	12,70	8,69	1,2

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

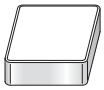
B24–B31

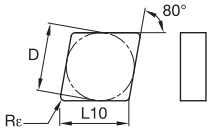
B32–B37

● first choice
○ alternate choice

P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

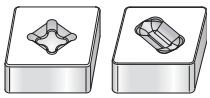
CNGN

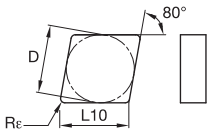




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGN120404T01020	12,70	12,90	0,4							●
CNGN120408T01020	12,70	12,90	0,8	●	●	●				●
CNGN120408T02020	12,70	12,90	0,8				●		●	
CNGN120412E	12,70	12,90	1,2	●	●					
CNGN120412T01020	12,70	12,90	1,2	●	●	●				●
CNGN120412T02020	12,70	12,90	1,2				●	●	●	
CNGN120416E	12,70	12,90	1,6	●	●					
CNGN120416T01020	12,70	12,90	1,6	●	●	●				
CNGN120416T02020	12,70	12,90	1,6						●	
CNGN120708T01020	12,70	12,90	0,8			●				●
CNGN120712T01020	12,70	12,90	1,2	●	●	●				●
CNGN120712T02020	12,70	12,90	1,2					●	●	
CNGN120716T01020	12,70	12,90	1,6	●	●	●				●
CNGN120716T02020	12,70	12,90	1,6				●		●	
CNGN160412T02020	15,88	16,12	1,2						●	
CNGN160716T02020	15,88	16,12	1,6						●	

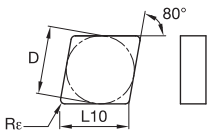
CNGX





ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGX120708T01020	12,70	12,90	0,8	●	●					
CNGX120708T02020	12,70	12,90	0,8				●	●	●	
CNGX120712E	12,70	12,90	1,2		●					
CNGX120712T01020	12,70	12,90	1,2	●	●					
CNGX120712T02020	12,70	12,90	1,2				●	●	●	
CNGX120716E	12,70	12,90	1,6		●					
CNGX120716T02020	12,70	12,90	1,6				●	●	●	
CNGX160716T02020	15,88	16,12	1,6				●	●	●	

CNGX-FW

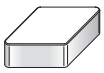


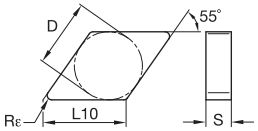
ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGX120708T01020FW	12,70	12,90	0,8						●	
CNGX120712T01020FW	12,70	12,90	1,2						●	
CNGX120716T01020FW	12,70	12,90	1,6						●	

● first choice
○ alternate choice

	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

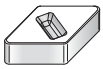
DNGN

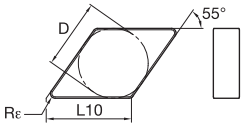




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGN150412T01020	12,70	15,50	1,2							●
DNGN150704T01020	12,70	15,50	0,4							●
DNGN150708T01020	12,70	15,50	0,8			●				●
DNGN150712T01020	12,70	15,50	1,2			●				●
DNGN150716T01020	12,70	15,50	1,6			●				●

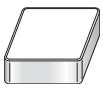
DNGX

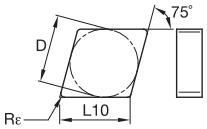




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGX120708T02020	10,00	12,21	0,8						●	
DNGX120712T02020	10,00	12,21	1,2					●	●	
DNGX120716T02020	10,00	12,21	1,6					●	●	
DNGX150708T01020	12,70	15,50	0,8	●	●					
DNGX150708T02020	12,70	15,50	0,8				●		●	
DNGX150712T01020	12,70	15,50	1,2	●	●					
DNGX150712T02020	12,70	15,50	1,2					●	●	
DNGX150716T01020	12,70	15,50	1,6	●	●					
DNGX150716T02020	12,70	15,50	1,6						●	

ENG





ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
ENGN130412T02020	12,70	13,15	1,2						●	
ENGN130708T01020	12,70	13,15	0,8			●				
ENGN130712T01020	12,70	13,15	1,2			●				
ENGN130712T02020	12,70	13,15	1,2						●	
ENGN130716T02020	12,70	13,15	1,6						●	

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

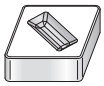
B24–B31

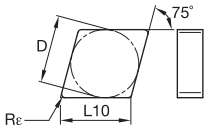
B32–B37

● first choice
○ alternate choice

P	
M	
K	● ● ●
N	
S	● ● ●
H	○ ● ●

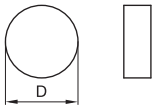
■ ENGX





ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
ENGX130716T02020	12,70	13,15	1,6						●	

■ RNGN

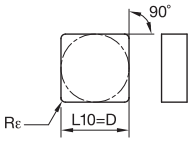


ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RNGN090300T01020	9,53	–	–			●				
RNGN090400T00520	9,53	–	–			●				
RNGN120300T01020	12,70	–	–							●
RNGN120400E	12,70	–	–	●	●					
RNGN120400T01020	12,70	–	–	●	●	●				●
RNGN120400T02020	12,70	–	–				●	●	●	
RNGN120700E	12,70	–	–	●	●	●				
RNGN120700T00520	12,70	–	–			●				
RNGN120700T00525	12,70	–	–		●					
RNGN120700T01020	12,70	–	–	●	●	●				●
RNGN120700T01025	12,70	–	–	●	●	●				
RNGN120700T02020	12,70	–	–				●	●	●	
RNGN120700T10015	12,70	–	–			●				
RNGN120700T15015	12,70	–	–			●				
RNGN150700T02020	15,88	–	–						●	
RNGN150700T20015	15,88	–	–			●				
RNGN190700E	19,05	–	–	●	●					
RNGN190700T01020	19,05	–	–	●	●					
RNGN190700T20015	19,05	–	–			●				
RNGN250700T01020	25,40	–	–		●					
RNGN250700T20015	25,40	–	–			●				
RNGN250900E	25,40	–	–		●					

● first choice
○ alternate choice

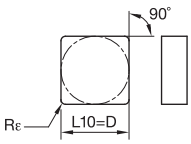
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

■ SNGN



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGN090308T01020	9,53	9,53	0,8			●				
SNGN090308T02020	9,53	9,53	0,8						●	
SNGN090312T01020	9,53	9,53	1,2							●
SNGN120408T01020	12,70	12,70	0,8	●	●	●				●
SNGN120408T02020	12,70	12,70	0,8					●	●	
SNGN120412T01020	12,70	12,70	1,2	●	●	●				●
SNGN120412T02020	12,70	12,70	1,2				●	●	●	
SNGN120416T01020	12,70	12,70	1,6	●	●	●				●
SNGN120416T02020	12,70	12,70	1,6						●	
SNGN120424T02020	12,70	12,70	2,4						●	
SNGN120432T02020	12,70	12,70	3,2						●	
SNGN120704T01020	12,70	12,70	0,4							●
SNGN120708T01020	12,70	12,70	0,8		●	●				●
SNGN120712T01020	12,70	12,70	1,2	●	●	●				●
SNGN120712T02020	12,70	12,70	1,2					●	●	
SNGN120716T01020	12,70	12,70	1,6	●	●	●				●
SNGN120716T02020	12,70	12,70	1,6						●	
SNGN120720T05020	12,70	12,70	2,0			●				
SNGN150712T02020	15,88	15,88	1,2						●	
SNGN190412T02020	19,05	19,05	1,2						●	
SNGN190416T02020	19,05	19,05	1,6						●	
SNGN190616E	19,05	19,05	1,6	●	●					
SNGN190616T01020	19,05	19,05	1,6	●	●					
SNGN190716T20015	19,05	19,05	1,6			●				
SNGN190720T10015	19,05	19,05	2,0			●				
SNGN190724E	19,05	19,05	2,4	●	●					
SNGN190724T20015	19,05	19,05	2,4			●				

■ SNGX



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGX120708T01020	12,70	12,70	0,8	●						
SNGX120708T02020	12,70	12,70	0,8						●	
SNGX120712T01020	12,70	12,70	1,2	●	●					
SNGX120712T02020	12,70	12,70	1,2				●	●	●	
SNGX120716T01020	12,70	12,70	1,6	●	●					
SNGX120716T02020	12,70	12,70	1,6				●	●	●	
SNGX150712T02020	15,88	15,88	1,2					●	●	
SNGX150716T02020	15,88	15,88	1,6				●	●	●	
SNGX150724T02020	15,88	15,88	2,4						●	

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

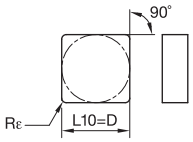
B24–B31

B32–B37

● first choice
○ alternate choice

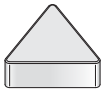
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

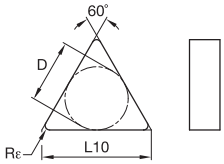
■ SNGX-FW



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGX120712T01020FW	12,70	12,70	1,2				●		●	

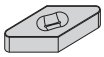
■ TNGN

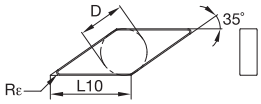




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
TNGN110308T01020	6,35	11,00	0,8							●
TNGN160408T01020	9,53	16,50	0,8			●				●
TNGN160408T02020	9,53	16,50	0,8						●	
TNGN160708T01020	9,53	16,50	0,8			●				●
TNGN160412T01020	9,53	16,50	1,2			●				●
TNGN160412T02020	9,53	16,50	1,2						●	
TNGN160712T01020	9,53	16,50	1,2							●
TNGN220408T01020	12,70	22,00	0,8							●
TNGN220408T02020	12,70	22,00	0,8						●	
TNGN220412T01020	12,70	22,00	1,2	●	●					
TNGN220416T01020	12,70	22,00	1,6	●	●					
TNGN220416T02020	12,70	22,00	1,6					●	●	

■ VNGX



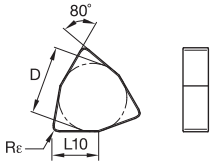


ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
VNGX160712T02020	9,53	16,61	1,2						●	
VNGX160716T02020	9,53	16,61	1,6						●	

● first choice
○ alternate choice

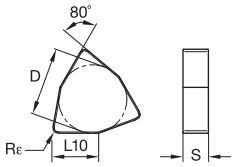
		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

WNGX



ISO catalogue number	D mm	L10 mm	Rε mm
WNGX080708T02020	12,70	8,69	0,8
WNGX080712T02020	12,70	8,69	1,2
WNGX080716T02020	12,70	8,69	1,6

WNGX-FW



ISO catalogue number	D mm	L10 mm	Rε mm
WNGX080708T01020FW	12,70	8,69	0,8
WNGX080712T01020FW	12,70	8,69	1,2
WNGX080716T01020FW	12,70	8,69	1,6

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

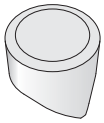
B24–B31

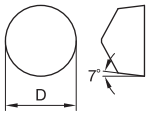
B32–B37

● first choice
○ alternate choice

P	
M	
K	
N	
S	
H	

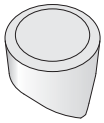
RCGX

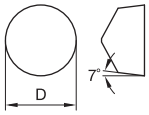




ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RCGX060400E	6,35	–	–	●	●					
RCGX060400T01020	6,35	–	–			●				
RCGX090700E	9,53	–	–	●	●					
RCGX090700T00525	9,53	–	–		●					
RCGX090700T01020	9,53	–	–	●	●	●				●
RCGX120700E	12,70	–	–						●	
RCGX120700E	12,70	–	–	●	●					
RCGX120700S20015	12,70	–	–							●
RCGX120700T01020	12,70	–	–	●	●	●				●
RCGX120700T01025	12,70	–	–	●	●	●				
RCGX151000T20015	15,88	–	–			●				
RCGX191000T20015	19,05	–	–			●				
RCGX251200T20015	25,40	–	–			●				

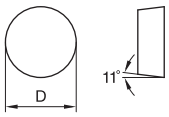
RCGV-T





ISO catalogue number	D mm	L10 mm	Rε mm
RCGX060600T00520	6,35	–	–

RPGN

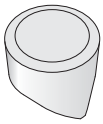


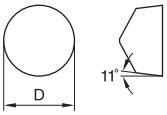
ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RPGN060200E	6,35	–	–		●					
RPGN090300E	9,53	–	–	●	●					
RPGN090300T00520	9,53	–	–			●				
RPGN090300T01020	9,53	–	–		●					
RPGN120400E	12,70	–	–		●					
RPGN120400T01020	12,70	–	–		●					

● first choice
○ alternate choice

P								
M								
K					●	●	●	
N								
S	●	●	●					
H	○		●					●

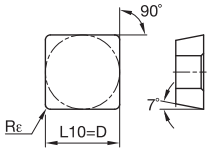
RPGX





ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RPGX060400T00520	6,35	–	–			●				
RPGX060400T01020	6,35	–	–			●				
RPGX090700E	9,53	–	–	●	●					
RPGX090700T00520	9,53	–	–			●				
RPGX090700T01020	9,53	–	–	●	●	●				
RPGX120700E	12,70	–	–	●	●					
RPGX120700T00520	12,70	–	–			●				
RPGX120700T01020	12,70	–	–	●	●	●				

SCGN-FW



ISO catalogue number	D mm	L10 mm	Rε mm							
SCGN090408EFW	9,53	9,53	0,8				●			
SCGN090408EFW	9,53	9,53	0,8						●	

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

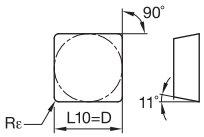
B24–B31

B32–B37

● first choice
○ alternate choice

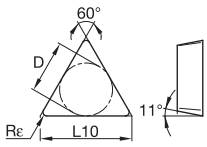
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

SPGN



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SPGN090308T01020	9,53	9,53	0,8							●
SPGN120308T01020	12,70	12,70	0,8							●

TPGN



ISO catalogue number	D mm	L10 mm	Rε mm	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
TPGN110304T01020	6,35	11,00	0,4							●
TPGN110308T00520	6,35	11,00	0,8			●				
TPGN110308T01020	6,35	11,00	0,8							●
TPGN160304T01020	9,53	16,50	0,4							●
TPGN160308T00520	9,53	16,50	0,8			●				
TPGN160308T01020	9,53	16,50	0,8							●
TPGN160308T02020	9,53	16,50	0,8				●		●	
TPGN160312T01020	9,53	16,50	1,2							●
TPGN160312T02020	9,53	16,50	1,2				●		●	
TPGN220408T02020	12,70	22,00	0,8				●		●	
TPGN220412T02020	12,70	22,00	1,2						●	

Beyond™ ISO Ceramic Insert Expansion

KYK10™, KYK25™, KYS25™, and KYS30™

The new Beyond ISO KYK Ceramic Inserts are the first choice for high speed, continuous, and lightly interrupted turning applications in grey cast iron. These premium ceramic solutions for continuous cast iron turning applications offer improved fracture toughness, better wear resistance, and extended application range. By combining KYK10 and CVD-coated KYK25 with Kennametal's other ceramic grades for cast iron materials, Kennametal provides a complete, high-performance ceramic portfolio that can be optimised to reduce machining cycle times and lower overall manufacturing costs.

KYK10:
- Best suited for continuous turning of cast iron materials and in lightly interrupted cuts.

KYK25:
- Excellent wear resistance and pre-coat treatment allows for very consistent tool life and performance in a multitude of cast iron applications.

KYS25:
- Excellent surface finish, lower cutting forces, higher speeds.

KYS30:
- Excellent toughness and depth-of-cut notch resistance.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

Superhard Materials • PCBN and PCD

Superhard Tool Materials **B133–B173**

Application Areas B134–B135

PCBN B137–B163

PCD B165–B173

Superhard Inserts **B174–B197**

Properties of PCD and PCBN cutting tool materials

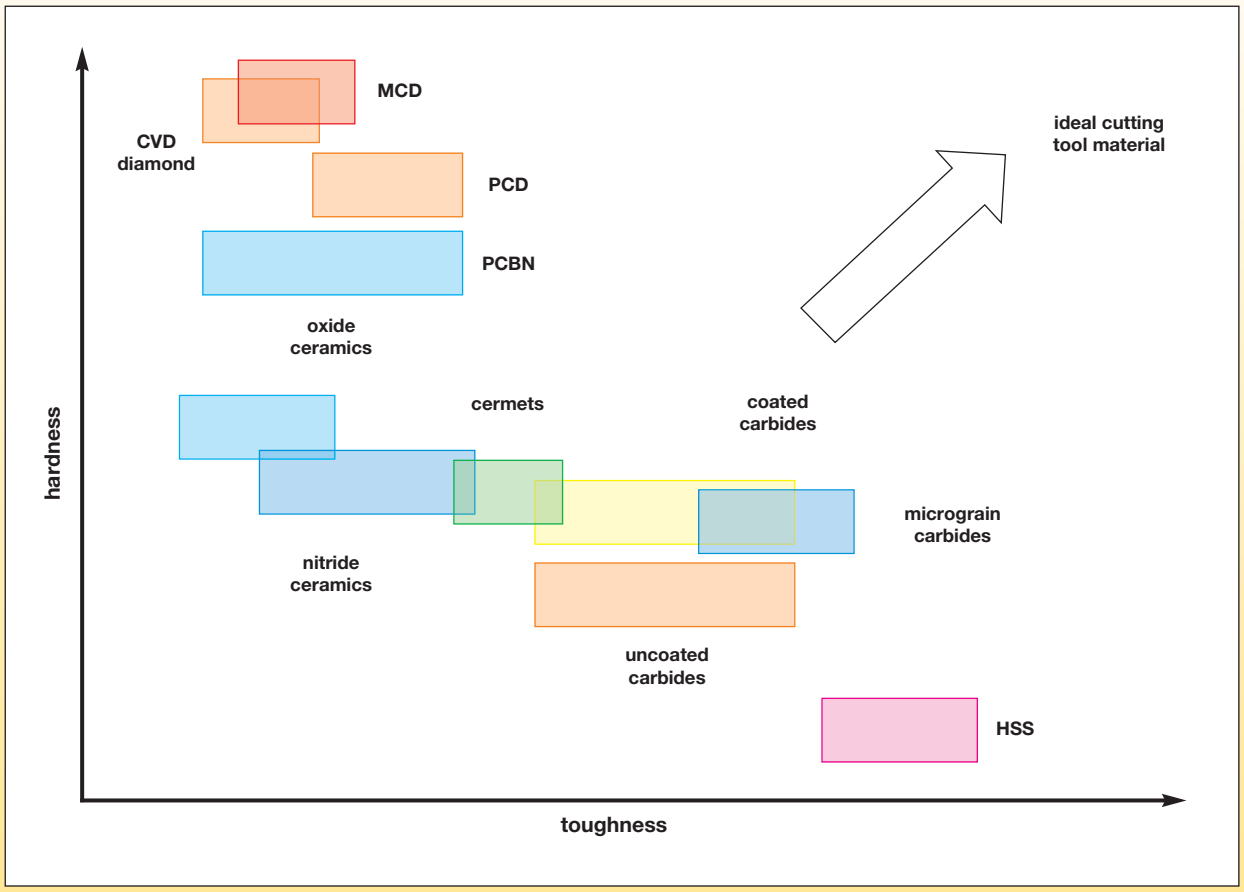
The current global metalcutting climate has put increased focus on high productivity and cost reductions coming from cutting tools. These requirements lead to the rapid growth and implementation of cutting tools using superhard materials. As the name implies, these materials have a significant advantage in hardness over conventional tool materials, which from the end user point of view, translates into increased productivity (higher cutting speeds, longer tool life, etc.), lower tooling cost per part, and also, the ability to process materials previously un-machinable with conventional tooling.

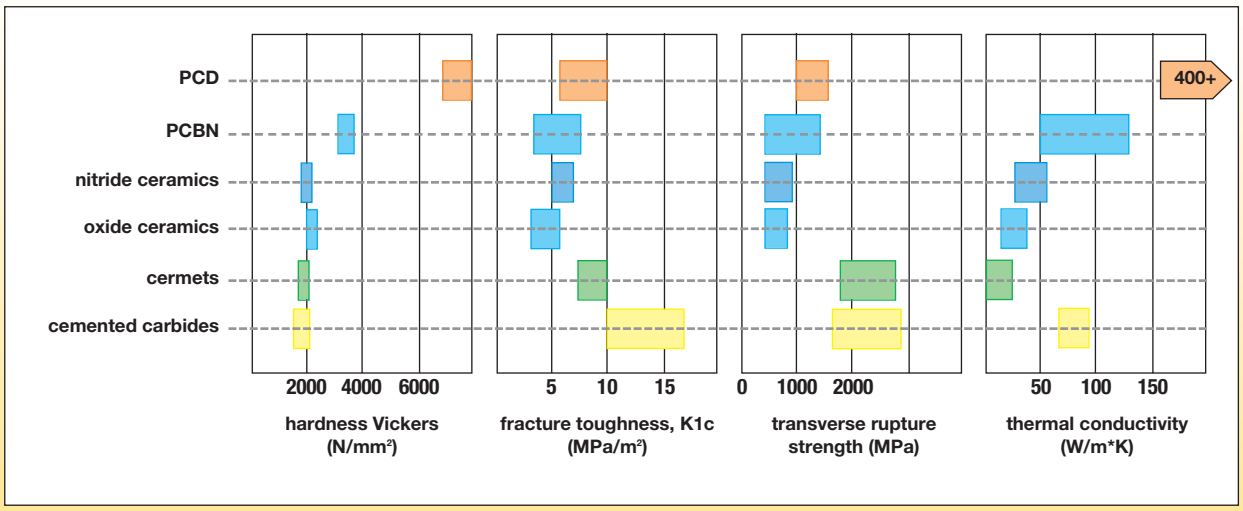
The most widely known superhard materials are diamond and cubic boron nitride. Our industry uses the polycrystalline forms of these materials, i.e., polycrystalline diamond (PCD) and polycrystalline boron nitride (PCBN). PCD tooling is mainly targeted at the machining of non-ferrous materials (e.g., aluminum alloys, plastics, CFRPs, composites, titanium alloys, ceramics, carbides, etc.) whereas PCBN targets iron-based alloys (e.g., cast irons, hard steels, iron-based composites, etc.)

Kennametal is at the forefront of developing and implementing superhard materials in our standard and special tooling solutions across all our product lines. Kennametal's approach to superhard tooling starts with customer needs and constraints. We then use fundamental research to develop the best superhard solutions that would make available the best value for the customer and respond to their specific demands.

Where to use PCD and PCBN

Diamond and cubic boron nitride (CBN) are the most commonly known superhard materials.
For cutting tools, they are used in their polycrystalline form, i.e., PCD and PCBN.





Choosing between PCD and PCBN

It is primarily their thermochemical stability that determines the suitability of the two materials for specific areas of application. For standard PCD, this means that it is restricted to workpiece materials where the cutting temperature does not exceed 700 °C and has no affinity with carbon if diffusion wear of the cutting edge is to be avoided at elevated temperatures. Operations that satisfy these conditions are, for example, the machining of non-ferrous metals, wood, plastics, and minerals where PCD mainly competes against tungsten carbide and, to some extent, high-speed steel.

By contrast, PCBN is thermally stable up to approximately 1200 °C and has high resistance to chemical attack. As a result, extreme temperatures, such as occur when machining hard ferrous metals, do not pose difficulties and can be used to promote self-induced hot cutting. Therefore, technical and economic benefits can be achieved, particularly in comparison with grinding, and in most cases, performance is significantly better than that attainable with conventional tool materials, such as tungsten carbides and ceramics.

There are limitations for PCBN, however, in the machining of austenitic steels and ferritic cast irons, where more reactive phases result in increased PCBN edge wear.

PCBN

Increased productivity can be achieved with PCBN tools through:

- Higher cutting speeds.
- Higher feed rates.
- Longer tool life.
- Less machine downtime.

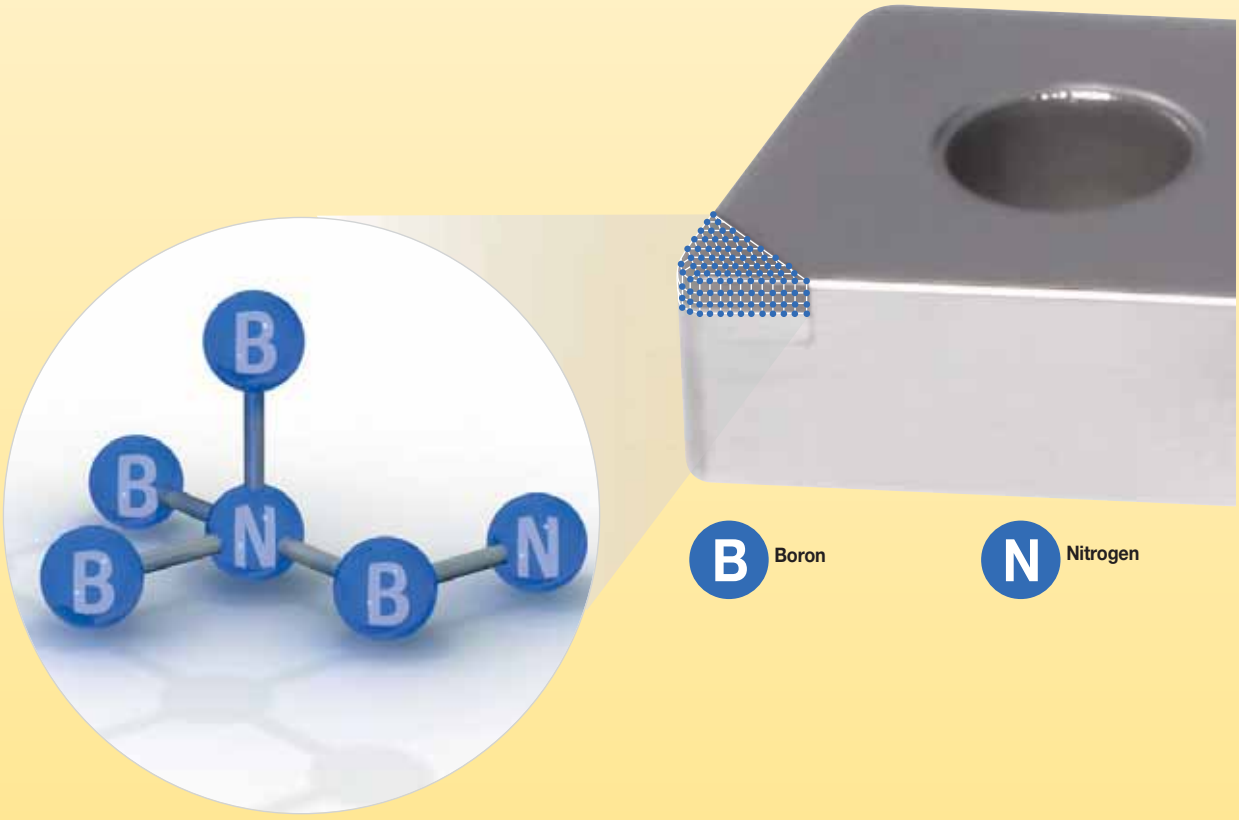
- More parts per machine means direct tool costs can be reduced.

- Very tight workpiece surface finish tolerances can be achieved on difficult-to-machine materials.

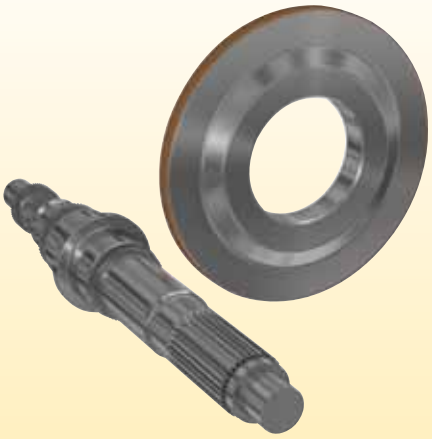
- PCBN can be used to machine ferrous materials in the hardened condition as an alternative to grinding, making it possible to substantially reduce component machining times.

- PCBN offers environmental benefits — the generation of grinding sludge is eliminated and the chips can be recycled.

- Improved surface integrity of critical components.



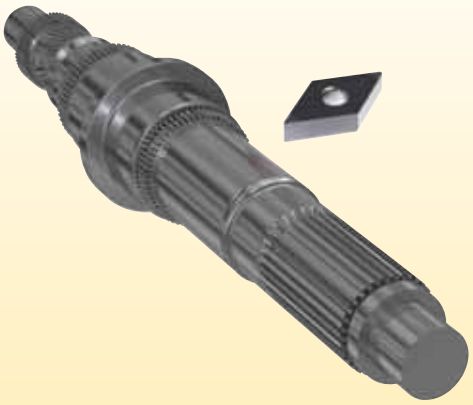
Grinding vs. Hard Turning



Grinding

- Size tolerance specifications beyond the capability of turning.
- Surface finish requirements too tight for hard turning.

vs.



Hard Turning

- Size tolerance specifications beyond the capability of turning.
- Complex geometry that makes single-point turning more practical.
- Relatively high metal removal rates.
- Dry machining.
- Faster machine setup.
- Faster cycle times.
- I.D. and O.D. machining on one machine.

Where does PCBN work?

PCBN is suitable for machining a wide variety of workpiece materials, mainly ferrous alloys.

The application areas may be broadly categorised as follows:

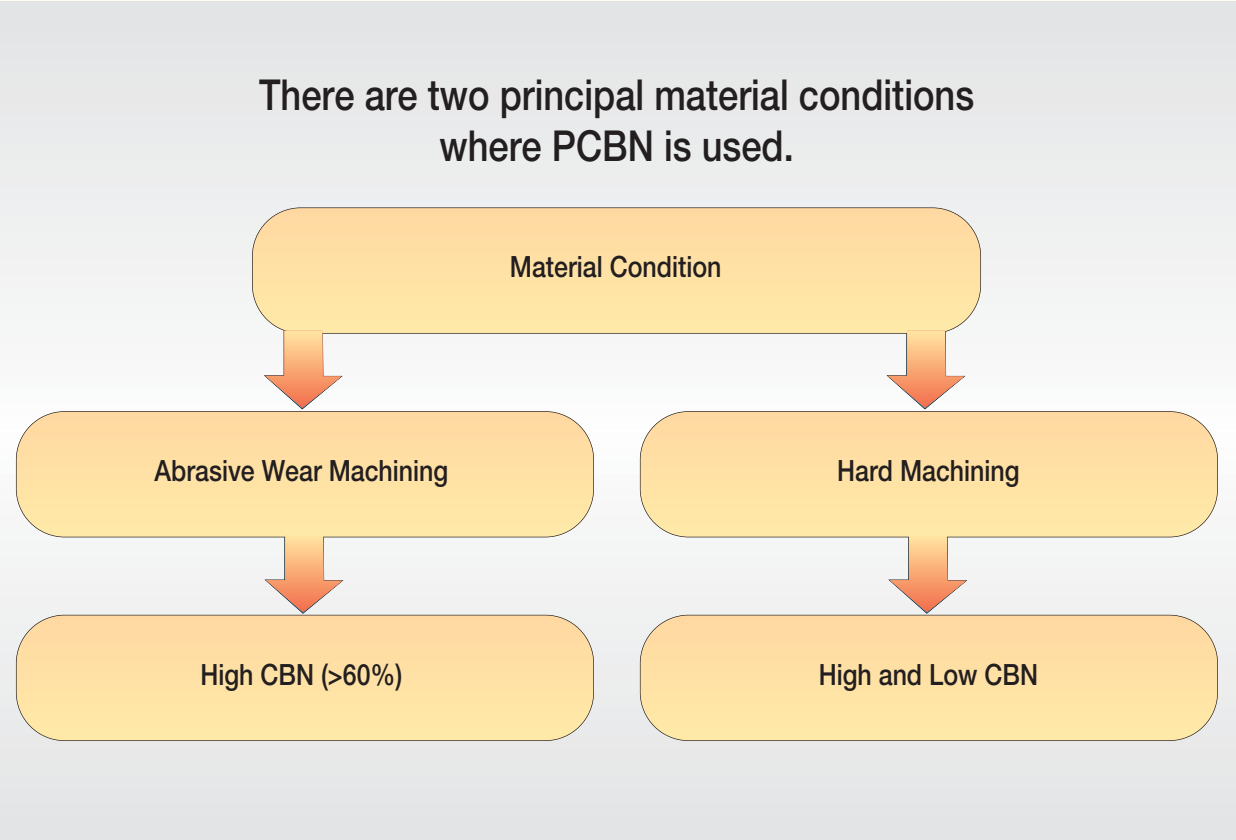
Hardened Steels	Cast Irons	Superalloys	Powder Metallurgy Steels

Certain classes of PCBN materials are associated with each particular application.

For best cost performance, proper selection of the following is essential:

- Format of the insert.
- Grade.
- Edge prep.
- Application data.

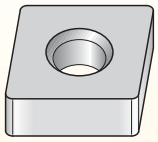
PCBN is known as the second hardest material



PCBN insert formats

Solid Inserts

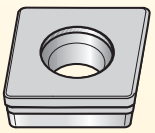
- Inserts are made only from PCBN.
- No material joint.
- Best heat absorption capacity.
- Can work at highest temperatures.



solid

Full-Face Inserts

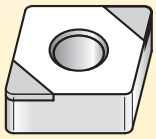
- Inserts are made from a presintered carbide/PCD or PCBN joint.
- Elimination of the brazing joint. Less delamination.
- Better heat absorption capacity.
- Can work at higher temperatures than tipped tools.
- Facilitate larger depth of cut compared to the same size tipped insert.
- The blanks are available with “A” and “W” ISO-style pin-lock holes.



full-face

Tipped Inserts

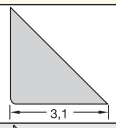
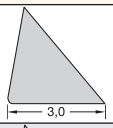
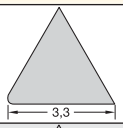
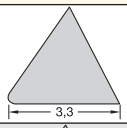
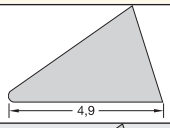
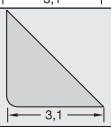
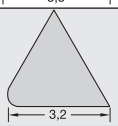
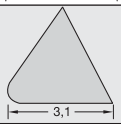
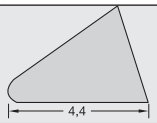
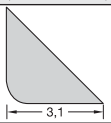
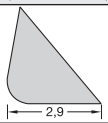
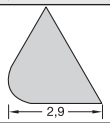
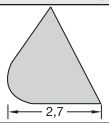
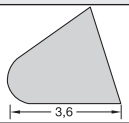
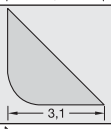
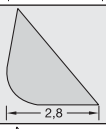
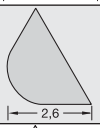
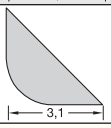
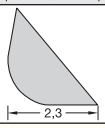
- Require a carrier and substrate for the insert.
- The tips are brazed to the substrate. Various brazing methods are applied.
- The substrate has to have a pocket that will accommodate and support the tip.
- In these types of tools, the braze joint represents the weak link, so the brazing operation is very important and should be carefully controlled and executed.
- The main advantage of tipped tools over full-faced inserts is the lower cost.



tipped

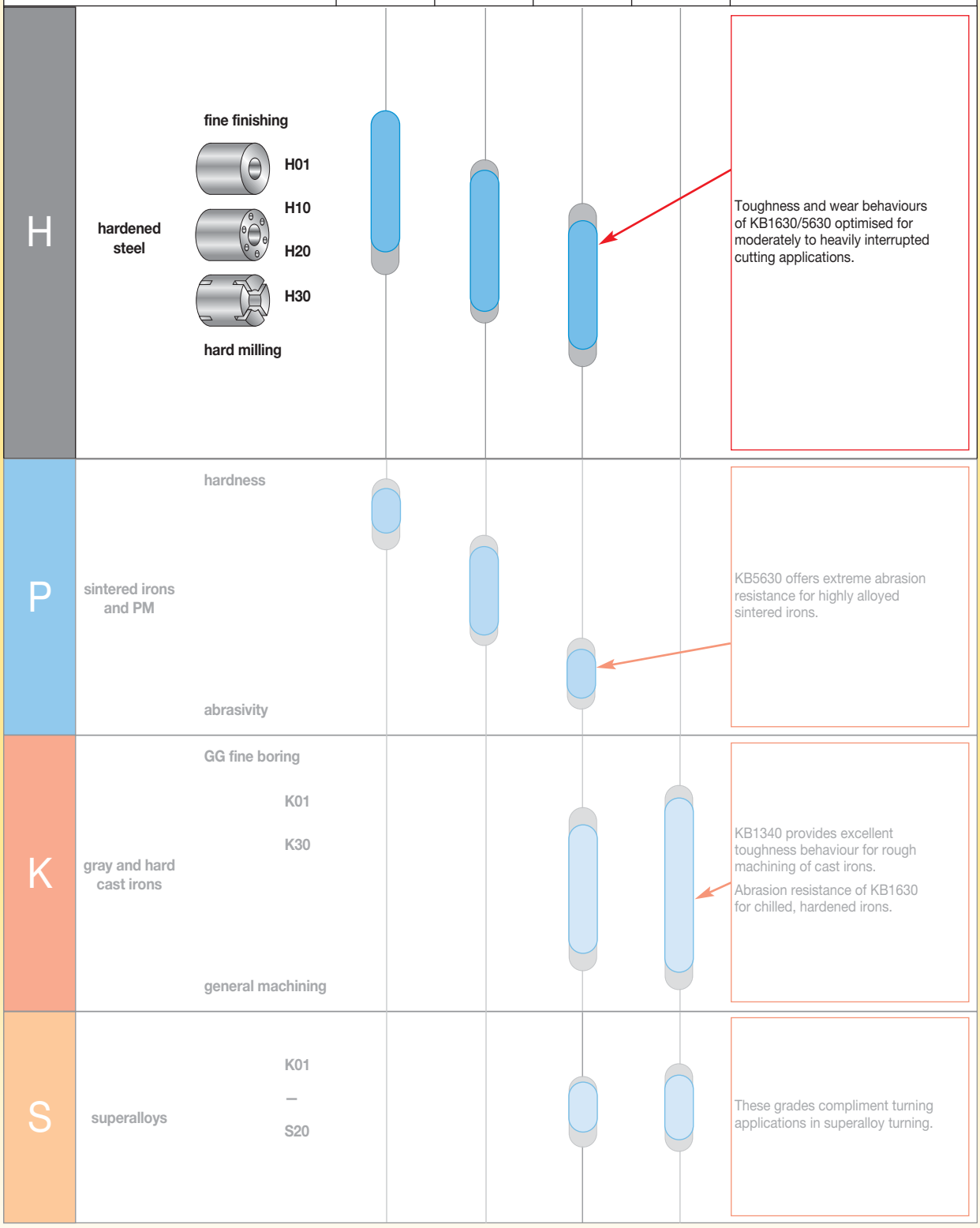
Kennametal inserts

This table shows approximate tip sizes of Kennametal CBN inserts depending on style and corner radius. Please note that the maximum cutting depth is not more than 80% of the tip length.

radius	insert shape				
	S	C, W	T	D, K	V
R 0,2mm					
R 0,4mm					
R 0,8mm					
R 1,2mm					
R 1,6mm					

PCBN portfolio

Grade	KB5610 (KB1610)	KB5625 (KB1625)	KB5630 (KB1630)	KB1340	Grade
CBN%	50	65	90	90	CBN%



PCBN Hard Turning Selection System

Introduction

This guide will help you choose the PCBN grade, edge preparations, nose radius, feed, and recommended speed range for your hard turning applications. These recommendations will establish a starting point for optimisation of the application. Where possible, this guide will lead you to standard line items. If this is not the case, the items can still be obtained through the QTSP (Quick-Turn Solutions Program) or ordered as specials.

We will classify hard turning operations as any turning or boring of ferrous-based workpiece materials with a hardness (HRC) higher than 45. For workpieces with lower hardness values, PCBN is not recommended.

To use the guide, you will need this application information:

- Workpiece design: interruptions, shape, and frequency.
- Workpiece material specifications: hardness, superficial or through treatment, and carbide forming alloying elements (that increase the abrasivity of the material).
- Depth of cut.
- Surface finish requirements.
- Preset conditions, such as specific nose radius, limited feed, etc.
- Setup limitations related to machine tool, fixturing, etc.
- Tool life criteria, e.g., surface finish, dimensional tolerance, cutting force, etc.

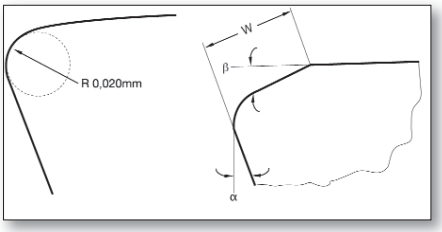
PCBN Hard Turning • Selection System Overview

Step 1 • Choosing the PCBN Grade

Step 1, reference page B144–B145.

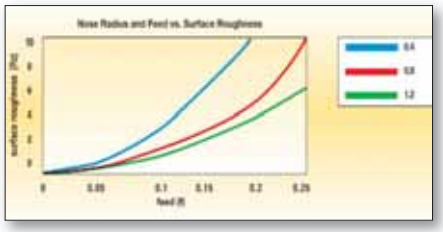
Step 2 • PCBN Edge Preparation Features

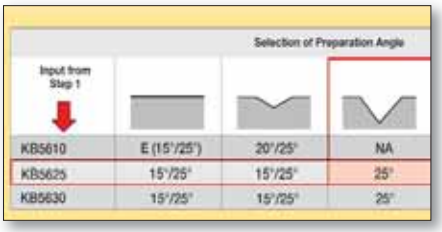
Edge Preparation Specifications		
E	Hone Only	0,020mm
S01015	W x β = 0,1mm x 15°	
S01025	W x β = 0,1mm x 25°	



Step 2, reference page B145.

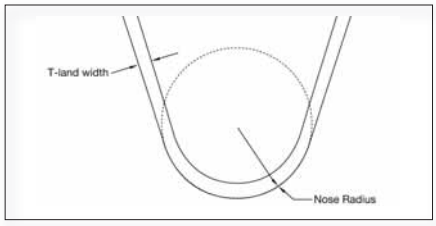
Step 3 • Selection of T-Land Angle

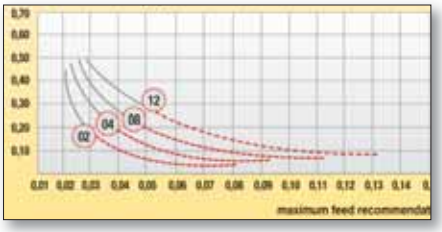




Step 3, reference page B145.

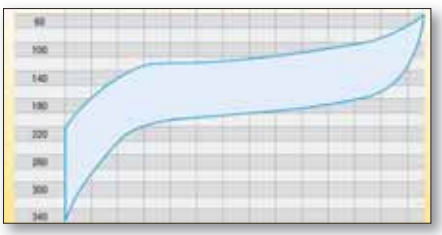
Step 4 • Selection of T-Land Width





Step 4, reference page B146.

Step 5 • Choosing the Speed Range



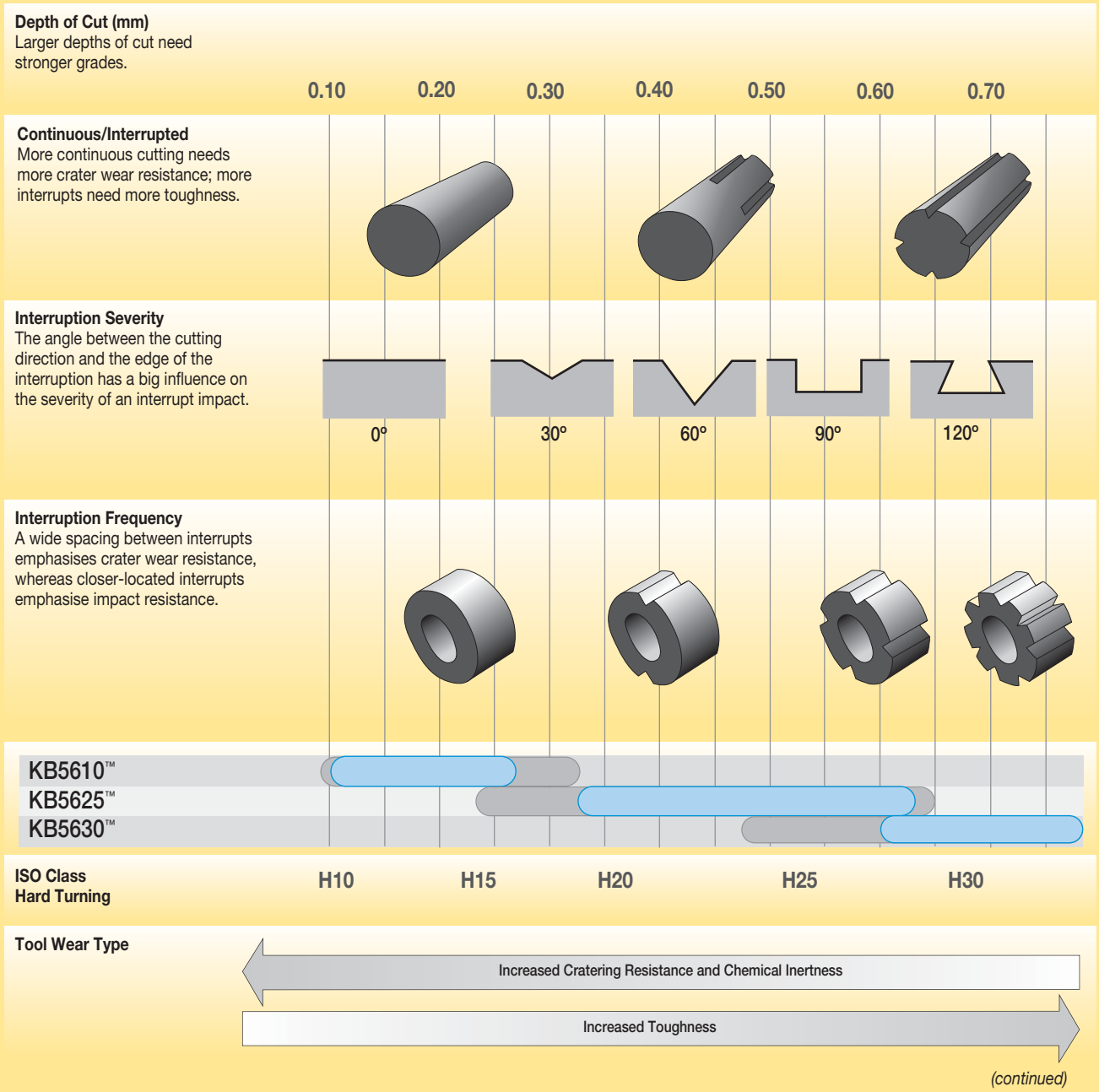
Step 5, reference page B147.

Grade Selection for Hard Turning

How to Use

Identify your application conditions. The most far right parameter will then determine the recommended grade(s). If more than one grade is intersected, it is recommended to first select the grade with the highest toughness (page B139) before optimising using the Troubleshooting Guide (pages B142–B143).

Step 1 • Choosing the PCBN grade



(continued)

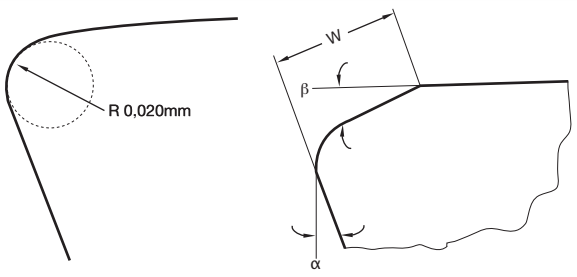
Step 1 • Choosing the PCBN grade *(continued)*

	cratering resistance	abrasive resistance	impact resistance	surface finish
KB5610™	***	*	*	***
KB5625™	**	**	**	**
KB5630™	*	***	***	**

*** = Best

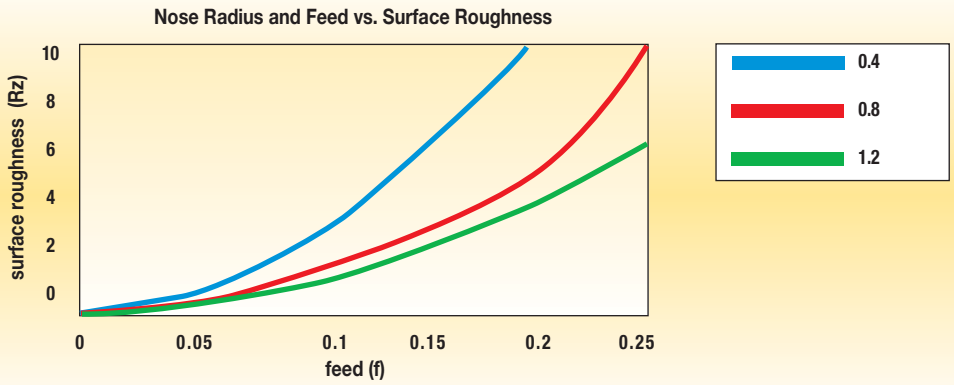
Step 2 • PCBN edge preparation features

Edge Preparation Specifications		
E	hone only	0,020mm
S01015	W x β = 0,1mm x 15°	
S01025	W x β = 0,1mm x 25°	



W – Edge Prep Width
α – Clearance Angle

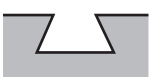
β – T-Land Angle



Step 3 • Selection of T-land angle

How to Use

Using the grade selection and the Interruption Severity from **Step 1**, select edge preparation angle or hone only, E, from the table **below**. Solutions in parenthesis are second options.

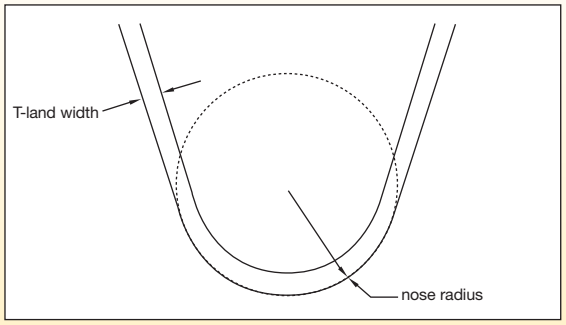
Selection of Preparation Angle					
input from Step 1 ↓					
KB5610	E (15°/25°)	20°/25°	NA	NA	NA
KB5625	15°/25°	15°/25°	20°/25°	25°	NA
KB5630	15°/25°	15°/25°	20°/25°	25°	25°/35°

Step 4 • Selection of T-land width

How to Use

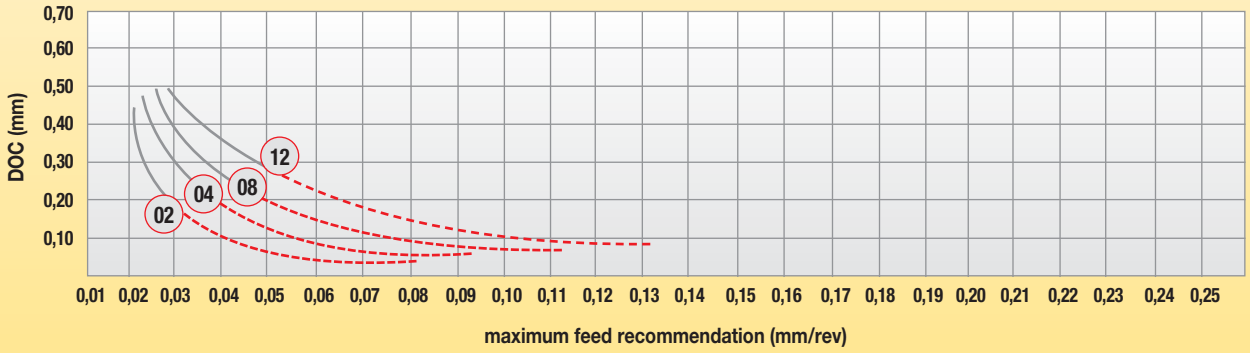
Example 1: If the feed, depth of cut, and the tool nose radius are fixed, use these values to see what T-land width should be used.

Example 2: If you want to use a specific T-land width or hone only edge, use the chart below to see what maximum feeds and depths of cut are recommended for different nose radii.



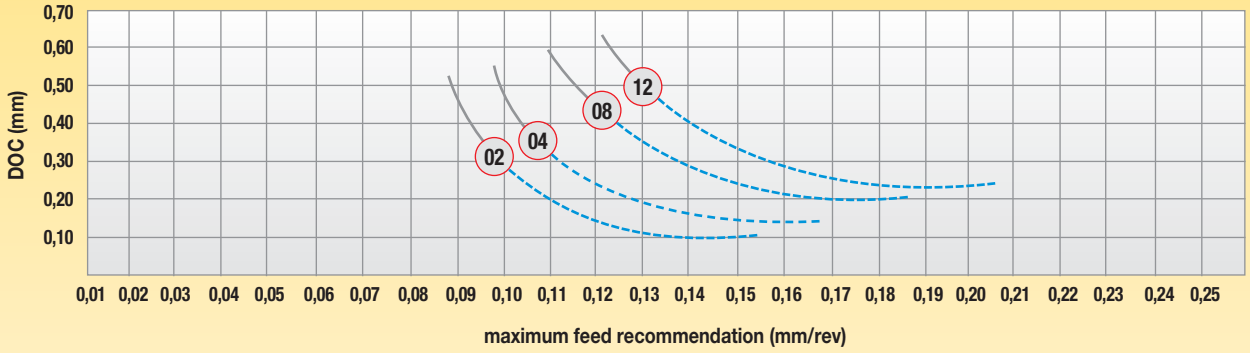
T-Land Width (W): E

Number in circle is NOSE RADIUS*



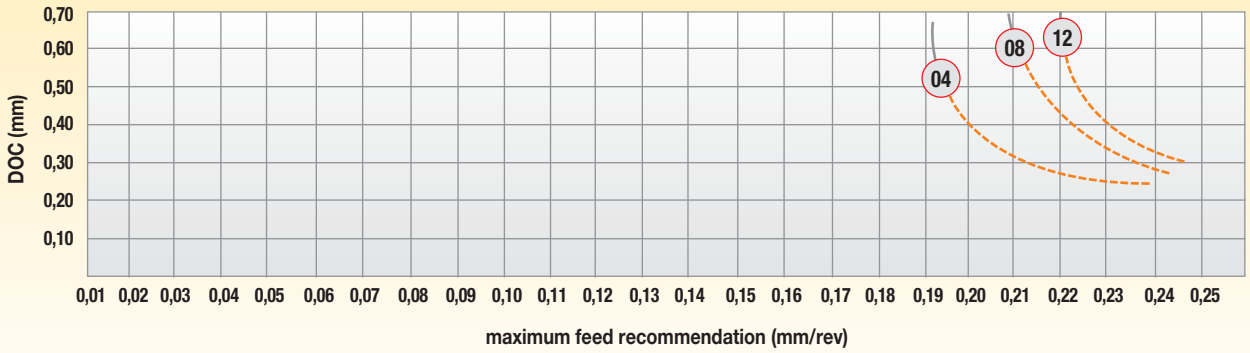
T-Land Width (W): 0,1mm

Number in circle is NOSE RADIUS*



T-Land Width (W): 0,2mm

Number in circle is NOSE RADIUS*



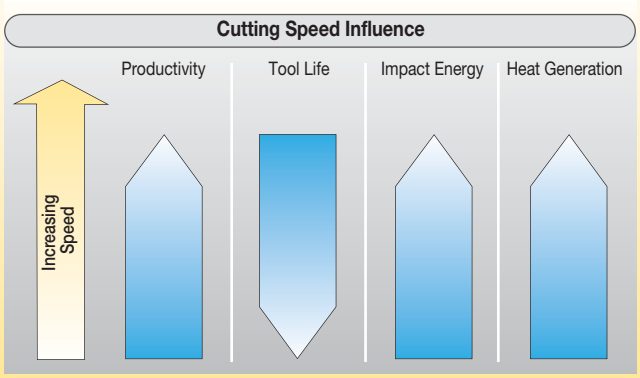
*NOTE: Colored lines represent proven solutions; grey lines represent theoretically possible solutions.

Step 5 • Choosing the speed range

How to Use

Using the application information, determine your position in the INPUT DATA table below and select the speed range area with which it intersects for each input parameter. If different speed ranges result, choose the lowest speed range.

The shaded area extends to the minimum and maximum speedsfor the application. The suggested starting speeds can be taken as the minimum line of this range.



Speed Range Selection for Hard Turning

INPUT DATA

Depth of Cut (mm)
Larger depths of cut need stronger grades.

0,10 | 0,20 | 0,30 | 0,40 | 0,50 | 0,60 | 0,70

Interruption Severity
The angle between the cutting direction and the edge of the interruption has a big influence on the severity of an interrupt impact.

0° | 30° | 60° | 90° | 120°

Workpiece Hardness (HRC)

45 | 50 | 55 | 60 | 65

OUTPUT DATA

Speed Range (m/min)

60 | 100 | 140 | 180 | 220 | 260 | 300 | 340

CBN Inserts with Chipbreaker

For hardened steels, grinding is no longer the preferred method in finish turning operations because hard turning now drastically reduces cost per part. With high metal removal rates, faster machine setup, quicker cycle times, and greater flexibility, it is obviously the preferred method.

Despite these advantages, hard turning has sometimes had issues with poor chip control causing surface scratching and bird-nest formations. Kennametal solved these problems by integrating special chipbreaking geometries into two high-performance PCBN grades, giving customers total control of their hard machining.

Ideally, hardened steels are machined with a low or medium CBN content grade where the workpiece encounters few interruptions. However, because of CBN's structure, the industry had not been able to add chipbreaking technology to low content CBN inserts. KB5610™ with chipbreaker is, therefore, the first product of its type to deliver chipbreaking where it's most needed. KB5625™ with chipbreaker provides a chipbreaking solution for applications requiring more toughness.

Together, these tools give Kennametal customers industry-leading flexibility in choosing the right tool for the job.

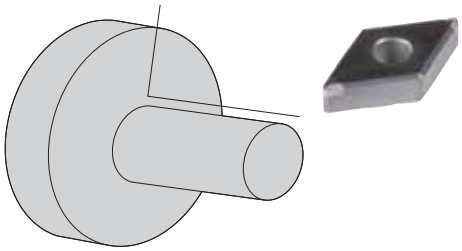
Features

- Chipbreaker for improved chip control.
- KB5610 ideal grade for continuous operations.
- KB5625 ideal grade for continuous and interrupted operations.

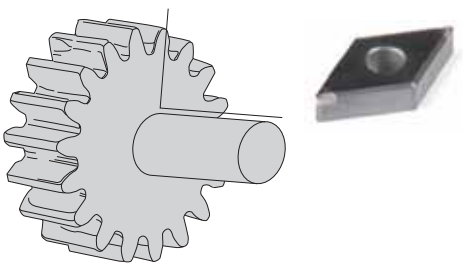
Benefits

- Improved surface quality to reduce scrap rates.
- Reduction of machine stops due to swarf issues to improve machine availability.
- Reduction of bird-nest formation to reduce clean up time.
- Two grades to choose from for best performance.

KB5610



KB5625



CBN Inserts

Insert without Chipbreaker

- Long chips.
- Bird-nest formation.

Insert with Chipbreaker

- Chips are broken.

Reverse gear face turning and chamfering

Workpiece: Reverse gear
Hardness: 58–62 HRC

	Competitor	Kennametal
Insert:	DNGG150412N-SV	DNGM159412S0125MT CB1
Grade:	—	KB5625
vc:	235 m/min (775 SFM)	235 m/min (775 SFM)
f:	0,25 mm/rev (.0098 in/rev)	0,35 mm/rev (.014 in/rev)
ap:	0,26mm (.0098")	0,26mm (.0098")
Pieces/edge:	600	900
Chip shape:	Snarling or infinite helix	Coiled with 3 turns

Result: Better chip control, high productivity (by increased feed), and 1,5x tool life

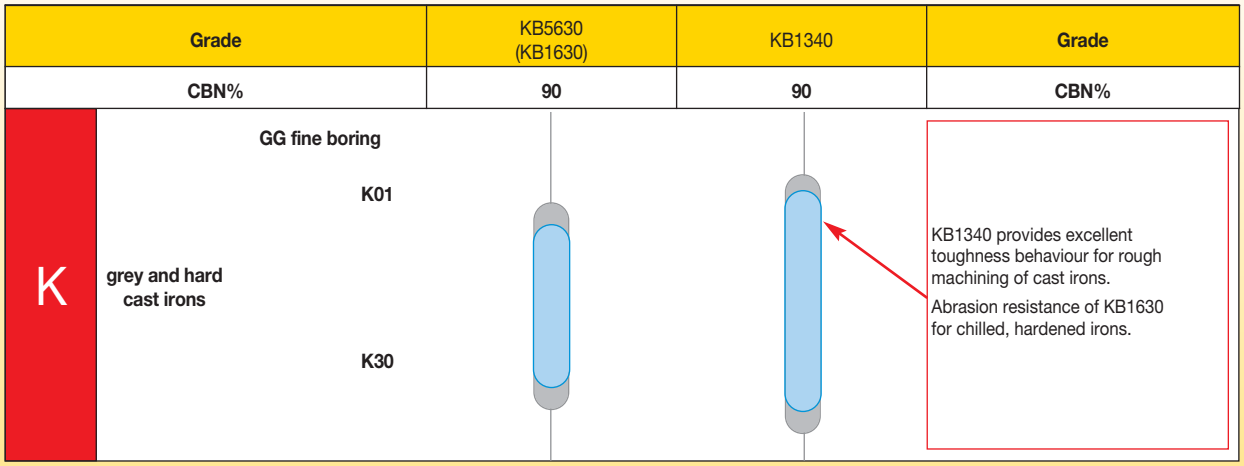
Hard material turning by using PCBN with chipbreaker

Workpiece: Tube
Hardness: 52–58 HRC

	Competitor	Kennametal
Insert:	DNGA150608S01020MT	DNGM150408S01325M7CB1
Grade:	—	KB5625
vc:	120 m/min (400 SFM)	120 m/min (400 SFM)
f:	0,15 mm/rev (.0059 in/rev)	0,15 mm/rev (.0059 in/rev)
ap:	0,3mm (.012")	0,3mm (.012")
Pieces/edge:	2	4
Chip shape:	Snarling or infinite helix	Discontinuous

Result: Better chip control and double tool life

PCBN portfolio



High content PCBN grades: KB1340™, KB1630™, and KB5630™

General Application Area

Continuous and interrupted machining of ferrous alloys where the main wear mode is abrasive and a strong edge is required.

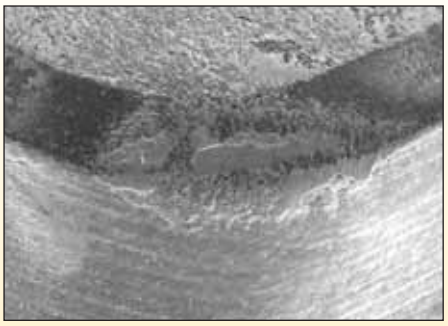
Primary Target Workpiece Materials

- Grey cast irons.
- High Cr content irons.
- Chilled and hardened irons.
- Co-, Ni-, and Fe-based hard facing alloys.
- Other alloys in which there is a high concentration of carbide forming elements, and the primary wear is abrasive.

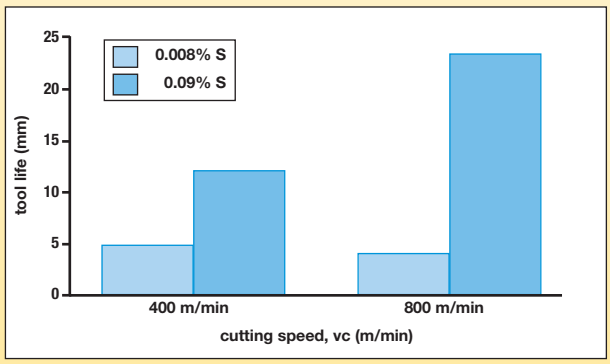
Machining grey cast iron

The largest application area for KB1340™ is machining of grey cast irons. Following are a few particulars of this application:

- GCI have to be machined dry. The application needs to generate high levels of heat in order to create a protective oxide layer on the tool.
- It is important to confirm with the customer that the GCI has been properly aged, and it has a sulphur content over 0,05%.
- The starting point for edge preparation should be 0,10mm (.004") x 20° for finishing (DOC <0,5mm) and 0,20mm (.008") x 20° for roughing.
- The edge preparation angle should increase if any interruptions are present, up to 35°.
- Lack of aging and/or low sulphur content can lead to a decrease in tool life of up to 10 times!
- A slow feed approach/engagement of the tool is recommended to minimise chipping and notching.



Proper application of KB1340 — formation of protective layer, tool life should exceed 70 km sliding distance.



Comparison of the life of PCBN cutting tools in machining two different grey cast irons, primarily differing in sulphur content.

Application recommendations

workpiece material	speed				feed				depth of cut			
	m/min		SFM		mm		in		mm		in	
	min	max	min	max	min	max	min	max	min	max	min	max
hot-work tool steels — roughing	50	150	165	495	0,2	0,5	0,008	0,020	0,8	3,0	0,031	0,118
cold-work tool steels — roughing	50	150	165	495	0,2	0,5	0,008	0,020	0,8	3,0	0,031	0,118
grey cast iron — roughing	700	1200	2310	3960	0,2	0,6	0,008	0,024	0,5	3,0	0,020	0,118
grey cast iron — finishing	750	1500	2475	4950	0,1	0,3	0,004	0,012	–	0,5	0,000	0,020
CGI and NCI — roughing	50	300	165	990	0,2	0,5	0,008	0,020	0,5	2,0	0,020	0,079
chilled cast iron — roughing	30	150	99	495	0,2	0,6	0,008	0,024	0,5	3,0	0,020	0,118
chilled cast iron — finishing	30	150	99	495	0,1	0,3	0,004	0,012	–	0,5	0,000	0,020
hard facings — as per bearing steel	60	200	198	660	0,1	0,5	0,004	0,020	0,2	3,0	0,008	0,118
high Cr irons	80	250	264	825	0,1	0,6	0,004	0,024	0,2	3,0	0,008	0,118

High-content PCBN grades are intended for use in negative rake clamp-type toolholders, boring, recessing tools, and milling heads. Due to the dynamic loads that occur in the machining of hard ferrous materials and the conditions under which these grades operate, frequently involving shocks from interrupted cutting, it is advisable to strengthen the tool system as much as possible and use dimpled inserts where possible.

Dimple Clamps for Added Stability

Typical Application

Continuous cost pressures force manufacturers of grey cast iron brake disks to look for cost-cutting solutions. CBN inserts deliver high productivity and long tool life. Kennametal has developed the solid, high-content grade KB1340™, which provides superior performance when machining grey cast iron components, such as brake disks or fly wheels. To ensure secure seating in the toolholder, the inserts are available with dimple-design clamping. The clamps fit Ceramtec holders, which makes the conversion to Kennametal tooling easier.

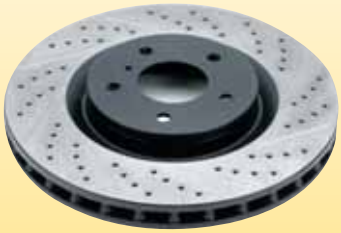
Higher Productivity and Profitability

- Ensures tight and rigid clamping.
- Dimpled insert with special clamping provides increased stability in the pocket.
- Ideal for use in heavy-duty machining applications.
- Cladded clamps for improved resistance against chip wash are available upon request.
- The shallow dimple design enables the use of less expensive 4,76mm (3/16") inserts.
- Round dimple design works with custom tooling where clamping direction must be offset due to space limitations.

Featured Applications: Brake Disk Machining

Proven solutions

Workpiece: Brake disk
Material: GGG 60



	Competitor CBN	Kennametal KB1340
Insert:	N/A	SNMN120416502020
vc:	1100 m/min (3600 SFM)	1100 m/min (3600 SFM)
f:	0,4 mm/rev (.016 in/rev)	0,4 mm/rev (.016 in/rev)
ap:	2mm (.079")	2mm (.079")
Performance:	1500 pieces	1700 pieces

	Competitor Ceramic	Kennametal CBN KB1340
Insert:	N/A	CNGX433S0415FW
vc:	800 m/min (2600 SFM)	1500 m/min (5000 SFM)
f:	0,5 mm/rev (.02 in/rev)	0,5 mm/rev (.02 in/rev)
ap:	1,5mm (.059")	1,5mm (.059")
Performance:	120 pieces	4200 pieces

Clamp selection chart

insert		clamp	
ANSI catalogue number	ISO catalogue number	catalogue number	MM
CNGX433S0415	CNGX120412S01015	551.718 - 100° Corner	3968904
CNGX433S0415FW	CNGX120412S01015FW	551.718 - 100° Corner	3968904
CNGX434S0820	CNGX120416S02020	551.718 - 100° Corner	3968904
CNGF432	CNGF120408	551.718 - 100° Corner	3968904
DNGX434S0820	DNGX150416S02020	551.720	4094234
SNGX434S0820	SNGX120416S02020	551.718	3968904
SNGX534S0820	SNGX150416S02020	551.718	3968904
VNGX333S0820	VNGX160412S02020	551.721	4094236
TNGX333EFW	TNGX160412EFW	551.733	4094235

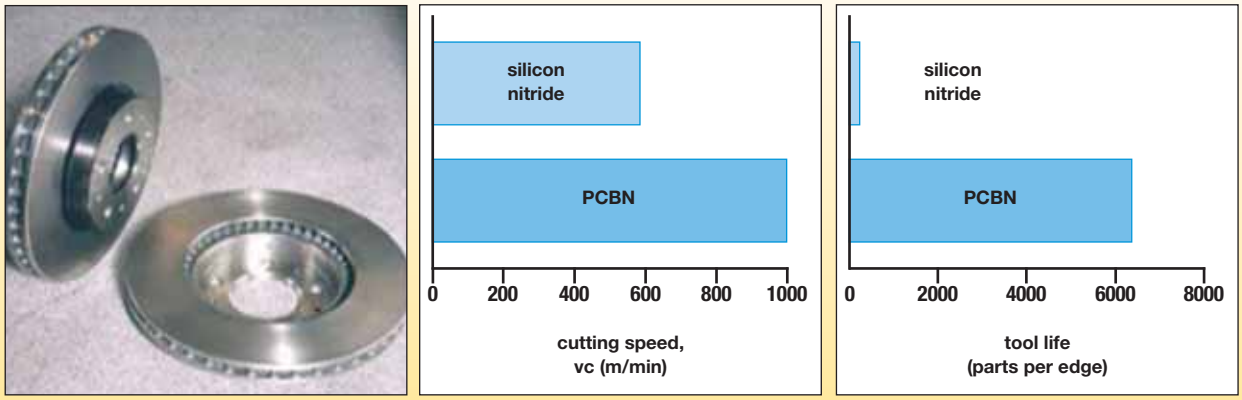
Application recommendation

vc: 800–1500 m/min

Certain melts of grey cast iron can exhibit poor machinability — by as much as two orders of magnitude — **related to either insufficient aging or composition.**

Good GG25 (0.05 S)
62 km sliding distance @ 1500 m/min

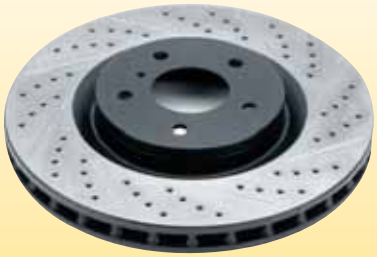
Grey cast iron brake disk machining • Ceramic vs. PCBN



(a) (b) (c)

PCBN increases productivity when machining grey iron brake disks (a) in terms of cutting speed (b) and tool life (c) compared to silicon nitride ceramic.

Brake disk machining example



Optimised Process

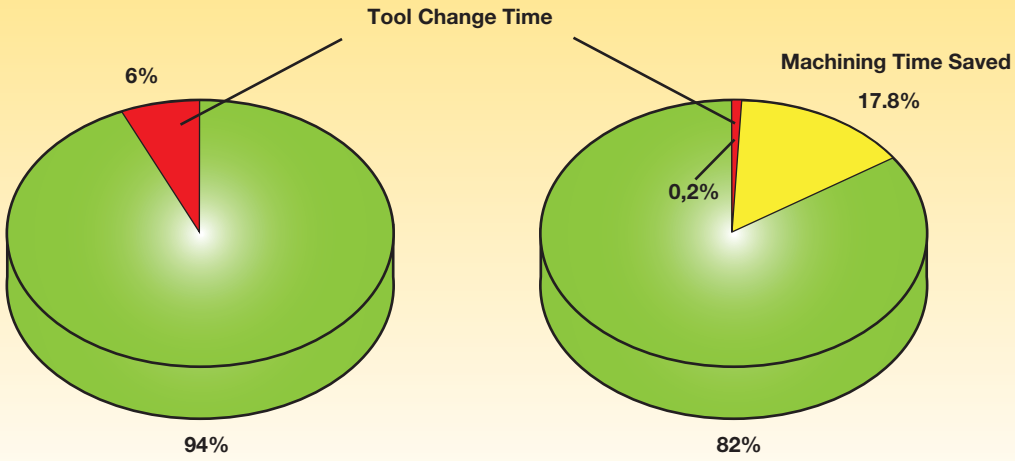
Tool Material: PCBN

Tool Life: 2000 brake disks

Starting Situation

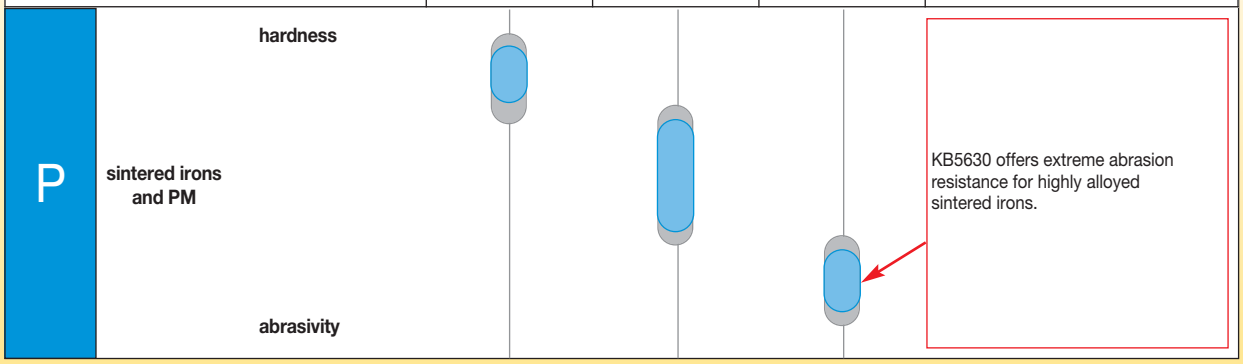
Tool Material: black ceramic

Tool Life: 40 brake disks

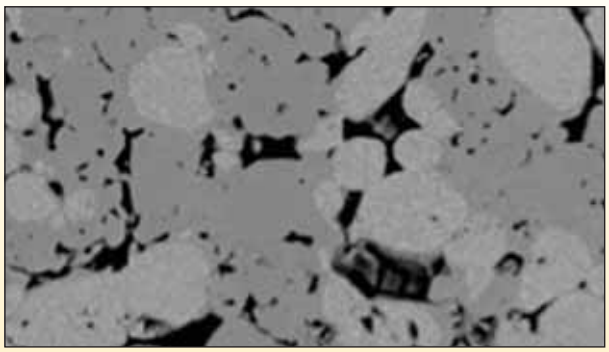


PCBN portfolio

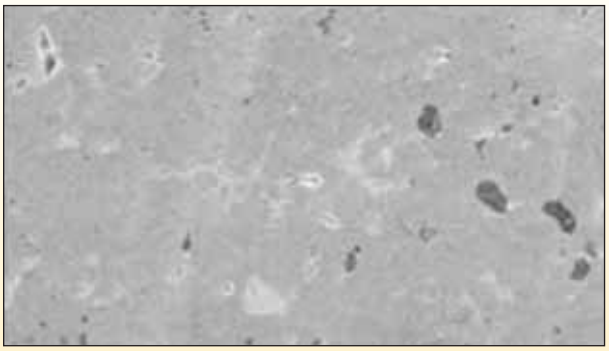
Grade	KB5610 (KB1610)	KB5625 (KB1625)	KB5630 (KB1630)	Grade
CBN%	50	65	90	CBN%



PM machining • Inlet/outlet valve



50 µm



50 µm

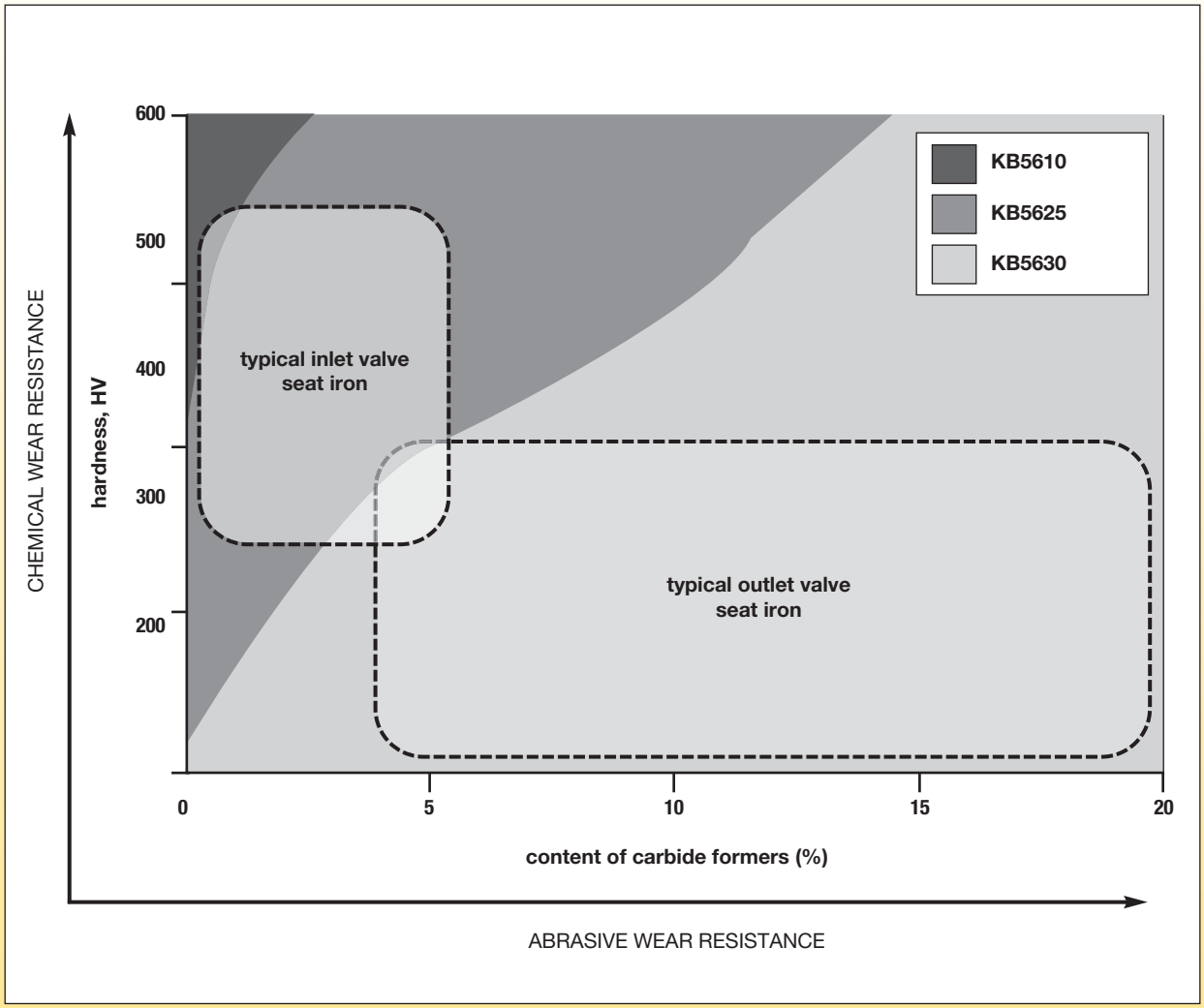
Exhaust

- Abrasive with hard particle content:
  Martensite — 800 HK
  WMoC — 1600 HK
  VC — 2800 HK
- High porosity/Cu infiltrated.
- Co increases hot hardness.
- Macro-hardness <400 HV (<41 HRC).
- Derives wear resistance from hard particles.

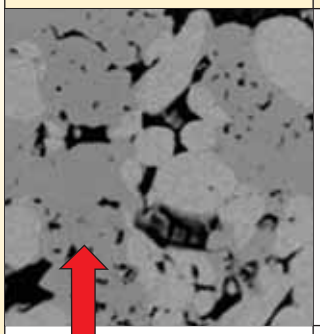
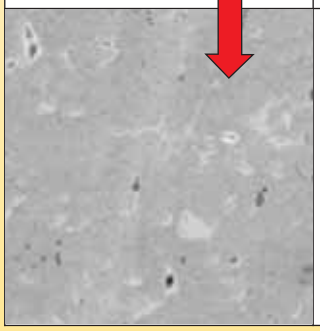
Intake

- Principally, structure is hard steel.
- Minimal porosity on well sintered.
- Low/medium alloy content.
- Macro-hardness >400 HV (>41 HRC).
- Derives wear resistance from hardened matrix structure.

PCBN grade selection for valve seat machining



PCBN grade selection for valve seat machining

	material to be machined	short engagement (e.g., plunging)	long engagement (e.g., generating)
	Soft matrix (≤300 HV), hard carbides, high porosity	1. Abrasion resistance 2. Strength **#1 Choice: KB5630™**	1. Abrasion resistance 2. Strength 3. Chemical wear resistance **#1 Choice: KB5630**
Highly Abrasive High Hardness	Both material types with single insert	1. Abrasion resistance 2. Chemical wear resistance 3. Strength **#1 Choice: KB5630** #2 Choice: KB5625™	1. Abrasion and chemical wear resistance 2. Strength **#1 Choice: KB5625** #2 Choice: KB5630
	Hard matrix (≥400 HV), few carbides, low porosity	1. Chemical wear resistance 2. Strength 3. Abrasion resistance **#1 Choice: KB5625** #2 Choice: KB5610™	1. Chemical wear resistance 2. Abrasion resistance 3. Strength **#1 Choice: KB5625** #2 Choice: KB5610

A4™ Grooving and Turning System

- One tool for turning, facing, grooving, and face grooving in O.D. and I.D. applications — that means exceptionally fast cycle times and no turret indexes.
- Extra-long clamping area, ground 120° bottom prism seating surface, and an exclusive top guide rail combine to deliver unsurpassed grooving and side-turning stability!
- Precise insert positioning is ensured for accurate cuts!

Clamping Design

Applications

Test result • A4

Tool: A4R0400M04800E KB1630
Material: INCONEL® 718
Diameter: 983mm

Cutting Data	Competitor	Kennametal
Speed:	180 m/min (600 SFM)	180 m/min (600 SFM)
Feed:	0,13mm/rev (.0051 in/rev)	0,13mm/rev (.0051 in/rev)
DOC:	8mm (.31")	8mm (.31")
Diameter:	30mm (1.18")	30mm (1.18")
Performance:	70–140 pieces	160–200 pieces

Top Notch™ Grooving System

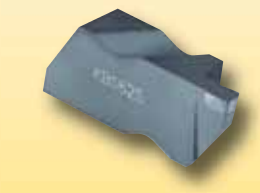
Our rigid clamping design prevents insert movement. This benefit ensures excellent surface finish, improved productivity, and superior tool life and promotes perfect concentricity. The rugged bridge clamp generates locking forces in three directions to provide superior resistance to side thrust and tangential forces.

Clamping Design

Applications

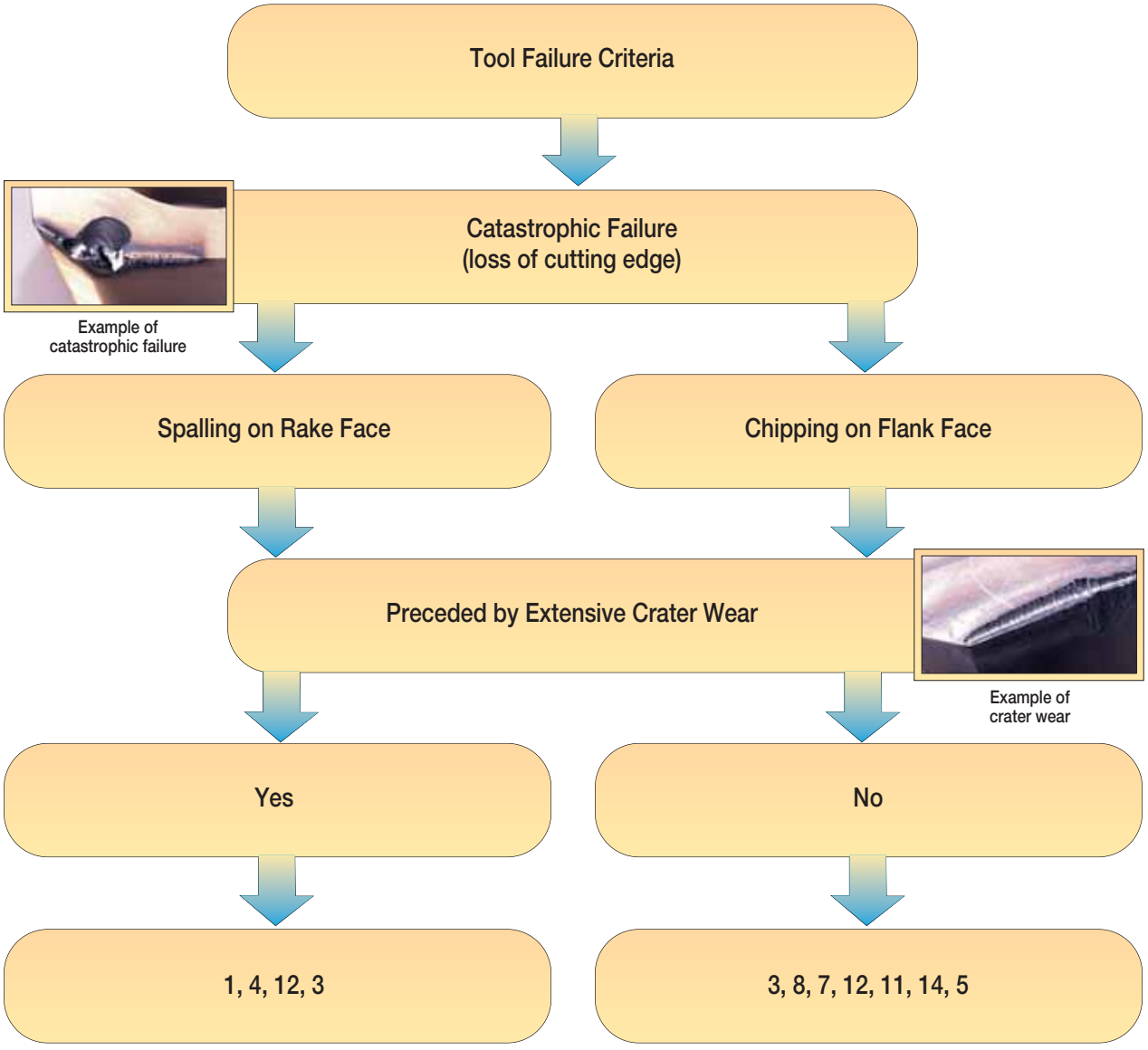
Test result • Top Notch

Tool: WSP 4121129 Top Notch KB5625
Material: DIN 16MnCr5/AISI 5115, 59–63 HRC
Machine: Hard/soft machining



Cutting Data	Competitor	Kennametal
Speed:	160 m/min (530 SFM)	160 m/min (530 SFM)
Feed:	0,06 mm/rev (.0024 in/rev)	0,06 mm/rev (.0024 in/rev)
DOC:	2mm (.079")	2mm (.079")
Diameter:	39,5mm (1.56")	39,5mm (1.56")
Performance:	70 pieces	90 pieces

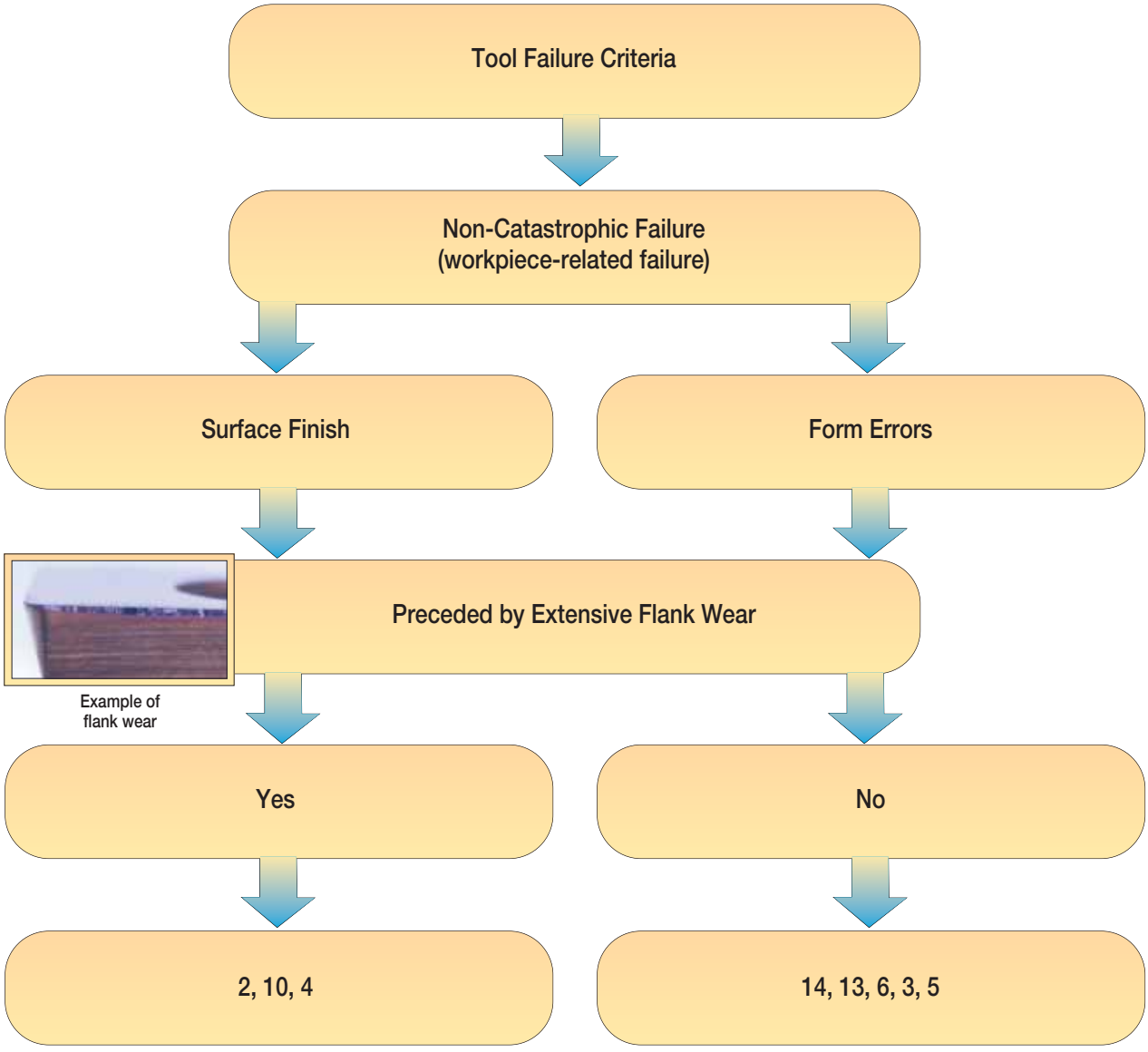
Quick Optimisation Guide: Troubleshooting for Catastrophic Failure



Remedial Action

1. Select more inert PCBN grade.
2. Select more abrasion-resistant PCBN grade.
3. Select stronger PCBN grade.
4. Reduce cutting speed.
5. Increase cutting speed.
6. Reduce nose radius.
7. Increase nose radius.
8. Increase chamfer angle.
9. Decrease chamfer angle.
10. Increase clearance angle.
11. Reduce clearance angle.
12. Increase edge hone dimension.
13. Reduce edge hone dimension.
14. Reduce feed and/or depth of cut.
15. Increase feed and/or depth of cut.

Quick Optimisation Guide: Troubleshooting for Non-Catastrophic Failure



Remedial Action

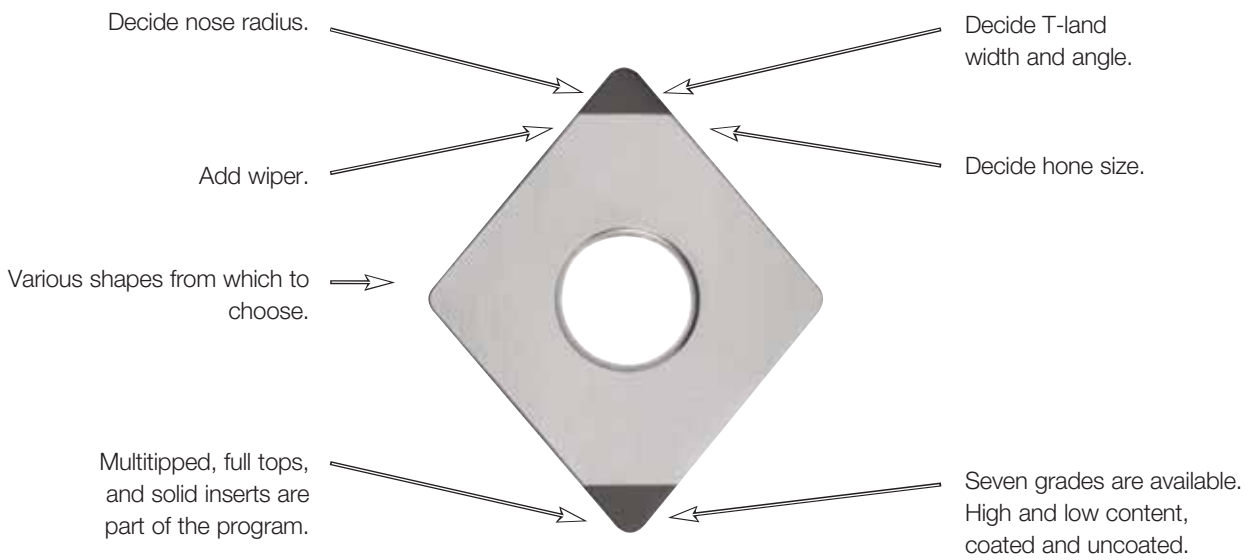
1. Select more inert PCBN grade.
2. Select more abrasion-resistant PCBN grade.
3. Select stronger PCBN grade.
4. Reduce cutting speed.
5. Increase cutting speed.
6. Reduce nose radius.
7. Increase nose radius.
8. Increase chamfer angle.
9. Decrease chamfer angle.
10. Increase clearance angle.
11. Reduce clearance angle.
12. Increase edge hone dimension.
13. Reduce edge hone dimension.
14. Reduce feed and/or depth of cut.
15. Increase feed and/or depth of cut.

Quick-Turn Solutions Program for CBN Inserts

Standard inserts incorporate latest grade, coating, edge preparation, and manufacturing technology. They cover a wide range of applications and provide superior performance.

However, in some cases, further fine tuning is needed to reach the optimum performance point. Therefore, Kennametal has set up the Quick-Turn Solutions Program (QTSP) to allow edge preparation modifications on selected styles, grades, and formats to further enhance the tool performance.

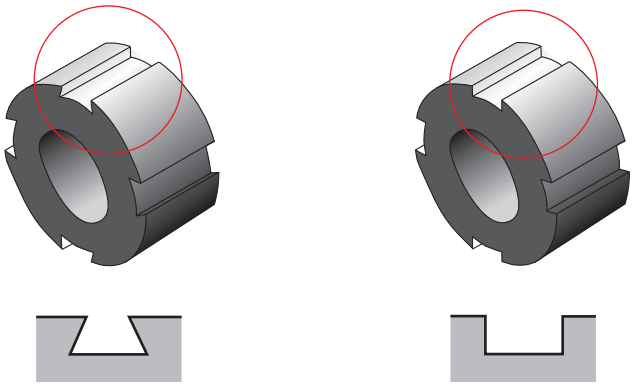
Technical Details • Options for a Customisation



For more information, please contact a Kennametal Sales Representative, Authorised Kennametal Distributor, or visit www.kennametal.com.

Teardrop (TD Edges) for Demanding Applications

Teardrop (TD) edges are advanced edge preparations used in heavily interrupted operations where standard edge preps fail. They can be ordered as specials.

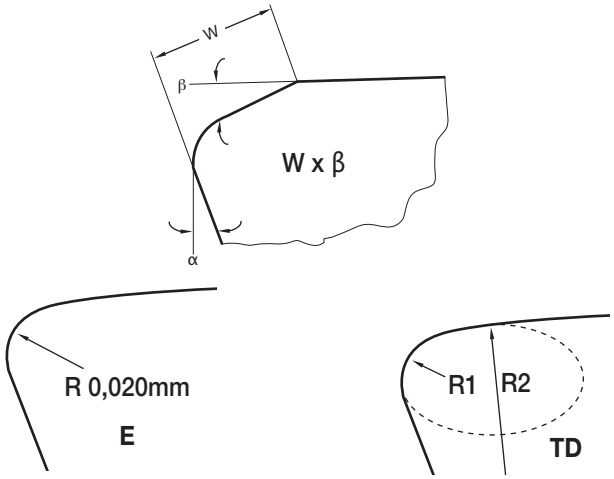


Possible TD Edges

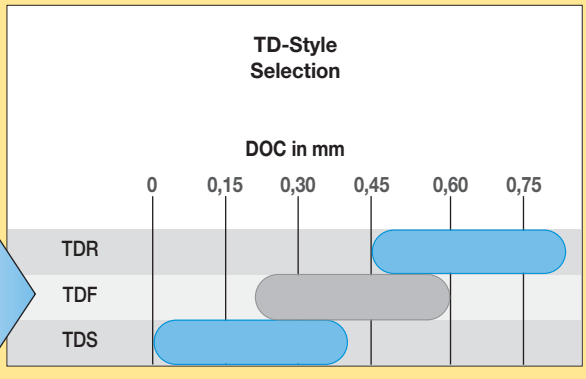
W – Edge Prep Width

α – Clearance Angle

β – Edge Prep Angle – between rake face and K-land



Edge Preparation Specifications		
E	hone only	0,020mm
W x β	width in 0,001mm x angle	
TDR	ellipse based on 0,25 x 30°	
TDF	ellipse based on 0,20 x 20°	
TDS	ellipse based on 0,10 x 20°	

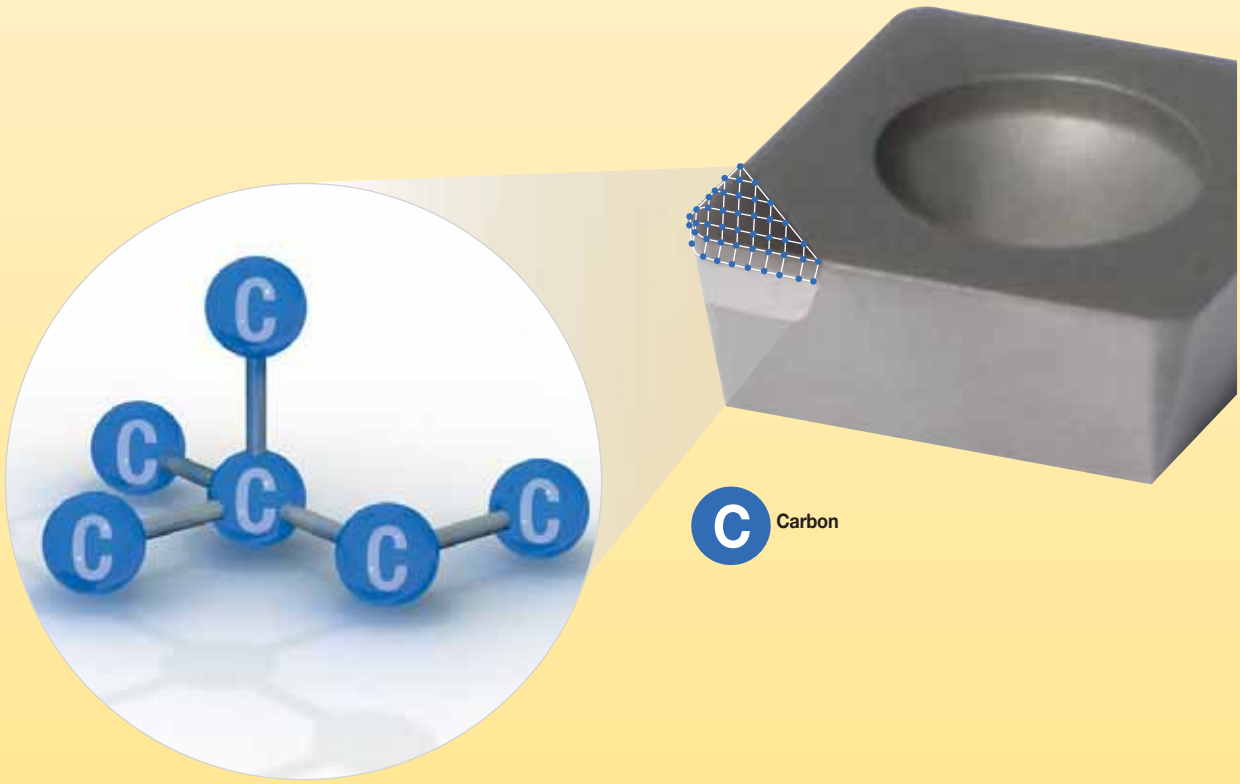


PCD

The current global metalcutting climate has put increased focus on high productivity and cost reductions coming from cutting tools. These requirements lead to the rapid growth and implementation of cutting tools using superhard materials. As the name implies, these materials have a significant advantage in hardness over conventional tool materials, which from the end user point of view, translates into increased productivity (higher cutting speeds, longer tool life, etc.), lower tooling cost per part, and also, the ability to process materials previously un-machinable with conventional tooling.

The most widely known superhard materials are diamond and cubic boron nitride. Our industry uses the polycrystalline forms of these materials, i.e., polycrystalline diamond (PCD) and polycrystalline boron nitride (PCBN). PCD tooling is mainly targeted at the machining of non-ferrous materials (e.g., aluminium alloys, plastics, CFRPs, composites, titanium alloys, ceramics, carbides, etc.) whereas PCBN targets iron-based alloys (e.g., cast irons, hard steels, iron-based composites, etc.)

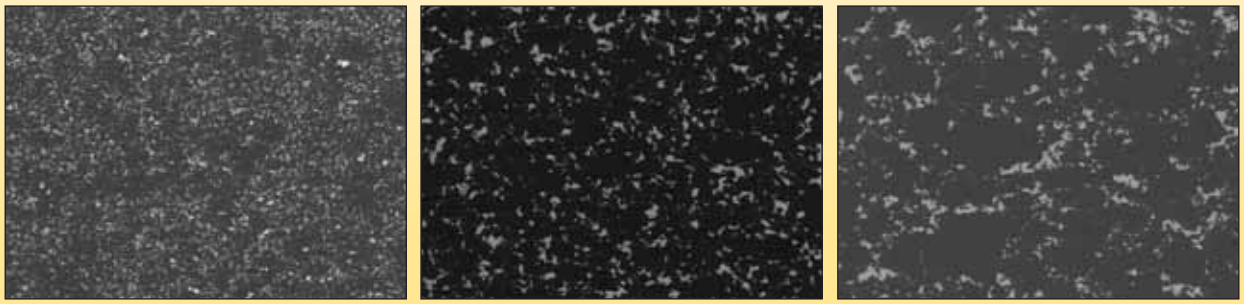
Kennametal is at the forefront of developing and implementing superhard materials in our standard and special tooling solutions across all our product lines. Kennametal's approach to superhard tooling starts with customer needs and constraints. We then use fundamental research to develop the best superhard solutions that would make available the best value for the customer and respond to their specific demands.



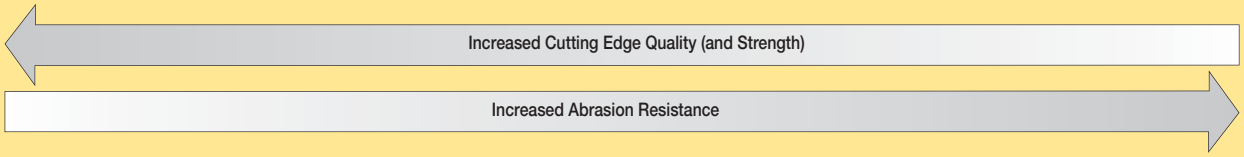
Different kinds of PCD grades

Application demands determine the choice of cutting tool material. The important requirements of the material are:

- Abrasion resistance.
- Toughness and strength.
- Thermal behaviour.



Fine Grain **Medium Grain** **Coarse Grain**



Comparison of different PCD grades

Behaviour in Applications

grade characteristics:	KD1400™	fine grain	medium grain
grain size:	0,5–1 µm	2 µm	10 µm
chip resistance:	●●●●●●●●●●○	●●●●●●●●●○	●●●●●●●●○○
abrasion resistance:	●●●●●○○○○○	●●●○○○○○○○	●●●●●○○○○○

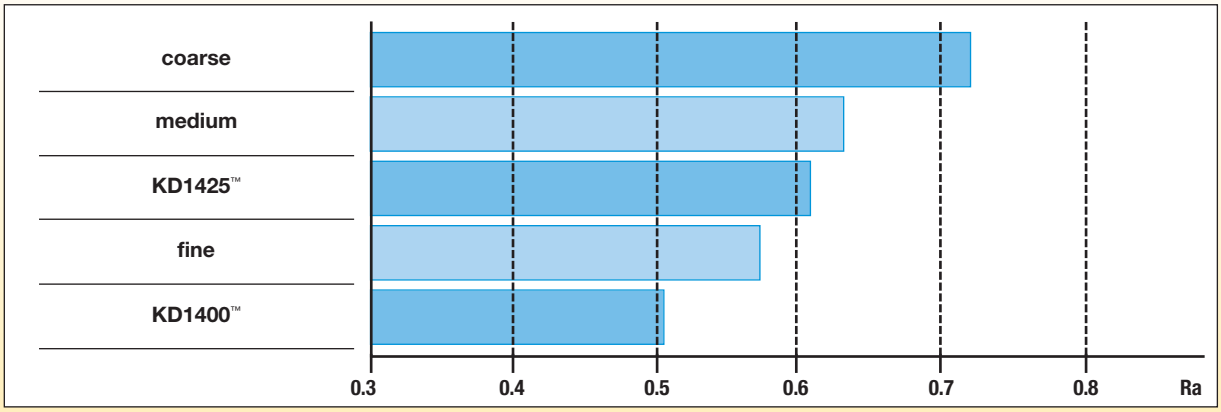
Behaviour in Applications

grade characteristics:	coarse grain	KD1425™	KD1405™
grain size:	25 µm	2–30 µm	0 µm
chip resistance:	●●●●●●●○○○	●●●●●●○○○○	●●●●●●●○○○
abrasion resistance:	●●●●●●●○○○	●●●●●●●●○○	●●●●●●●●●●

Chipping can be defined as the formation of small notches on the cutting edge and generally occurs when the load at the cutting edge exceeds the strength of the material. An A390 alloy was used in edge milling tests to assess the chip resistance of the different PCD grades.

Abrasion is characterised by the development of grooves and ridges on the flank of the tool in the direction of sliding. The abrasion resistance of PCD was evaluated on a high silicon aluminium alloy, A390, in a continuous cutting operation.

PCD grain size • Workpiece surface finish

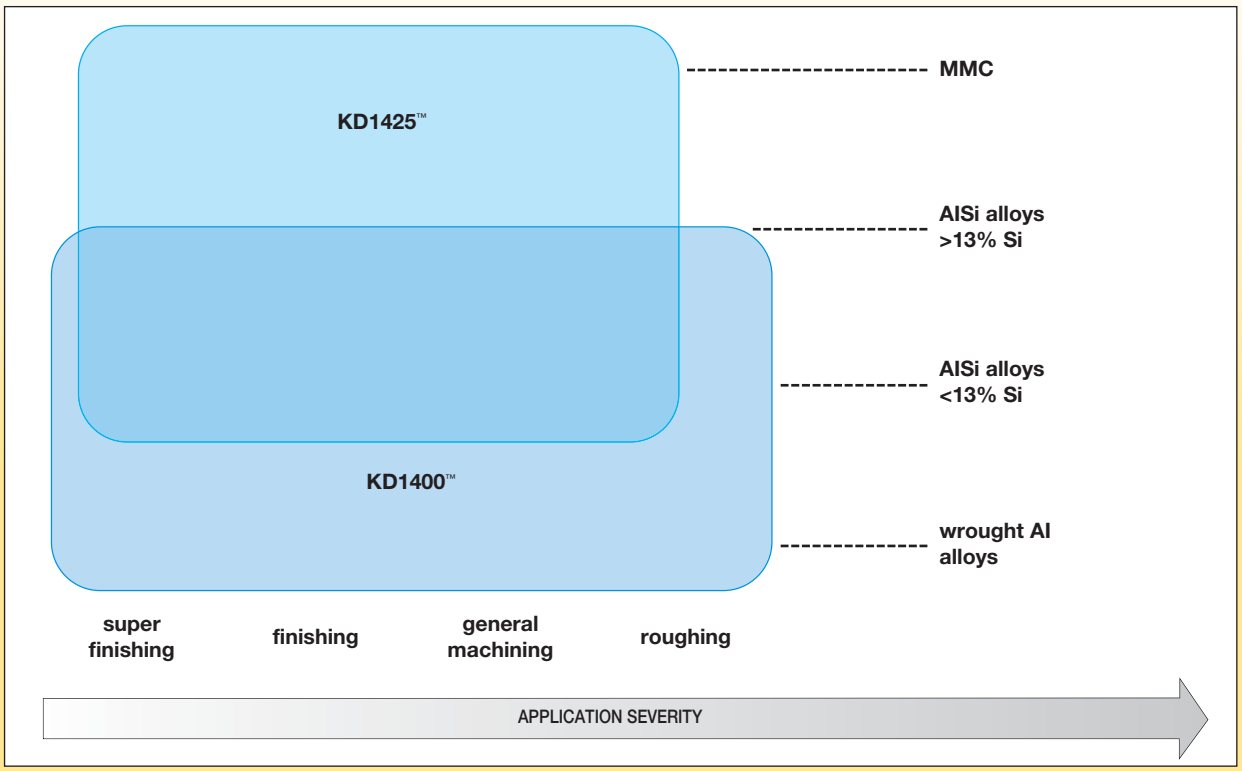


This chart illustrates the influence of the PCD grain size on surface finish in turning 18% silicon aluminium alloys. The best finish is obtained with the submicron grade KD1400. While the grade KD1425 contains grains as large as 30 microns, this material's unique multimodal grain size distribution results in a microstructure of closely packed diamond grains resulting in a smoother ground edge.

KD1400 advantages at a glance • Summary

A sharper cutting edge	• Clean cuts on carbon fibres. • Permits larger nose radii for increased feed and productivity without loss in finish.
A less serrated (smoother) cutting edge	• Improved surface finish — potentially reducing rough and intermediate honing.
Permits a more positive rake	• Reduced cutting forces, delamination, and burr formation.
Permits increased clearance	• Providing for lower tool wear rates and lower push-off forces — thereby improving process capability.
Provides unparalleled chip resistance	• Suitable for heavy milling and interrupted turning with positive edge geometries and longest tool life.
Comparable abrasion resistance to a coarse grade PCD	• Covers the widest range of applications with a single grade — reduce inventory and complexity.

PCD grades application/workpiece material



PCD application areas and parameter range

material machined	operation	PCD grade	speed				feed rate				DOC			
			m/min		SFM		mm/rev		in/rev		mm		in	
			min	max	min	max	min	max	min	max	min	max	min	max
aluminium alloy	turning	KD1400	1000	4000	3300	13200	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
4–8% Si	milling		2000	5000	6600	16500	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
9–12% Si	turning		700	3000	2310	9900	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
>13 Si	milling	KD1400/KD1425	1000	3000	3300	9900	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
	turning	KD1425	300	1000	990	3300	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
	milling	KD1400	500	1500	1650	4950	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
cast iron	roughing	KD1425	50	300	165	990	0,2	0,5	0,008	0,020	0,5	3,0	0,020	0,118
CGI/NCI	finishing		50	400	165	1320	0,1	0,3	0,004	0,012	–	0,5	–	0,020
MMC	turning/milling		300	700	990	2310	0,1	0,4	0,004	0,016	0,2	1,5	0,008	0,059
20% Sic/Al														
copper alloys	turning/milling	KD1400	400	1300	1320	4290	0,03	0,3	0,001	0,012	0,05	2,0	0,002	0,079
copper, zinc, bass														
tungsten carbide <16% Co	turning	KD1425	30	120	99	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
unsintered (green)			20	60	66	198	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
sintered	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ceramics	turning	KD1425	70	120	231	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
unsintered			50	100	165	330	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
sintered	–	–	–	–	–	–	–	–	–	–	–	–	–	–
plastics/composites	turning/milling	KD1400/KD1425	300	990	990	8250	0,05	0,3	0,002	0,012	0,2	3,0	0,004	0,118
carbon/graphite			200	660	660	3300	0,05	0,5	0,002	0,020	0,1	3,0	0,004	0,118

PCD tool failure modes

The gradual wear observed on diamond cutting tools can be divided into:

- Mechanically activated wear (abrasion, adhesion, and wear by microfracture).
- Tribochemical wear (dissolution/diffusion wear and formation of new chemical compounds).

Abrasion

The primary mode of mechanically activated wear for diamond cutting tools is abrasion, which is the removal of tool material by a scoring action of protruding asperities and hard phase inclusions in the workpiece and chip (e.g., silicon grains in aluminium-silicon alloys).

Abrasion is characterised by the development of grooves and ridges in the direction of the tool sliding against a newly machined surface of the workpiece or chip sliding against the rake face.

The severity of abrasion can be increased in cases where the workpiece material contains hard inclusions or when there is hard wear debris from the workpiece or the tool at the interface.

Tribochemical

Tribochemical wear is particularly relevant in the machining of titanium alloys when the carbon in the tool material diffuses into the adhered titanium layer to form a TiC boundary layer on the rake face of the tool.

This boundary quickly becomes saturated with tool constituents and can then act as a protective barrier against any further diffusion.

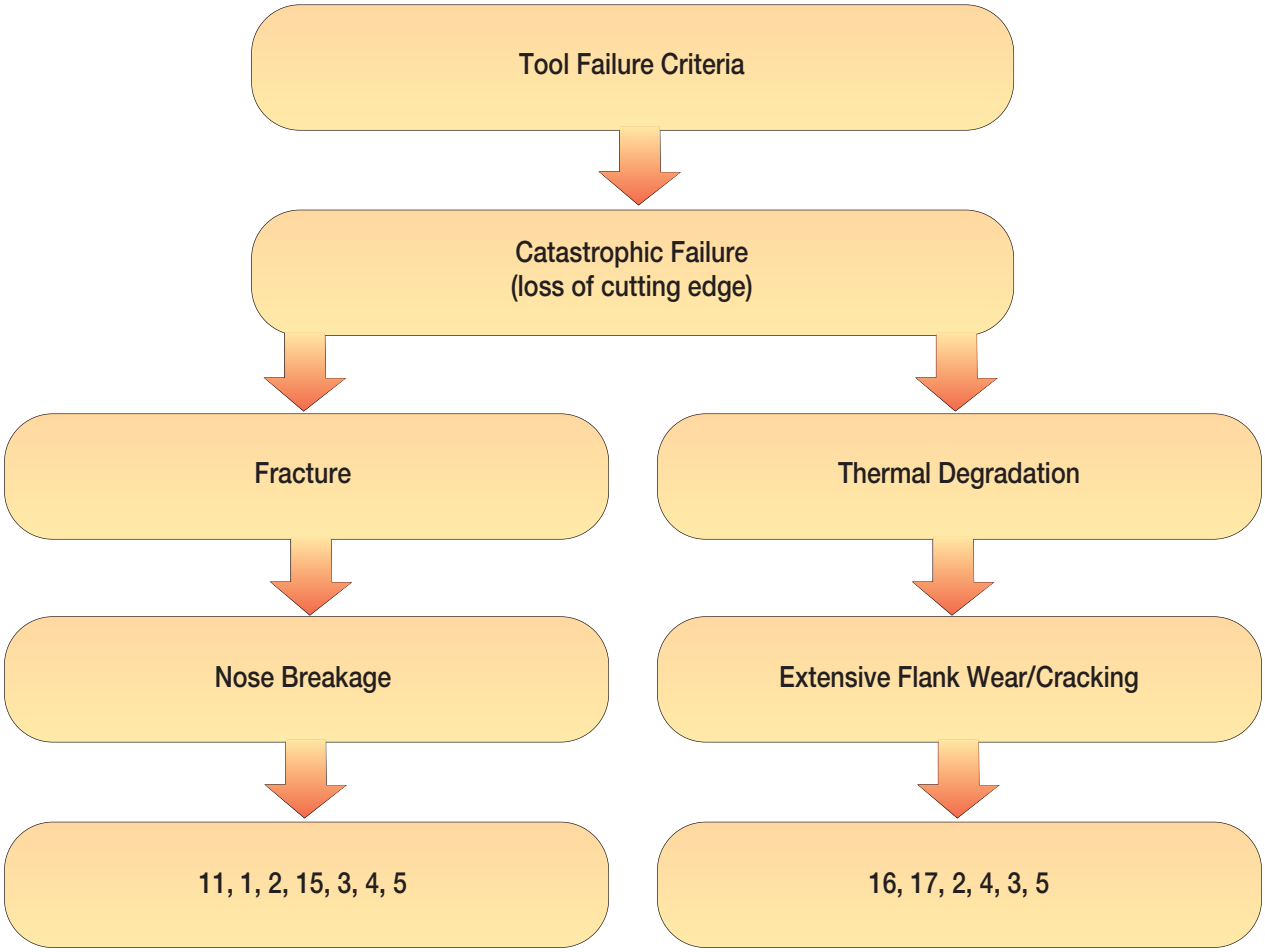
Attrition

When two surfaces slide over each other, particularly in the absence of a lubricant, some adhesion can occur at the points of contact. Adhesive wear (often called attrition) in cutting tools involves the mechanism in which individual grains or small grain aggregates are pulled out of the tool surfaces and are carried away at the underside of the chip or are torn away by the adherent workpiece. The term “plucking” is also used to describe the loss of tool particles from the edge or faces. For example, when the forces are high enough, the TiC boundary layer that forms in titanium machining can be removed from the rake face of the tool transporting with it a pulled-out diamond grain, to form a crater. Once this crater becomes excessive, fracture of the tool could occur due to the geometrical weakening of the edge. Negative geometries tend to enhance the possibility of adhesive wear and built-up edge formation. Subsequent break-up (fracture) of the adhesive tool/workpiece joints results in attrition wear. The wear scars produced by attrition are rough, as opposed to the usually smooth wear surfaces generated by tribochemical wear.

Microfracture

When cutting tools are employed for continuous machining of high hardness materials or interrupted machining, small fractures can appear on the cutting edge. If fracturing is small, the cutting tool can usually still be used. Wear by microfracture involves a less severe form of fracture and includes chipping, spalling, and cracking whereby the cutting tool can be reused.

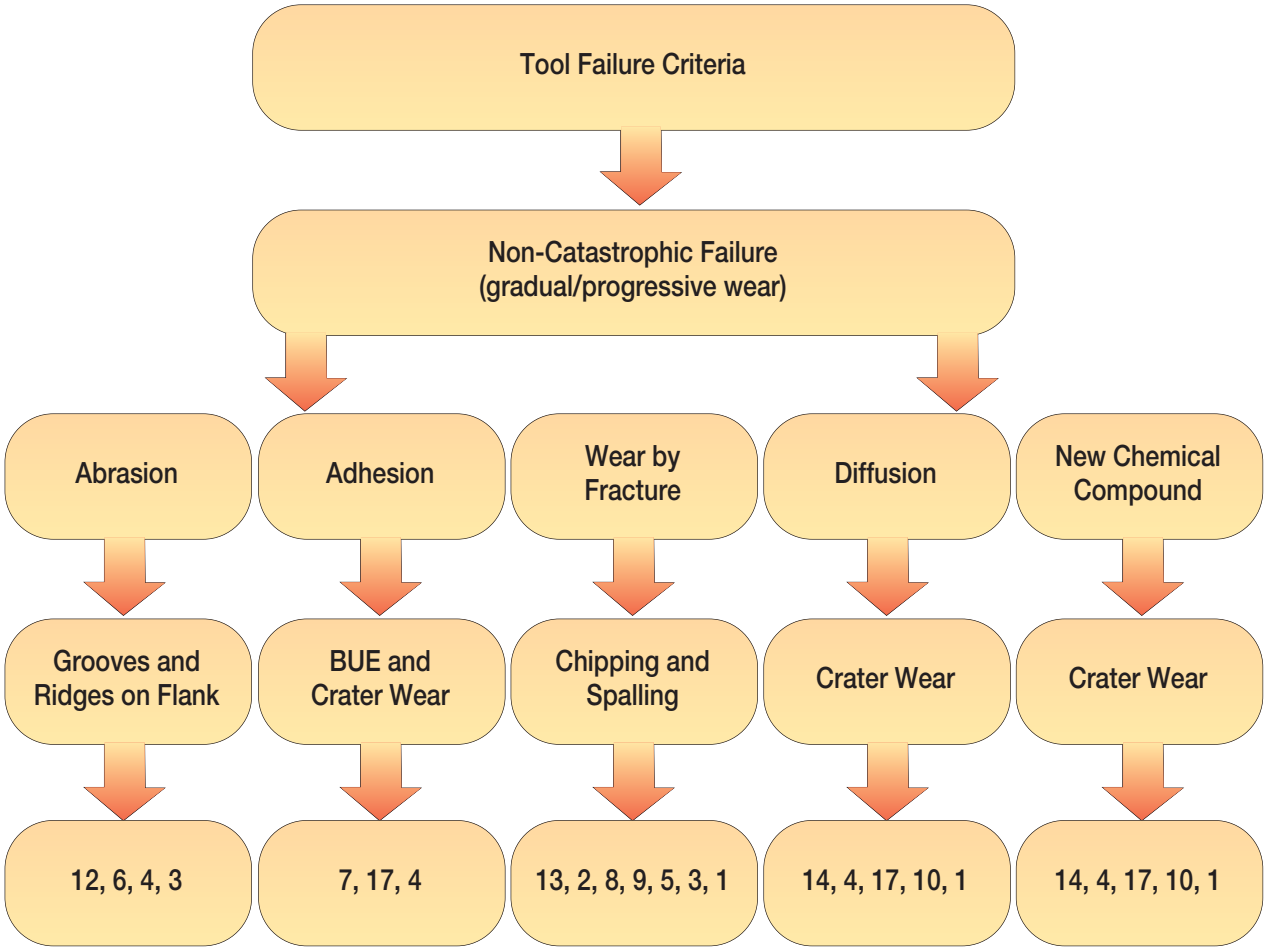
Tool Failure and Wear:



Remedial Action

1. Increase nose radius.
2. Reduced clearance angle.
3. Reduce feed.
4. Reduce cutting speed.
5. Reduce DOC.
6. Increase clearance angle.
7. Use a positive rake angle.
8. Add a small edge hone.
9. Use neutral rake angle.
10. Increase lead angle.
11. Select a tougher grade.
12. Select more abrasion-resistant grade.
13. Select a higher TRS grade.
14. Choose a more chemically inert grade.
15. Increase thickness.
16. Select a more thermally stable grade.
17. Use coolant.

Tool Failure and Wear:



Remedial Action

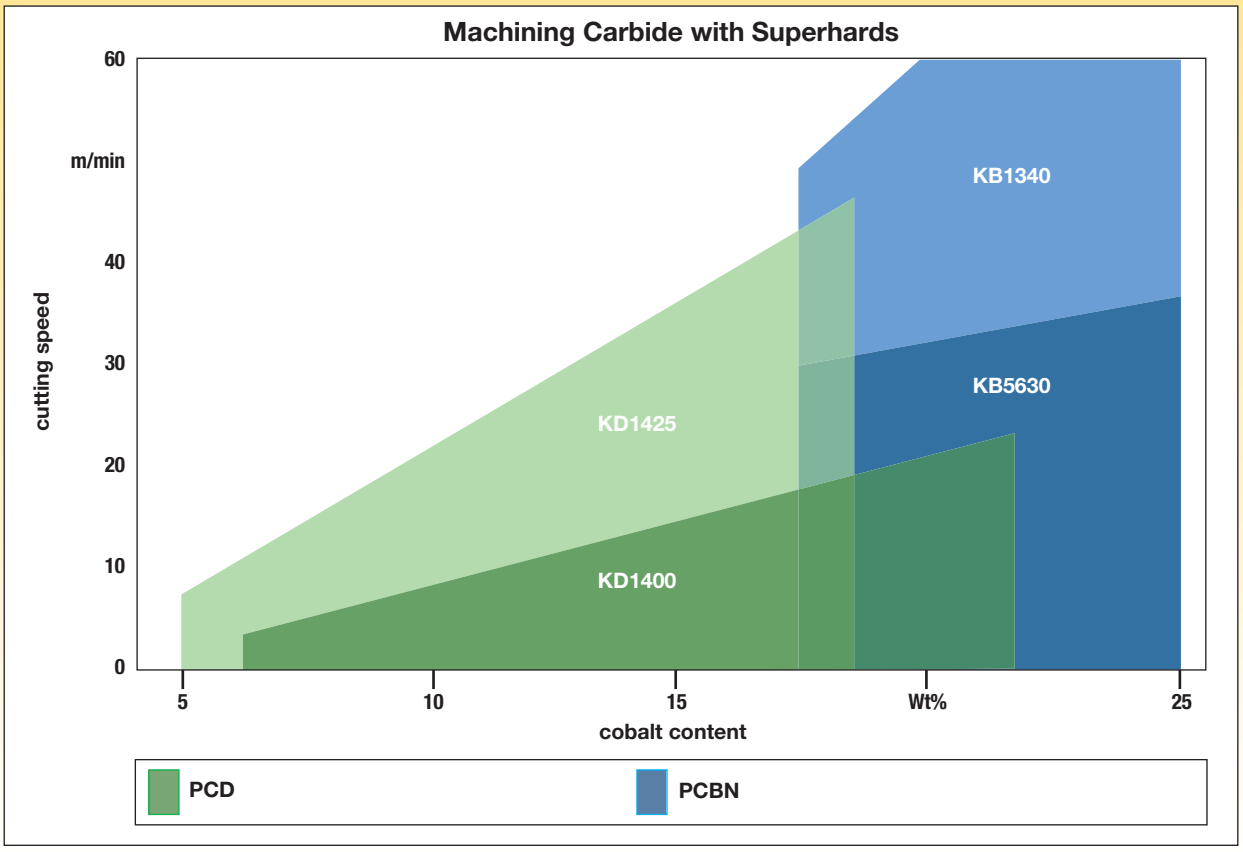
1. Increase nose radius.
2. Reduced clearance angle.
3. Reduce feed.
4. Reduce cutting speed.
5. Reduce DOC.
6. Increase clearance angle.
7. Use a positive rake angle.
8. Add a small edge hone.
9. Use neutral rake angle.
10. Increase lead angle.
11. Select a tougher grade.
12. Select more abrasion-resistant grade.
13. Select a higher TRS grade.
14. Choose a more chemically inert grade.
15. Increase thickness.
16. Select a more thermally stable grade.
17. Use coolant.

Machining of carbides with superhards

material machined	operation	PCD grade	speed				feed rate				DOC			
			m/min		SFM		mm/rev		in/rev		mm		in	
			min	max	min	max	min	max	min	max	min	max	min	max
tungsten carbide <19% Co														
unsintered (green)	turning	KD1425	30	120	99	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
sintered	turning	KD1425	20	80	66	264	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
tungsten carbide >19% Co														
unsintered (green)	turning	KB1340	50	150	165	495	0,1	0,5	0,004	0,020	0,2	1,0	0,008	0,039
sintered	turning	KB1340	30	100	99	330	0,1	0,4	0,004	0,016	0,1	0,5	0,004	0,020

Application Notes

- PCD tools should be used with a neutral geometry and 7° clearance.
- PCD edge preparation should be either F or E. An E edge preparation is preferred for larger DOCs, low Co content, and interrupted machining.
- PCBN tools should be used in a negative geometry with 5° to 7° negative rake.
- PCBN edge preparation should be either E or S01025.
- Coolant application is recommended and very important, especially with PCD application where failure is determined by heat generation.
- PCD can also be applied for Co concentrations higher than 19% as long as minimal heat is generated.



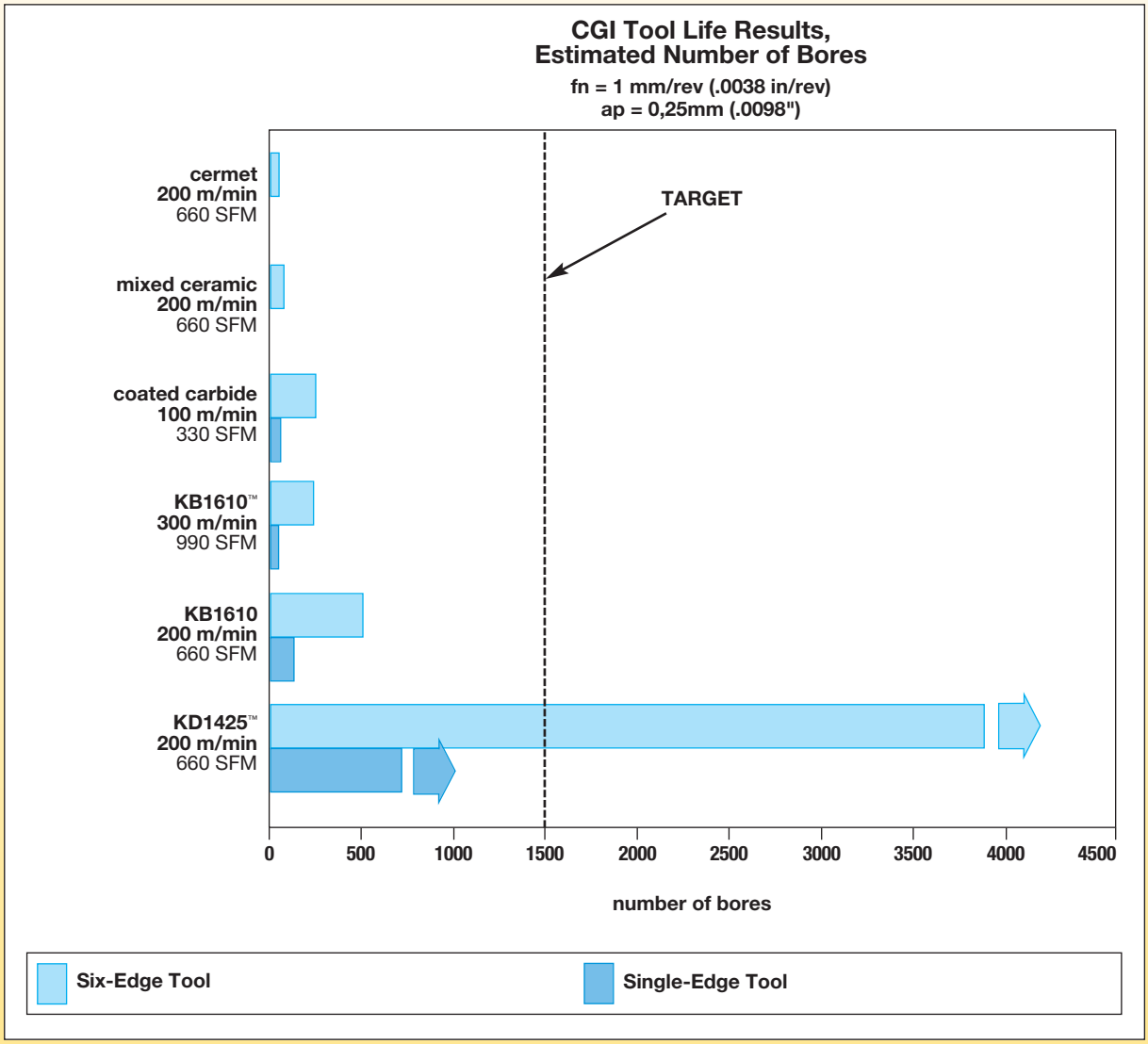
CGI boring with turning insert

Machining Parameters

- Feed = 0,1mm (.0038")
- Depth of cut = 0,25mm (.0098")

Tool Life Criteria

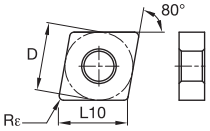
- VB max = 0,3mm (.0098")
- Number of bores = 1500



● first choice
○ alternate choice

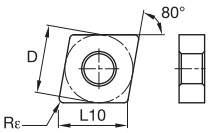
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

CNGA



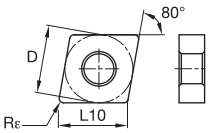
ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404E	12,70	12,90	0,4
CNGA120408E	12,70	12,90	0,8

CNGA-EMT



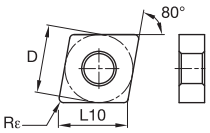
ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120408EMT	12,70	12,90	0,8
CNGA120412EMT	12,70	12,90	1,2

CNGA-FST



ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404FST	12,70	12,90	0,4
CNGA120408FST	12,70	12,90	0,8

CNGA-FW/MW MT

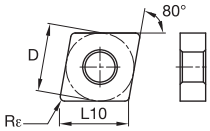


ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404S01025FWMT	12,70	12,90	0,4
CNGA120404EFWMT	12,70	12,90	0,4
CNGA120408EFWMT	12,70	12,90	0,8
CNGA120408S01025FWMT	12,70	12,90	0,8
CNGA120412EFWMT	12,70	12,90	1,2
CNGA120416S02015MWMT	12,70	12,90	1,6

● first choice
○ alternate choice

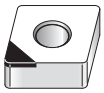
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

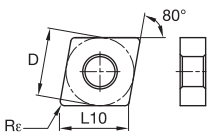
CNGA-MT



ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404S01025MT	12,70	12,90	0,4
CNGA120408S01020MT	12,70	12,90	0,8
CNGA120408S02020MT	12,70	12,90	0,8
CNGA120408S01025MT	12,70	12,90	0,8
CNGA120412S01025MT	12,70	12,90	1,2
CNGA120412S01020MT	12,70	12,90	1,2
CNGA120412T02020MT	12,70	12,90	1,2
CNGA120416S01020MT	12,70	12,90	1,6

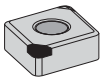
CNGA-ST

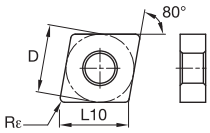




ISO catalogue number	D mm	L10 mm	Rε mm
CNGA120404S01025ST	12,70	12,90	0,4
CNGA120408S01025ST	12,70	12,90	0,8
CNGA120412S01025ST	12,70	12,90	1,2

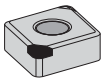
CNGM-CB1

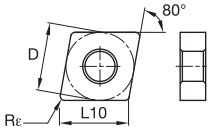




ISO catalogue number	D mm	L10 mm	Rε mm
CNGM120404S01325MTCB1	12,70	12,90	0,4
CNGM120408S01325MTCB1	12,70	12,90	0,8
CNGM120412S01325MTCB1	12,70	12,90	1,2

CNGM-CB2





ISO catalogue number	D mm	L10 mm	Rε mm
CNGM120404S01325MTCB2	12,70	12,90	0,4
CNGM120408S01325MTCB2	12,70	12,90	0,8
CNGM120412S01325MTCB2	12,70	12,90	1,2

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

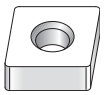
B24–B31

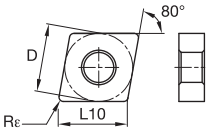
B32–B37

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

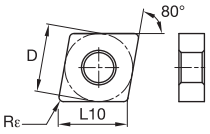
CNMA





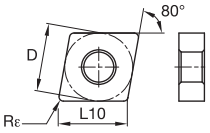
ISO catalogue number	D mm	L10 mm	Rε mm
CNMA120408S01025	12,70	12,90	0,8
CNMA120408S02020	12,70	12,90	0,8
CNMA120412S02020	12,70	12,90	1,2

CNMS-E



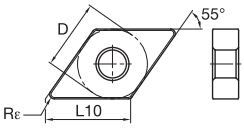
ISO catalogue number	D mm	L10 mm	Rε mm
CNMS120408E	12,70	12,90	0,8

CNMS-FST



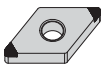
ISO catalogue number	D mm	L10 mm	Rε mm
CNMS120404FST	12,70	12,90	0,4
CNMS120408FST	12,70	12,90	0,8

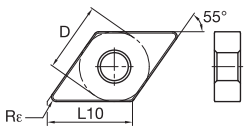
DNGA



ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150404E	12,70	15,50	0,4
DNGA150408E	12,70	15,50	0,8

DNGA-EMT



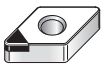


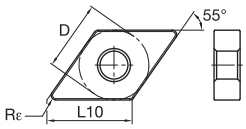
ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150408EMT	12,70	15,50	0,8
DNGA150412EMT	12,70	15,50	1,2

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

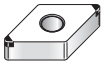
DNGA-FST

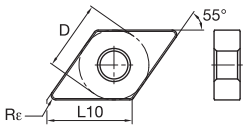




ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150404FST	12,70	15,50	0,4
DNGA150408FST	12,70	15,50	0,8

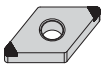
DNGA-FW/MW MT

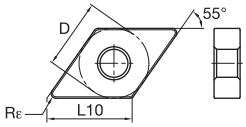




ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150404EFWMT	12,70	15,50	0,4
DNGA150408EFWMT	12,70	15,50	0,8
DNGA150412EFWMT	12,70	15,50	1,2

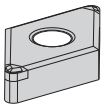
DNGA-MT

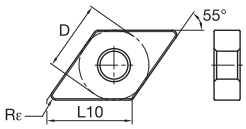




ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150404S01025MT	12,70	15,50	0,4
DNGA150408S01020MT	12,70	15,50	0,8
DNGA150408S01025MT	12,70	15,50	0,8
DNGA150412S01025MT	12,70	15,50	1,2

DNGM-CB1





ISO catalogue number	D mm	L10 mm	Rε mm
DNGM150408S01325MTCB1	12,70	15,50	0,8
DNGM150412S01325MTCB1	12,70	15,50	1,2

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

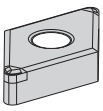
B24–B31

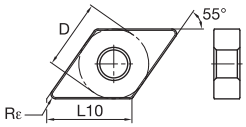
B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

■ DNGM-CB2

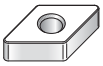


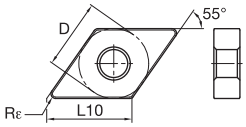


ISO catalogue number	D mm	L10 mm	Rε mm
DNGM150408S01325MTCB2	12,70	15,50	0,8
DNGM150412S01325MTCB2	12,70	15,50	1,2

NOTE: Other insert geometries available upon request.

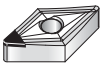
■ DNMA

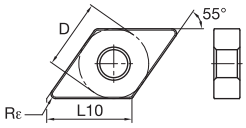




ISO catalogue number	D mm	L10 mm	Rε mm
DNMA110408S02020	9,53	11,63	0,8
DNMA110412S02020	9,53	11,63	1,2

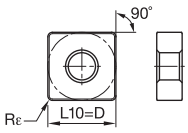
■ DNMS-FST





ISO catalogue number	D mm	L10 mm	Rε mm
DNGA150404FST	12,70	15,50	0,4
DNGA150408FST	12,70	15,50	0,8

■ SNGA-FW

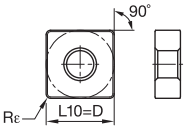


ISO catalogue number	D mm	L10 mm	Rε mm
SNGA120408S01020FWMT	12,70	12,70	0,8

● first choice
○ alternate choice

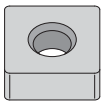
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

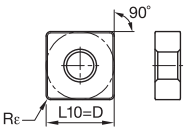
SNGA



ISO catalogue number	D mm	L10 mm	Rε mm	KB5625	KB1610
SNGA120404S01025MT	12,70	12,70	0,4	●	
SNGA120408S01025MT	12,70	12,70	0,8	●	●
SNGA120412S01025MT	12,70	12,70	1,2	●	●

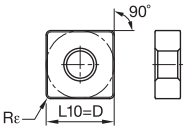
SNMA





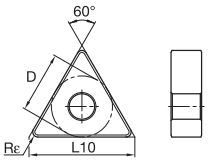
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1625
SNMA120408S01025	12,70	12,70	0,8		●
SNMA120408S02020	12,70	12,70	0,8	●	
SNMA120412S01025	12,70	12,70	1,2		●
SNMA120412S02020	12,70	12,70	1,2	●	

SNMS-FST



ISO catalogue number	D mm	L10 mm	Rε mm	KD1425
SNMS120408FST	12,70	12,70	0,8	●
SNMS120412FST	12,70	12,70	1,2	●

TNGA-FW MT



ISO catalogue number	D mm	L10 mm	Rε mm	KB5625
TNGA160408EFWMT	9,53	16,50	0,8	●
TNGA160412EFWMT	9,53	16,50	1,2	●

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

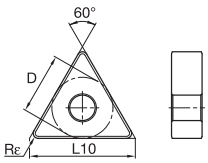
B24–B31

B32–B37

● first choice
○ alternate choice

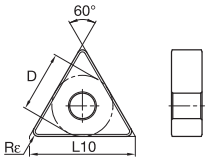
		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

TNGA



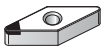
ISO catalogue number	D mm	L10 mm	Rε mm
TNGA160404S01025MT	9,53	16,50	0,4
TNGA160408S01020MT	9,53	16,50	0,8
TNGA160408S01025MT	9,53	16,50	0,8
TNGA160412S01025MT	9,53	16,50	1,2
TNGA160416S01025MT	9,53	16,50	1,6

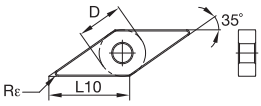
TNMS-FST



ISO catalogue number	D mm	L10 mm	Rε mm
TNMS160404FST	9,53	16,50	0,4
TNMS160408FST	9,53	16,50	0,8

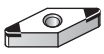
VNGA-FST

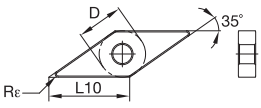




ISO catalogue number	D mm	L10 mm	Rε mm
VNGA160404FST	9,53	16,61	0,40
VNGA160408FST	9,53	16,61	0,80

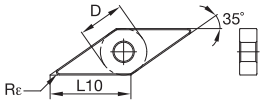
VNGA-MT





ISO catalogue number	D mm	L10 mm	Rε mm
VNGA160404S01025MT	9,53	16,61	0,4
VNGA160408S01025MT	9,53	16,61	0,8

VNMS-E

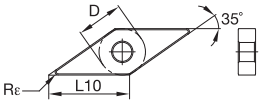


ISO catalogue number	D mm	L10 mm	Rε mm
VNMS160404E	9,53	16,61	0,4
VNMS160408E	9,53	16,61	0,8

● first choice
○ alternate choice

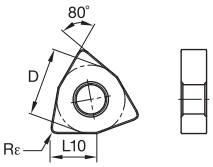
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

VNMS-FST



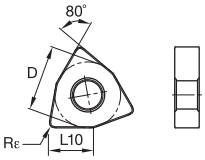
ISO catalogue number	D mm	L10 mm	Rε mm
VNMS160404FST	9,53	16,61	0,4
VNMS160408FST	9,53	16,61	0,8

WNGA-FST



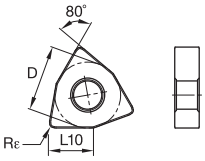
ISO catalogue number	D mm	L10 mm	Rε mm
WNGA080404FST	12,70	8,69	0,4
WNGA080408FST	12,70	8,69	0,8

WNGA-FW/MT



ISO catalogue number	D mm	L10 mm	Rε mm
WNGA080412S01020FWMT	12,70	8,69	1,2

WNGA



ISO catalogue number	D mm	L10 mm	Rε mm	max mm
WNGA080404S01025MT	12,70	8,69	0,4	1,60
WNGA080408S01025MT	12,70	8,69	0,8	1,12

C2–C71

C72–C109

C110–C115

C116–C147

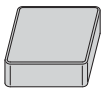
beyond
B10–B23

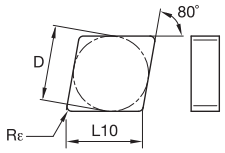
B24–B31

B32–B37

● first choice
○ alternate choice

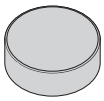
CNMN

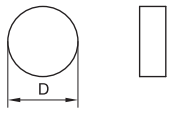




ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CNMN090308S02020	9,53	9,67	0,8	●										
CNMN090312S02020	9,53	9,67	1,2	●										
CNMN120408S02020	12,70	12,90	0,8	●										
CNMN120412S02020	12,70	12,90	1,2	●										

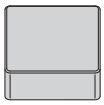
RNMN

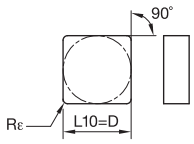




ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
RNMN090300S02020	9,53	–	–	●										
RNMN120300S02020	12,70	–	–	●										
RNMN120400S02020	12,70	–	–	●										

SNMN



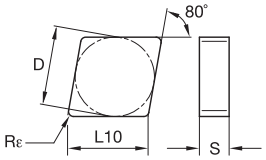


ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
SNMN090308S02020	9,53	9,53	0,8	●										
SNMN090312S02020	9,53	9,53	1,2	●										
SNMN090316S02020	9,53	9,53	1,6	●										
SNMN120308S02020	12,70	12,70	0,8	●										
SNMN120312S02020	12,70	12,70	1,2	●										
SNMN120316S02020	12,70	12,70	1,6	●										
SNMN120416T02020	12,70	12,70	1,6	●										

● first choice
○ alternate choice

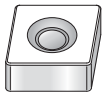
		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

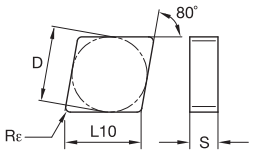
CNGF



ISO catalogue number	D mm	L10 mm	Rε mm
CNGF120408	12,70	12,90	0,8

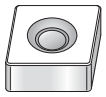
CNGX

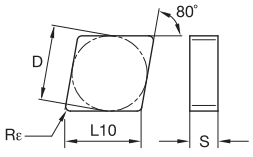




ISO catalogue number	D mm	L10 mm	Rε mm
CNGX120412S01015	12,70	12,90	1,20
CNGX120416S02020	12,70	12,90	1,60

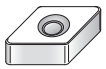
CNGX-FW

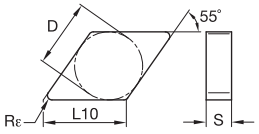




ISO catalogue number	D mm	L10 mm	Rε mm
CNGX120412S01015FW	12,70	12,90	1,2

DNGX





ISO catalogue number	D mm	L10 mm	Rε mm
DNGX150416S02020	12,70	15,50	1,6

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

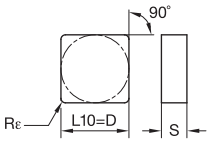
B24–B31

B32–B37

● first choice
○ alternate choice

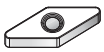
		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

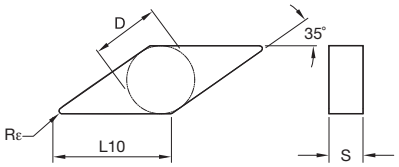
SNGX



ISO catalogue number	D mm	L10 mm	Rε mm
SNGX120416S02020	12,70	12,70	1,6
SNGX150416S02020	15,88	15,88	1,6

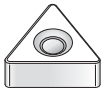
VNGX

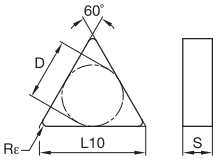




ISO catalogue number	D mm	L10 mm	Rε mm
VNGX160412S02020	9,53	16,61	1,2

TNGX-FW





ISO catalogue number	D mm	L10 mm	Rε mm
TNGX160412EFW	9,53	16,50	1,2

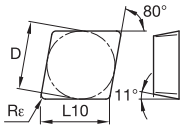
Clamp Selection Chart

	insert	clamp	
MM	ISO catalogue number		
3960807	CNGX120412S01015	551.718 - 100° Corner	551.716 - 80° Corner
3960808	CNGX120412S01015FW	551.718 - 100° Corner	551.716 - 80° Corner
3960806	CNGX120416S02020	551.718 - 100° Corner	551.716 - 80° Corner
3960811	DNGX150416S02020	551.720	551.720
3960812	SNGX120416S02020	551.718	551.718
3960823	SNGX150416S02020	551.718	551.718
3960824	VNGX160412S02020	551.721	551.721
3876843	CNGF120408	551.718 - 100° Corner	551.716 - 80° Corner
3960825	TNGX160412EFW	551.733	551.733

● first choice
○ alternate choice

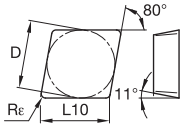
		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

CPG



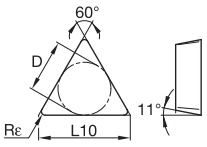
ISO catalogue number	D mm	L10 mm	Rε mm
CPGN120304F	12,70	12,90	0,4
CPGN120308F	12,70	12,90	0,8

CPG-MT



ISO catalogue number	D mm	L10 mm	Rε mm
CPGN120304S01015MT	12,70	12,90	0,4
CPGN120308S01015MT	12,70	12,90	0,8

TPG



ISO catalogue number	D mm	L10 mm	Rε mm
TPGN110304F	6,35	11,00	0,4
TPGN110308F	6,35	11,00	0,8
TPGN160304F	9,53	16,50	0,4
TPGN160308F	9,53	16,50	0,8
TPGN160312F	9,53	16,50	1,2
TPGN220404F	12,70	22,00	0,4
TPGN220408F	12,70	22,00	0,8

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

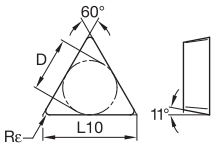
B24–B31

B32–B37

● first choice
○ alternate choice

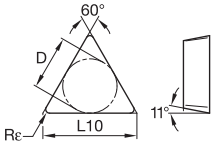
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

■ TPG-M



ISO catalogue number	D mm	L10 mm	Rε mm
TPGN110304EM	6,35	11,00	0,4
TPGN110304S01020M	6,35	11,00	0,4
TPGN160304EM	9,53	16,50	0,4
TPGN160304S01020M	9,53	16,50	0,4
TPGN160308EM	9,53	16,50	0,8

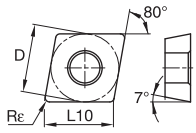
■ TPG-MT



ISO catalogue number	D mm	L10 mm	Rε mm
TPGN160304S01015MT	9,53	16,50	0,4
TPGN160308S01015MT	9,53	16,50	0,8
TPGN220404S01015MT	12,70	22,00	0,4
TPGN220408S01015MT	12,70	22,00	0,8

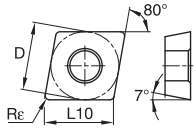
● first choice
○ alternate choice

CCGW-C



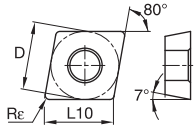
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW060202EC	6,35	6,45	0,2										●	
CCGW060202S01015C	6,35	6,45	0,2						●		●	●		●
CCGW060204S01015C	6,35	6,45	0,4						●		●	●	●	●
CCGW09T304S01015C	9,53	9,67	0,4										●	
CCGW09T308EC	9,53	9,67	0,8		●									
CCGW09T308S01015C	9,53	9,67	0,8										●	

CCGW-EMT



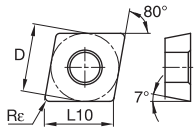
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW09T304EMT	9,53	9,67	0,4									●		

CCGW-FST



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW060204FST	6,35	6,45	0,4			●		●						
CCGW09T304FST	9,53	9,67	0,4			●		●						
CCGW09T308FST	9,53	9,67	0,8			●		●						

CCGW-FWC



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW060202EFWC	6,35	6,45	0,2										●	
CCGW060204EFWC	6,35	6,45	0,4										●	
CCGW09T304EFWC	9,53	9,67	0,4										●	
CCGW09T308EFWC	9,53	9,67	0,8										●	

C2–C71

C72–C109

C110–C115

C116–C147

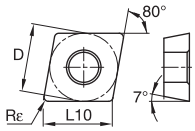
beyond
B10–B23

B24–B31

B32–B37

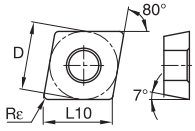
● first choice
○ alternate choice

CCGW-FWM



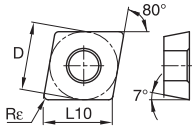
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW060202EFWM	6,35	6,45	0,2										●	
CCGW060204EFWM	6,35	6,45	0,4										●	
CCGW09T304EFWM	9,53	9,67	0,4										●	
CCGW09T308EFWM	9,53	9,67	0,8										●	

CCGW-FWMT



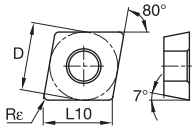
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW09T304S01015FWMT	9,53	9,67	0,4						●					
CCGW09T308S01015FWMT	9,53	9,67	0,8						●					

CCGW-M



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW060202EM	6,35	6,45	0,2										●	
CCGW060204S01015M	6,35	6,45	0,4										●	
CCGW09T304S01015M	9,53	9,67	0,4										●	
CCGW09T308S01015M	9,53	9,67	0,8										●	

CCGW-MT

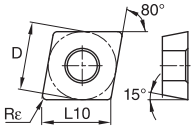


ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CCGW09T304S01015MT	9,53	9,67	0,4						●		●	●		●
CCGW09T308S01015MT	9,53	9,67	0,8						●		●	●		●
CCGW120404S01015MT	12,70	12,90	0,4		●									
CCGW120408S01015MT	12,70	12,90	0,8		●						●			

● first choice
○ alternate choice

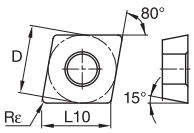
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

CDHB



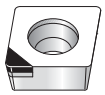
ISO catalogue number	D mm	L10 mm	Rε mm
CDHBS4T0S0	3,97	4,03	0,1
CDHBS4T002	3,97	4,03	0,2
CDHBS4T004	3,97	4,03	0,4

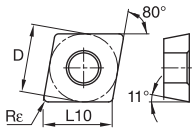
CDHB-FST



ISO catalogue number	D mm	L10 mm	Rε mm
CDHBS4T004FST	3,97	4,03	0,1
CDHBS4T002FST	3,97	4,03	0,2

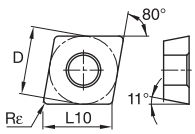
CPGW-E





ISO catalogue number	D mm	L10 mm	Rε mm
CPGW060204E	6,35	6,45	0,4
CPGW09T304E	9,53	9,67	0,4
CPGW09T308E	9,53	9,67	0,8

CPGW-FWC



ISO catalogue number	D mm	L10 mm	Rε mm
CPGW060202EFWC	6,35	6,45	0,2
CPGW060204EFWC	6,35	6,45	0,4

C2–C71

C72–C109

C110–C115

C116–C147

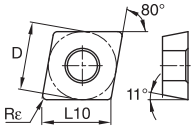
beyond
B10–B23

B24–B31

B32–B37

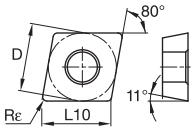
● first choice
○ alternate choice

CPGW-FWM



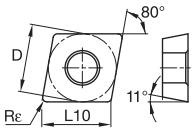
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CPGW060202EFWM	6,35	6,45	0,2									●		
CPGW060204EFWM	6,35	6,45	0,4									●		
CPGW060208EFWM	6,35	6,45	0,8									●		

CPGW-FWMT



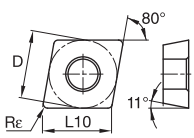
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CPGW09T304S01015FWMT	9,53	9,67	0,4						●					
CPGW09T308S01015FWMT	9,53	9,67	0,8						●					

CPGW-FWST



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CPGW060204FWST	6,35	6,45	0,4			●		●						
CPGW09T308FWST	9,53	9,67	0,8			●		●						
CPGW120408FWST	12,70	12,90	0,8			●		●						

CPGW-ST

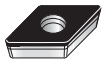


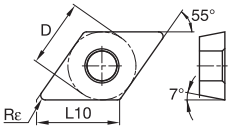
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CPGW060202FST	6,35	6,45	0,2			●		●						
CPGW060204FST	6,35	6,45	0,4			●		●						
CPGW060208FST	6,35	6,45	0,8			●		●						
CPGW09T304FST	9,53	9,67	0,4			●		●						
CPGW09T308FST	9,53	9,67	0,8			●		●						
CPGW120404FST	12,70	12,90	0,4			●		●						
CPGW120408FST	12,70	12,90	0,8			●		●						

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

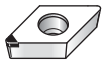
DCGW-C

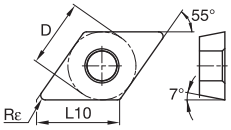




ISO catalogue number	D mm	L10 mm	Rε mm
DCGW070202EC	6,35	7,75	0,2
DCGW070202S01015C	6,35	7,75	0,2
DCGW070204S01015C	6,35	7,75	0,4

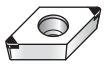
DCGW-FWM

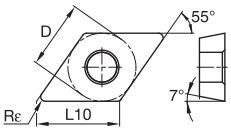




ISO catalogue number	D mm	L10 mm	Rε mm
DCGW070204EFWM	6,35	7,75	0,4

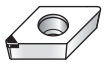
DCGW-FWMT

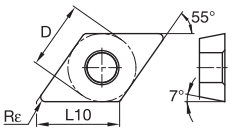




ISO catalogue number	D mm	L10 mm	Rε mm
DCGW11T304EFWMT	9,53	11,63	0,4
DCGW11T308S01015FWMT	9,53	11,63	0,8

DCGW-M





ISO catalogue number	D mm	L10 mm	Rε mm
DCGW070202EM	6,35	7,75	0,2
DCGW070204EM	6,35	7,75	0,4
DCGW070204S01015M	6,35	7,75	0,4
DCGW11T304S01015M	9,53	11,63	0,4
DCGW11T308S01015M	9,53	11,63	0,8

PCBN/PCD Inserts

C2–C71

C72–C109

C110–C115

C116–C147

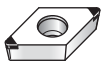
beyond
B10–B23

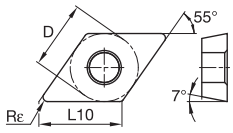
B24–B31

B32–B37

● first choice
○ alternate choice

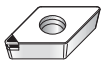
DCGW-MT

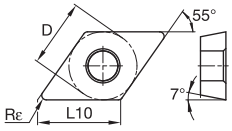




ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DCGW11T304S01015MT	9,53	11,63	0,4		●				●	●		●		●
DCGW11T308S01015MT	9,53	11,63	0,8		●				●	●		●		●

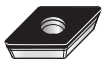
DCGW-ST

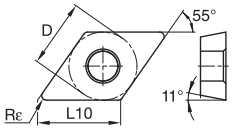




ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DCGW070204FST	6,35	7,75	0,4			●		●						
DCGW11T304FST	9,53	11,63	0,4			●		●						

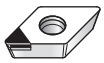
DPGW-C

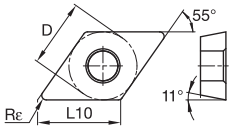




ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW070202EC	6,35	7,75	0,2										●	
DPGW070204S01015C	6,35	7,75	0,4										●	
DPGW070208S01015C	6,35	7,75	0,8										●	

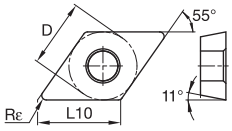
DPGW-E





ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW070202E	6,35	7,75	0,2				●							
DPGW11T304E	9,53	11,63	0,4				●							

DPGW-EMT

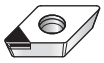


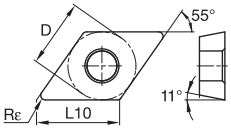
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW11T304EMT	9,53	11,63	0,4		●									

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

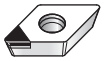
DPGW-FST

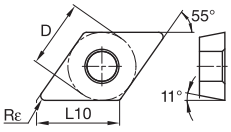




ISO catalogue number	D mm	L10 mm	Rε mm
DPGW070202FST	6,35	7,75	0,2
DPGW070204FST	6,35	7,75	0,4
DPGW11T304FST	9,53	11,63	0,4

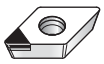
DPGW-FWM

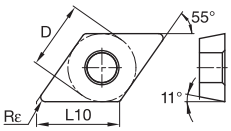




ISO catalogue number	D mm	L10 mm	Rε mm
DPGW070204S01015FWM	6,35	7,75	0,4

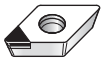
DPGW-FWST

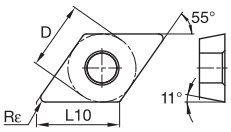




ISO catalogue number	D mm	L10 mm	Rε mm
DPGW070204FWST	6,35	7,75	0,2
DPGW11T304FWST	9,53	11,63	0,2

DPGW-M





ISO catalogue number	D mm	L10 mm	Rε mm
DPGW070202EM	6,35	7,75	0,2
DPGW070204S01015M	6,35	7,75	0,4
DPGW070208S01015M	6,35	7,75	0,8
DPGW11T304S01015M	9,53	11,63	0,4
DPGW11T308S01015M	9,53	11,63	0,8

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

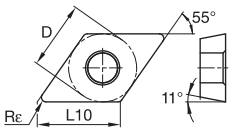
B24–B31

B32–B37

● first choice
○ alternate choice

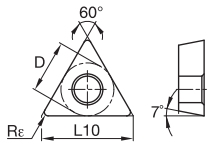
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●				○		
S				●							○
H	○					●	●	●	●	●	●

■ DPGW-MT



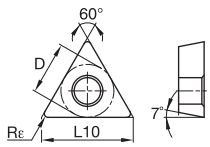
ISO catalogue number	D mm	L10 mm	Rε mm
DPGW11T304S01015MT	9,53	11,63	0,4
DPGW11T308S01015MT	9,53	11,63	0,8

■ TCGW-C



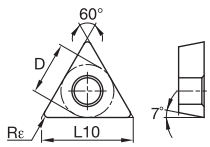
ISO catalogue number	D mm	L10 mm	Rε mm
TCGW110202EC	6,35	11,00	0,20
TCGW110202S01015C	6,35	11,00	0,20
TCGW110204S01015C	6,35	11,00	0,40

■ TCGW-FST



ISO catalogue number	D mm	L10 mm	Rε mm
TCGW110204FST	6,35	11,00	0,40
TCGW16T304FST	9,53	16,50	0,40

■ TCGW-M

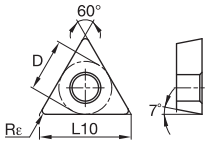


ISO catalogue number	D mm	L10 mm	Rε mm
TCGW110202EM	6,35	11,00	0,2
TCGW110204S01015M	6,35	11,00	0,4
TCGW16T304S01015M	9,53	16,50	0,4
TCGW16T308S01015M	9,53	16,50	0,8

● first choice
○ alternate choice

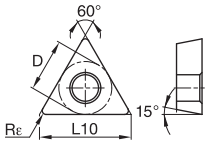
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

TCGW-MT



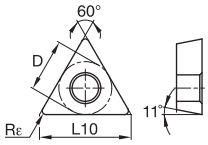
ISO catalogue number	D mm	L10 mm	Rε mm
TCGW16T304S01015MT	9,53	16,50	0,4

TDHB



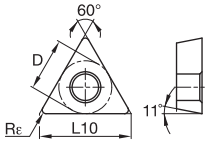
ISO catalogue number	D mm	L10 mm	Rε mm
TDHB07T1202	4,06	7,04	0,2

TPGW



ISO catalogue number	D mm	L10 mm	Rε mm
TPGW110208E	6,35	11,00	0,80

TPGW-C



ISO catalogue number	D mm	L10 mm	Rε mm
TPGW110202EC	6,35	11,00	0,20
TPGW110204EC	6,35	11,00	0,40
TPGW110204S01015C	6,35	11,00	0,40
TPGW110208S01015C	6,35	11,00	0,80

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

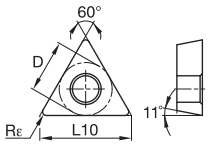
B24–B31

B32–B37

● first choice
○ alternate choice

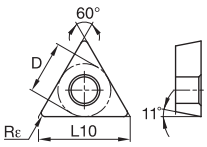
	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

TPGW-FST



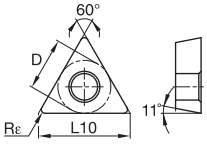
ISO catalogue number	D mm	L10 mm	Rε mm
TPGW110204FST	6,35	11,00	0,4
TPGW110208FST	6,35	11,00	0,8
TPGW16T304FST	9,53	16,50	0,4
TPGW16T308FST	9,53	16,50	0,8

TPGW-M



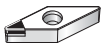
ISO catalogue number	D mm	L10 mm	Rε mm
TPGW110202EM	6,35	11,00	0,2
TPGW110204S01015M	6,35	11,00	0,4
TPGW110208S01015M	6,35	11,00	0,8
TPGW16T304S01015M	9,53	16,50	0,4
TPGW16T308S01015M	9,53	16,50	0,8

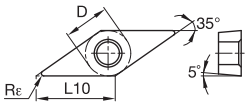
TPGW-MT



ISO catalogue number	D mm	L10 mm	Rε mm
TPGW16T308S01015MT	9,53	16,50	0,8

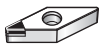
VBGW-E



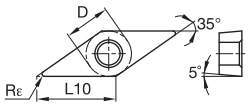


ISO catalogue number	D mm	L10 mm	Rε mm
VBGW160408E	9,53	16,61	0,8

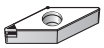
● first choice
○ alternate choice



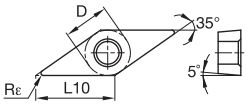
VBGW-FST



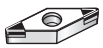
ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
VBGW110304FST	6,35	11,07	0,4			●		●						
VBGW160404FST	9,53	16,61	0,4			●		●						



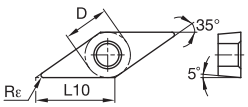
VBGW-M



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
VBGW160404S01015M	9,53	16,61	0,4										●	
VBGW160408S01015M	9,53	16,61	0,8										●	



VBGW-MT



ISO catalogue number	D mm	L10 mm	Rε mm	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
VBGW160404S01015MT	9,53	16,61	0,4						●	●		●		●
VBGW160408S01015MT	9,53	16,61	0,8						●	●		●		●

C2–C71

C72–C109

C110–C115

C116–C147

beyond
B10–B23

B24–B31

B32–B37

Toolholders, Boring Bars, and Cartridges

Toolholders C2–C71

Toolholder Selection Guide C2–C3

Kenclamp C6–C15

Kenlever C16–C22

Fix-Perfect C23

Kenloc C24–C33

Wedgelock C34

Kendex C36–C39

Screw-On C40–C55

V-Bottom C56

MTS C58–C71

Boring Bars C72–C115

Boring Bar Selection Guide C72–C73

Kenclamp C76–C79

Kenloc C80–C82

Kendex C83–C84

Screw-On C85–C102

Kenlever C103–C104

MTS C105–C107

Boring Heads C108–C115

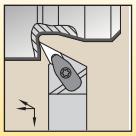
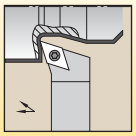
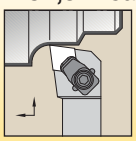
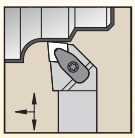
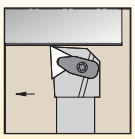
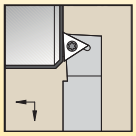
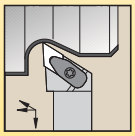
Cartridges C116–C147

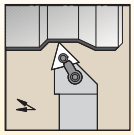
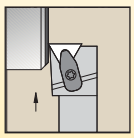
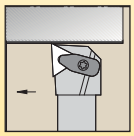
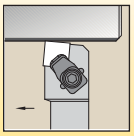
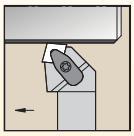
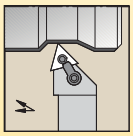
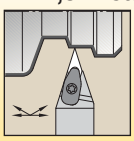
Kenloc C120–C129

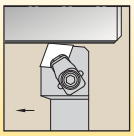
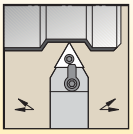
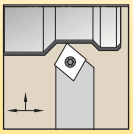
Kenlever C130–C131

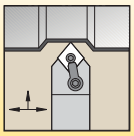
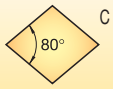
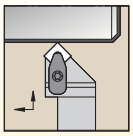
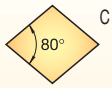
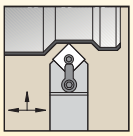
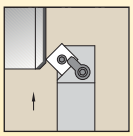
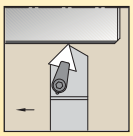
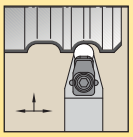
Kendex C132–C136

Screw-On C137–C147

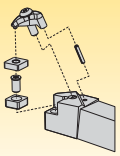
tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
117,5° Lead Angle								
	V 35°	Kenloc™	●	●				C33
		Kenclamp	●		●			C14
107,5° Lead Angle								
	D 55°	Screw-On	●	●				C47
		MTS	●			●		C63
	V 35°	Screw-On	●	●				C55
97,5° Lead Angle								
	E 75°	MTS	●		●			C65
95° Lead Angle								
	C 80°	Kenloc	●	●	●			C24
		Kenclamp	●	●	●			C6
		Kenlever	●	●	●			C16
		Screw-On	●	●	●			C45
		MTS	●	●	●			C62
	W 80°	Kenloc	●	●	●			C33
		Kenclamp	●	●	●			C15
		Kenlever	●	●	●			C22
		Screw-On	●	●	●			C57
		MTS	●	●	●			C73
		Wedgelock™	●	●	●			C34
93° Lead Angle								
	D 55°	Kenloc	●	●				C26
		Kenclamp	●	●				C8
		Kenlever	●	●				C18
		Screw-On	●	●				C48
		MTS	●	●				C64
	V 35°	Kenloc	●	●				C32
		Kenclamp	●	●				C13
		Screw-On	●	●				C56
	T 60°	Wedgelock	●	●				C34

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
90° Lead Angle								
	C 80°	Screw-On	●		●			C44
	D 55°	Screw-On	●	●				C47
	V 35°	Screw-On	●	●				C55
	T 60°	Kenloc	●	●		●		C32
		Kenclamp	●		●			C13
		Kenlever™	●		●			C21
		Kendex™	●		●			C41
		Screw-On	●		●			C54
		MTS	●		●			C72
85° Lead Angle								
	S 90°	MTS	●		●			C71
75° Lead Angle								
	C 80°	Kenloc	●		●			C26
		Kenclamp	●		●			C6
		Kenlever	●		●			C15
		Kendex	●					C38
		Screw-On	●		●			C46
		MTS	●					C63
	S 90°	Kenloc	●		●			C29
		Kenclamp	●		●			C11
		Kenlever	●		●			C20
		Screw-On	●		●			C52
		MTS	●		●			C68–C69
72,5° Lead Angle								
	D 55°	Kenloc	●	●				C33
	V 35°	Kenclamp		●				C14
		Screw-On	●	●				C57

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
70° Lead Angle								
	E 75°	MTS	●					–
63° Lead Angle								
	D 55°	Kenclamp	●	●				C9
62,5° Lead Angle								
	D 55°	Kenloc	●	●				C27
		Kenlever	●	●				C18
		Screw-On	●	●				C49
60° Lead Angle								
	T 60°	Kenloc	●	●				C31
		Kendex	●					–
		Screw-On	●	●	●			–

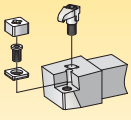
tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
50° Lead Angle								
	 C 80°	Kenloc™	●	●				C25
45° Lead Angle								
	 C 80°	Kenclamp™	●	●	●			C8
		Kenlever™	●	●	●			C17
		Screw-On	●	●	●			C47
	S 90°	Kenloc	●	●	●			C29
		Kenclamp	●	●	●			C12
		Kenlever	●	●	●			C19
		Kendex™	●	●	●			C39
		Screw-On	●	●	●			C52–C53
		MTS	●	●	●			C70
	T 60°	Kendex	●	●	●			C40
	R	Kenloc	●	●	●			C27
		Kenclamp	●	●	●			C9
		Fix-Perfect™	●	●	●			C23
		Screw-On	●	●	●			C50–C51
		MTS	●	●	●			C66

Clamping Styles



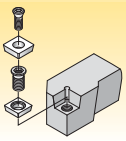
Kenclamp Style

- Uses Kenloc inserts.
- Unique clamp design provides rigid clamping.
- Ensures insert repeatability and seating.
- Reduced chatter and improved tool life.



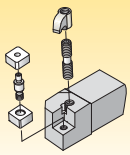
MTS Style Modular Tooling System

- Proven superior system in holding ceramic inserts rigidly in turning and profiling operations.
- Uses standard insert sizes — 80°, 75°, 55°, square, and trigon.
- This system offers the added versatility of using optional hardware to hold standard Kendex and Kenloc inserts.



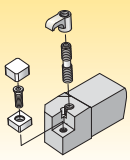
Screw-On Style

- Top clamping by screw for Screw-On inserts.



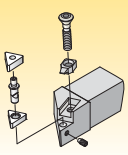
Kenloc Style

- Uses Kenloc inserts.
- Lock pin and top clamp provide rigid clamping.
- Wide variety of insert styles may be used.
- Tools may be used with or without clamp.



Kendex Style

- Uses Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.

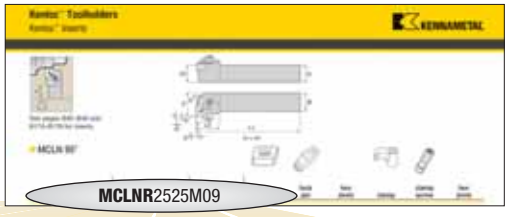


Wedgelock™ Style

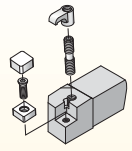
- Top and hole clamping for inserts with hole.

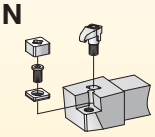
How Do Catalogue Numbers Work?

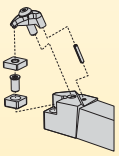
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

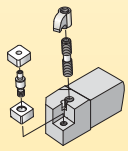


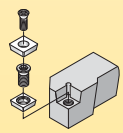
M — Insert Holding Method

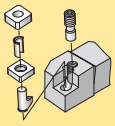
C

Kendex™

N

Top Notch™ Profiling

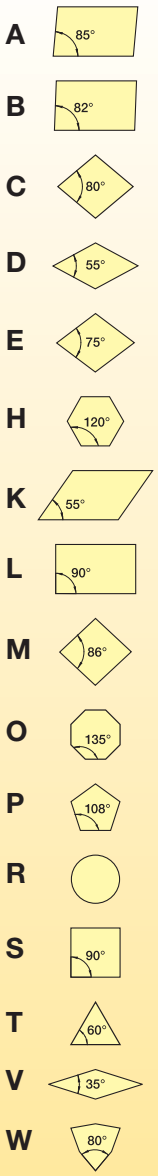
D

Kenclamp™

M

Kenloc™

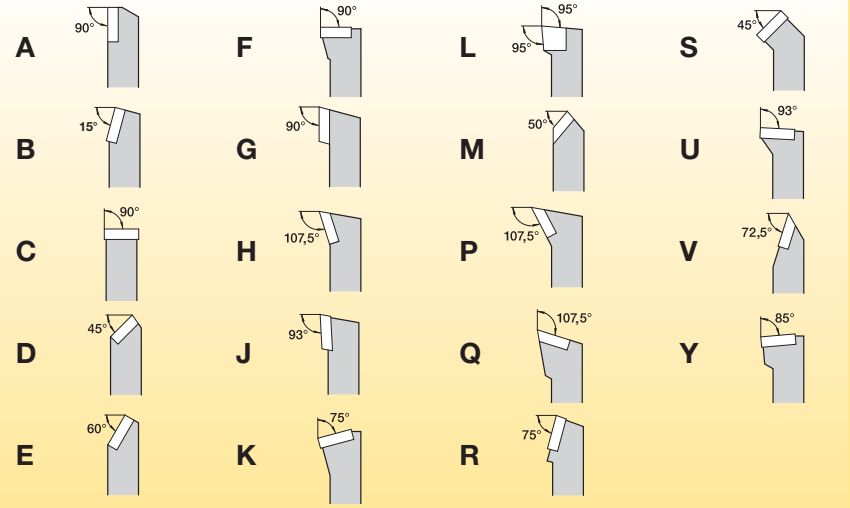
S

Screw-On

P

Kenlever™

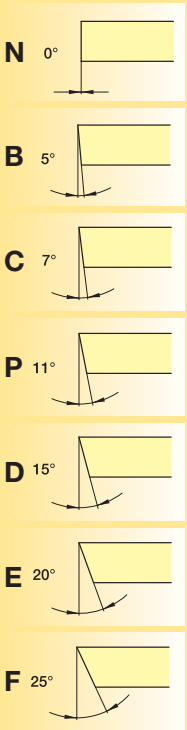
C — Insert Shape



L — Tool Style or Lead Angle



N — Insert Clearance Angle

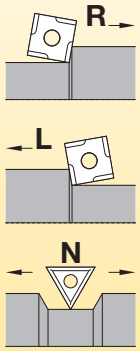


R — Hand of Tool

R = Right hand

L = Left hand

N = Neutral



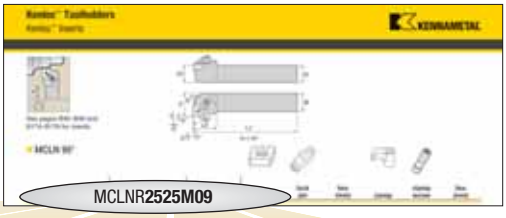
Additional Information

C = Deep pocket for ceramic insert

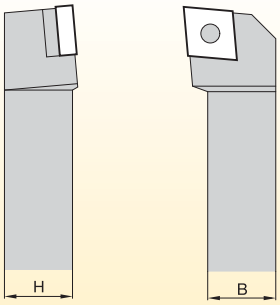
S = Single pocket locating wall

F = Straight shank, no offset

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



25 — Shank Dimensions



The 7th and 8th position shall be a significant two-digit number that indicates the holder cross section. If the dimension for the width "B" or the height "H" is represented by a one digit number, a 0 (zero) will be used in front of it.
Example: 8mm = 08

25 — Shank Dimensions

M — Tool Length

L1	ISO
32	A
40	B
50	C
60	D
70	E
80	F
90	G
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special Design	X

09 — Insert Size

Cutting Edge Length L10

H	Hexagon 120°	
O	Octagon 135°	
P	Pentagon 108°	
S	Square 90°	
T	Triangular 60°	
R	Round —	
C	Rhomboid 80°	
D		55°
E		75°
M		86°
V		35°
W	Trigon 80° with enlarged corner angles	
L	Rectangular 90°	
A	Parallelogram 85°	
B		82°
K		55°

Additional Information

KC = Kenclamp™

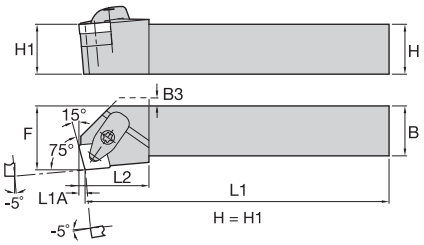
H4 = Wedgelock™ clamping system

M = MTS clamping system for ceramic and PCBN inserts

Insert Thickness *(optional)*

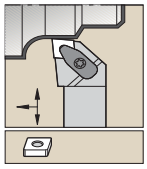
04 = 4,76mm
06 = 6,35mm

See pages B40–B49 and B174–B176 for inserts.

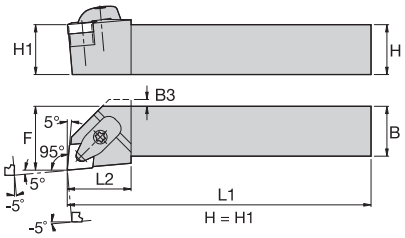


DCKN-KC 75°

catalogue number	H	B	F	L1	L2	L1A	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
DCKNR2020K12KC04	20	20	25,0	125	32,0	3,1	6,0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCKNR2525M12KC04	25	25	32,0	150	32,0	3,1	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCKNR3225P12KC04	32	25	32,0	170	32,0	3,1	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCKNR3232P16KC06	32	32	40,0	170	32,0	3,8	–	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCKNR3232P19KC06	32	32	40,0	170	38,0	4,6	–	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
left hand															
DCKNL2020K12KC04	20	20	25,0	125	32,0	3,1	6,0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCKNL2525M12KC04	25	25	32,0	150	32,0	3,1	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCKNL3225P12KC04	32	25	32,0	170	32,0	3,1	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**



See pages B40–B49 and B174–B176 for inserts.



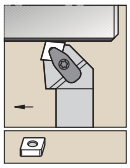
DCLN-KC 95°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DCLNR1616H09KC03	16	16	20,0	100	30,0	6,0	CN..090308	**ICSN332**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DCLNR2020K09KC03	20	20	25,0	125	30,0	2,0	CN..090308	**ICSN332**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DCLNR2020K12KC04	20	20	25,0	125	32,0	4,0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCLNR2525M12KC04	25	25	32,0	150	32,0	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCLNR2525M16KC06	25	25	32,0	150	33,0	–	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNR3225P12KC04	32	25	32,0	170	32,0	–	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCLNR3225P16KC06	32	25	32,0	170	33,0	–	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNR3232P16KC06	32	32	40,0	170	33,0	–	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNR3232P19KC06	32	32	40,0	170	40,0	–	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DCLNR4040S19KC06	40	40	50,0	250	40,0	–	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DCLNR4040S25KC09	40	40	50,0	250	51,0	–	CN..250924	**ICSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

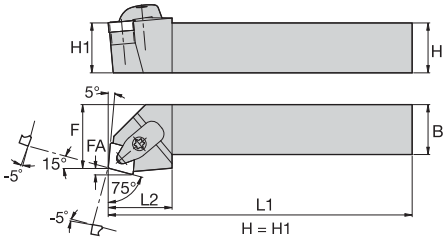
(continued)

(DCLN-KC 95° continued)

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
left hand														
DCLNL1616H09KC03	16	16	20,0	100	30,0	6,0	CN..090308	**ICSN332**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DCLNL2020K09KC03	20	20	25,0	125	30,0	2,0	CN..090308	**ICSN332**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DCLNL2020K12KC04	20	20	25,0	125	32,0	4,0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCLNL2525M12KC04	25	25	32,0	150	32,0	—	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCLNL2525M16KC06	25	25	32,0	150	33,0	—	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNL3225P12KC04	32	25	32,0	170	32,0	—	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCLNL3225P16KC06	32	25	32,0	170	33,0	—	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNL3232P16KC06	32	32	40,0	170	33,0	—	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCLNL3232P19KC06	32	32	40,0	170	40,0	—	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DCLNL4040S19KC06	40	40	50,0	250	40,0	—	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DCLNL4040S25KC09	40	40	50,0	250	51,0	—	CN..250924	**ICSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

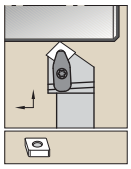


See pages B40–B49 and B174–B176 for inserts.

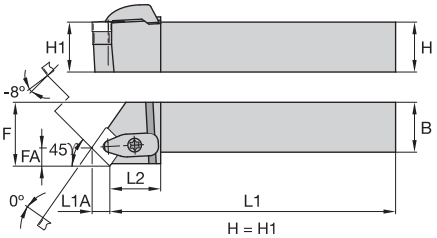


DCRN-KC 75°

catalogue number	H	B	F	L1	L2	FA	gage inset	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DCRNR2020K12KC04	20	20	25,0	125	32,0	3,1	CN..120406	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCRNR2525M12KC04	25	25	32,0	150	32,0	3,1	CN..120406	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCRNR3225P12KC04	32	25	32,0	170	32,0	3,1	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCRNR3232P16KC06	32	32	40,0	170	38,0	3,8	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DCRNR3232P19KC06	32	32	40,0	170	38,0	4,6	CN..190612	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
left hand														
DCRNL2020K12KC04	20	20	25,0	125	32,0	3,1	CN..120406	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCRNL2525M12KC04	25	25	32,0	150	32,0	3,1	CN..120406	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCRNL3225P12KC04	32	25	32,0	170	32,0	3,1	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DCRNL3232P16KC06	32	32	40,0	170	38,0	3,8	CN..160612	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**

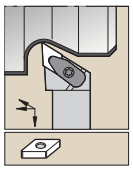


See pages B40–B49 and B174–B176 for inserts.

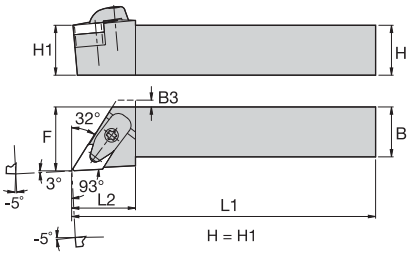


DCSN-KC 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
DCSNR2020K12KC04	20	20	25,0	125	35,0	8,5	8,5	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCSNR2525M12KC04	25	25	32,0	150	35,0	8,5	8,5	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
left hand															
DCSNL2020K12KC04	20	20	25,0	125	35,0	8,5	8,5	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DCSNL2525M12KC04	25	25	32,0	150	35,0	8,5	8,5	CN..120408	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**

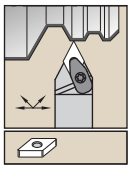


See pages B50–B58 and B176–B178 for inserts.

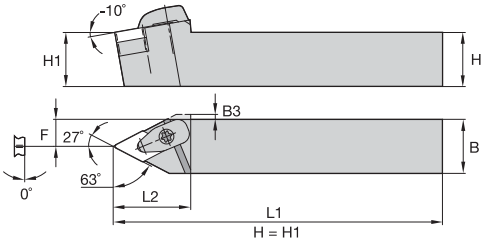


DDJN-KC 93°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DDJNR2020K11KC04	20	20	25,0	125	30,0	2,0	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DDJNR2020K15KC06	20	20	25,0	125	32,0	4,0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNR2525M11KC04	25	25	32,0	150	30,0	–	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DDJNR2525M15KC06	25	25	32,0	150	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNR3225P15KC06	32	25	32,0	170	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNR3232P15KC06	32	32	40,0	170	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
left hand														
DDJNL2020K11KC04	20	20	25,0	125	30,0	2,0	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DDJNL2020K15KC06	20	20	25,0	125	32,0	4,0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNL2525M11KC04	25	25	32,0	150	30,0	–	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DDJNL2525M15KC06	25	25	32,0	150	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNL3225P15KC06	32	25	32,0	170	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDJNL3232P15KC06	32	32	40,0	170	32,0	–	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**

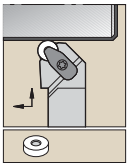


See pages B50–B58 and B176–B178 for inserts.

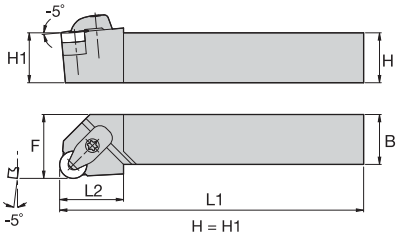


DDNN-KC 63°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DDNNR2020K15KC06	20	20	10,0	125	40,0	2,5	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDNNR2525M15KC06	25	25	12,5	150	40,0	—	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
left hand														
DDNNL2020K15KC06	20	20	10,0	125	40,0	2,5	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDNNL2525M15KC06	25	25	12,5	150	40,0	—	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DDNNL3225P15KC06	32	25	12,5	170	40,0	—	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**

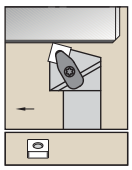


See pages B58–B59 for inserts.

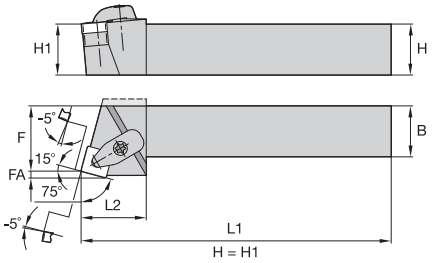


DRGN-KC

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand													
DRGNR2525M12KC04	25	25	32,0	150	32,0	RN..120400	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DRGNR3225P12KC04	32	25	32,0	170	32,0	RN..120400	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DRGNR4040S25KC09	40	40	50,0	250	48,0	RN..250900	**IRSN84**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**
left hand													
DRGNL3225P12KC04	32	25	32,0	170	32,0	RN..120400	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DRGNL3232P15KC06	32	32	40,0	170	32,0	RN..150600	**IRSN54**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DRGNL4040S25KC09	40	40	50,0	250	48,0	RN..250900	**IRSN84**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

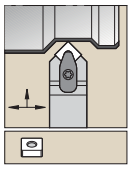


See pages B59–B66 and B178–B179 for inserts.

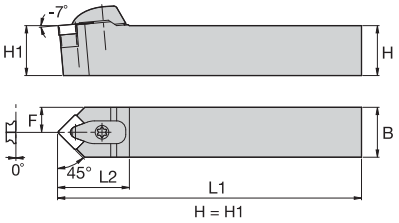


DSBN-KC 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DSBNR4040S25KC09	40	40	35,0	250	52,0	5,9	SN..250924	**ISSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**
left hand														
DSBNL2525M12KC04	25	25	22,0	150	32,0	3,0	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSBNL3232P15KC06	32	32	27,0	170	36,0	5,0	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSBNL4040S25KC09	40	40	35,0	250	52,0	5,9	SN..250924	**ISSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

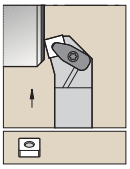


See pages B59–B66 and B178–B179 for inserts.

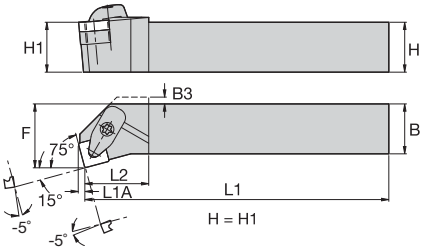


DSDN-KC 45°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
DSDNN2020K12KC04	20	20	10,0	125	36,0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DSDNN2525M12KC04	25	25	12,5	150	36,0	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSDNN2525M15KC06	25	25	12,5	150	42,0	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSDNN3225P12KC04	32	25	12,0	170	36,0	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSDNN3232P19KC06	32	32	15,5	170	44,0	SN..190612	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DSDNN4040S25KC09	40	40	19,5	250	59,0	SN..250924	**ISSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

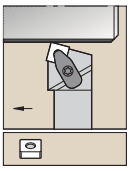


See pages B59–B66 and B178–B179 for inserts.

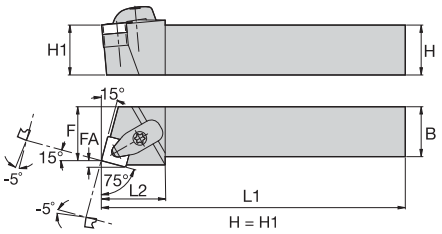


DSKN-KC 75°

catalogue number	H	B	F	L1	L2	L1A	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
DSKNR2020K12KC04	20	20	25,0	125	32,0	3,1	8,0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DSKNR2525M12KC04	25	25	32,0	150	32,0	3,1	4,0	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSKNR3225P12KC04	32	25	32,0	170	32,0	3,1	—	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSKNR3232P15KC06	32	32	40,0	170	32,0	3,8	—	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSKNR3232P19KC06	32	32	40,0	170	38,0	4,6	—	SN..190612	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
left hand															
DSKNL2525M12KC04	25	25	32,0	150	32,0	3,1	4,0	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSKNL3225P12KC04	32	25	32,0	170	32,0	3,1	—	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSKNL3232P15KC06	32	32	40,0	170	32,0	3,8	—	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**

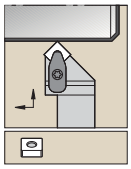


See pages B59–B66 and B178–B179 for inserts.

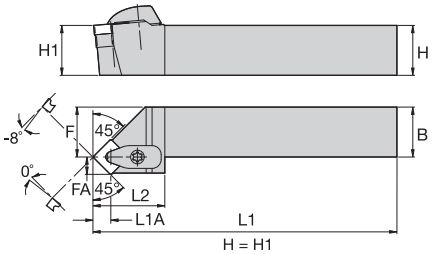


DSRN-KC 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DSRNR2020K12KC04	20	20	22,0	125	32,0	3,1	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DSRNR2525M12KC04	25	25	27,0	150	32,0	3,1	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSRNR3232P15KC06	32	32	35,0	170	38,0	3,8	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSRNR3232P19KC06	32	32	35,0	170	42,0	4,6	SN..190612	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
DSRNR4040S25KC09	40	40	43,0	250	52,0	5,9	SN..250924	**ISSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**
left hand														
DSRNL2525M12KC04	25	25	27,0	150	32,0	3,1	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSRNL3232P15KC06	32	32	35,0	170	38,0	3,8	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSRNL4040S25KC09	40	40	43,0	250	52,0	5,9	SN..250924	**ISSN846**	**KMSP825IP**	25 IP	**CM236R ASSY**	25 IP	**SSP025018M**	**KLM81025IP**

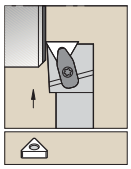


See pages B59–B66 and B178–B179 for inserts.

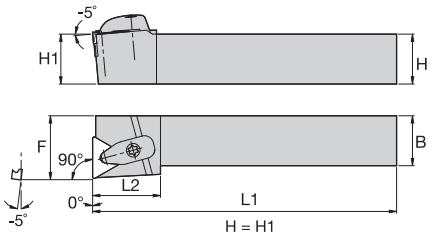


DSSN-KC 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
DSSNR2020K12KC04	20	20	25,0	125	36,0	8,7	8,7	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DSSNR2525M12KC04	25	25	32,0	150	36,0	8,7	8,7	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSSNR2525M15KC06	25	25	32,0	150	42,0	10,7	10,7	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSSNR3225P12KC04	32	25	32,0	170	35,4	8,7	8,7	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSSNR3232P15KC06	32	32	40,0	170	40,3	10,7	10,7	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSSNR3232P19KC06	32	32	40,0	170	44,0	10,7	10,7	SN..190612	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**
left hand															
DSSNL2020K12KC04	20	20	25,0	125	36,0	8,7	8,7	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DSSNL2525M12KC04	25	25	32,0	150	36,0	8,7	8,7	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSSNL3225P12KC04	32	25	32,0	170	35,4	8,7	8,7	SN..120408	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DSSNL3232P15KC06	32	32	40,0	170	40,3	10,7	10,7	SN..150612	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM58L15IP**
DSSNL3232P19KC06	32	32	40,0	170	44,0	10,7	10,7	SN..190612	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**	**KLM68L25IP**

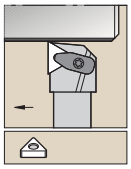


See pages B66–B73 and B179–B180 for inserts.

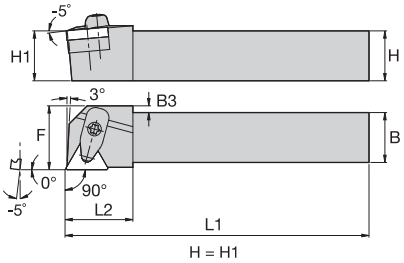


DTFN-KC 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand													
DTFNR2020K16KC04	20	20	25,0	125	32,0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTFNR2525M16KC04	25	25	32,0	150	32,0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTFNR2525M22KC04	25	25	32,0	150	34,0	TN..220408	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DTFNR3232P27KC06	32	32	40,0	170	38,0	TN..270612	**ITSN534**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**	**KLM5815IP**
left hand													
DTFNL2020K16KC04	20	20	25,0	125	32,0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTFNL2525M16KC04	25	25	32,0	150	32,0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTFNL2525M22KC04	25	25	32,0	150	34,0	TN..220408	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
DTFNL3225P16KC04	32	25	32,0	170	32,0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTFNL3225P22KC04	32	25	32,0	170	34,0	TN..220408	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**

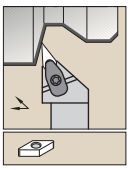


See pages B66–B73 and B179–B180 for inserts.

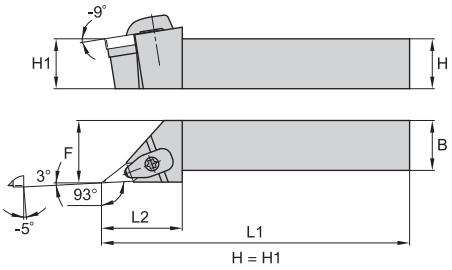


DTGN-KC 90°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DTGNR2020K16KC04	20	20	25,0	125	25,0	6,5	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTGNR2525M16KC04	25	25	32,0	150	25,0	—	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTGNR2525M22KC04	25	25	32,0	150	32,0	3,0	TN..220408	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM46L15IP**
left hand														
DTGNL2020K16KC04	20	20	25,0	125	25,0	6,5	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DTGNL2525M16KC04	25	25	32,0	150	25,0	—	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**

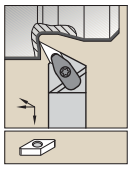


See pages B74–B78 and B180–B181 for inserts.

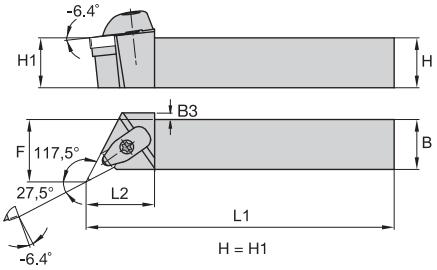


DVJN-KC 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand													
DVJNR2020K16KC04	20	20	25,0	125	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNR2525M16KC04	25	25	32,0	150	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNR2525M22KC04	25	25	32,0	150	55,0	VN..220408	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DVJNR3225P16KC04	32	25	32,0	170	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNR3225P22KC04	32	25	32,0	170	55,0	VN..220408	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
left hand													
DVJNL2020K16KC04	20	20	25,0	125	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNL2525M16KC04	25	25	32,0	150	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNL2525M22KC04	25	25	32,0	150	55,0	VN..220408	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DVJNL3225P16KC04	32	25	32,0	170	46,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVJNL3225P22KC04	32	25	32,0	170	55,0	VN..220408	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**

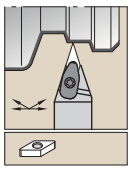


See pages B74–B78 and B180–B181 for inserts.

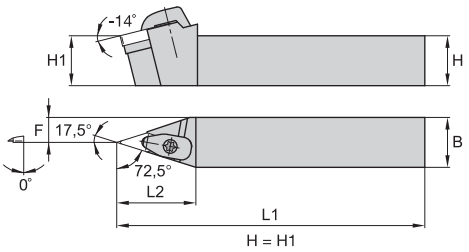


DVON-KC 117,5°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DVONR2020K16KC04	20	20	27,0	125	38,0	5,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVONR2525M16KC04	25	25	32,0	150	38,0	—	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVONR3225P16KC04	32	25	32,0	170	38,0	—	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
left hand														
DVONL2020K16KC04	20	20	27,0	125	38,0	5,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVONL2525M16KC04	25	25	32,0	150	38,0	—	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVONL3225P16KC04	32	25	32,0	170	38,0	—	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**

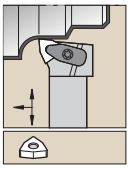


See pages B74–B78 and B180–B181 for inserts.

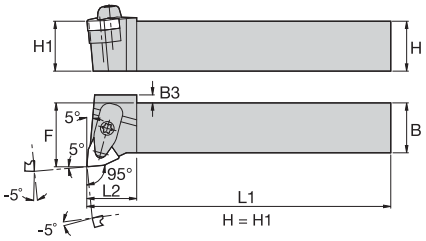


DVVN-KC 72,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
DVVNN2020K16KC04	20	20	9,5	125	48,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVVNN2525M16KC04	25	25	12,0	150	48,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DVVNN2525M22KC04	25	25	12,0	150	57,0	VN..220408	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DVVNN3225P16KC04	32	25	12,0	170	48,0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**

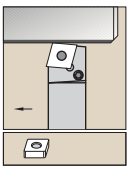


See pages B79–B83 and B181 for inserts.

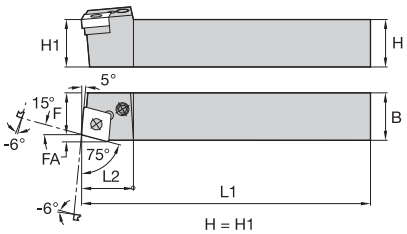


DWLN-KC 95°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand														
DWLNR2020K06KC04	20	20	25,0	125	31,0	–	WN..060408	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DWLNR2020K08KC04	20	20	25,0	125	33,0	–	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNR2525M06KC04	25	25	32,0	150	25,0	–	WN..060408	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DWLNR2525M08KC04	25	25	32,0	150	25,0	4,0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNR3225P08KC04	32	25	32,0	170	25,0	4,0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNR3232P08KC04	32	32	40,0	170	25,0	–	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
left hand														
DWLNL2020K06KC04	20	20	25,0	125	31,0	–	WN..060408	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DWLNL2020K08KC04	20	20	25,0	125	33,0	–	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNL2525M06KC04	25	25	32,0	150	25,0	–	WN..060408	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM34L9IP**
DWLNL2525M08KC04	25	25	32,0	150	25,0	4,0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNL3225P08KC04	32	25	32,0	170	25,0	4,0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**
DWLNL3232P08KC04	32	32	40,0	170	25,0	–	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**	**KLM4615IP**

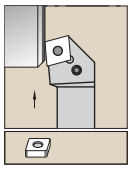


See pages B40–B49 and B174–B176 for inserts.

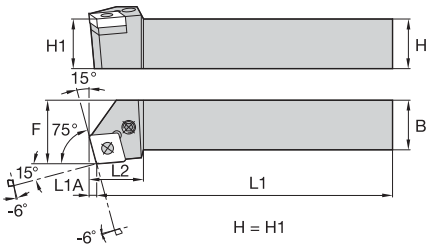


PCBN 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand													
PCBNR2525M12	25	25	22,0	150	26,0	3,1	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCBNR2525M16	25	25	22,0	150	28,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNR3225P12	32	25	22,0	170	28,0	3,1	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCBNR3225P16	32	25	22,0	170	28,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNR3232P16	32	32	27,0	170	38,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNR3232P19	32	32	27,0	170	40,0	4,6	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCBNR4040S19	40	40	35,0	250	38,0	4,6	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
left hand													
PCBNL2020K12	20	20	17,0	125	26,0	3,1	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCBNL2525M12	25	25	22,0	150	26,0	3,1	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCBNL2525M16	25	25	22,0	150	28,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNL3225P16	32	25	22,0	170	28,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNL3232P16	32	32	27,0	170	38,0	4,2	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCBNL3232P19	32	32	27,0	170	40,0	4,6	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCBNL4040S19	40	40	35,0	250	38,0	4,6	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP

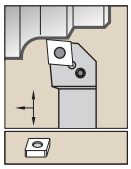


See pages B40–B49 and B174–B176 for inserts.

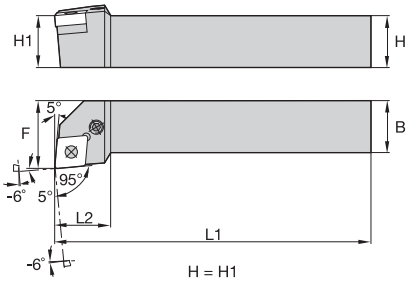


PCKN 75°

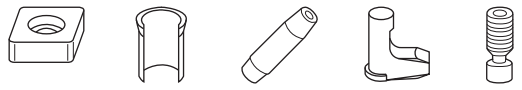
catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand													
PCKNR2020K12	20	20	25,0	125	23,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNR2525M12	25	25	32,0	150	23,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNR2525M16	25	25	32,0	150	30,0	3,80	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCKNR3225P12	32	25	32,0	170	26,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNR3225P16	32	25	32,0	170	30,0	3,80	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCKNR3232P19	32	32	40,0	170	40,0	4,63	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
left hand													
PCKNL2020K12	20	20	25,0	125	23,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNL2525M12	25	25	32,0	150	23,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNL3225P12	32	25	32,0	170	26,0	3,09	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCKNL3225P16	32	25	32,0	170	30,0	3,80	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCKNL3232P19	32	32	40,0	170	40,0	4,63	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP



See pages B40–B49 and B174–B176 for inserts.



PCLN 95°

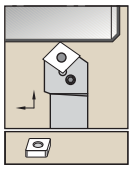


catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand												
PCLNR1616H12	16	16	20,0	100	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNR2020K12	20	20	25,0	125	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNR2525M12	25	25	32,0	150	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNR2525M16	25	25	32,0	150	28,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNR2525M19	25	25	32,0	150	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNR3225P12	32	25	32,0	170	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNR3225P16	32	25	32,0	170	38,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNR3225P19	32	25	32,0	170	38,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNR3232P16	32	32	40,0	170	36,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNR3232P19	32	32	40,0	170	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNR4040S19	40	40	50,0	250	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP

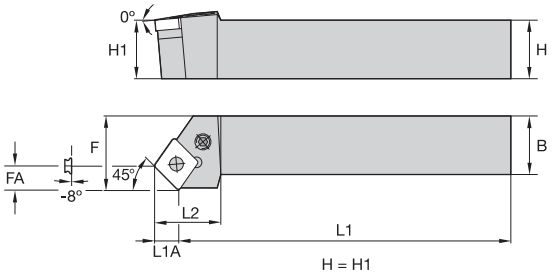
(continued)

(PCLN 95° continued)

catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
left hand												
PCLNL1616H12	16	16	20,0	100	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNL2020K12	20	20	25,0	125	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNL2525M12	25	25	32,0	150	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNL2525M16	25	25	32,0	150	28,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNL2525M19	25	25	32,0	150	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNL3225P12	32	25	32,0	170	26,0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCLNL3225P16	32	25	32,0	170	38,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNL3225P19	32	25	32,0	170	38,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNL3232P16	32	32	40,0	170	36,0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PCLNL3232P19	32	32	40,0	170	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PCLNL4040S19	40	40	50,0	250	36,0	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP

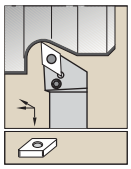


See pages B40–B49 and B174–B176 for inserts.

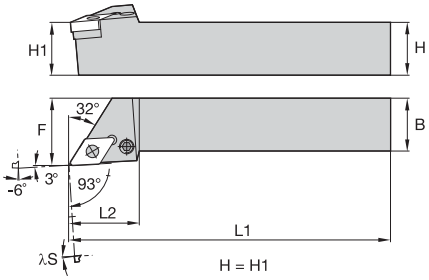


PCSN 45°

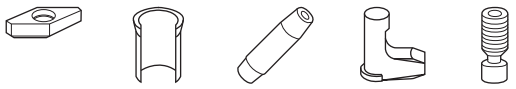
catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand														
PCSNR2020K12	20	20	25,0	125	26,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNR2525M12	25	25	32,0	150	28,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNR3225P12	32	25	32,0	170	32,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNR3232P19	32	32	40,0	170	40,0	12,7	12,7	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
left hand														
PCSNL2020K12	20	20	25,0	125	26,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNL2525M12	25	25	32,0	150	28,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNL3225P12	32	25	32,0	170	32,0	8,5	8,5	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PCSNL3232P19	32	32	40,0	170	40,0	12,7	12,7	CN..190612	**512.123**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP



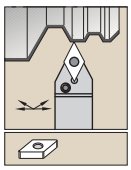
See pages B50–B58 and B176–B178 for inserts.



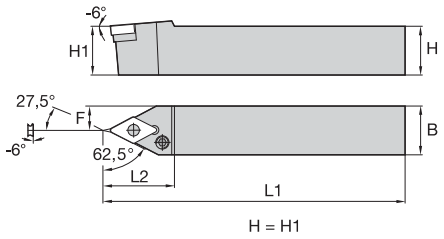
PDJN 93°



catalogue number	H	B	F	L1	L2	λS°	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand													
PDJNR1616H11	16	16	20,0	100	22,0	-6.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNR2020K11	20	20	25,0	125	30,0	-7.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNR2020K15	20	20	25,0	125	36,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNR2525M11	25	25	32,0	150	30,0	-7.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNR2525M15	25	25	32,0	150	36,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNR3225P15	32	25	32,0	170	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNR3232P15	32	32	40,0	170	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNR4025R15	40	25	32,0	200	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
left hand													
PDJNL1616H11	16	16	20,0	100	22,0	-6.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNL2020K11	20	20	25,0	125	30,0	-7.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNL2020K15	20	20	25,0	125	36,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNL2525M11	25	25	32,0	150	30,0	-7.0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDJNL2525M15	25	25	32,0	150	36,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNL3225P15	32	25	32,0	170	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNL3232P15	32	32	40,0	170	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDJNL4025R15	40	25	32,0	200	38,0	-7.0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP

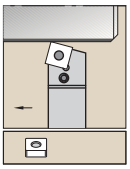


See pages B50–B58 and B176–B178 for inserts.

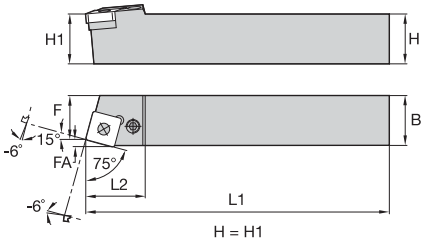


PDNN 62,5°

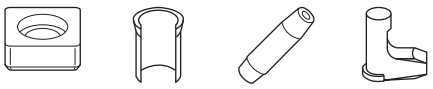
catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand												
PDNNR2020K11	20	20	10,0	125	24,0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDNNR2020K15	20	20	10,0	125	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDNNR2525M15	25	25	12,5	150	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDNNR4025M15	40	25	12,5	150	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
left hand												
PDNNL2020K11	20	20	10,0	125	24,0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDNNL2020K15	20	20	10,0	125	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDNNL2525M11	25	25	12,5	150	30,0	DN..110408	**512.060**	**513.060**	**515.018**	**511.060**	**514.118**	10 IP
PDNNL2525M15	25	25	12,5	150	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
PDNNL4025M15	40	25	12,5	150	36,0	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP



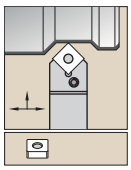
See pages B59–B66 and B178–B179 for inserts.



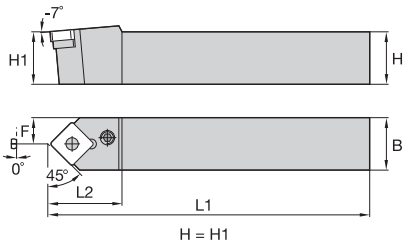
PSBN 75°



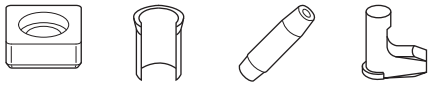
catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand													
PSBNR2020K12	20	20	17,0	125	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNR2525M12	25	25	22,0	150	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNR2525M15	25	25	22,0	150	36,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSBNR3225P12	32	25	22,0	170	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNR3232P15	32	32	27,0	170	33,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSBNR3232P19	32	32	27,0	170	40,0	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSBNR4040S19	40	40	35,0	250	38,0	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSBNR4040S25	40	40	35,0	250	47,0	5,9	SN..250724	**512.092**	**513.038**	**515.028**	**511.038**	**514.138**	30 IP
left hand													
PSBNL2020K12	20	20	17,0	125	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNL2525M12	25	25	22,0	150	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNL2525M15	25	25	22,0	150	36,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSBNL3225P12	32	25	22,0	170	26,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSBNL3225P15	32	25	22,0	170	33,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSBNL3232P15	32	32	27,0	170	33,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSBNL3232P19	32	32	27,0	170	40,0	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSBNL4040S19	40	40	35,0	250	38,0	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSBNL4040S25	40	40	35,0	250	47,0	5,9	SN..250724	**512.092**	**513.038**	**515.028**	**511.038**	**514.138**	30 IP



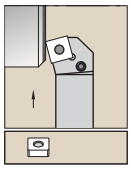
See pages B59–B66 and B178–B179 for inserts.



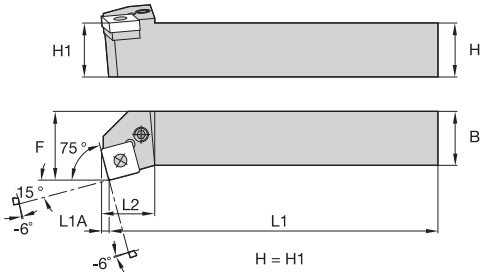
PSDN 45°



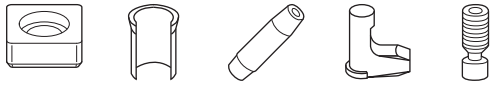
catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
PSDNN1616H09	16	16	8,0	100	20,0	SN..090308	**512.053**	**513.019**	**515.018**	**511.018**	**514.118**	10 IP
PSDNN2020K12	20	20	10,0	125	26,0	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSDNN2525M12	25	25	12,5	150	26,0	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSDNN3225P12	32	25	12,5	170	28,0	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSDNN3225P19	32	25	12,5	170	40,0	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSDNN3232P19	32	32	16,0	170	40,0	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSDNN4040S25	40	40	20,0	250	47,0	SN..250724	**512.092**	**513.038**	**515.028**	**511.038**	**514.138**	30 IP



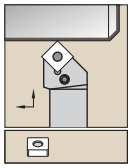
See pages B59–B66 and B178–B179 for inserts.



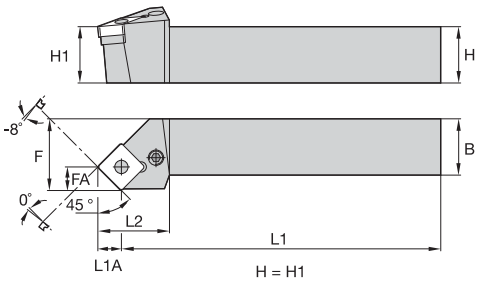
PSKN 75°



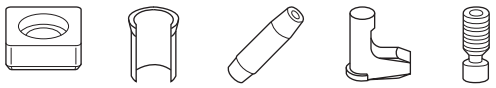
catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand													
PSKNR1616H09	16	16	20,0	100	20,0	2,2	SN..090308	**512.053**	**513.019**	**515.018**	**511.018**	**514.118**	10 IP
PSKNR2020K12	20	20	25,0	125	23,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSKNR2525M12	25	25	32,0	150	23,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSKNR3232P15	32	32	40,0	170	33,0	3,8	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSKNR3232P19	32	32	40,0	170	37,5	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
left hand													
PSKNL2020K12	20	20	25,0	125	23,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSKNL2525M12	25	25	32,0	150	23,0	3,1	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSKNL3232P19	32	32	40,0	170	37,5	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSKNL4040S19	40	40	50,0	250	37,5	4,6	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP



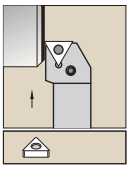
See pages B59–B66 and B178–B179 for inserts.



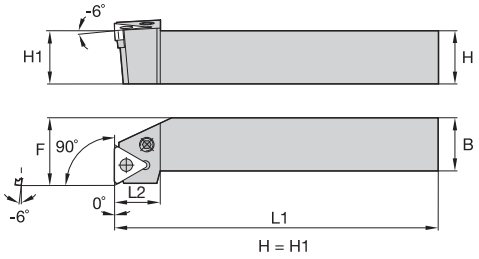
PSSN 45°



catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand														
PSSNR2020K09	20	20	25,0	125	26,0	6,1	6,1	SN..090308	**512.053**	**513.019**	**515.018**	**511.018**	**514.118**	10 IP
PSSNR2020K12	20	20	25,0	125	28,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNR2525M12	25	25	32,0	150	28,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNR2525M15	25	25	32,0	150	32,0	10,2	10,2	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSSNR3225P12	32	25	32,0	170	29,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNR3232P15	32	32	40,0	170	32,0	10,2	10,2	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSSNR3232P19	32	32	40,0	170	37,5	12,5	12,5	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSSNR4040S19	40	40	50,0	250	37,5	12,5	12,5	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
left hand														
PSSNL2020K12	20	20	25,0	125	28,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNL2525M12	25	25	32,0	150	28,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNL2525M15	25	25	32,0	150	32,0	10,2	10,2	SN..150608	**512.025**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
PSSNL3225P12	32	25	32,0	170	29,0	8,3	8,3	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PSSNL3232P19	32	32	40,0	170	37,5	12,5	12,5	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP
PSSNL4040S19	40	40	50,0	250	37,5	12,5	12,5	SN..190612	**512.083**	**513.033**	**515.022**	**511.033**	**514.133**	25 IP

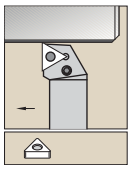


See pages B66–B73 and B179–B180 for inserts.

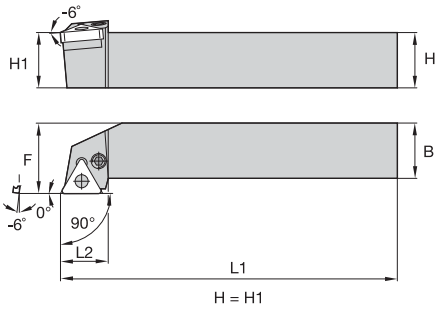


PTFN 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand												
PTFNR2020K16	20	20	25,0	125	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTFNR2525M16	25	25	32,0	150	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
left hand												
PTFNL1616H16	16	16	20,0	100	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTFNL2020K16	20	20	25,0	125	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTFNL2525M16	25	25	32,0	150	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP

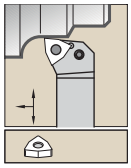


See pages B66–B73 and B179–B180 for inserts.

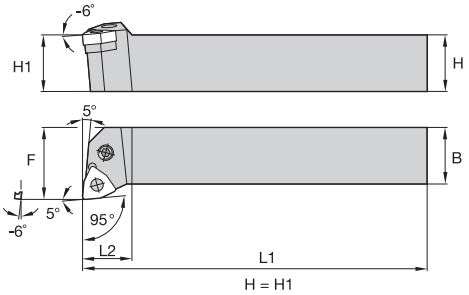


PTGN 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand												
PTGNR1616H16	16	16	20,0	100	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNR2020K16	20	20	25,0	125	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNR2525M16	25	25	32,0	150	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNR2525M22	25	25	32,0	150	26,0	TN..220408	**512.023**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
left hand												
PTGNL1616H16	16	16	20,0	100	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNL2020K16	20	20	25,0	125	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNL2525M16	25	25	32,0	150	20,0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PTGNL2525M22	25	25	32,0	150	26,0	TN..220408	**512.023**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP

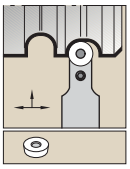


See pages B79–B83 and B181 for inserts.

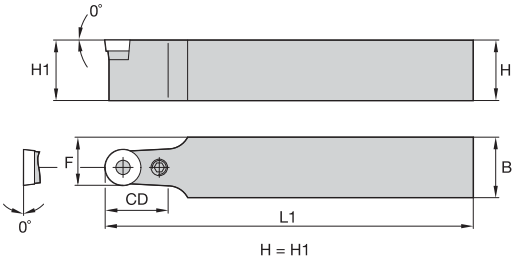


PWLN 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim pin	punch pin	lever	lever screw	Torx Plus
right hand												
PWLNR1616H06	16	16	20,0	100	14,0	WN..060404	**512.134**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PWLNR2020K06	20	20	25,0	125	14,0	WN..060404	**512.134**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PWLNR2020K08	20	20	25,0	125	20,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PWLNR2525M08	25	25	32,0	150	26,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PWLNR3225P08	32	25	32,0	170	26,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
left hand												
PWLNL1616H06	16	16	20,0	100	14,0	WN..060404	**512.134**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PWLNL2020K06	20	20	25,0	125	14,0	WN..060404	**512.134**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
PWLNL2020K08	20	20	25,0	125	20,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PWLNL2525M08	25	25	32,0	150	26,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
PWLNL3225P08	32	25	32,0	170	26,0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP

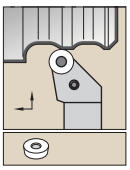


See pages B101–B102 for inserts.

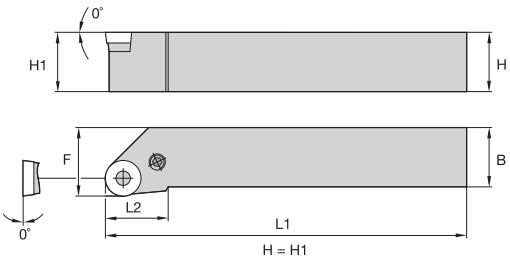


PRCC

catalogue number	H	B	F	L1	CD	gage insert	shim	clamp stud	clamp screw	wrench size clamp screw
PRCCN2020K08H1	20	20	14,0	125	16,0	RC..0803M0	–	**119.069**	**121.408**	2 mm
PRCCN2020K10H1	20	20	15,0	125	24,0	RC..1003M0	**169.325**	**119.069**	**121.408**	2 mm
PRCCN2525M08H1	25	25	16,5	150	16,0	RC..0803M0	–	**119.069**	**121.408**	2 mm
PRCCN2525M10H1	25	25	17,5	150	24,0	RC..1003M0	**169.325**	**119.069**	**121.408**	2 mm
PRCCN2525M12H1	25	25	18,5	150	24,0	RC..1204M0	**169.322**	**119.071**	**121.512**	2.5 mm
PRCCN3225P16H1	32	25	20,5	170	33,0	RC..1606M0	**169.327**	**410.081**	**121.616**	3 mm
PRCCN3232P20H1	32	32	26,0	170	32,0	RC..2006M0	**169.333**	**119.073**	**121.820**	4 mm
PRCCN4040S25H1	40	40	32,5	250	78,0	RC..2507M0	**169.337**	**118.404**	**121.820**	4 mm

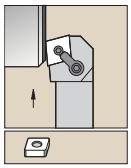


See pages B101–B102 for inserts.

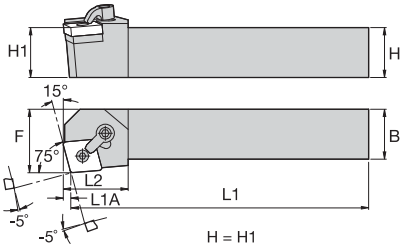


PRGC

catalogue number	H	B	F	L1	L2	gage insert	shim	clamp stud	clamp screw	wrench size clamp screw
right hand										
PRGCR2020K10H1	20	20	25,0	125	26,0	RC..1003M0	**169.325**	**119.069**	**121.408**	2 mm
PRGCR2525M08H1	25	25	29,0	150	26,0	RC..0803M0	–	**119.069**	**121.408**	2 mm
PRGCR2525M10H1	25	25	30,0	150	26,0	RC..1003M0	**169.325**	**119.069**	**121.408**	2 mm
PRGCR2525M12H1	25	25	32,0	150	26,0	RC..1204M0	**169.322**	**119.071**	**121.512**	2.5 mm
PRGCR3225P16H1	32	25	32,0	170	36,0	RC..1606M0	**169.327**	**118.205**	**121.616**	3 mm
PRGCR3232P20H1	32	32	40,0	170	40,0	RC..2006M0	**169.333**	**119.073**	**121.820**	4 mm
PRGCR4040S25H1	40	40	50,0	250	47,0	RC..2507M0	**169.337**	**118.404**	**121.820**	4 mm
left hand										
PRGCL2525M08H1	25	25	29,0	150	26,0	RC..0803M0	–	**119.069**	**121.408**	2 mm
PRGCL2525M10H1	25	25	30,0	150	26,0	RC..1003M0	**169.325**	**119.069**	**121.408**	2 mm
PRGCL2525M12H1	25	25	32,0	150	26,0	RC..1204M0	**169.322**	**119.071**	**121.512**	2.5 mm
PRGCL3225P16H1	32	25	32,0	170	36,0	RC..1606M0	**169.327**	**118.205**	**121.616**	3 mm
PRGCL3232P20H1	32	32	40,0	170	40,0	RC..2006M0	**169.333**	**119.073**	**121.820**	4 mm
PRGCL4040S25H1	40	40	50,0	250	47,0	RC..2507M0	**169.337**	**118.404**	**121.820**	4 mm

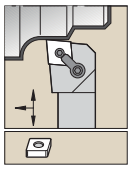


See pages B40–B49 and B174–B176 for inserts.

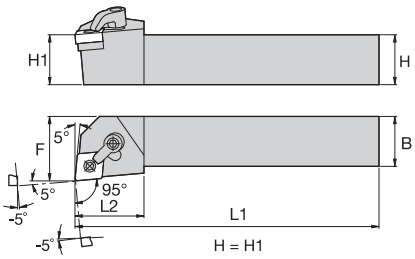


MCKN 75°

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
MCKNR2525M12	25	25	32,0	150	32,0	3,1	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCKNR3225P12	32	25	32,0	170	32,0	3,1	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCKNR3225P16	32	25	32,0	170	33,0	3,6	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCKNR3232P19	32	32	40,0	170	38,0	4,4	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand													
MCKNL2525M12	25	25	32,0	150	32,0	3,1	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCKNL3225P16	32	25	32,0	170	33,0	3,6	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCKNL3232P19	32	32	40,0	170	38,0	4,4	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm



See pages B40–B49 and B174–B176 for inserts.



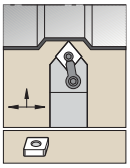
MCLN 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MCLNR1616H09	16	16	20,0	100	25,0	CN..090308	–	**KLM33**	2 mm	**CKM6**	**STCM5**	2.5 mm
MCLNR1616H12	16	16	20,0	100	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNR2020K09	20	20	25,0	125	25,0	CN..090308	**ICSN332**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MCLNR2020K12	20	20	25,0	125	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNR2525M09	25	25	32,0	150	25,0	CN..090308	**ICSN332**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MCLNR2525M12	25	25	32,0	150	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNR2525M16	25	25	32,0	150	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNR2525M19	25	25	32,0	150	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNR3225P12	32	25	32,0	170	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNR3225P16	32	25	32,0	170	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNR3225P19	32	25	32,0	170	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNR3232P12	32	32	40,5	171	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNR3232P16	32	32	40,5	171	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNR3232P19	32	32	40,0	170	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNR4040R19	40	40	50,0	200	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

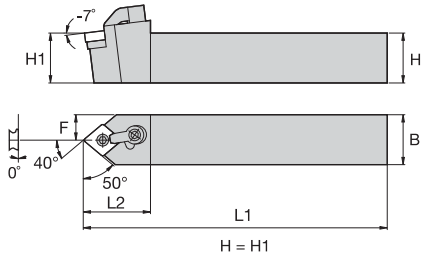
(continued)

(MCLN 95° continued)

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
left hand												
MCLNL1616H09	16	16	20,0	100	25,0	CN..090308	**–**	**KLM33**	2 mm	**CKM6**	**STCM5**	2.5 mm
MCLNL1616H12	16	16	20,0	100	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNL2020K12	20	20	25,0	125	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNL2525M09	25	25	32,0	150	25,0	CN..090308	**ICSN332**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MCLNL2525M12	25	25	32,0	150	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNL2525M16	25	25	32,0	150	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNL2525M19	25	25	32,0	150	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNL3225P12	32	25	32,0	170	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNL3225P16	32	25	32,0	170	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNL3225P19	32	25	32,0	170	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNL3232P12	32	32	40,5	171	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCLNL3232P16	32	32	40,5	171	33,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCLNL3232P19	32	32	40,0	170	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MCLNL4040R19	40	40	50,0	200	38,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

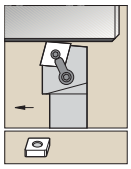


See pages B40–B49 and B174–B176 for inserts.

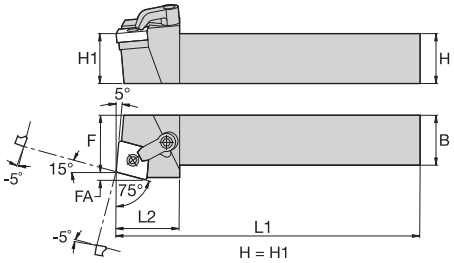


MCMN 50°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
MCMNN2020K12	20	20	10,0	125	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCMNN2525M12	25	25	12,9	150	32,0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCMNN3225P16	32	25	12,9	170	38,0	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCMNN4040R19	40	40	20,0	200	42,0	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

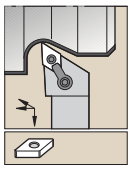


See pages B40–B49 and B174–B176 for inserts.

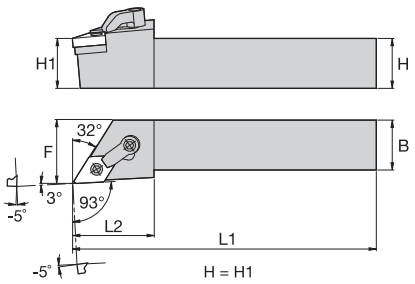


MCRN 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
MCRNR2020K12	20	20	25,0	125	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNR2525M12	25	25	32,0	150	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNR3225P12	32	25	32,0	170	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNR3232P16	32	32	32,0	170	33,0	4,2	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCRNR3232P19	32	32	40,0	170	38,0	4,6	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand													
MCRNL2020K12	20	20	25,0	125	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNL2525M12	25	25	32,0	150	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNL3225P12	32	25	32,0	170	32,0	3,3	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MCRNL3232P16	32	32	32,0	170	33,0	4,2	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MCRNL3232P19	32	32	40,0	170	38,0	4,6	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

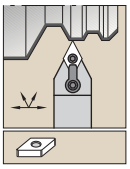


See pages B50–B58 and B176–B178 for inserts.

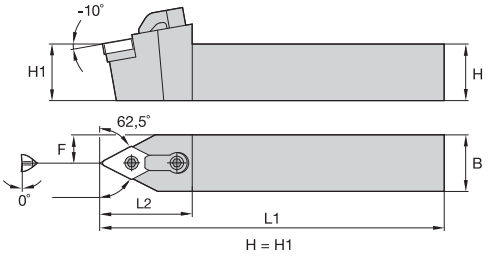


MDJN 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MDJNR1616H11	16	16	20,0	100	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNR2020K11	20	20	25,0	125	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNR2020K15	20	20	25,0	125	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNR2525M11	25	25	32,0	150	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNR2525M15	25	25	32,0	150	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNR3225P15	32	25	32,0	170	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNR3232P15	32	32	40,5	173	32,0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
left hand												
MDJNL1616H11	16	16	20,0	100	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNL2020K11	20	20	25,0	125	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNL2020K15	20	20	25,0	125	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNL2525M11	25	25	32,0	150	32,0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
MDJNL2525M15	25	25	32,0	150	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNL3225P15	32	25	32,0	170	36,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDJNL3232P15	32	32	40,5	173	32,0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm

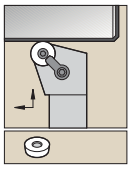


See pages B50–B58 and B176–B178 for inserts.

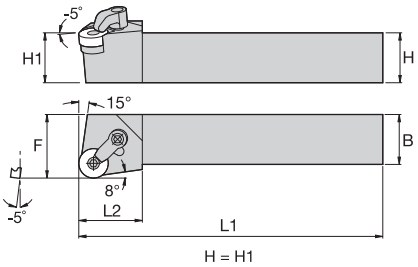


MDNN 62,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MDNNR2525M15	25	25	12,5	150	41,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDNNR3225P15	32	25	12,5	170	41,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
left hand												
MDNNL2525M15	25	25	12,5	150	41,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
MDNNL3225P15	32	25	12,5	170	41,0	DN..150612	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm

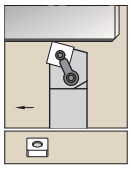


See pages B58–B59 for inserts.

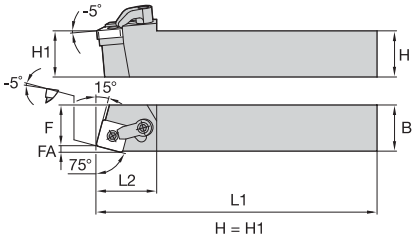


MRGN

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MRGNR2525M12	25	25	32,0	150	32,0	RN..120400	**IRSN43**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MRGNR3232P19	32	32	40,0	170	38,0	RN..190600	**IRSN63**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand												
MRGNL2525M12	25	25	32,0	150	32,0	RN..120400	**IRSN43**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MRGNL3232P19	32	32	40,0	170	38,0	RN..190600	**IRSN63**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

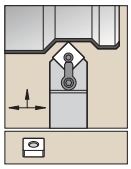


See pages B59–B66 and B178–B179 for inserts.

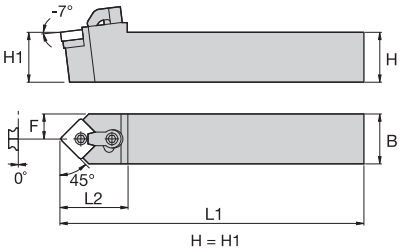


MSBN 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
MSBNR2020K12	20	20	17,0	125	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNR2525M12	25	25	22,0	150	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNR2525M15	25	25	22,0	150	35,0	3,8	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSBNR3225P12	32	25	22,0	170	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNR3232P15	32	32	27,0	170	35,0	3,8	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSBNR3232P19	32	32	27,0	170	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MSBNR4040R19	40	40	35,0	200	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand													
MSBNL2020K12	20	20	17,0	125	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNL2525M12	25	25	22,0	150	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNL2525M15	25	25	22,0	150	35,0	3,8	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSBNL3225P12	32	25	22,0	170	32,0	3,1	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSBNL3232P15	32	32	27,0	170	35,0	3,8	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSBNL3232P19	32	32	27,0	170	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MSBNL4040R19	40	40	35,0	200	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

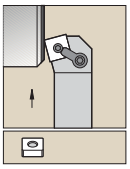


See pages B59–B66 and B178–B179 for inserts.

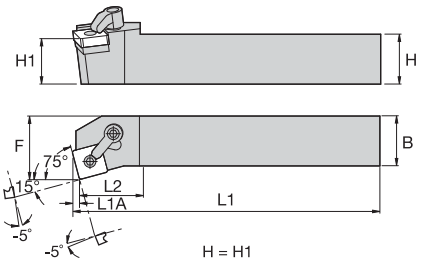


MSDN 45°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
MSDNN1616H09	16	16	8,0	100	28,0	SN..090308	**ISSN332**	**KLM34L**	2 mm	**CKM19**	**STCM9**	2.5 mm
MSDNN2020K12	20	20	10,0	125	32,0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSDNN2525M12	25	25	12,5	150	32,0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSDNN2525M15	25	25	12,5	150	35,0	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSDNN3225P12	32	25	12,5	170	32,0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSDNN3232P19	32	32	16,0	170	42,0	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

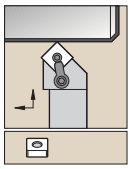


See pages B59–B66 and B178–B179 for inserts.

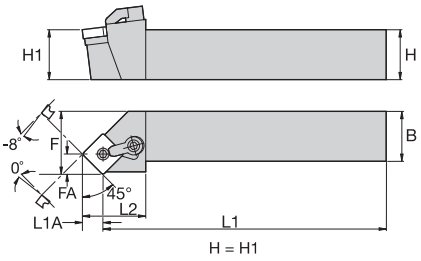


MSKN 75°

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
MSKNR2525M12	25	25	32,0	150	32,0	3,1	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNR3225P12	32	25	32,0	170	32,0	3,1	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNR3232P15	32	32	40,0	170	35,0	3,7	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSKNR3232P19	32	32	40,0	170	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand													
MSKNL2020K12	20	20	25,0	125	32,0	3,1	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNL2525M12	25	25	32,0	150	32,0	3,1	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNL2525M15	25	25	32,0	150	35,0	3,7	SN..150612	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNL3225P12	32	25	32,0	170	32,0	3,1	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSKNL3232P15	32	32	40,0	170	35,0	3,7	SN..150612	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
MSKNL3232P19	32	32	40,0	170	40,0	4,6	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

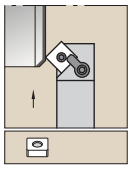


See pages B59–B66 and B178–B179 for inserts.

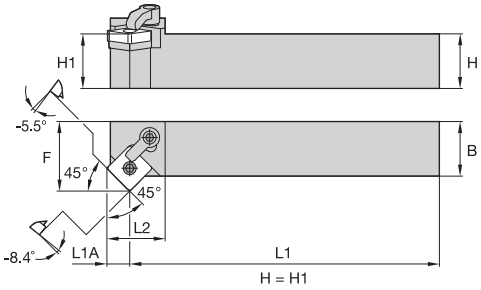


MSSN 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
MSSNR2020K12	20	20	25,0	125	32,0	8,3	8,3	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSSNR2525M12	25	25	32,0	150	32,0	8,3	8,3	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSSNR3232P19	32	32	40,0	170	40,0	12,5	12,5	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MSSNR4040R19	40	40	50,0	200	40,0	12,5	12,5	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand														
MSSNL2020K12	20	20	25,0	125	32,0	8,3	8,3	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSSNL2525M12	25	25	32,0	150	32,0	8,3	8,3	SN..120408	**ISSN433**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
MSSNL3232P19	32	32	40,0	170	40,0	12,5	12,5	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
MSSNL4040R19	40	40	50,0	200	40,0	12,5	12,5	SN..190612	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm

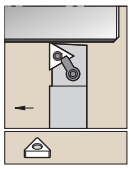


See pages B59–B66 and B178–B179 for inserts.

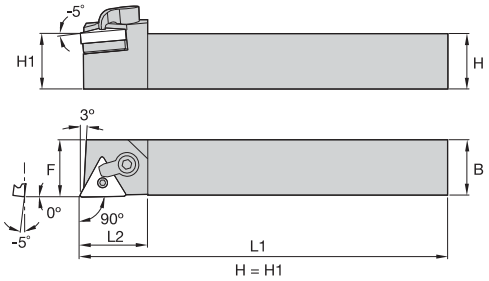


MSZN 45°

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
MSZNR2525M12	25	25	32,0	150	25,0	8,5	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
left hand													
MSZNL2525M12	25	25	32,0	150	25,0	8,5	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm

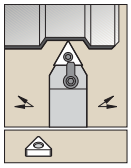


See pages B66–B73 and B179–B180 for inserts.

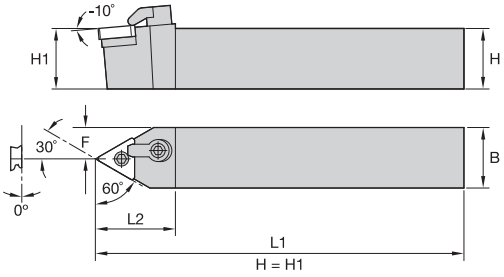


MTAN-S 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MTANRS2020K16	20	20	20,5	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTANRS2525M16	25	25	25,5	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTANRS2525M22	25	25	25,5	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
left hand												
MTANLS2020K16	20	20	20,5	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTANLS2525M16	25	25	25,5	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTANLS2525M22	25	25	25,5	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm

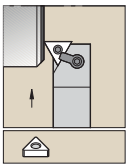


See pages B66–B73 and B179–B180 for inserts.

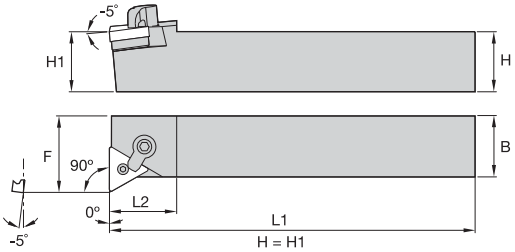


MTEN-S 60°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
MTENNS2020K16	20	20	10,0	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTENNS2525M16	25	25	12,0	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTENNS2525M22	25	25	12,0	150	35,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
MTENNS3225P22	32	25	12,0	170	35,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm

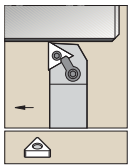


See pages B66–B73 and B179–B180 for inserts.

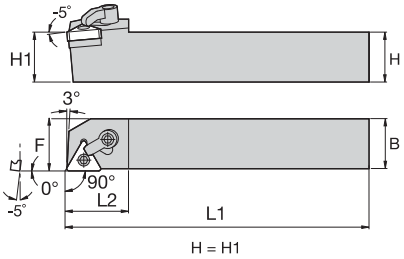


MTFN 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MTFNR2020K16	20	20	25,0	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM20**	**STCM11**	3 mm
MTFNR2525M16	25	25	32,0	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM20**	**STCM11**	3 mm
MTFNR2525M22	25	25	32,0	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
left hand												
MTFNL2020K16	20	20	25,0	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM20**	**STCM11**	3 mm
MTFNL2525M16	25	25	32,0	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM20**	**STCM11**	3 mm
MTFNL2525M22	25	25	32,0	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm

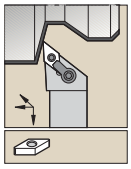


See pages B66–B73 and B179–B180 for inserts.

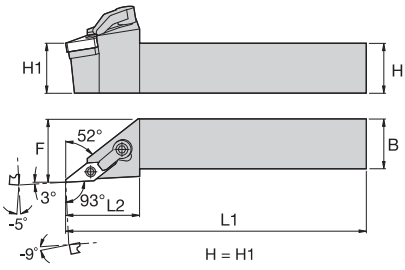


MTGN 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MTGNR1616H16	16	16	20,0	100	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM20**	**STCM11**	3 mm
MTGNR2020K16	20	20	25,0	125	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTGNR2525M16	25	25	32,0	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTGNR2525M22	25	25	32,0	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
MTGNR3232P22	32	32	40,0	170	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
left hand												
MTGNL2525M16	25	25	32,0	150	32,0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
MTGNL2525M22	25	25	32,0	150	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
MTGNL3232P22	32	32	40,0	170	32,0	TN..220408	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm

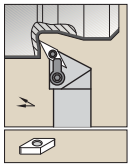


See pages B74–B78 and B180–B181 for inserts.

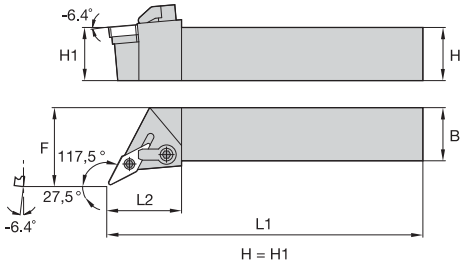


MVJN 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MVJNR2020K16	20	20	25,0	125	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNR2525M16	25	25	32,0	150	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNR3225P16	32	25	32,0	171	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNR3225P22	32	25	32,0	170	50,0	VN..220408	**IVSN432**	**KLM46**	2.5 mm	**CKM26**	**STCM4**	4 mm
MVJNR3232P16	32	32	40,5	171	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
left hand												
MVJNL2020K16	20	20	25,0	125	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNL2525M16	25	25	32,0	150	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNL3225P16	32	25	32,0	171	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVJNL3225P22	32	25	32,0	170	50,0	VN..220408	**IVSN432**	**KLM46**	2.5 mm	**CKM26**	**STCM4**	4 mm
MVJNL3232P16	32	32	40,5	171	37,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm

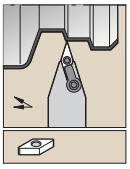


See pages B74–B78 and B180–B181 for inserts.

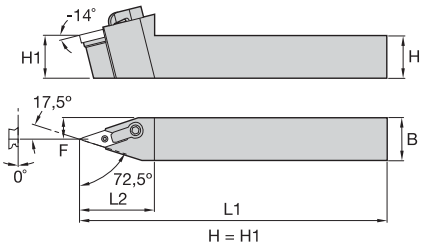


MVON 117,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MVONR2525M16	25	25	32,0	150	30,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
left hand												
MVONL2525M16	25	25	32,0	150	30,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm

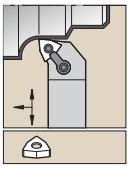


See pages B74–B78 and B180–B181 for inserts.

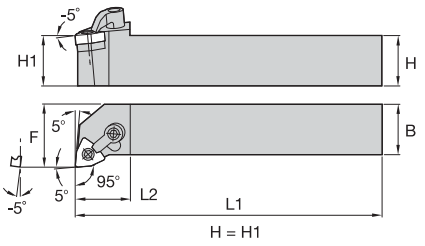


MVVN 72,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
MVVNN2020K16	20	20	10,0	125	42,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVVNN2525M16	25	25	12,5	150	42,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
MVVNN2525M22	25	25	12,0	150	55,0	VN..220408	**IVSN432**	**KLM46**	2.5 mm	**CKM26**	**STCM4**	4 mm
MVVNN3225P16	32	25	12,5	170	42,0	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm

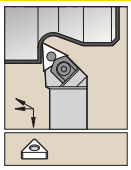


See pages B79–B83 and B181 for inserts.

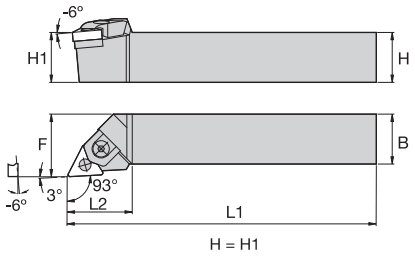


MWLN 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
MWLNR2020K06	20	20	25,0	125	25,0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MWLNR2525M06	25	25	32,0	150	25,0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MWLNR3232P08	32	32	40,3	171	32,0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM7**	**STCM5**	2.5 mm
left hand												
MWLNL2020K06	20	20	25,0	125	25,0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MWLNL2525M06	25	25	32,0	150	25,0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
MWLNL3232P08	32	32	40,3	171	32,0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM7**	**STCM5**	2.5 mm

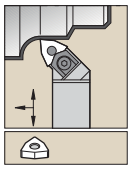


See pages B66–B73 and B179–B180 for inserts.

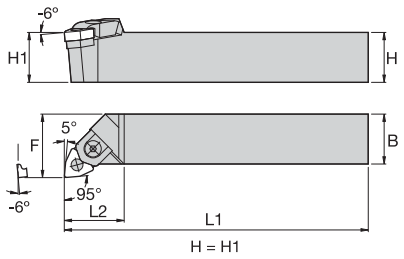


MTJN 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	set screw	hex (mm)	clamp assembly	hex (mm)
right hand												
MTJNR2020K16H4	20	20	25,0	125	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm
MTJNR2525M16H4	25	25	32,0	150	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm
MTJNR2525M22H4	25	25	32,0	150	36,0	TN..220408	**512.126**	**513.126**	**192.159**	3 mm	**551.126**	3 mm
MTJNR3225P16H4	32	25	32,0	170	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm
MTJNR3225P22H4	32	25	32,0	170	36,0	TN..220408	**512.126**	**513.126**	**192.159**	3 mm	**551.126**	3 mm
left hand												
MTJNL2020K16H4	20	20	25,0	125	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm
MTJNL2525M16H4	25	25	32,0	150	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm
MTJNL2525M22H4	25	25	32,0	150	36,0	TN..220408	**512.126**	**513.126**	**192.159**	3 mm	**551.126**	3 mm
MTJNL3225P16H4	32	25	32,0	170	32,0	TN..160408	**512.125**	**513.125**	**192.159**	3 mm	**551.125**	3 mm



See pages B79–B83 and B181 for inserts.



MWLN 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	lock pin	set screw	Torx	clamp assembly	hex (mm)
right hand												
MWLNR2020K08H4	20	20	25,0	125	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm
MWLNR2525M08H4	25	25	32,0	150	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm
MWLNR3225P08H4	32	25	32,0	170	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm
left hand												
MWLNL2020K08H4	20	20	25,0	125	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm
MWLNL2525M08H4	25	25	32,0	150	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm
MWLNL3225P08H4	32	25	32,0	170	30,0	WN..080408	**512.131**	**513.132**	**192.636**	T15	**551.131**	3 mm

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The ISO 26622 Standard

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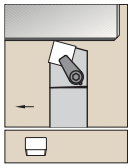
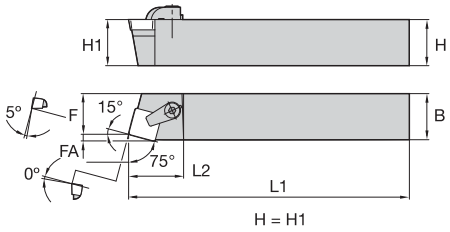
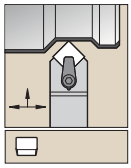


See pages B85–B86 and B130 for inserts.

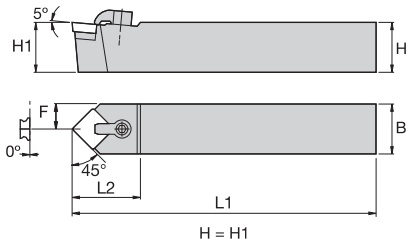


CSBP 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	hex (mm)	shim screw	clamp	clamp screw	hex (mm)
right hand													
CSBPR2020K12	20	20	17,0	125	30,0	3,1	SP..120308	**SM840**	2 mm	**MS111**	**CKM10**	**STCM8**	4 mm
CSBPR2525M12	25	25	22,0	150	30,0	3,1	SP..120308	**SM840**	2 mm	**MS111**	**CKM10**	**STCM8**	4 mm
left hand													
CSBPL2020K12	20	20	17,0	125	30,0	3,1	SP..120308	**SM840**	2 mm	**MS111**	**CKM10**	**STCM8**	4 mm
CSBPL2525M12	25	25	22,0	150	30,0	3,1	SP..120308	**SM840**	2 mm	**MS111**	**CKM10**	**STCM8**	4 mm

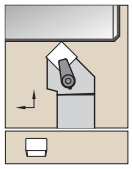


See pages B85–B86 and B130 for inserts.

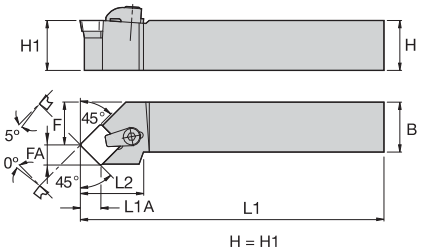


CSDP 45°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
CSDPN1212F09	12	12	6,0	80	25,0	SP..090308	**SM820**	**MS959**	–	**CKM7**	**STCM9**	2.5 mm
CSDPN1616H09	16	16	8,0	100	25,0	SP..090308	**SM820**	**MS959**	–	**CKM7**	**STCM9**	2.5 mm
CSDPN2020K12	20	20	10,0	125	32,0	SP..120308	**SM840**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CSDPN2525M12	25	25	12,5	150	32,0	SP..120308	**SM840**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm

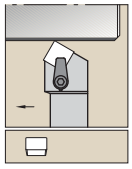


See pages B85–B86 and B130 for inserts.

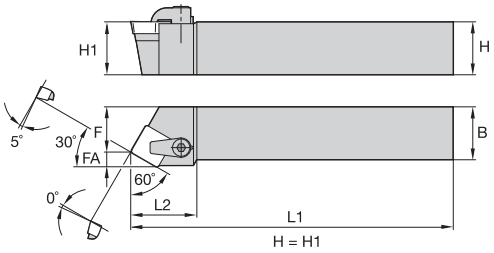


CSSP 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
CSSPR2020K12	20	20	25,0	125	32,0	8,7	8,3	SP..120308	**SM840**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CSSPR2525M12	25	25	32,0	150	32,0	8,7	8,3	SP..120308	**SM840**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm
left hand														
CSSPL2525M12	25	25	32,0	150	32,0	8,7	8,3	SP..120308	**SM840**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm

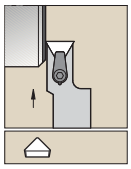


See pages B86–B87 and B130 for inserts.

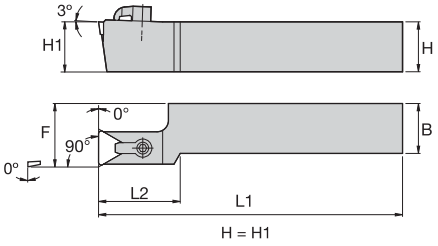


CSTP 60°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
CSTPR2020K09	20	20	17,0	125	20,0	4,3	SP..090308	**SM820**	**MS959**	–	**CKM7**	**STCM5**	2.5 mm
CSTPR2020K12	20	20	17,0	125	30,0	5,9	SP..120308	**SM840**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
left hand													
CSTPL2020K09	20	20	17,0	125	20,0	4,3	SP..090308	**SM820**	**MS959**	–	**CKM7**	**STCM5**	2.5 mm
CSTPL2020K12	20	20	17,0	125	30,0	5,9	SP..120308	**SM840**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CSTPL2525M12	25	25	22,0	150	28,0	5,9	SP..120308	**SM840**	**MS111**	2 mm	**CKM12**	**STCM4**	4 mm

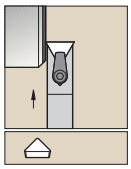


See pages B86–B87 and B130 for inserts.

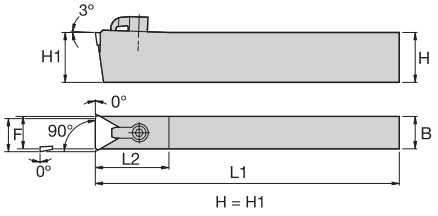


CTCP 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
CTCPR2020K16	20	20	25,0	125	38,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM13**	**STCM8**	4 mm

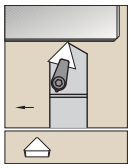


See pages B86–B87 and B130 for inserts.

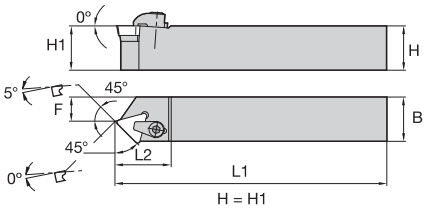


CTCP 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
CTCPN2510M11	25	10	10,0	150	26,0	TP..110304	**SM819**	**MS960**	–	**CKM7**	**STCM5**	2.5 mm
CTCPN2514M16	25	14	14,4	150	28,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM13**	**STCM4**	4 mm
CTCPN2518M22	25	18	19,2	150	41,0	TP..220408	**SM837**	**MS125**	2.5 mm	**CKM13**	**STCM4**	4 mm
CTCPN2520M22	25	20	20,2	150	41,0	TP..220408	**SM837**	**MS125**	2.5 mm	**CKM13**	**STCM4**	4 mm
CTCPN4018R22	40	18	19,2	200	41,0	TP..220408	**SM837**	**MS125**	2.5 mm	**CKM13**	**STCM4**	4 mm
CTCPN4020R22	40	20	20,2	200	41,0	TP..220408	**SM837**	**MS125**	2.5 mm	**CKM13**	**STCM4**	4 mm

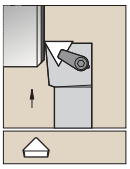


See pages B86–B87 and B130 for inserts.

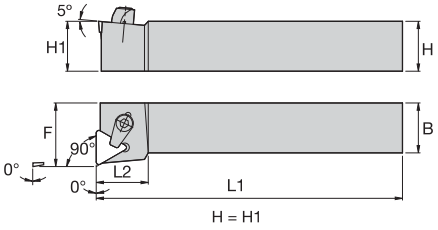


CTDP 45°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
CTDPR1212F11	12	12	6,0	80	22,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm
CTDPR2525M16	25	25	16,0	150	30,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm
left hand												
CTDPL1212F11	12	12	6,0	80	22,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm

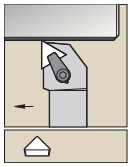


See pages B86–B87 and B130 for inserts.

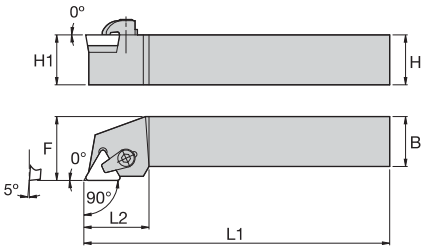


CTFP 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
CTFPR2020K16	20	20	25,0	125	29,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CTFPR2525M16	25	25	32,0	150	29,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm
left hand												
CTFPL2020K16	20	20	25,0	125	29,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CTFPL2525M16	25	25	32,0	150	29,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm

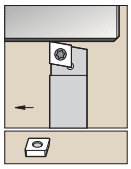


See pages B86–B87 and B130 for inserts.

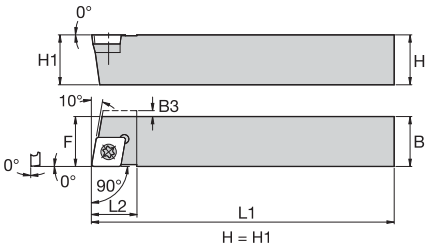


CTGP 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
CTGPR1212F11	12	12	16,0	80	20,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm
CTGPR1616H11	16	16	20,0	100	20,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm
CTGPR2020K11	20	20	25,0	125	20,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm
CTGPR2020K16	20	20	25,0	125	26,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CTGPR2525M16	25	25	32,0	150	26,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm
CTGPR2525M22	25	25	32,0	150	30,0	TP..220408	**SM837**	**MS125**	2.5 mm	**CKM9**	**STCM4**	4 mm
left hand												
CTGPL1212F11	12	12	16,0	80	20,0	TP..110304	**SM819**	**MS960**	–	**CKM19**	**STCM9**	2.5 mm
CTGPL2020K16	20	20	25,0	125	26,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM10**	**STCM8**	4 mm
CTGPL2525M16	25	25	32,0	150	26,0	TP..160308	**SM841**	**MS111**	2 mm	**CKM9**	**STCM4**	4 mm

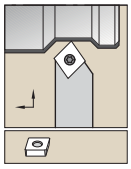


See pages B88–B91 and B187–B188 for inserts.

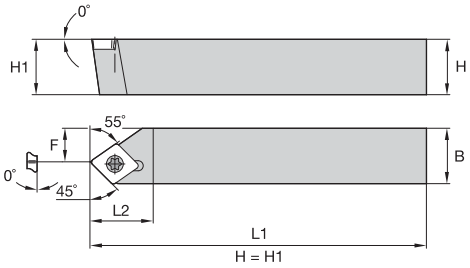


SCAC 90°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCACR1010M06Q	10	10	10,0	150	11,0	–	CC..060204	**–**	**–**	–	**MS1153**	T7
SCACR1212M06Q	12	12	12,0	150	11,0	–	CC..060204	**–**	**–**	–	**MS1153**	T7
SCACR1616K09Q	16	16	16,0	125	16,0	–	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SCACL0808M06Q	8	8	8,0	150	12,0	1,5	CC..060204	**–**	**–**	–	**MS1153**	T7
SCACL1010M06Q	10	10	10,0	150	11,0	–	CC..060204	**–**	**–**	–	**MS1153**	T7

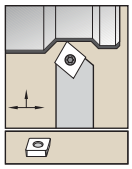


See pages B92–B95 and B189–B190 for inserts.

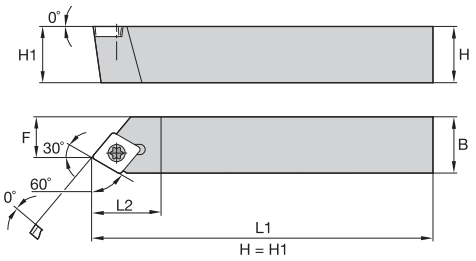


SCDP 45°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCDPR1212H06	12	12	7,0	100	14,0	CP..060203	**MS1153**	T7
left hand								
SCDPL1212H06	12	12	7,0	100	14,0	CP..060203	**MS1153**	T7

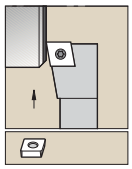


See pages B92–B95 and B189–B190 for inserts.

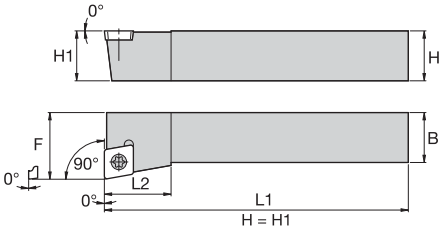


SCEP 60°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCEPR1010H06	10	10	6,5	100	12,0	CP..060203R.	**MS1153**	T7
SCEPR1212H06	12	12	8,5	100	12,0	CP..060203R.	**MS1153**	T7
left hand								
SCEPL1010H06	10	10	6,5	100	12,0	CP..060203L.	**MS1153**	T7

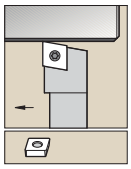


See pages B88–B91 and B187–B188 for inserts.

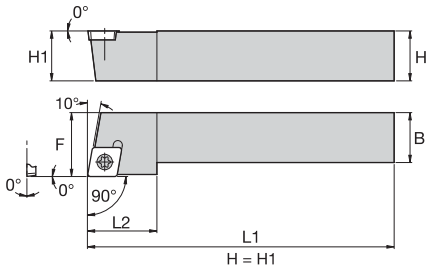


SCFC 90°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCFCR1212N09	12	12	16,0	160	16,0	CC..09T308	**MS1155**	T15
left hand								
SCFCL1212N09	12	12	16,0	160	16,0	CC..09T308	**MS1155**	T15

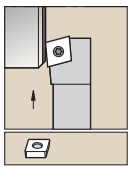


See pages B88–B91 and B187–B188 for inserts.

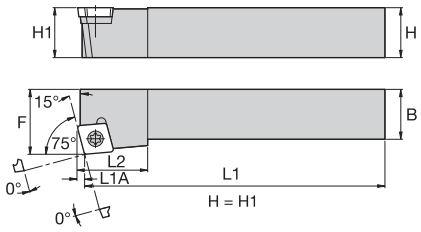


SCGC 90°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCGCR1010M06	10	10	12,0	150	11,0	CC..060204	**MS1153**	T7
SCGCR1212N09	12	12	16,0	160	16,0	CC..09T308	**MS1155**	T15
left hand								
SCGCL1010M06	10	10	12,0	150	11,0	CC..060204	**MS1153**	T7
SCGCL1212N09	12	12	16,0	160	16,0	CC..09T308	**MS1155**	T15

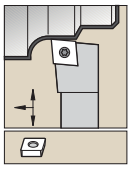


See pages B88–B91 and B187–B188 for inserts.

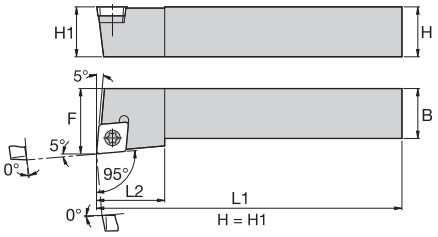


SCKC 75°

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCKCR1616H09	16	16	20,0	100	16,0	2,3	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCKCR2020K09	20	20	25,0	125	16,0	2,3	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

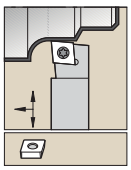


See pages B88–B91 and B187–B188 for inserts.

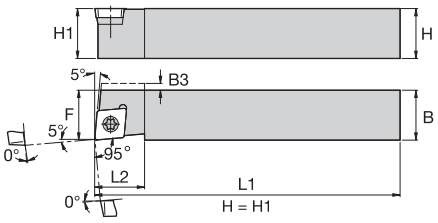


SCLC 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SCLCR0808L06	8	8	10,0	140	11,0	CC..060204	–	–	–	**MS1153**	T7
SCLCR1010M06	10	10	12,0	150	12,0	CC..060204	–	–	–	**MS1153**	T7
SCLCR1212N09	12	12	16,0	160	16,0	CC..09T308	–	–	–	**MS1155**	T15
SCLCR1616H09	16	16	20,0	100	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR2020K09	20	20	25,0	125	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR2020K12	20	20	25,0	125	20,0	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
SCLCR2525M09	25	25	32,0	150	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR2525M12	25	25	32,0	150	19,8	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
left hand											
SCLCL0808L06	8	8	10,0	140	11,0	CC..060204	–	–	–	**MS1153**	T7
SCLCL1010M06	10	10	12,0	150	12,0	CC..060204	–	–	–	**MS1153**	T7
SCLCL1212N09	12	12	16,0	160	16,0	CC..09T308	–	–	–	**MS1155**	T15
SCLCL1616H09	16	16	20,0	100	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL2020K09	20	20	25,0	125	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL2020K12	20	20	25,0	125	20,0	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
SCLCL2525M09	25	25	32,0	150	16,0	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL2525M12	25	25	32,0	150	19,8	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15

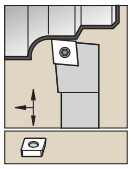


See pages B88–B91 and B187–B188 for inserts.

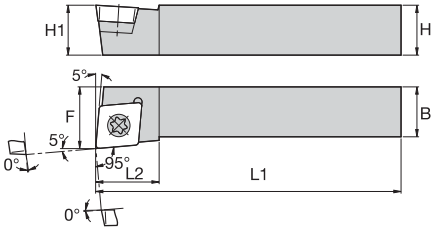


SCLC-F 95°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCLCRF0808M06Q	8	8	8,0	150	12,0	1,5	CC..060204	–	–	–	**MS1153**	T7
SCLCRF1010M06Q	10	10	10,0	150	11,0	–	CC..060204	–	–	–	**MS1153**	T7
SCLCRF1212M06Q	12	12	12,0	150	11,0	–	CC..060204	–	–	–	**MS1153**	T7
SCLCRF1616K09Q	16	16	16,0	125	16,0	–	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SCLCLF1616K09Q	16	16	16,0	125	16,0	–	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

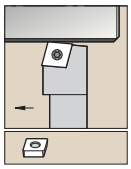


See pages B92–B95 and B189–B190 for inserts.

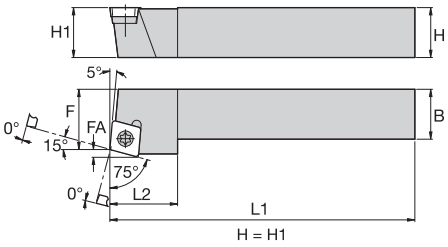


SCLP 95°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCLPR1010M06	10	10	11,0	150	11,4	CP..060203	**MS1153**	T7
SCLPR1212M06	12	12	13,0	150	11,4	CP..060203	**MS1153**	T7
left hand								
SCLPL1212M06	12	12	13,0	150	11,4	CP..060203	**MS1153**	T7

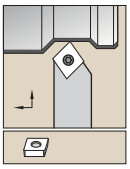


See pages B88–B91 and B187–B188 for inserts.

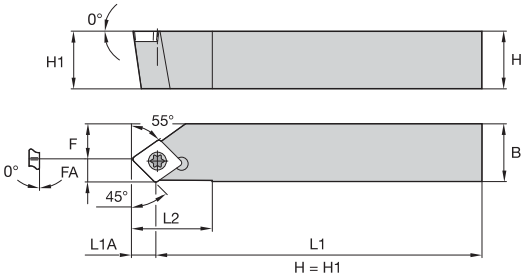


SCRC 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCRCR1212N09	12	12	13,0	160	14,0	2,3	CC..09T308	–	–	–	**MS1155**	T15
SCRCR1616H09	16	16	17,0	100	14,0	2,3	CC..09T308	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

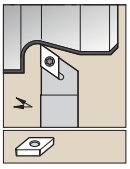


See pages B92–B95 and B189–B190 for inserts.

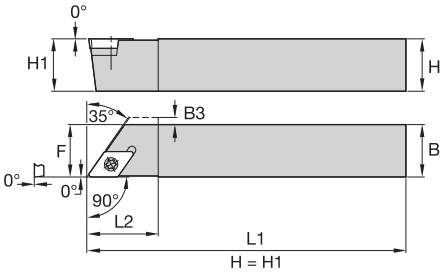


SCSP 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex	insert screw	Torx
SCSPR1010H06	10	10	6,0	100	14,0	4,2	4,2	CP..060203	–	–	–	**MS1153**	T7

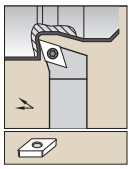


See pages B95–B98 and B191–B192 for inserts.

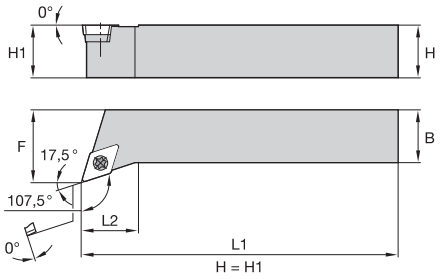


SDAC 90°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SDACR1212M11Q	12	12	12,0	150	22,0	1,5	DC..11T308	–	–	–	**MS1155**	T15
SDACR1616K11Q	16	16	16,0	125	22,0	–	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SDACL0808M07Q	8	8	8,0	150	16,0	1,5	DC..070204	–	–	–	**MS1153**	T7
SDACL1212M11Q	12	12	12,0	150	22,0	1,5	DC..11T308	–	–	–	**MS1155**	T15

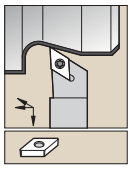


See pages B95–B98 and B191–B192 for inserts.

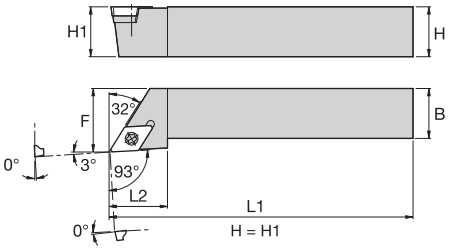


SDHC 107,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SDHCR1616H11	16	16	20,0	100	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCR2020K11	20	20	25,0	125	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCR2525M11	25	25	32,0	150	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCR2525M15	25	25	32,0	150	25,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15
left hand											
SDHCL1616H11	16	16	20,0	100	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCL2020K11	20	20	25,0	125	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCL2525M11	25	25	32,0	150	20,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDHCL2525M15	25	25	32,0	150	25,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15

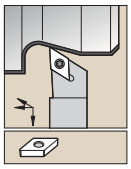


See pages B95–B98 and B191–B192 for inserts.

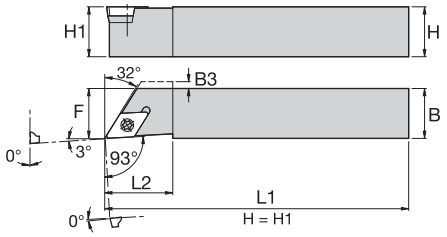


SDJC 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SDJCR0808L07	8	8	10,0	140	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCR1010M07	10	10	12,0	150	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCR1212N07	12	12	16,0	160	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCR1212N11	12	12	16,0	160	22,0	DC..11T308	–	–	–	**MS1155**	T15
SDJCR1616H07	16	16	20,0	100	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCR1616H11	16	16	20,0	100	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCR2020K07	20	20	25,0	125	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCR2020K11	20	20	25,0	125	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCR2020K15	20	20	25,0	125	32,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15
SDJCR2525M11	25	25	32,0	150	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCR2525M15	25	25	32,0	150	32,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15
left hand											
SDJCL0808L07	8	8	10,0	140	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCL1010M07	10	10	12,0	150	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCL1212N07	12	12	16,0	160	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCL1212N11	12	12	16,0	160	22,0	DC..11T308	–	–	–	**MS1155**	T15
SDJCL1616H07	16	16	20,0	100	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCL1616H11	16	16	20,0	100	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCL2020K07	20	20	25,0	125	16,0	DC..070204	–	–	–	**MS1153**	T7
SDJCL2020K11	20	20	25,0	125	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCL2525M11	25	25	32,0	150	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCL2525M15	25	25	32,0	150	32,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15

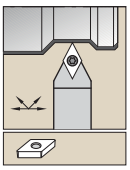


See pages B95–B98 and B191–B192 for inserts.

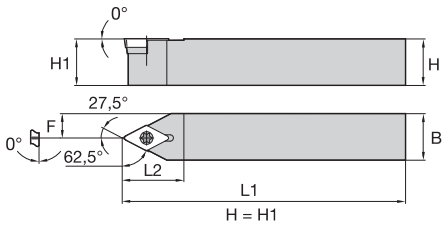


SDJC-F 93°

catalogue number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SDJCRF0808M07Q	8	8	8,0	150	16,0	1,5	DC..070204	–	–	–	**MS1153**	T7
SDJCRF1010M07Q	10	10	10,0	150	16,0	–	DC..070204	–	–	–	**MS1153**	T7
SDJCRF1212M07Q	12	12	12,0	150	16,0	–	DC..070204	–	–	–	**MS1153**	T7
SDJCRF1616K11Q	16	16	16,0	125	22,0	–	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SDJCLF1212M07Q	12	12	12,0	150	16,0	–	DC..070204	–	–	–	**MS1153**	T7
SDJCLF1616K11Q	16	16	16,0	125	22,0	–	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15

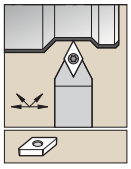


See pages B95–B98 and B191–B192 for inserts.

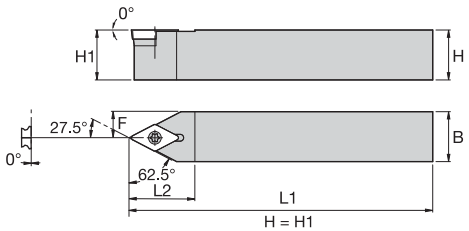


SDNC 62,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SDNCN0808L07	8	8	4,0	140	16,0	DC..070204	–	–	–	**MS1153**	T7
SDNCN1010M07	10	10	5,0	150	16,0	DC..070204	–	–	–	**MS1153**	T7
SDNCN1212N07	12	12	6,0	160	16,0	DC..070204	–	–	–	**MS1153**	T7
SDNCN1616H11	16	16	8,0	100	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDNCN2020K11	20	20	10,0	125	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDNCN2020K15	20	20	10,0	125	28,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15
SDNCN2525M15	25	25	12,5	150	28,0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15

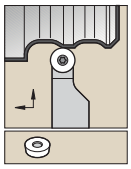


See pages B95–B98 and B191–B192 for inserts.

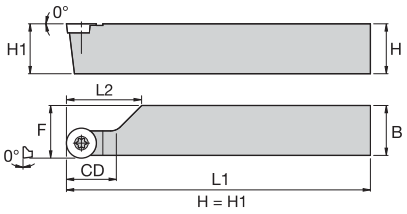


SDPC 62,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SDPCN1212M11Q	12	12	6,0	150	22,0	DC..11T308	–	–	–	**MS1155**	T15
SDPCN1616K11Q	16	16	8,0	125	22,0	DC..11T308	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15

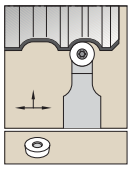


See pages B100–B102 for inserts.

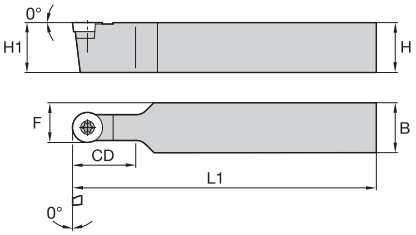


SRAC

catalogue number	H	B	F	L1	L2	CD	gage insert	insert screw	Torx
right hand									
SRACR1010M06	10	10	11,0	150	29,0	10,0	RC..0602M0	**MS1153**	T7
SRACR1212N08	12	12	13,0	160	31,0	12,0	RC..0803M0	**MS1154**	T9
SRACR1616Q08	16	16	17,0	180	35,0	16,0	RC..0803M0	**MS1154**	T9
left hand									
SRACL1616Q08	16	16	17,0	180	35,0	16,0	RC..0803M0	**MS1154**	T9

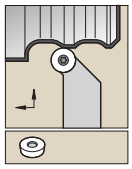


See pages B100–B102 for inserts.

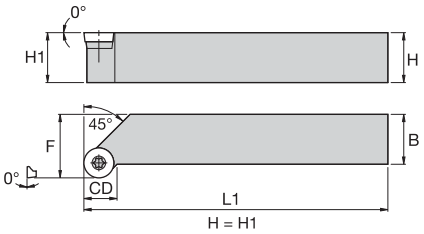


SRDC

catalogue number	H	B	F	L1	CD	gage insert	shim	shim screw	hex	insert screw	Torx
SRDCN0808L06	8	8	7,0	140	8,0	RC..0602M0	–	–	–	**MS1153**	T7
SRDCN1010M06	10	10	8,0	150	10,0	RC..0602M0	–	–	–	**MS1153**	T7
SRDCN1212N06	12	12	9,0	160	12,0	RC..0602M0	–	–	–	**MS1153**	T7
SRDCN1212N08	12	12	10,0	160	12,0	RC..0803M0	–	–	–	**MS1154**	T9
SRDCN1616H06	16	16	11,0	100	16,0	RC..0602M0	–	–	–	**MS1153**	T7
SRDCN1616H08	16	16	12,0	100	16,0	RC..0803M0	–	–	–	**MS1154**	T9
SRDCN1616H10	16	16	13,0	100	16,0	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRDCN1616Q08	16	16	12,0	180	16,0	RC..0803M0	–	–	–	**MS1154**	T9
SRDCN2020K08	20	20	14,0	125	20,0	RC..0803M0	–	–	–	**MS1154**	T9
SRDCN2020K10	20	20	15,0	125	20,0	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRDCN2020K12	20	20	16,0	125	20,0	RC..1204M0	**SKRN1203M0**	**SRS3**	3.5 mm	**MS1156**	T15
SRDCN2525M08	25	25	16,5	150	25,0	RC..0803M0	–	–	–	**MS1154**	T9
SRDCN2525M10	25	25	17,5	150	25,0	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRDCN2525M12	25	25	18,5	150	25,0	RC..1204M0	**SKRN1203M0**	**SRS3**	3.5 mm	**MS1156**	T15
SRDCN2525M16	25	25	20,5	150	25,0	RC..1605M0	**SKRN160400**	**SRS4**	4 mm	–	T15

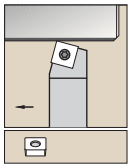


See pages B100–B102 for inserts.

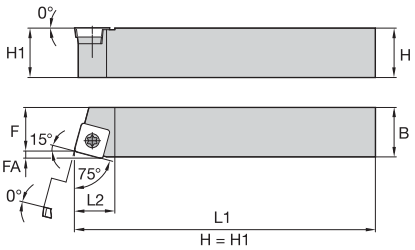


SRGC

catalogue number	H	B	F	L1	CD	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SRGCR1616H06	16	16	20,0	100	7,0	RC..0602M0	–	–	–	**MS1153**	T7
SRGCR1616H10	16	16	20,0	100	7,9	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRGCR2020K08	20	20	25,0	125	9,0	RC..0803M0	–	–	–	**MS1154**	T9
SRGCR2020K10	20	20	25,0	125	9,3	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRGCR2525M08	25	25	32,0	150	11,8	RC..0803M0	–	–	–	**MS1154**	T9
SRGCR2525M10	25	25	32,0	150	12,1	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRGCR2525M12	25	25	32,0	150	12,7	RC..1204M0	**SKRN1203M0**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SRGCL1616H06	16	16	20,0	100	7,0	RC..0602M0	–	–	–	**MS1153**	T7
SRGCL1616H10	16	16	20,0	100	7,9	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRGCL2020K08	20	20	25,0	125	9,0	RC..0803M0	–	–	–	**MS1154**	T9
SRGCL2525M08	25	25	32,0	150	11,8	RC..0803M0	–	–	–	**MS1154**	T9
SRGCL2525M10	25	25	32,0	150	12,1	RC..10T3M0	**SKRN100300**	**SRS3**	3.5 mm	**MS1156**	T15
SRGCL2525M12	25	25	32,0	150	12,7	RC..1204M0	**SKRN1203M0**	**SRS3**	3.5 mm	**MS1156**	T15

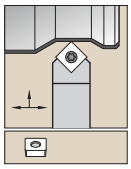


See pages B103–B104 for inserts.

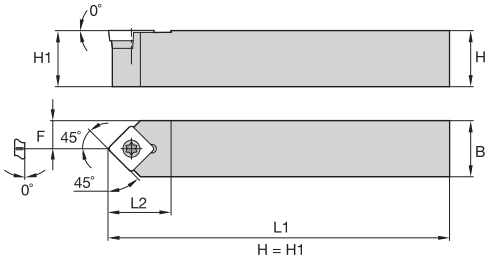


SSBC 75°

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SSBCR1212N09	12	12	11,0	160	16,0	2,2	SC..09T308	–	–	–	**MS1155**	T15
SSBCR2020K12	20	20	17,0	125	21,0	3,1	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
SSBCR2525M12	25	25	22,0	150	21,0	3,1	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
left hand												
SSBCL1616H09	16	16	13,0	100	16,0	2,2	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15

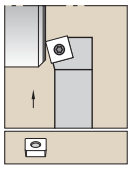


See pages B103–B104 for inserts.

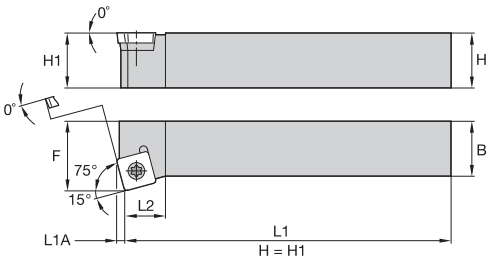


SSDC 45°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SSDCN1212N09	12	12	6,0	160	18,0	SC..09T308	**–**	**–**	–	**MS1155**	T15
SSDCN1616H09	16	16	8,0	100	18,0	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15
SSDCN2020K09	20	20	10,0	125	18,0	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15

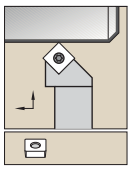


See pages B103–B104 for inserts.

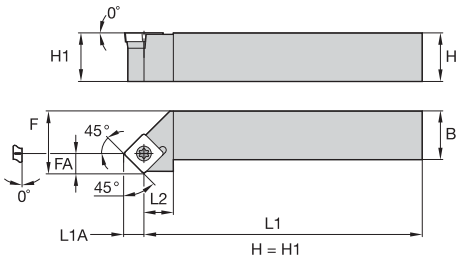


SSKC 75°

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SSKCR1616H09	16	16	20,0	100	16,0	2,2	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15
SSKCR2020K12	20	20	25,0	125	22,0	3,1	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
left hand												
SSKCL2020K12	20	20	25,0	125	22,0	3,1	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15

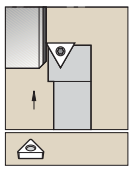


See pages B103–B104 for inserts.

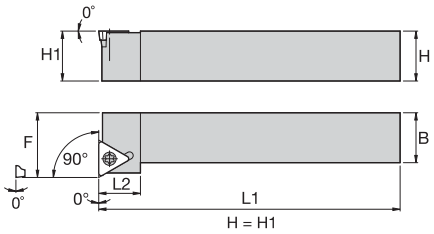


SSSC 45°

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex	insert screw	Torx
right hand													
SSSCR1212N09	12	12	16,0	160	18,0	6,1	6,1	SC..09T308	–	–	–	**MS1155**	T15
SSSCR1616H09	16	16	20,0	100	18,0	6,1	6,1	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15
SSSCR1616H12	16	16	20,0	100	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
SSSCR2020K12	20	20	25,0	125	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
SSSCR2525M12	25	25	32,0	150	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
left hand													
SSSCL1212N09	12	12	16,0	160	18,0	6,1	6,1	SC..09T308	–	–	–	**MS1155**	T15
SSSCL1616H09	16	16	20,0	100	18,0	6,1	6,1	SC..09T308	**SKSP343**	**SRS3**	3.5 mm	**MS1156**	T15
SSSCL1616H12	16	16	20,0	100	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
SSSCL2020K12	20	20	25,0	125	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15
SSSCL2525M12	25	25	32,0	150	25,0	8,3	8,3	SC..120408	**SKSP453**	**SRS4**	4 mm	**MS1158**	T15

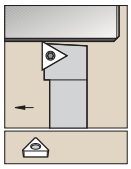


See pages B106–B108 and B194–B195 for inserts.

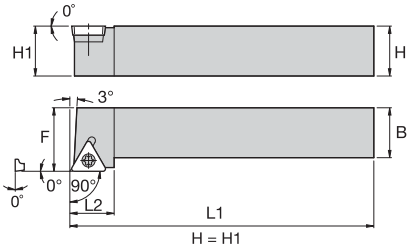


STFC 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
STFCR1616H11	16	16	20,0	100	16,0	TC..110204	–	–	–	**MS1153**	T7
STFCR1616H16	16	16	20,0	100	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STFCR2020K16	20	20	25,0	125	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STFCR2525M16	25	25	32,0	150	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
STFCL1010M11	10	10	12,0	150	13,0	TC..110204	–	–	–	**MS1153**	T7
STFCL1212N11	12	12	16,0	160	13,0	TC..110204	–	–	–	**MS1153**	T7
STFCL1616H16	16	16	20,0	100	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STFCL2020K16	20	20	25,0	125	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STFCL2525M16	25	25	32,0	150	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15

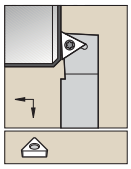


See pages B106–B108 and B194–B195 for inserts.

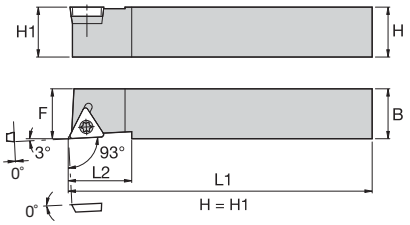


STGC 90°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
STGCR1010M11	10	10	12,0	150	16,0	TC..110204	–	–	–	**MS1153**	T7
STGCR1212N11	12	12	16,0	160	16,0	TC..110204	–	–	–	**MS1153**	T7
STGCR1616H11	16	16	20,0	100	20,0	TC..110204	–	–	–	**MS1153**	T7
STGCR1616H16	16	16	20,0	100	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCR2020K16	20	20	25,0	125	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCR2525M16	25	25	32,0	150	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
STGCL1010M11	10	10	12,0	150	16,0	TC..110204	–	–	–	**MS1153**	T7
STGCL1212N11	12	12	16,0	160	16,0	TC..110204	–	–	–	**MS1153**	T7
STGCL1616H11	16	16	20,0	100	20,0	TC..110204	–	–	–	**MS1153**	T7
STGCL1616H16	16	16	20,0	100	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCL2020K16	20	20	25,0	125	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCL2525M16	25	25	32,0	150	20,0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15

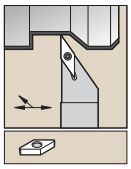


See pages B106–B108 and B194–B195 for inserts.

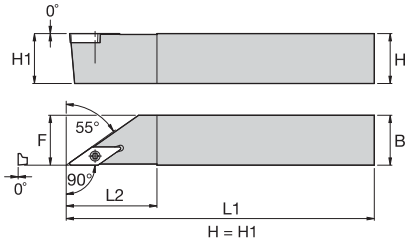


STJC-F 90°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
STJCRF1212M11Q	12	12	12,0	150	16,0	TC..110204	**MS1153**	T7
left hand								
STJCLF1212M11Q	12	12	12,0	150	16,0	TC..110204	**MS1153**	T7

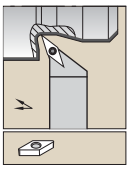


See pages B113–B114 and B196–B197 for inserts.

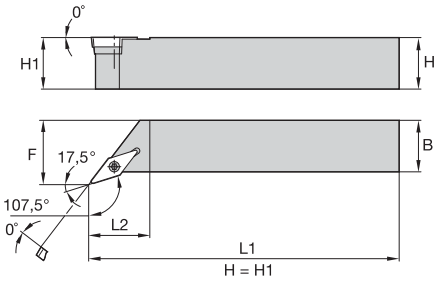


SVAB 90°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SVABR1010M11Q	10	10	10,0	150	22,0	VB..110304	**MS1153**	T7
SVABR1212M11Q	12	12	12,0	150	22,0	VB..110304	**MS1153**	T7
SVABR1616K16Q	16	16	16,0	125	30,0	VB..160408	**MS1155**	T15
left hand								
SVABL1212M11Q	12	12	12,0	150	22,0	VB..110304	**MS1153**	T7
SVABL1616K16Q	16	16	16,0	125	30,0	VB..160408	**MS1155**	T15

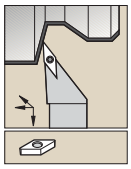


See pages B113–B114 and B196–B197 for inserts.

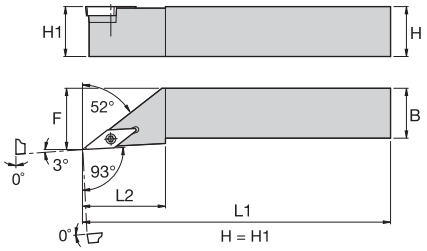


SVHB 107,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SVHBR1212N11	12	12	16,0	160	19,0	VB..110304	–	–	–	**MS1153**	T7
SVHBR1616H11	16	16	20,0	100	19,0	VB..110304	–	–	–	**MS1153**	T7
SVHBR2020K11	20	20	25,0	125	26,0	VB..110304	–	–	–	**MS1153**	T7
SVHBR2020K16	20	20	25,0	125	28,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVHBR2525M16	25	25	32,0	150	28,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SVHBL1212N11	12	12	16,0	160	19,0	VB..110304	–	–	–	**MS1153**	T7
SVHBL1616H11	16	16	20,0	100	19,0	VB..110304	–	–	–	**MS1153**	T7
SVHBL2020K11	20	20	25,0	125	26,0	VB..110304	–	–	–	**MS1153**	T7
SVHBL2020K16	20	20	25,0	125	28,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVHBL2525M16	25	25	32,0	150	28,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15

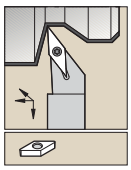


See pages B113–B114 and B196–B197 for inserts.

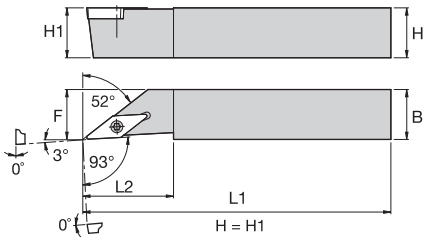


SVJB 93°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SVJBR1212N11	12	12	16,0	160	22,0	VB..110304	–	–	–	**MS1153**	T7
SVJBR1616H11	16	16	20,0	100	22,0	VB..110304	–	–	–	**MS1153**	T7
SVJBR1616H16	16	16	20,0	100	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBR2020K11	20	20	25,0	125	26,0	VB..110304	–	–	–	**MS1153**	T7
SVJBR2020K16	20	20	25,0	125	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBR2525M16	25	25	32,0	150	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBR3225P16	32	25	32,0	170	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SVJBL1212N11	12	12	16,0	160	22,0	VB..110304	–	–	–	**MS1153**	T7
SVJBL1616H11	16	16	20,0	100	22,0	VB..110304	–	–	–	**MS1153**	T7
SVJBL1616H16	16	16	20,0	100	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBL2020K11	20	20	25,0	125	26,0	VB..110304	–	–	–	**MS1153**	T7
SVJBL2020K16	20	20	25,0	125	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBL2525M16	25	25	32,0	150	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBL3225P16	32	25	32,0	170	35,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15

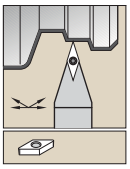


See pages B113–B114 and B196–B197 for inserts.

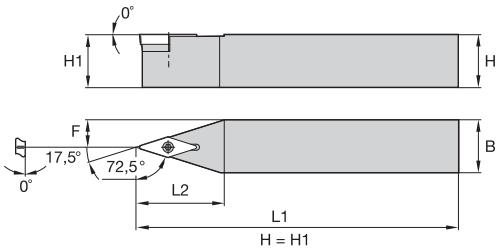


SVJB-F 93°

catalogue number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SVJBRF1010M11Q	10	10	10,0	150	23,0	VB..110304	**MS1153**	T7
SVJBRF1212M11Q	12	12	12,0	150	23,0	VB..110304	**MS1153**	T7
SVJBRF1616K16Q	16	16	16,0	125	31,0	VB..160408	**MS1155**	T15
left hand								
SVJBLF1010M11Q	10	10	10,0	150	23,0	VB..110304	**MS1153**	T7
SVJBLF1212M11Q	12	12	12,0	150	23,0	VB..110304	**MS1153**	T7
SVJBLF1616K16Q	16	16	16,0	125	31,0	VB..160408	**MS1155**	T15

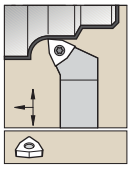


See pages B113–B114 and B196–B197 for inserts.

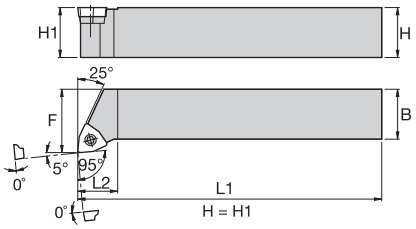


SVVB 72,5°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SVVBN1212N11	12	12	6,0	160	26,0	VB..110304	–	–	–	**MS1153**	T7
SVVBN1616H11	16	16	8,0	100	26,0	VB..110304	–	–	–	**MS1153**	T7
SVVBN1616H16	16	16	8,0	100	33,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVVBN2020K11	20	20	10,0	125	26,0	VB..110304	–	–	–	**MS1153**	T7
SVVBN2020K16	20	20	10,0	125	33,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVVBN2525M16	25	25	12,5	150	33,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVVBN3225P16	32	25	12,5	170	33,0	VB..160408	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15

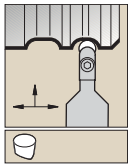


See pages B114–B115 for inserts.

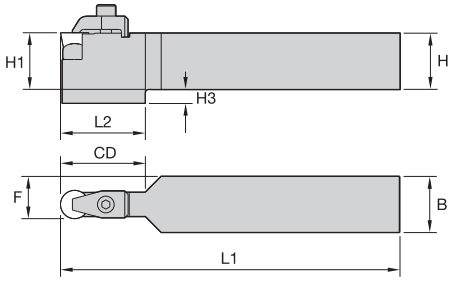


SWLC 95°

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SWLCR1212N06	12	12	16,0	160	16,0	WC..06T308	**SKWP343**	**SRS3**	3.5 mm	**MS1156**	T15
SWLCR2020K06	20	20	25,0	125	16,0	WC..06T308	**SKWP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SWLCL2020K06	20	20	25,0	125	16,0	WC..06T308	**SKWP343**	**SRS3**	3.5 mm	**MS1156**	T15

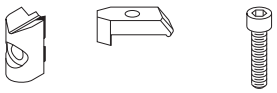


See pages B85 and B129 for inserts.



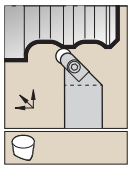
H = H1

CRDP

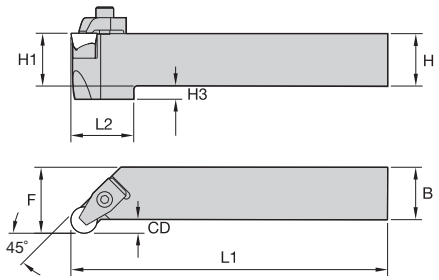


catalogue number	H	B	F	L1	L2	CD	H3	gage insert	nest	clamp	clamp screw	hex
CRDPN2525M06V	25	25	12,5	151,3	—	19,0	—	RPGX060400E	**NST1**	**CM214**	**MS1321**	2.5 mm
CRDPN3232P09V	32	32	16,0	171,3	—	29,0	—	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRDPN2525M09V	25	25	12,5	151,3	—	29,0	—	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRDPN3232P12V	32	32	16,0	171,3	—	38,0	—	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRDPN2525M12V	25	25	12,5	151,3	38,1	38,0	6,4	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRDPN3232P15V	32	32	16,0	171,3	38,1	38,0	6,4	RPGX151000	**NST4**	**CM217**	**MS1294**	6 mm
CRDPN4040R19V	40	40	20,0	201,5	—	38,0	—	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm
CRDPN3232P19V	32	32	16,0	171,3	38,1	38,0	6,4	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm
CRDPN3232P25V	32	32	16,0	171,3	38,0	38,0	6,4	RPGX251200	**NST6**	**CM218**	**MS1242**	8 mm

NOTE: CRDP Toolholders are able to use RPGX and RCGX insert styles.

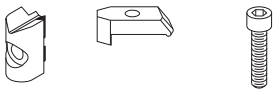


See pages B85 and B129 for inserts.



H = H1

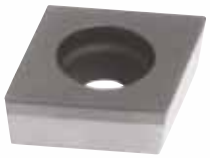
CRGP

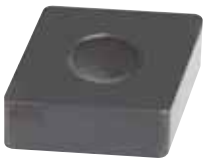


catalogue number	H	B	F	L1	L2	H3	CD	gage insert	nest	clamp	clamp screw	hex
right hand												
CRGPR2525M06V	25	25	32,0	151,3	—	—	7,0	RPGX060400E	**NST1**	**CM214**	**MS1321**	2.5 mm
CRGPR3232P09V	32	32	40,0	171,3	—	—	8,0	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPR2525M09V	25	25	32,0	151,3	—	—	7,0	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPR3232P12V	32	32	40,0	171,3	—	—	8,0	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPR2525M12V	25	25	32,0	151,3	27,1	6,4	7,0	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPR3232P15V	32	32	40,0	171,3	37,1	6,4	8,0	RPGX151000	**NST4**	**CM217**	**MS1294**	6 mm
CRGPR4040R19V	40	40	50,0	201,5	—	—	10,0	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm
CRGPR3232P19V	32	32	40,0	171,3	41,0	6,4	8,0	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm
left hand												
CRGPL2525M06V	25	25	32,0	151,3	—	—	7,0	RPGX060400E	**NST1**	**CM214**	**MS1321**	2.5 mm
CRGPL3232P09V	32	32	40,0	171,3	—	—	8,0	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPL2525M09V	25	25	32,0	151,3	—	—	7,0	RPGX090700E	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPL3232P12V	32	32	40,0	171,3	—	—	8,0	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPL2525M12V	25	25	32,0	151,3	27,1	6,4	7,0	RPGX120700E	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPL3232P15V	32	32	40,0	171,3	37,1	6,4	8,0	RPGX151000	**NST4**	**CM217**	**MS1294**	6 mm
CRGPL4040R19V	40	40	50,0	201,5	—	—	10,0	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm
CRGPL3232P19V	32	32	40,0	171,3	41,0	6,4	8,0	RPGX191000	**NST5**	**CM217**	**MS1294**	6 mm

NOTE: CRGP Toolholders are able to use RPGX and RCGX insert styles.

Quick-Turn Solutions Program for CBN Inserts

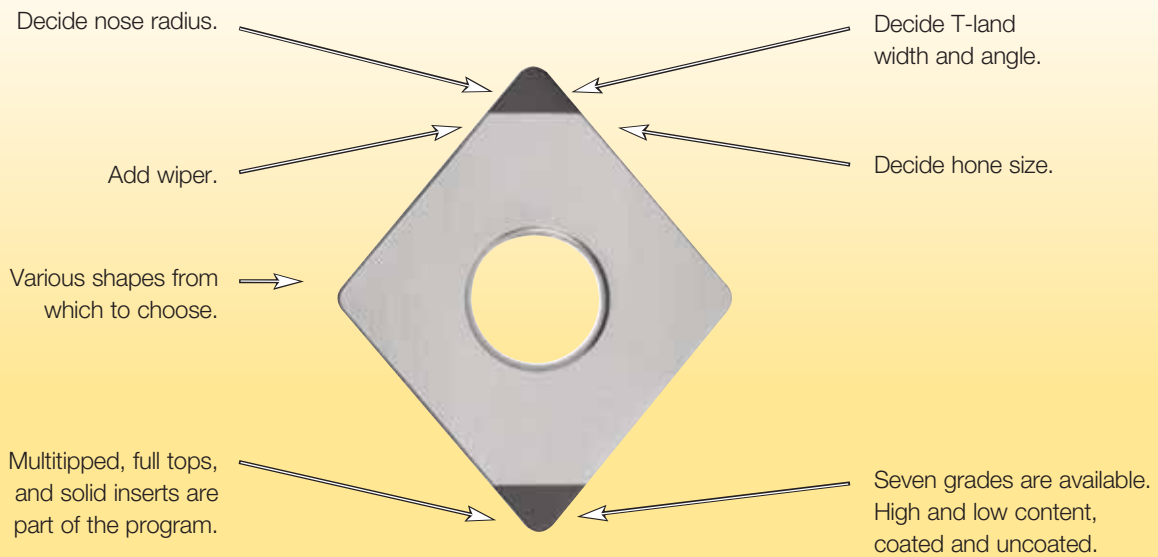




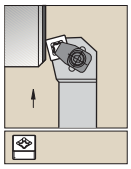
Standard inserts incorporate latest grade, coating, edge preparation, and manufacturing technology. They cover a wide range of applications and provide superior performance.

However, in some cases, further fine tuning is needed to reach the optimum performance point. Therefore, Kennametal has set up the Quick-Turn Solutions Program (QTSP) to allow edge preparation modifications on selected styles, grades, and formats to further enhance the tool performance.

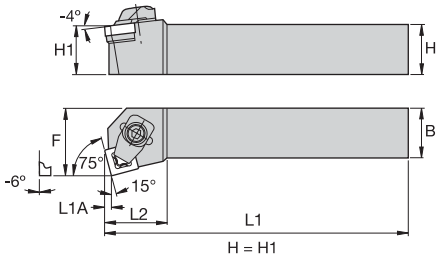
Technical Details • Options for a Customisation



For more information, please contact a Kennametal Sales Representative, Authorised Kennametal Distributor, or visit www.kennametal.com.



See pages B122 and B183 for inserts.



CCKN 75° • MX

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand												
CCKNR2525M12MX7	25	25	32,5	151	32,0	3,1	CNGX120708	**552.221**	**554.252**	2.5 mm	**551.013**	4 mm
CCKNR3225P12MX7	32	25	32,5	171	32,0	3,1	CNGX120708	**552.221**	**554.252**	2.5 mm	**551.013**	4 mm
left hand												
CCKNL2525M12MX7	25	25	32,5	151	32,0	3,1	CNGX120708	**552.221**	**554.252**	2.5 mm	**551.013**	4 mm

CCKN 75° • MN

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand												
CCKNR3225P12MN7	32	25	32,5	171	32,0	3,1	CNGN120708	**552.221**	**554.252**	2.5 mm	**551.255**	4 mm
left hand												
CCKNL2525M12MN4	25	25	32,5	151	32,0	3,1	CNGN120408	**552.220**	**554.252**	2.5 mm	**551.255**	4 mm
CCKNL2525M12MN7	25	25	32,5	151	32,0	3,1	CNGN120708	**552.221**	**554.252**	2.5 mm	**551.255**	4 mm
CCKNL3225P12MN7	32	25	32,5	171	32,0	3,1	CNGN120708	**552.221**	**554.252**	2.5 mm	**551.255**	4 mm

CCKN 75° • MF

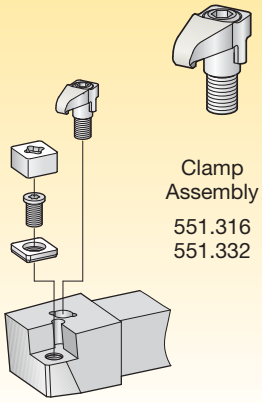
catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand												
CCKNR2525M12MF7	25	25	32,5	151	32,0	3,1	CNGN120708	**552.221**	**554.252**	2.5 mm	**551.252**	4 mm
left hand												
CCKNL2525M12MF4	25	25	32,5	151	32,0	3,1	CNGN120408	**552.220**	**554.252**	2.5 mm	**551.252**	4 mm
CCKNL2525M12MF7	25	25	32,5	151	32,0	3,1	CNGN120708	**552.221**	**554.252**	2.5 mm	**551.255**	4 mm

NOTE: MX — clamping version is shown.

Basic holder may be ordered separately:
V.SKN R/L 2525M12

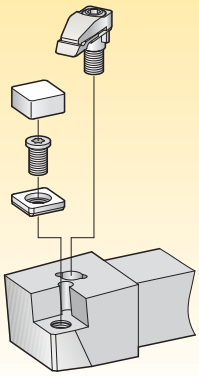
Spare Parts • -MX, -MN, -MF, and -MA Clamping Version

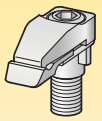
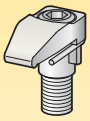
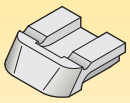
Clamping Mode MX



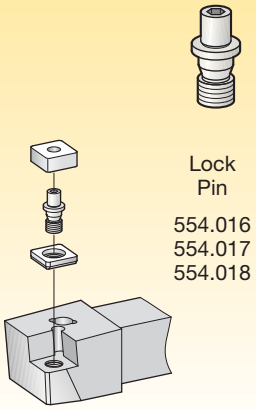
Clamp Assembly
551.316
551.332

Clamping Mode MN



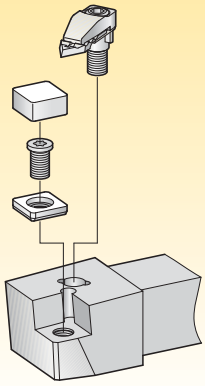
	Individual Clamping Elements	
		
Clamp Assembly	Clamping Element	Pressure Plate
551.251	551.333	557.111
551.255	551.317	557.111

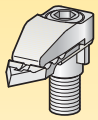
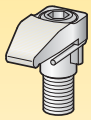
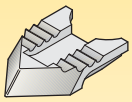
Clamping Mode MA

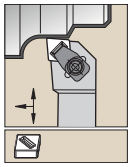


Lock Pin
554.016
554.017
554.018

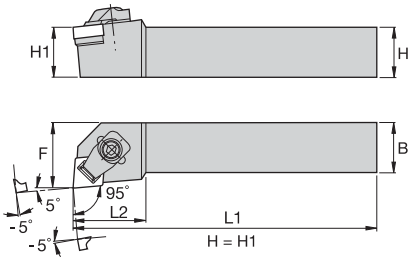
Clamping Mode MF



	Individual Clamping Elements	
		
Clamp Assembly	Clamping Element	Chipbreaker
551.252	551.317	557.125
551.253	551.317	557.126
551.254	551.317	557.127
551.256	551.317	557.120
551.257	551.317	557.121
551.258	551.317	557.122
551.260	551.317	557.123
551.261	551.317	557.124



See pages B122 and B183 for inserts.



CCLN 95° • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand											
CCLNR2525M12-MX7	25	25	32,0	150	32,0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm
CCLNR3225P12-MX7	32	25	32,0	170	32,0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm
left hand											
CCLNL2525M12-MX7	25	25	32,0	150	32,0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm
CCLNL3225P12-MX7	32	25	32,0	170	32,0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm

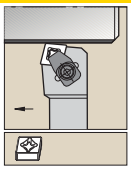
CCLN 95° • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CCLNR2525M12-MN4	25	25	32,0	150	32,0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCLNR2525M12-MN7	25	25	32,0	150	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCLNR3225P12-MN4	32	25	32,0	170	32,0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCLNR3225P12-MN7	32	25	32,0	170	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand												
CCLNL2525M12-MN4	25	25	32,0	150	32,0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCLNL2525M12-MN7	25	25	32,0	150	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCLNL3225P12-MN7	32	25	32,0	170	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

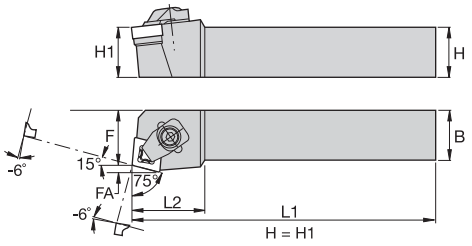
CCLN 95° • MF

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand												
CCLNR2525M12-MF4	25	25	32,0	150	32,0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm
CCLNR2525M12-MF7	25	25	32,0	150	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm
left hand												
CCLNL2525M12-MF4	25	25	32,0	150	32,0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm
CCLNL2525M12-MF7	25	25	32,0	150	32,0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm

NOTE: MX — clamping version is shown.
Basic holder may be ordered separately:
V.CLN R/L 2525M12
V.CLN R/L 3225P12
V.CLN R/L 3225P16



See pages B122 and B183 for inserts.



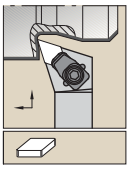
CCRN 75° • MX

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand												
CCRNR3225P16-MX7	32	25	27,0	170	35,0	4,2	CN.X160708	**552.223**	**554.253**	3 mm	**551.316**	4 mm
left hand												
CCRNL3225P16-MX7	32	25	27,0	170	35,0	4,2	CN.X160708	**552.223**	**554.253**	3 mm	**551.316**	4 mm

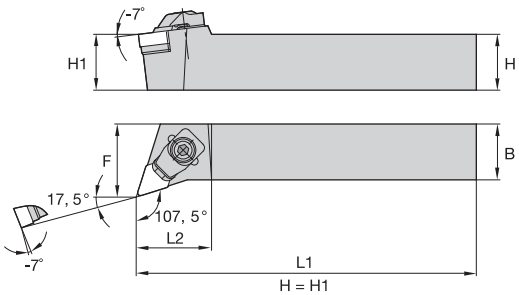
CCRN 75° • MN

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand													
CCRNR2525M12-MN7	25	25	27,0	150	35,0	3,1	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CCRNR3225P12-MN7	32	25	27,0	170	35,0	3,1	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
CCRNL2525M12-MN7	25	25	27,0	150	35,0	3,1	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

NOTE: MX — clamping version is shown.
Basic holder may be ordered separately:
V.CRN R/L 2525M12
V.CRN R/L 3225P12
V.CRN R/L 3225P16



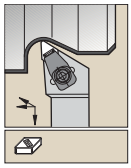
See pages B123 and B183 for inserts.



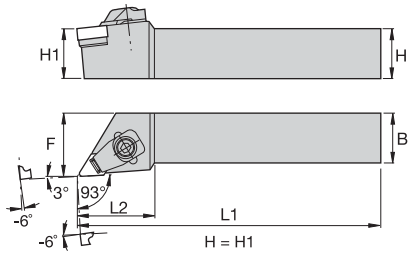
CDHN 107,5° • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand											
CDHNR2525M12-MX7	25	25	32,0	150	30,0	DN.X120708	**552.225**	**554.254**	2.5 mm	**551.316**	4 mm
left hand											
CDHNL3225P15-MX7	32	25	32,0	170	33,0	DN.X150708	**552.228**	**554.252**	2.5 mm	**551.332**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.DHN R/L 2525M12
V.DHN R/L 2525M15
V.DHN R/L 3225P15



See pages B123 and B183 for inserts.



CDJN 93° • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand											
CDJNR2525M12-MX7	25	25	32,0	150	38,0	DN.X120708	**552.225**	**554.254**	2.5 mm	**551.316**	4 mm
CDJNR2525M15-MX7	25	25	32,0	150	38,0	DN.X150708	**552.228**	**554.252**	2.5 mm	**551.332**	4 mm
CDJNR3225P12MX7	32	25	32,5	171	38,0	DNGX120708	**552.225**	**554.254**	—	**551.316**	4 mm
left hand											
CDJNL2525M12-MX7	25	25	32,0	150	38,0	DN.X120708	**552.225**	**554.254**	2.5 mm	**551.316**	4 mm
CDJNL2525M15-MX7	25	25	32,0	150	38,0	DN.X150708	**552.228**	**554.252**	2.5 mm	**551.332**	4 mm
CDJNL3225P12MX7	32	25	32,5	171	38,0	DNGX120708	**552.225**	**554.254**	—	**551.316**	4 mm

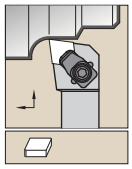
CDJN 93° • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CDJNR2525M15-MN7	25	25	32,0	150	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CDJNR3225P15-MN7	32	25	32,0	170	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand												
CDJNL2525M15-MN7	25	25	32,0	150	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CDJNL3225P15-MN7	32	25	32,0	170	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

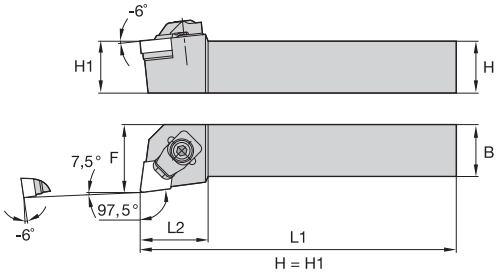
CDJN 93° • MF

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand												
CDJNR2525M15-MF7	25	25	32,0	150	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.123**	**551.317**	4 mm
left hand												
CDJNL2525M15-MF7	25	25	32,0	150	38,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.124**	**551.317**	4 mm

NOTE: MX — clamping version is shown.
Basic holder may be ordered separately:
V.DJN R/L 2525M12
V.DJN R/L 3225M15
V.DJN R/L 3225P15



See pages B123–B124 for inserts.



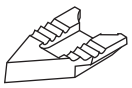
CELN 97,5° • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand											
CELNR2525M13-MX7	25	25	32,0	150	32,0	EN.X130708	**552.240**	**554.252**	2.5 mm	**551.316**	4 mm
left hand											
CELNL2525M13-MX7	25	25	32,0	150	32,0	EN.X130708	**552.240**	**554.252**	2.5 mm	**551.316**	4 mm

CELN 97,5° • MN

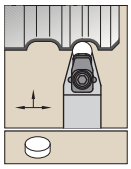
catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CELNR2525M13-MN7	25	25	32,0	150	32,0	EN.N130708	**552.240**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand												
CELNL2525M13-MN7	25	25	32,0	150	32,0	EN.N130708	**552.240**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

CELN 97,5° • MF

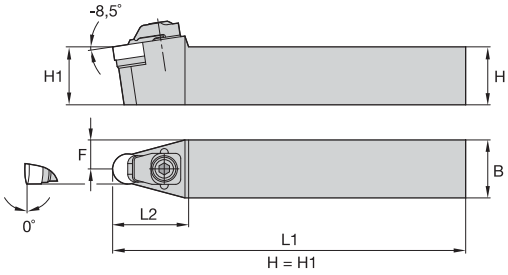


catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand												
CELNR2525M13-MF7	25	25	32,0	150	32,0	EN.N130708	**552.240**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm
left hand												
CELNL2525M13-MF7	25	25	32,0	150	32,0	EN.N130708	**552.240**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.ELN R/L 2525M13
V.ELN R/L 3225P13



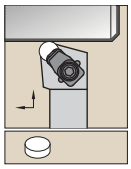
See page B124 for inserts.



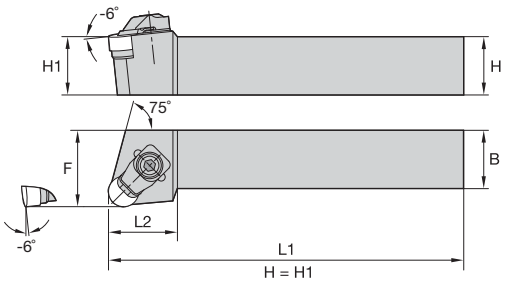
CRDN • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
CRDNN2525M12-MN4	25	25	12,5	150	30,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRDNN2525M12-MN7	25	25	12,5	150	30,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRDNN3225P12-MN4	32	25	12,5	170	30,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRDNN3225P12-MN7	32	25	12,5	170	30,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.RDN N 2525M12
V.RDN N 3225M12



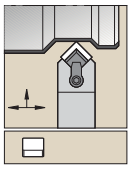
See page B124 for inserts.



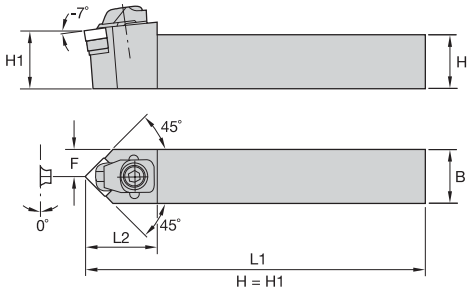
CRSN • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CRSNR2525M12-MN4	25	25	32,0	150	26,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNR2525M12-MN7	25	25	32,0	150	26,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNR3225P12-MN4	32	25	32,0	170	26,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNR3225P12-MN7	32	25	32,0	170	26,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
left hand												
CRSNL2525M12-MN4	25	25	32,0	150	26,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNL2525M12-MN7	25	25	32,0	150	26,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNL3225P12-MN4	32	25	32,0	170	26,0	RN.N120400	**552.229**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm
CRSNL3225P12-MN7	32	25	32,0	170	26,0	RN.N120700	**552.230**	**554.252**	2.5 mm	**557.111**	**551.333**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.RSN R/L 2525M12
V.RSN R/L 3225P12



See pages B125–B126 and B184 for inserts.



CSDN • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
CSDNN2525M12MX7	25	25	12,5	151	36,0	SNGX120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
CSDNN3225P12MX7	32	25	12,5	171	36,0	SNGX120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

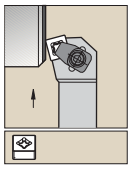
CSDN • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
CSDNN2525M12MN4	25	25	12,5	151	36,0	SNGN120408	**552.231**	**554.252**	2.5 mm	**551.255**	4 mm
CSDNN2525M12MN7	25	25	12,5	151	36,0	SNGN120708	**552.232**	**554.252**	2.5 mm	**551.255**	4 mm
CSDNN3225P12MN4	32	25	12,5	171	36,0	SNGN120408	**552.231**	**554.252**	2.5 mm	**551.255**	4 mm
CSDNN3225P12MN7	32	25	12,5	171	36,0	SNGN120708	**552.232**	**554.252**	2.5 mm	**551.255**	4 mm

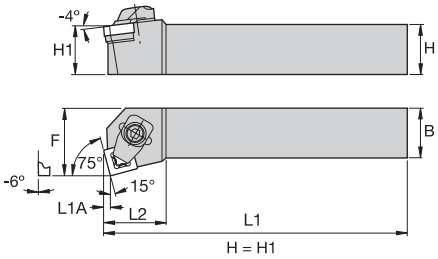
CSDN • MF

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
CSDNN2525M12MF4	25	25	12,5	151	36,0	SNGN120408	**552.231**	**554.252**	2.5 mm	**551.252**	4 mm
CSDNN2525M12MF7	25	25	12,5	151	36,0	SNGN120708	**552.232**	**554.252**	2.5 mm	**551.252**	4 mm
CSDNN3225P12MF4	32	25	12,5	171	36,0	SNGN120408	**552.231**	**554.252**	2.5 mm	**551.252**	4 mm
CSDNN3225P12MF7	32	25	12,5	171	36,0	SNGN120708	**552.232**	**554.252**	2.5 mm	**551.252**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.SRN R/L 2525M12
V.SRN R/L 3225P12
V.SRN R/L 3225P15



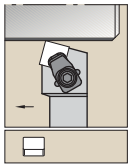
See pages B125–B126 and B184 for inserts.



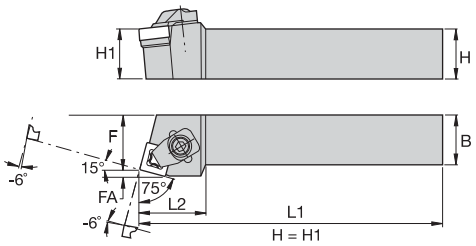
CSKN 75° • MN

catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand													
CSKNR2525M12-MN4	25	25	32,0	150	27,0	3,0	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSKNR2525M12-MN7	25	25	32,0	150	27,0	3,0	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
CSKNL2525M12-MN4	25	25	32,0	150	27,0	3,0	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSKNL2525M12-MN7	25	25	32,0	150	27,0	3,0	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

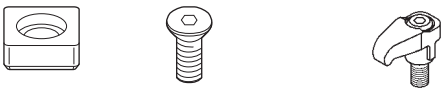
NOTE: MX — clamping version is shown.
Basic holder may be ordered separately:
V.SKN R/L 2525M12



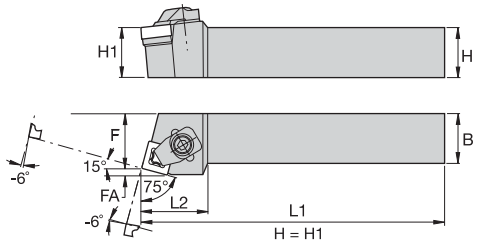
See pages B125–B126 and B184 for inserts.



CSRN 75° • MX



catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	clamp assembly	hex
left hand												
CSRNL3225P15-MX7	32	25	27,0	170	34,0	4,1	SN.X150708	**552.234**	**554.253**	3 mm	**551.316**	4 mm



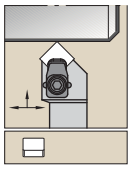
CSRN 75° • MN

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand													
CSRNR2525M12-MN4	25	25	27,0	150	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNR2525M12-MN7	25	25	27,0	150	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNR3225P12-MN4	32	25	27,0	170	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNR3225P12-MN7	32	25	27,0	170	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
CSRNL2525M12-MN4	25	25	27,0	150	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNL2525M12-MN7	25	25	27,0	150	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNL3225P12-MN4	32	25	27,0	170	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSRNL3225P12-MN7	32	25	27,0	170	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

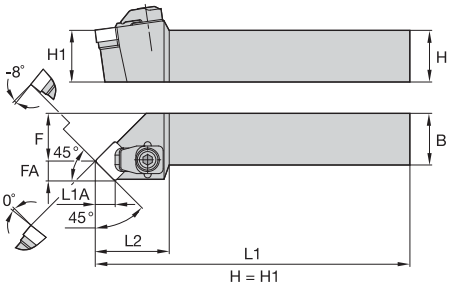
CSRN 75° • MF

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand													
CSRNR2525M12-MF4	25	25	27,0	150	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.126**	**551.317**	4 mm
CSRNR2525M12-MF7	25	25	27,0	150	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.126**	**551.317**	4 mm
CSRNR3225P15-MF7	32	25	27,0	170	34,0	4,1	SN.N150708	**552.234**	**554.253**	3 mm	**557.121**	**551.317**	4 mm
left hand													
CSRNL2525M12-MF4	25	25	27,0	150	32,0	3,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.127**	**551.317**	4 mm
CSRNL2525M12-MF7	25	25	27,0	150	32,0	3,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.127**	**551.317**	4 mm
CSRNL3225P15-MF7	32	25	27,0	170	34,0	4,1	SN.N150708	**552.234**	**554.253**	3 mm	**557.122**	**551.317**	4 mm

NOTE: MX — clamping version is shown.
Basic holder may be ordered separately:
V.SRN R/L 2525M12
V.SRN R/L 3225P12
V.SRN R/L 3225P15



See pages B125–B126 and B184 for inserts.



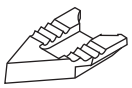
CSSN 45° • MX

catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand													
CSSNR2525M12-MX7	25	25	32,0	150	35,0	8,3	8,3	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
CSSNR3225P15-MX7	32	25	32,0	159	37,0	10,6	10,6	SN.X150708	**552.234**	**554.253**	3 mm	**551.316**	4 mm
left hand													
CSSNL2525M12-MX7	25	25	32,0	150	35,0	8,3	8,3	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

CSSN 45° • MN

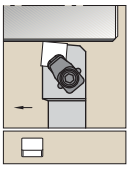
catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand														
CSSNR2525M12-MN7	25	25	32,0	142	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSSNR3225P12-MN4	32	25	32,0	162	35,0	8,3	8,3	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSSNR3225P12-MN7	32	25	32,0	162	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand														
CSSNL2525M12-MN7	25	25	32,0	142	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSSNL3225P12-MN4	32	25	32,0	162	35,0	8,3	8,3	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSSNL3225P12-MN7	32	25	32,0	162	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

CSSN 45° • MF

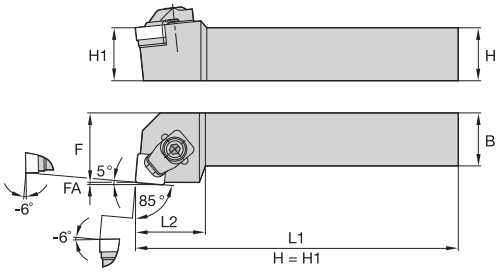


catalogue number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand														
CSSNR2525M12-MF7	25	25	32,0	142	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm
left hand														
CSSNL2525M12-MF7	25	25	32,0	142	35,0	8,3	8,3	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.125**	**551.317**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.SSN R/L 2525M12
V.SSN R/L 3225P12
V.SSN R/L 3225P15



See pages B125–B126 and B184 for inserts.



CSXN 85° • MX

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand												
CSXNR2525M12-MX7	25	25	32,0	150	30,0	1,1	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
CSXNR3225P12-MX7	32	25	32,0	170	30,0	1,1	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
left hand												
CSXNL2525M12-MX7	25	25	32,0	150	30,0	1,1	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
CSXNL3225P12-MX7	32	25	32,0	170	30,0	1,1	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

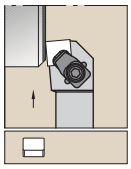
CSXN 85° • MN

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand													
CSXNR2525M12-MN4	25	25	32,0	150	30,0	1,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
CSXNL2525M12-MN4	25	25	32,0	150	30,0	1,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

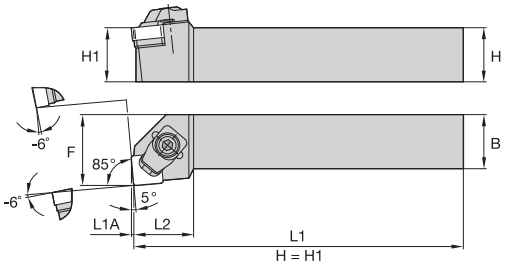
CSXN 85° • MF

catalogue number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	chipbreaker	clamp assembly	hex
right hand													
CSXNR2525M12-MF7	25	25	32,0	150	30,0	1,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.126**	**551.317**	4 mm
left hand													
CSXNL2525M12-MF7	25	25	32,0	150	30,0	1,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.127**	**551.317**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.SXN R/L 2525M12
V.SXN R/L 3225P12



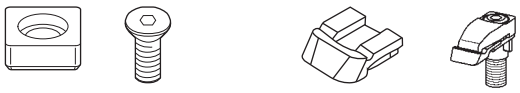
See pages B125–B126 and B184 for inserts.



CSYN 85° • MX

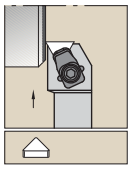
catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex	clamp assembly	hex
left hand												
CSYNL3225P12-MX7	32	25	32,0	170	27,0	1,0	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

CSYN 85° • MN

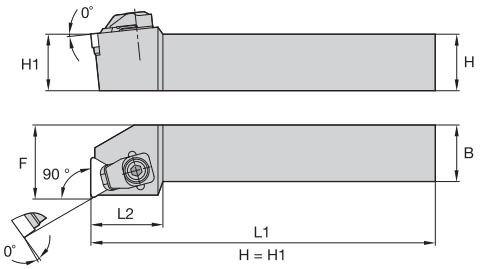


catalogue number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand													
CSYNR2525M12-MN4	25	25	32,0	150	27,0	1,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSYNR2525M12-MN7	25	25	32,0	150	27,0	1,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
CSYNL2525M12-MN4	25	25	32,0	150	27,0	1,1	SN.N120408	**552.231**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
CSYNL2525M12-MN7	25	25	32,0	150	27,0	1,1	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.SYN R/L 2525M12
V.SYN R/L 3225P12



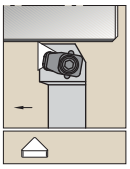
See pages B126 and B184 for inserts.



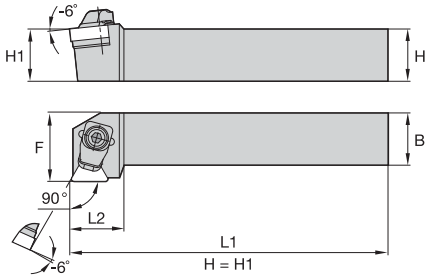
CTFN 90° • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CTFNR2525M16-MN4	25	25	32,0	150	29,0	TN.N160408	**552.235-H**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm
left hand												
CTFNL2525M16-MN4	25	25	32,0	150	29,0	TN.N160408	**552.235-H**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.TFN R/L 2525M16



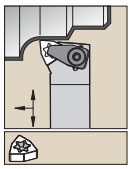
See pages B126 and B184 for inserts.



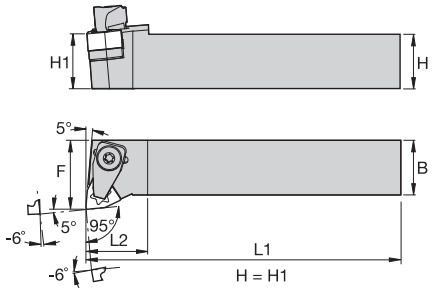
CTGN 90° • MN

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	thrust plate	clamp assembly	hex
right hand												
CTGNR2525M16-MN4	25	25	32,0	150	20,0	TN.N160408	**552.235-H**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm
CTGNR2525M16-MN7	25	25	32,0	150	20,0	TN.N160708	**552.236**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm
left hand												
CTGNL2525M16-MN4	25	25	32,0	150	20,0	TN.N160408	**552.235-H**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm
CTGNL2525M16-MN7	25	25	32,0	150	20,0	TN.N160708	**552.236**	**554.254**	2.5 mm	**557.111**	**551.333**	4 mm

NOTE: MN — clamping version is shown.
Basic holder may be ordered separately:
V.TGN R/L 2525M16

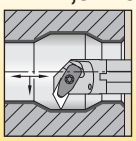
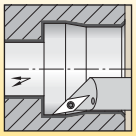
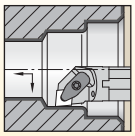
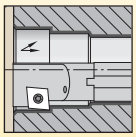
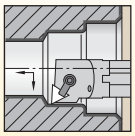
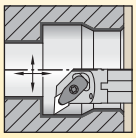
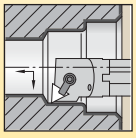
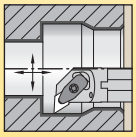


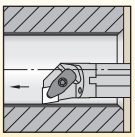
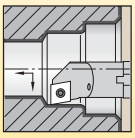
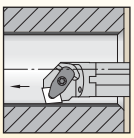
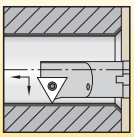
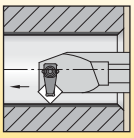
See page B127 for inserts.



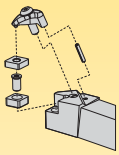
CWLN 95° • MX

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	clamp assembly	hex
right hand											
CWLNR2525M08MX7	25	25	32,0	150	32,0	WN.X080708	**552.210**	**554.252**	2.5 mm	**551.316**	4 mm
CWLNR3225P08MX7	32	25	32,0	170	32,0	WN.X080708	**552.210**	**554.252**	2.5 mm	**551.316**	4 mm
left hand											
CWLNL2525M08MX7	25	25	32,0	150	32,0	WN.X080708	**552.210**	**554.252**	2.5 mm	**551.316**	4 mm

tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
117,5° Lead Angle						
	D 55°	Kenclamp™	●		●	C78
107,5° Lead Angle						
	D 55°	Kenclamp	●	●	●	C79
		Screw-On	●	●		C94–C95
	V 35°	Screw-On	●	●	●	C102
95° Lead Angle						
	C 80°	Kenloc™	●		●	C82
		Kenclamp	●		●	C78
		Screw-On	●		●	C90–C94
		Kenlever™	●		●	C105
		MTS	●		●	C107
	E 75°	MTS	●		●	–
	T 60°	Screw-On	●		●	C100–C101
	W 80°	Kenloc	●			C84
		Kenclamp	●		●	C81
		Kenlever	●		●	C106
		Screw-On	●		●	C103
		MTS	●		●	C109
93° Lead Angle						
	D 55°	Kenloc	●	●	●	C82
		Kenclamp	●	●	●	C79
		Screw-On	●		●	C95–C97
		MTS	●		●	C108
	V 35°	Kenloc	●		●	C84
		Kenclamp	●	●		C81
		Screw-On	●	●	●	C103
	T 60°	Kendex™	●		●	C86
	W 80°	Screw-On	●		●	C104
						

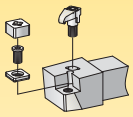
tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
90° Lead Angle						
	C 80°	Screw-On	●		●	C87–C89
	T 60°	Kenloc	●			C83
		Kenclamp	●		●	C80
		Kenlever	●		●	C106
		Kendex	●		●	C85
		Screw-On	●			C98–C100
75° Lead Angle						
	C 80°	Screw-On	●			C89
	S 90°	Kenloc	●			C83
		Kenclamp	●			C80
		Kenlever	●			C105
		Kendex	●			C85
		Screw-On	●			C97–C98
	T 60°	MTS	●			–
		Kendex	●			–
60° Lead Angle						
	T 60°	Screw-On	●		●	C102
45° Lead Angle						
	S 90°	MTS	●			C108

Clamping Styles



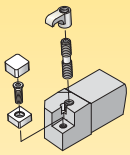
Kenclamp™ Style

- Suitable for Kenloc inserts.
- Unique clamp design provides rigid clamping.
- Ensures insert repeatability and seating.
- Reduced chatter and improved tool life.



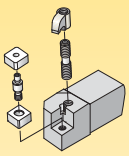
MTS Style

- Proven superior system in holding ceramic inserts rigidly in turning and profiling operations.
- Uses standard insert sizes — 80°, 75°, 55°, square, and trigon.
- This system offers the added versatility of using optional hardware to hold standard Kendex and Kenloc inserts.



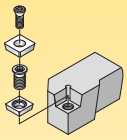
Kendex™ Style

- Suitable for Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.



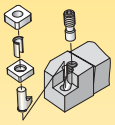
Kenloc™ Style

- Suitable for Kenloc inserts.
- Lock pin and top clamp provide rigid clamping.
- Wide variety of insert styles may be used.
- Tools may be used with or without clamp.



Screw-On Style

- Top clamping by screw for Screw-On inserts.

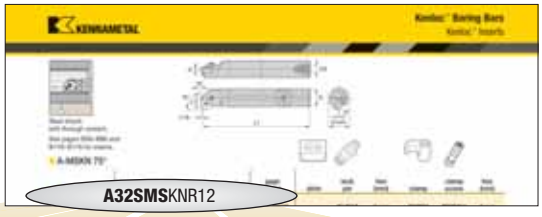


Kenlever™ Style

- Proven superior system for holding ceramic inserts rigidly in turning and profiling operations.
- Can be used on Kendex or Kenloc inserts using optional hardware.

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A — Bar Type

A — Steel bar with coolant

S — Steel bar without coolant

C — Carbide bar

D — DeVibrator bar with coolant

D — Tuneable bar with coolant

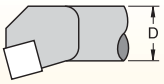
E — Carbide bar with coolant

B — DeVibrator

H — Interchangeable head

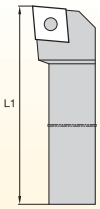
L — Heavy metal bar with coolant

32 — Bar Diameter



Metric:
A two-digit number indicates the bar diameter in mm.
If the diameter is represented by a one digit number, a 0 (zero) will be used in front of it.
Example: 8mm = 08

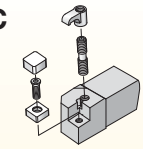
S — Bar Length



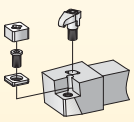
L1		ISO
32	=	A
40	=	B
50	=	C
60	=	D
70	=	E
80	=	F
90	=	G
100	=	H
110	=	J
125	=	K
140	=	L
150	=	M
160	=	N
170	=	P
180	=	Q
200	=	R
250	=	S
300	=	T
350	=	U
400	=	V
450	=	W
500	=	Y
Special Length	=	X

M — Insert Holding Method

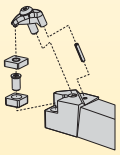
C — Kendex™



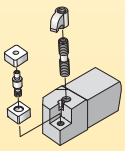
N — Top Notch™ Profiling



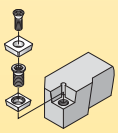
D — Kenclamp™



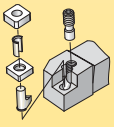
M — Kenloc™



S — Screw-On



P — Kenlever™



S — Insert Shape

A — 85°

B — 82°

C — 80°

D — 55°

E — 75°

H — 120°

K — 55°

L — 90°

M — 86°

O — 135°

P — 108°

R

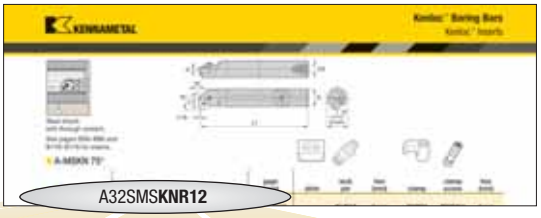
S — 90°

T — 60°

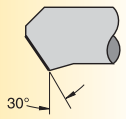
V — 35°

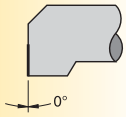
W — 80°

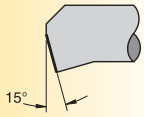
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

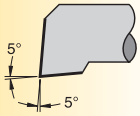


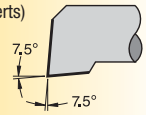
K
Bar Style or Lead Angle

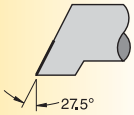
E


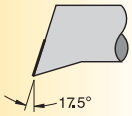
F


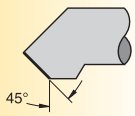
K


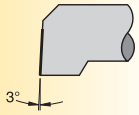
L


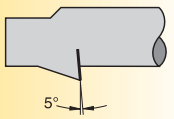
(E-style inserts)
L


P


Q


S


U


X


N
Insert Clearance Angle

N 0°

B 5°

C 7°

P 11°

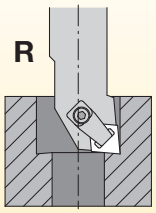
D 15°

E 20°

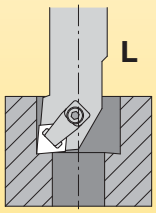
F 25°

R
Hand of Tool

R = Right-hand boring bar



L = Left-hand boring bar



12
Insert Size

Cutting Edge Length L10

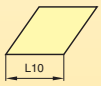
H

O

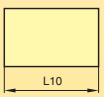
P

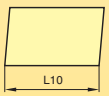
S

T

C D E M V


W

L


A B K


H

Additional Information

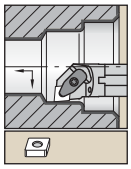
M.. = TNT/MTS clamping systems for ceramic and PCBN inserts

D = Dual pocket

AP5 = Axial positive

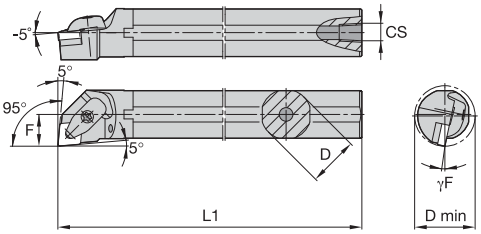
KC = Kenclamp™

+ = Insert thickness



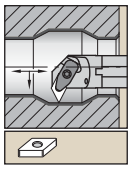
Steel shank
with through coolant.

See pages B40–B49 and
B174–B176 for inserts.



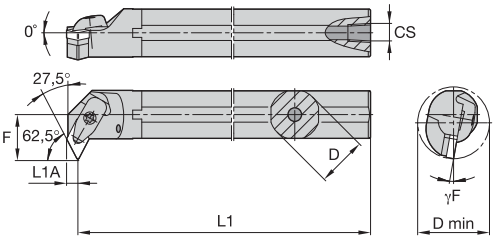
A-DCLN-KC 95°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand													
A25RDCLNR12KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	CN..120408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDCLNR12KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDCLNR12KC04	40	50,0	27,0	300	1/4-18 NPT	-9.0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDCLNR16KC06	40	50,0	27,0	300	1/4-18 NPT	-12.0	CN..160612	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
left hand													
A25RDCLNL12KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	CN..120408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDCLNL12KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDCLNL12KC04	40	50,0	27,0	300	1/4-18 NPT	-9.0	CN..120408	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDCLNL16KC06	40	50,0	27,0	300	1/4-18 NPT	-12.0	CN..160612	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP



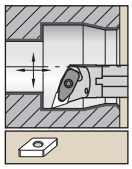
Steel shank
with through coolant.

See pages B50–B58 and
B176–B178 for inserts.



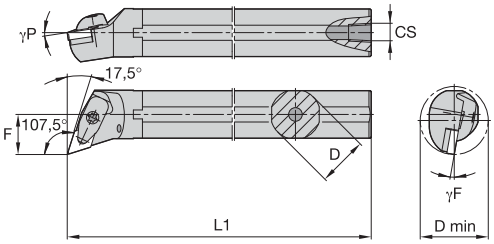
A-DDPN-KC 117,5°

catalogue number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
A25RDDPNR11KC04	25	37,0	22,0	200	4,8	1/4-18 NPT	-10.0	DN..110408	**IDSN322**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDPNR15KC06	32	45,0	27,0	250	6,5	1/4-18 NPT	-12.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDPNR15KC06	40	52,0	30,0	300	6,6	1/4-18 NPT	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
A25RDDPNL11KC04	25	37,0	22,0	200	4,8	1/4-18 NPT	-10.0	DN..110408	**IDSN322**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDPNL15KC06	32	45,0	27,0	250	6,5	1/4-18 NPT	-12.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDPNL15KC06	40	52,0	30,0	300	6,6	1/4-18 NPT	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



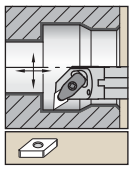
Steel shank
with through coolant.

See pages B50–B58 and
B176–B178 for inserts.



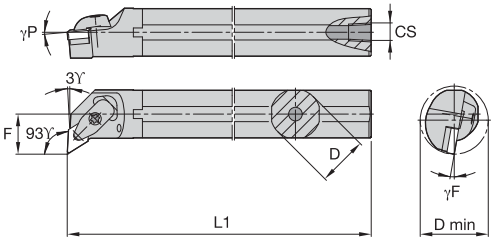
A-DDQN-KC 107,5°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
A25RDDQNR11KC04	25	32,0	17,0	200	1/4-18 NPT	-11.0	-7.0	DN..110408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDQNR15KC06	32	40,0	22,0	250	1/4-18 NPT	-12.0	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDQNR15KC06	40	50,0	27,0	300	1/4-18 NPT	-10.0	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
A25RDDQNL11KC04	25	32,0	17,0	200	1/4-18 NPT	-11.0	-7.0	DN..110408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDQNL15KC06	32	40,0	22,0	250	1/4-18 NPT	-12.0	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDQNL15KC06	40	50,0	27,0	300	1/4-18 NPT	-10.0	-10.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



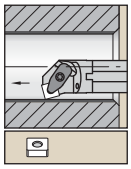
Steel shank
with through coolant.

See pages B50–B58 and
B176–B178 for inserts.



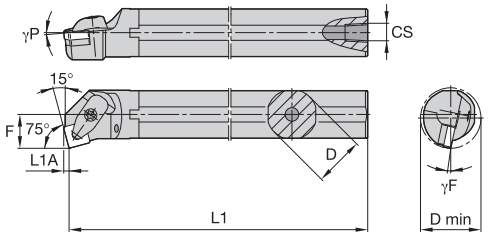
A-DDUN-KC 93°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
A25RDDUNR11KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	-5.0	DN..110408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDUNR11KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	-5.0	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDUNR15KC06	32	40,0	22,0	250	1/4-18 NPT	-12.0	-6.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDUNR15KC06	40	50,0	27,0	300	1/4-18 NPT	-9.0	-5.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A50UDDUNR15KC06	50	63,0	35,0	350	1/4-18 NPT	-7.0	-5.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
A25RDDUNL11KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	-5.0	DN..110408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDUNL11KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	-5.0	DN..110408	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDDUNL15KC06	32	40,0	22,0	250	1/4-18 NPT	-12.0	-6.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDDUNL15KC06	40	50,0	27,0	300	1/4-18 NPT	-9.0	-5.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A50UDDUNL15KC06	50	63,0	35,0	350	1/4-18 NPT	-7.0	-5.0	DN..150608	**IDSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



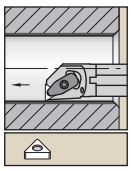
Steel shank
with through coolant.

See pages B59–B66 and
B178–B179 for inserts.



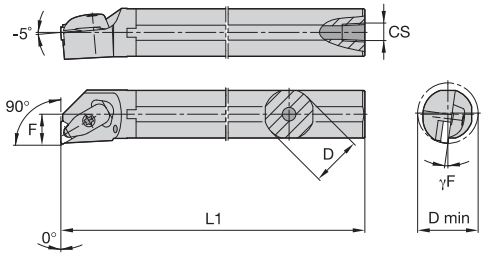
A-DSKN-KC 75°

catalogue number	D	D min	F	L1	L1A	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand															
A25RDSKNR12KC04	25	32,0	17,0	200	3,0	1/4-18 NPT	-13.0	-15.0	SN..120408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDSKNR12KC04	32	40,0	22,0	250	3,0	1/4-18 NPT	-14.0	-5.0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDSKNR12KC04	40	50,0	27,0	300	3,0	1/4-18 NPT	-9.0	-5.0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDSKNR15KC06	40	50,0	27,0	300	3,7	1/4-18 NPT	-12.0	-5.0	SN..150612	**ISSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
left hand															
A25RDSKNL12KC04	25	32,0	17,0	200	3,0	1/4-18 NPT	-13.0	-15.0	SN..120408	–	–	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDSKNL12KC04	32	40,0	22,0	250	3,0	1/4-18 NPT	-14.0	-5.0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDSKNL12KC04	40	50,0	27,0	300	3,0	1/4-18 NPT	-9.0	-5.0	SN..120408	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDSKNL15KC06	40	50,0	27,0	300	3,7	1/4-18 NPT	-12.0	-5.0	SN..150612	**ISSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP



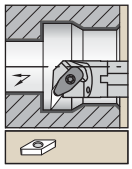
Steel shank
with through coolant.

See pages B66–B73 and
B179–B180 for inserts.



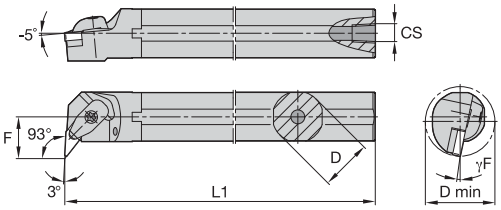
A-DTFN-KC 90°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand													
A25RDTFNR16KC04	25	32,0	17,0	200	1/4-18 NPT	-14.0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDTFNR16KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand													
A25RDTFNL16KC04	25	32,0	17,0	200	1/4-18 NPT	-14.0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDTFNL16KC04	32	40,0	22,0	250	1/4-18 NPT	-12.0	TN..160408	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



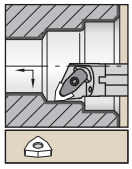
Steel shank
with through coolant.

See pages B74–B78 and
B180–B181 for inserts.



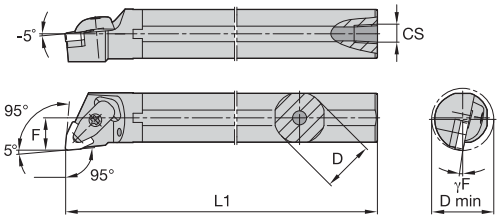
A-DVUN-KC 93°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand													
A32SDVUNR16KC04	32	40,0	22,0	250	1/4-18 NPT	-9.0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDVUNR16KC04	40	50,0	27,0	300	1/4-18 NPT	-8.0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	**SSP025016M**	15 IP
left hand													
A32SDVUNL16KC04	32	40,0	22,0	250	1/4-18 NPT	-9.0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDVUNL16KC04	40	50,0	27,0	300	1/4-18 NPT	-8.0	VN..160408	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	**SSP025016M**	15 IP



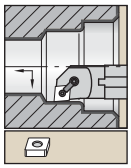
Steel shank
with through coolant.

See pages B79–B83 and
B181 for inserts.



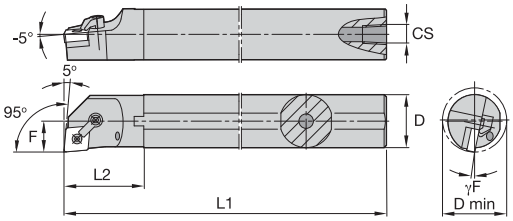
A-DWLN-KC 95°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand													
A25RDWLNR06KC04	25	32,0	17,0	200	1/4-18 NPT	-14.0	WN..060408	**–**	**–**	–	**CM234R ASSY**	**SSP025016M**	15 IP
A25RDWLNR08KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	WN..080408	**–**	**–**	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDWLNR08KC04	32	40,0	22,0	250	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDWLNR08KC04	40	50,0	27,0	300	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand													
A25RDWLNL06KC04	25	32,0	17,0	200	1/4-18 NPT	-14.0	WN..060408	**–**	**–**	–	**CM234R ASSY**	**SSP025016M**	15 IP
A25RDWLNL08KC04	25	32,0	17,0	200	1/4-18 NPT	-12.0	WN..080408	**–**	**–**	–	**CM234R ASSY**	**SSP025016M**	15 IP
A32SDWLNL08KC04	32	40,0	22,0	250	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40TDWLNL08KC04	40	50,0	27,0	300	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



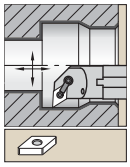
Steel shank
with through coolant.

See pages B40–B49 and
B174–B176 for inserts.



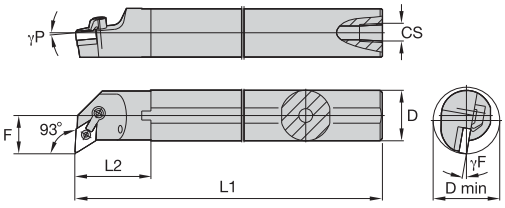
A-MCLN 95°

catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A25RMCLNR09	25	32,0	17,0	200	40	1/4-18 NPT	-12.0	CN..090308	—	**KLM33**	2 mm	**CKM6**	**STCM5**	2.5 mm
A25RMCLNR12	25	32,0	17,0	200	33	1/4-18 NPT	-12.0	CN..120408	—	**KLM43**	2 mm	**CKM21**	**STCM11**	3 mm
A32SMCLNR12	32	40,0	22,0	250	—	1/4-18 NPT	-14.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMCLNR12	40	50,0	27,0	300	—	1/4-18 NPT	-12.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMCLNR16	40	50,0	27,0	300	—	1/4-18 NPT	-11.0	CN..160608	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMCLNR12	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A50UMCLNR16	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..160608	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMCLNR19	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..190608	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand														
A25RMCLNL12	25	32,0	17,0	200	33	1/4-18 NPT	-12.0	CN..120408	—	**KLM43**	2 mm	**CKM21**	**STCM11**	3 mm
A32SMCLNL12	32	40,0	22,0	250	—	1/4-18 NPT	-14.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMCLNL12	40	50,0	27,0	300	—	1/4-18 NPT	-12.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMCLNL16	40	50,0	27,0	300	—	1/4-18 NPT	-11.0	CN..160608	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMCLNL12	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM11**	3 mm
A50UMCLNL16	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..160608	**ICSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMCLNL19	50	63,0	35,0	350	—	1/4-18 NPT	-12.0	CN..190608	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm



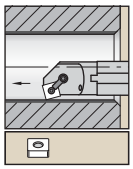
Steel shank
with through coolant.

See pages B50–B58 and
B176–B178 for inserts.



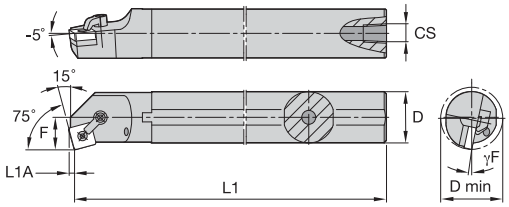
A-MDUN 93°

catalogue number	D	D min	F	L1	L2	CS	γF°	γP°	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
A25RMDUNR11	25	32,0	17,0	200	40	1/4-18 NPT	-14.0	-5.0	DN..110408	—	**KLM33L**	2 mm	**CKM7**	**STCM5**	2.5 mm
A25RMDUNR15	25	32,0	17,0	200	—	1/4-18 NPT	-14.0	-5.0	DN..150408	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM11**	3 mm
A32SMDUNR11	32	40,0	22,0	250	50	1/4-18 NPT	-12.0	-5.0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
A32SMDUNR15	32	40,0	22,0	250	—	1/4-18 NPT	-12.0	-6.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
A40TMDUNR15	40	50,0	27,0	300	—	1/4-18 NPT	-9.0	-5.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
A50UMDUNR15	50	63,0	35,0	350	—	1/4-18 NPT	-7.0	-5.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
left hand															
A25RMDUNL11	25	32,0	17,0	200	40	1/4-18 NPT	-14.0	-5.0	DN..110408	—	**KLM33L**	2 mm	**CKM7**	**STCM5**	2.5 mm
A25RMDUNL15	25	32,0	17,0	200	—	1/4-18 NPT	-14.0	-5.0	DN..150408	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM11**	3 mm
A32SMDUNL11	32	40,0	22,0	250	50	1/4-18 NPT	-12.0	-5.0	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
A32SMDUNL15	32	40,0	22,0	250	—	1/4-18 NPT	-12.0	-6.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
A40TMDUNL15	40	50,0	27,0	300	—	1/4-18 NPT	-9.0	-5.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
A50UMDUNL15	50	63,0	35,0	350	—	1/4-18 NPT	-7.0	-5.0	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm



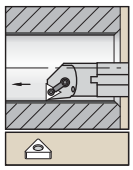
Steel shank
with through coolant.

See pages B59–B66 and
B178–B179 for inserts.



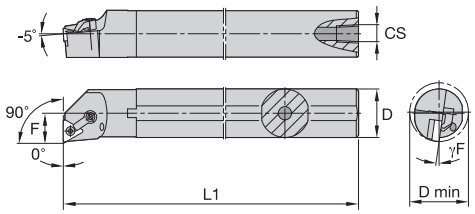
A-MSKN 75°

catalogue number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A25RMSKNR12	25	32,0	17,0	200	3,1	1/4-18 NPT	-14.0	SN..120408	–	**KLM43**	2 mm	**CKM21**	**STCM11**	3 mm
A32SMSKNR12	32	40,0	22,0	250	3,1	1/4-18 NPT	-14.0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMSKNR12	40	50,0	27,0	300	3,1	1/4-18 NPT	-10.0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMSKNR15	40	50,0	27,0	300	4,1	1/4-18 NPT	-14.0	SN..150608	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMSKNR19	50	63,0	35,0	350	4,6	1/4-18 NPT	-12.0	SN..190608	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand														
A25RMSKNL12	25	32,0	17,0	200	3,1	1/4-18 NPT	-14.0	SN..120408	–	**KLM43**	2 mm	**CKM21**	**STCM11**	3 mm
A32SMSKNL12	32	40,0	22,0	250	3,1	1/4-18 NPT	-14.0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMSKNL12	40	50,0	27,0	300	3,1	1/4-18 NPT	-10.0	SN..120408	**ISSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
A40TMSKNL15	40	50,0	27,0	300	4,1	1/4-18 NPT	-14.0	SN..150608	**ISSN533**	**KLM58**	3 mm	**CKM21**	**STCM20**	3 mm
A50UMSKNL19	50	63,0	35,0	350	4,6	1/4-18 NPT	-12.0	SN..190608	**ISSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm



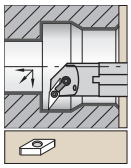
Steel shank
with through coolant.

See pages B66–B73 and
B179–B180 for inserts.



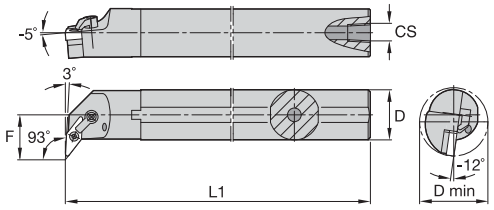
A-MTFN 90°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
A25RMTFNR16	25	32,0	17,0	200	1/4-18 NPT	-14.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A32SMTFNR16	32	40,0	22,0	250	1/4-18 NPT	-12.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A40TMTFNR16	40	50,0	27,0	300	1/4-18 NPT	-9.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A50UMTFNR22	50	63,0	35,0	350	1/4-18 NPT	-7.0	TN..220412	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm
left hand													
A25RMTFNL16	25	32,0	17,0	200	1/4-18 NPT	-14.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A32SMTFNL16	32	40,0	22,0	250	1/4-18 NPT	-12.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A40TMTFNL16	40	50,0	27,0	300	1/4-18 NPT	-9.0	TN..160408	**ITSN322**	**KLM34L**	2 mm	**CKM21**	**STCM20**	3 mm
A50UMTFNL22	50	63,0	35,0	350	1/4-18 NPT	-7.0	TN..220412	**ITSN433**	**KLM46**	2.5 mm	**CKM9**	**STCM4**	4 mm



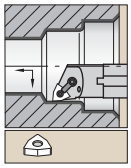
Steel shank
with through coolant.

See pages B74–B78 and
B180–B181 for inserts.



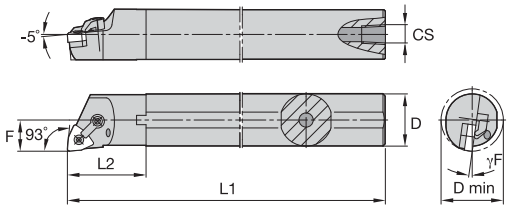
A-MVUN 93°

catalogue number	D	D min	F	L1	CS	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand												
A25RMVUNR16	25	37,0	22,0	200	1/4-18 NPT	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM26**	3 mm
A32SMVUNR16	32	40,0	22,0	250	1/4-18 NPT	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm
left hand												
A25RMVUNL16	25	37,0	22,0	200	1/4-18 NPT	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM26**	3 mm
A32SMVUNL16	32	40,0	22,0	250	1/4-18 NPT	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM31**	**STCM20**	3 mm



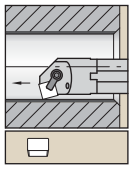
Steel shank
with through coolant.

See pages B79–B83 and
B181 for inserts.



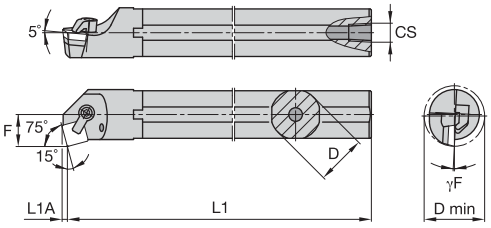
A-MWLN 95°

catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A25RMWLNR06	25	32,0	17,0	200	—	1/4-18 NPT	-12.0	WN..060408	**—**	**KLM33L**	2 mm	**CKM6**	**STCM5**	2.5 mm
A25RMWLNR08	25	32,0	17,0	200	40	1/4-18 NPT	-12.0	WN..080408	**—**	**KLM43**	2 mm	**CKM20**	**STCM11**	3 mm
A32SMWLNR06	32	40,0	22,0	250	—	1/4-18 NPT	-10.0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
A32SMWLNR08	32	40,0	22,0	250	50	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm
A40TMWLNR08	40	50,0	27,0	300	55	1/4-18 NPT	-12.0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm
left hand														
A25RMWLNL06	25	32,0	17,0	200	—	1/4-18 NPT	-12.0	WN..060408	**—**	**KLM33L**	2 mm	**CKM6**	**STCM5**	2.5 mm
A25RMWLNL08	25	32,0	17,0	200	40	1/4-18 NPT	-12.0	WN..080408	**—**	**KLM43**	2 mm	**CKM20**	**STCM11**	3 mm
A32SMWLNL06	32	40,0	22,0	250	—	1/4-18 NPT	-10.0	WN..060408	**IWSN322**	**KLM34L**	2 mm	**CKM6**	**STCM5**	2.5 mm
A32SMWLNL08	32	40,0	22,0	250	50	1/4-18 NPT	-14.0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm
A40TMWLNL08	40	50,0	27,0	300	55	1/4-18 NPT	-12.0	WN..080408	**IWSN433**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm



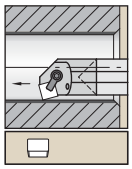
Steel shank
with through coolant.

See pages B85–B86 and B130 for inserts.



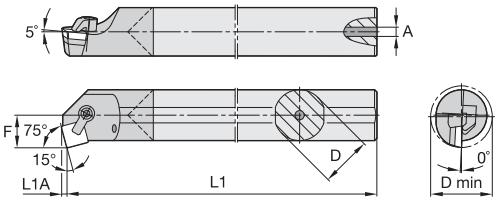
A-CSKP 75°

catalogue number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A25RCSKPR12	25	32,0	17,0	200	3,1	1/4-18 NPT	-2.0	SP..120308	**SM840**	**MS110**	2 mm	**CKM20**	**STCM11**	3 mm
A32SCSKPR12	32	40,0	22,0	250	3,1	1/4-18 NPT	0.0	SP..120308	**SM840**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm
left hand														
A25RCSKPL12	25	32,0	17,0	200	3,1	1/4-18 NPT	-2.0	SP..120308	**SM840**	**MS110**	2 mm	**CKM20**	**STCM11**	3 mm
A32SCSKPL12	32	40,0	22,0	250	3,1	1/4-18 NPT	0.0	SP..120308	**SM840**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm



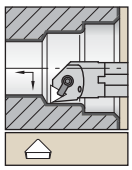
Carbide shank
with through coolant.

See pages B85–B86 and B130 for inserts.



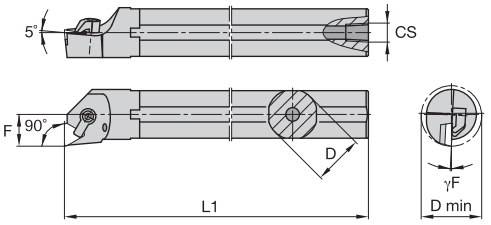
E-CSKP 75°

catalogue number	D	D min	F	L1	L1A	A	gage insert	shim	shim screw	clamp	clamp screw	hex (mm)
right hand												
E16RCSKPR09	16	20,0	11,0	200	2,2	5,5	SP..090308	**SM821**	**MS963**	**CKM19**	**STCM9**	2.5 mm
left hand												
E16RCSKPL09	16	20,0	11,0	200	2,2	5,5	SP..090308	**SM821**	**MS963**	**CKM19**	**STCM9**	2.5 mm



Steel shank
with through coolant.

See pages B86–B87 and B136 for inserts.

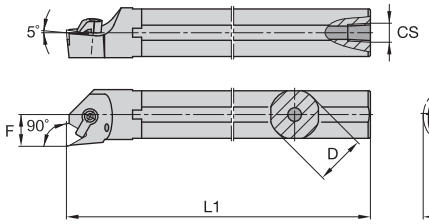


A-CTFP 90°

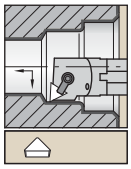
catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
A16RCTFPR11	16	20,0	11,0	200	1/8-27 NPT	-4.0	TP..110304	–	–	–	**CKM19**	**STCM9**	2.5 mm
A20QCTFPR11	20	25,0	13,0	180	1/8-27 NPT	0.0	TP..110304	**SM815**	**MS961**	–	**CKM19**	**STCM9**	2.5 mm
A25RCTFPR16	25	32,0	17,0	200	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm
A32SCTFPR16	32	40,0	22,0	250	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm
A40VCTFPR16	40	48,0	27,0	400	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm

(continued)

(A-CTFP 90° continued)

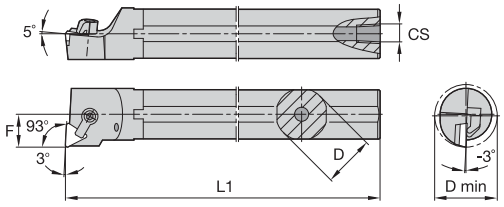


catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
left hand													
A16RCTFPL11	16	20,0	11,0	200	1/8-27 NPT	-4.0	TP..110304	–	–	–	**CKM19**	**STCM9**	2.5 mm
A20QCTFPL11	20	25,0	13,0	180	1/8-27 NPT	0.0	TP..110304	**SM815**	**MS961**	–	**CKM19**	**STCM9**	2.5 mm
A25RCTFPL16	25	32,0	17,0	200	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm
A32SCTFPL16	32	40,0	22,0	250	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm
A40VCTFPL16	40	48,0	27,0	400	1/4-18 NPT	-3.0	TP..160308	**SM841**	**MS110**	2 mm	**CKM10**	**STCM8**	4 mm

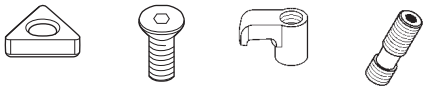


Steel shank
with through coolant.

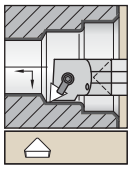
See pages B86–B87 and B130 for inserts.



A-CTUP 93°

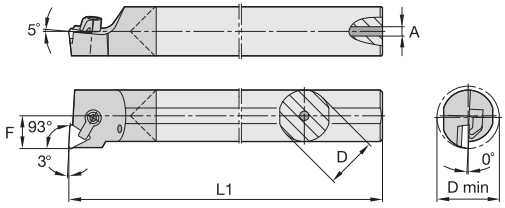


catalogue number	D	D min	F	L1	CS	gage insert	shim	shim screw	clamp	clamp screw	hex (mm)
right hand											
A16MCTUPR11	16	20,0	11,0	150	1/8-27 NPT	TP..110304	**SM815**	**MS961**	**CKM19**	**STCM9**	2.5 mm
left hand											
A16MCTUPL11	16	20,0	11,0	150	1/8-27 NPT	TP..110304	**SM815**	**MS961**	**CKM19**	**STCM9**	2.5 mm
A20QCTUPL11	20	25,0	13,0	180	1/8-27 NPT	TP..110304	**SM815**	**MS961**	**CKM19**	**STCM9**	2.5 mm

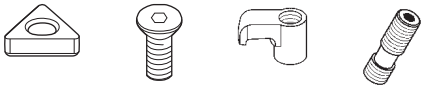


Carbide shank
with through coolant.

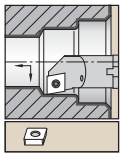
See pages B86–B87 and B130 for inserts.



E-CTUP 93°

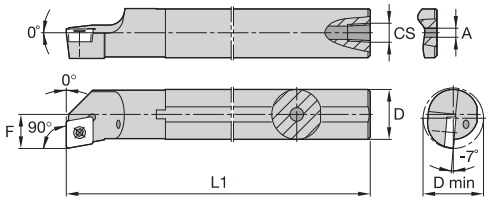


catalogue number	D	D min	F	L1	A	gage insert	shim	shim screw	clamp	clamp screw	hex (mm)
right hand											
E16RCTUPR11	16	20,0	11,0	200	5,5	TP..110304	**SM815**	**MS961**	**CKM19**	**STCM9**	2.5 mm
left hand											
E16RCTUPL11	16	20,0	11,0	200	5,5	TP..110304	**SM815**	**MS961**	**CKM19**	**STCM9**	2.5 mm



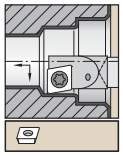
Steel shank
with through coolant.

See pages B88–B91 and
B187–B188 for inserts.



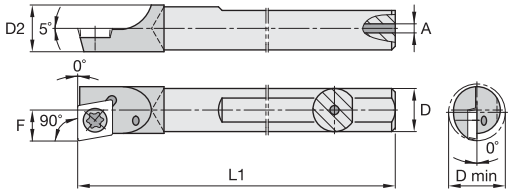
A-SCFC 90°

catalogue number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A25TSCFCR12	25	32,0	17,0	300	1/4-18 NPT	CC..120408	**MS1157**	T15
left hand								
A25TSCFCL12	25	32,0	17,0	300	1/4-18 NPT	CC..120408	**MS1157**	T15



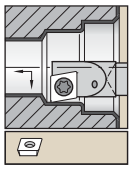
Carbide shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



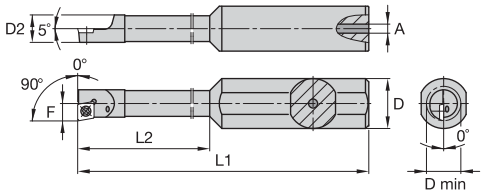
E-SCFD 90°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E05HSCFDRS4	5	5,9	5,2	3,0	102	1,0	CD..S4T002	**CC09**	T6
E06HSCFDRS4	6	7,1	6,2	3,7	100	1,2	CD..S4T002	**CC11**	T6



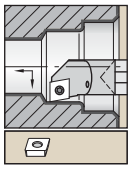
Necked steel shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



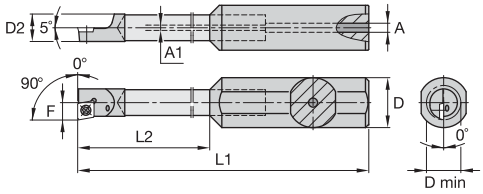
A-SCFD 90°

catalogue number	D	D min	D2	F	L1	L2	A	gage insert	insert screw	Torx
right hand										
A0510ESCFDRS412	10	5,9	5,16	3,1	70	12,7	1,0	CD..S4T002	**CC11**	T6
A0510ESCFDRS425	10	5,9	5,16	3,1	70	25,4	1,0	CD..S4T002	**CC11**	T6
A0612ESCFDRS431	12	7,4	6,60	3,9	70	31,7	1,0	CD..S4T002	**CC11**	T6



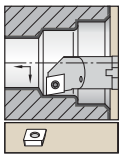
Necked carbide shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



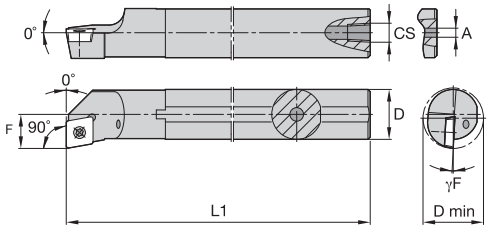
E-SCFD 90°

catalogue number	D	D min	D2	F	L1	L2	A	A1	gage insert	insert screw	Torx
right hand											
E0512XSCFDRS425	12	6,1	5,30	3,2	64	25,4	3,18	1,0	CD..S4T002	**CC11**	T6
E0512XSCFDRS450	12	6,1	5,30	3,2	89	50,8	3,18	1,0	CD..S4T002	**CC11**	T6
E0616XSCFDRS463	16	7,4	6,50	3,9	127	63,5	3,18	1,2	CD..S4T002	**CC11**	T6



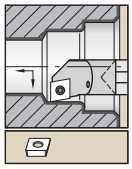
Steel shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



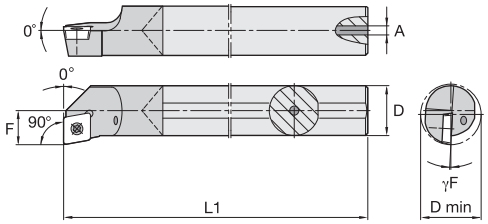
A-SCFP 90°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A08JSCFPR06	8	11,0	6,0	110	2,4	–	-8.0	CP..060204	**MS1153**	T7
A10KSCFPR06	10	13,0	7,0	125	3,2	–	-6.0	CP..060204	**MS1153**	T7
A12MSCFPR06	12	16,0	9,0	150	–	1/16-27 NPT	-4.0	CP..060204	**MS1153**	T7
A16RSCFPR06	16	20,0	11,0	200	–	1/8-27 NPT	-5.0	CP..060203	**MS1153**	T7
A16RSCFPR09	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCFPR06	20	25,0	13,0	250	–	1/8-27 NPT	-3.0	CP..060203	**MS1153**	T7
A20SSCFPR09	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	CP..09T308	**MS1155**	T15
left hand										
A08JSCFPL06	8	11,0	6,0	110	2,4	–	-8.0	CP..060204	**MS1153**	T7
A10KSCFPL06	10	13,0	7,0	125	3,2	–	-6.0	CP..060204	**MS1153**	T7
A12MSCFPL06	12	16,0	9,0	150	–	1/16-27 NPT	-4.0	CP..060204	**MS1153**	T7
A16RSCFPL06	16	20,0	11,0	200	–	1/8-27 NPT	-5.0	CP..060203	**MS1153**	T7
A16RSCFPL09	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCFPL06	20	25,0	13,0	250	–	1/8-27 NPT	-3.0	CP..060203	**MS1153**	T7
A20SSCFPL09	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	CP..09T308	**MS1155**	T15



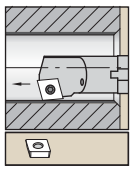
Carbide shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



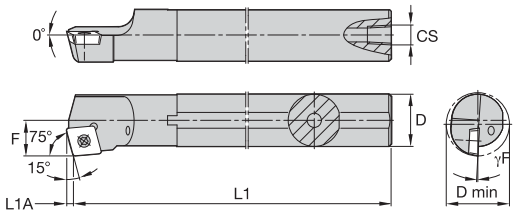
E-SCFP 90°

catalogue number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E08KSCFPR06A	8	11,0	6,0	125,0	2,4	-8.0	CP..060204	**MS1939**	T7
E10MSCFPR06A	10	13,0	7,0	150,0	3,2	-4.0	CP..060204	**MS1939**	T7
E12QSCFPR06	12	16,0	9,0	180,0	4,8	-3.0	CP..060204	**MS1153**	T7
left hand									
E08KSCFPL06A	8	11,0	6,0	125,0	2,4	-8.0	CP..060204	**MS1939**	T7
E10MSCFPL06A	10	13,0	7,0	150,0	3,2	-4.0	CP..060204	**MS1939**	T7
E12QSCFPL06	12	16,0	9,0	180,0	4,8	-3.0	CP..060204	**MS1153**	T7



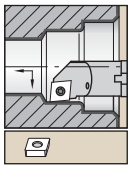
Steel shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



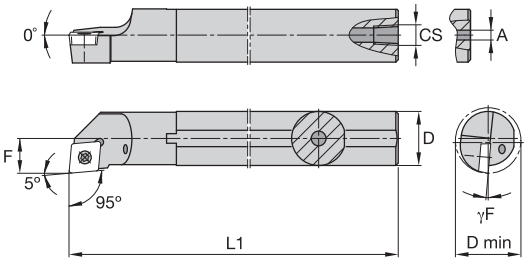
A-SCKP 75°

catalogue number	D	D min	F	L1	L1A	CS	γF°	gage insert	insert screw	Torx
right hand										
A16RSCKPR09	16	20,0	11,0	200	2,3	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCKPR09	20	25,0	13,0	250	2,3	1/8-27 NPT	-3.0	CP..09T308	**MS1155**	T15
left hand										
A16RSCKPL09	16	20,0	11,0	200	2,3	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCKPL09	20	25,0	13,0	250	2,3	1/8-27 NPT	-3.0	CP..09T308	**MS1155**	T15



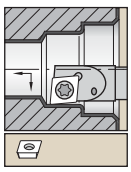
Steel shank
with through coolant.

See pages B88–B91 and
B187–B188 for inserts.



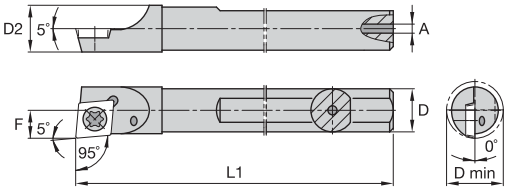
A-SCLC 95°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	shim	shim screw	hex (mm)	insert screw	Torx
right hand													
A08JSCLCR06	8	11,0	6,0	110	2,4	–	-8.0	CC..060204	–	–	–	**MS1939**	T7
A10KSCLCR06	10	13,0	7,0	125	3,2	–	-7.0	CC..060204	–	–	–	**MS1153**	T7
A12MSCLCR06	12	16,0	9,0	150	4,0	1/16-27 NPT	-6.0	CC..060204	–	–	–	**MS1153**	T7
A16RSCLCR09	16	20,0	11,0	200	–	1/8-27 NPT	-7.0	CC..09T308	–	–	–	**MS1155**	T15
A20SSCLCR09	20	25,0	13,0	250	–	1/8-27 NPT	-5.0	CC..09T308	–	–	–	**MS1155**	T15
A25TSCLCR12	25	32,0	17,0	300	–	1/4-18 NPT	-7.0	CC..120408	–	–	–	**MS1157**	T15
A32TSCLCR12	32	40,0	22,0	300	–	1/4-18 NPT	-7.0	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
left hand													
A08JSCLCL06	8	11,0	6,0	110	2,4	–	-8.0	CC..060204	–	–	–	**MS1939**	T7
A10KSCLCL06	10	13,0	7,0	125	3,2	–	-7.0	CC..060204	–	–	–	**MS1153**	T7
A12MSCLCL06	12	16,0	9,0	150	4,0	1/16-27 NPT	-6.0	CC..060204	–	–	–	**MS1153**	T7
A16RSCLCL09	16	20,0	11,0	200	–	1/8-27 NPT	-7.0	CC..09T308	–	–	–	**MS1155**	T15
A20SSCLCL09	20	25,0	13,0	250	–	1/8-27 NPT	-5.0	CC..09T308	–	–	–	**MS1155**	T15
A25TSCLCL12	25	32,0	17,0	300	–	1/4-18 NPT	-7.0	CC..120408	–	–	–	**MS1157**	T15
A32TSCLCL12	32	40,0	22,0	300	–	1/4-18 NPT	-7.0	CC..120408	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15



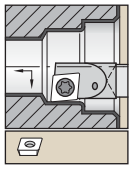
Steel shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



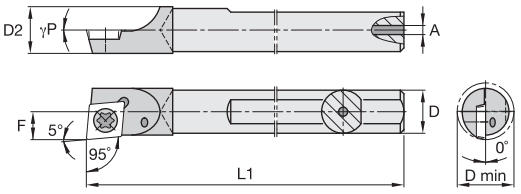
A-SCLD 95°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A04XSCLDRS4	4	4,6	4,2	2,4	65	1,0	CD..S4T002	**CC09**	T6
A05XSCLDRS4	5	5,8	5,2	3,0	65	1,0	CD..S4T002	**CC09**	T6
A06XSCLDRS4	6	7,1	6,2	3,7	64	1,0	CD..S4T002	**CC11**	T6
A08XSCLDRS4	8	9,1	8,2	4,7	76	2,0	CD..S4T002	**CC11**	T6
left hand									
A04XSCLDLS4	4	4,6	4,2	2,4	65	1,0	CD..S4T002	**CC09**	T6
A05XSCLDLS4	5	5,8	5,2	3,0	65	1,0	CD..S4T002	**CC09**	T6
A06XSCLDLS4	6	6,9	6,2	3,7	65	1,0	CD..S4T002	**CC11**	T6
A08XSCLDLS4	8	9,1	8,2	4,7	76	2,0	CD..S4T002	**CC11**	T6



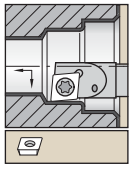
Carbide shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



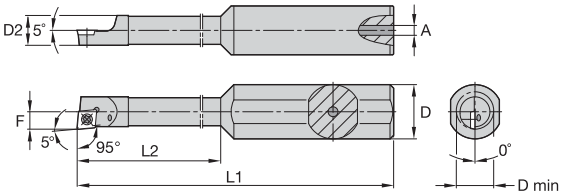
E-SCLD 95°

catalogue number	D	D min	D2	F	L1	A	γP°	gage insert	insert screw	Torx
right hand										
E04HSCLDRS4	4	4,6	–	2,4	100	1,0	0.0	CD..S4T002	**CC09**	T6
E04MSCLDRS4	4	4,6	4,2	2,4	150	1,0	0.0	CD..S4T002	**CC09**	T6
E05HSCLDRS4	5	5,9	–	3,0	101	1,0	5.0	CD..S4T002	**CC09**	T6
E05MSCLDRS4	5	5,9	5,2	3,0	150	1,0	0.0	CD..S4T002	**CC09**	T6
E06HSCLDRS4	6	7,1	6,2	3,7	100	1,2	0.0	CD..S4T002	**CC11**	T6
E06MSCLDRS4	6	7,1	6,2	3,7	150	1,2	0.0	CD..S4T002	**CC11**	T6
E08MSCLDRS4	8	9,1	–	4,7	150	2,4	5.0	CD..120605	**CC11**	T6
left hand										
E04HSCLDLS4	4	4,6	4,2	2,4	100	1,0	0.0	CD..S4T002	**CC09**	T6
E04MSCLDLS4	4	4,6	4,2	2,4	150	1,0	0.0	CD..S4T002	**CC09**	T6
E05HSCLDLS4	5	5,9	5,2	3,0	100	1,0	0.0	CD..S4T002	**CC09**	T6
E05MSCLDLS4	5	5,9	5,2	3,0	150	1,0	0.0	CD..S4T002	**CC09**	T6
E06HSCLDLS4	6	7,1	6,2	3,7	100	1,2	0.0	CD..S4T002	**CC11**	T6
E06MSCLDLS4	6	7,1	6,2	3,7	150	1,2	0.0	CD..S4T002	**CC11**	T6
E08MSCLDLS4	8	9,1	8,2	4,7	150	2,4	0.0	CD..S4T002	**CC11**	T6



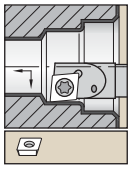
Necked steel shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



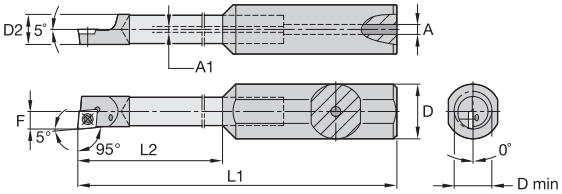
A-SCLD 95°

catalogue number	D	D min	D2	F	L1	L2	A	gage insert	insert screw	Torx
right hand										
A0410ESCLDRS412	10	5,2	4,57	2,6	70	12,7	1,0	CD..S4T002	**CC09**	T6
A0410ESCLDRS425	10	5,2	4,70	2,6	70	25,4	1,0	CD..S4T002	**CC09**	T6
A0412ESCLDRS412	12	5,2	4,57	2,6	70	12,7	1,0	CD..S4T002	**CC09**	T6
A0412ESCLDRS425	12	5,2	4,57	2,6	70	25,4	1,0	CD..S4T002	**CC09**	T6
A0510ESCLDRS412	10	5,8	5,16	3,0	70	12,7	1,0	CD..S4T002	**CC11**	T6
A0510ESCLDRS425	10	5,8	5,16	3,0	70	25,4	1,0	CD..S4T002	**CC11**	T6
A0510GSCLDRS4	10	6,0	–	3,2	90	25,0	3,2	CD..S4T002	**MS1454**	T5
A0610HSCLDRS4	10	7,6	–	3,8	100	32,0	3,2	CD..S4T002	**MS1454**	T5
A0612ESCLDRS419	12	7,2	6,60	3,7	70	19,1	1,0	CD..S4T002	**CC11**	T6



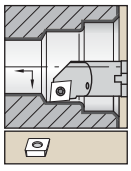
Necked carbide shank
with through coolant.

See pages B91–B92 and
B189 for inserts.



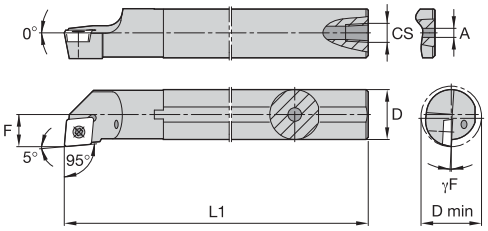
E-SCLD 95°

catalogue number	D	D min	D2	F	L1	L2	A	gage insert	insert screw	Torx
right hand										
E0412DSCLDRS422	12	5,3	4,80	2,6	60	22,2	3,18	CD..S4T002	**CC09**	T6
E0412XSCLDRS447	12	5,3	4,80	2,6	86	47,6	3,18	CD..S4T002	**CC09**	T6
E0416KSCLDRS447	16	5,3	4,80	2,6	124	47,6	3,18	CD..S4T002	**CC09**	T6
E0512XSCLDRS425	12	5,9	5,30	3,0	64	25,4	3,18	CD..S4T002	**CC11**	T6
E0612ESCLDRS431	12	7,2	6,56	3,7	70	31,7	3,18	CD..S4T002	**CC11**	T6
E0612HSCLDRS463	12	7,2	6,56	3,7	100	63,5	3,18	CD..S4T002	**CC11**	T6
E0616HSCLDRS431	16	7,2	6,56	3,7	95	31,7	3,18	CD..S4T002	**CC11**	T6
E0616XSCLDRS463	16	7,2	6,56	3,7	133	63,5	3,18	CD..S4T002	**CC11**	T6



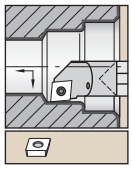
Steel shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



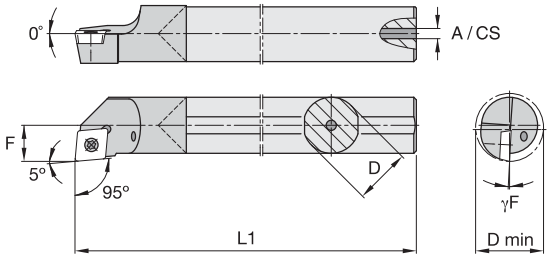
A-SCLP 95°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A08JSCLPR06	8	11,0	6,0	110	2,4	–	-6.0	CP..060204	**MS1939**	T7
A10KSCLPR06	10	13,0	7,0	125	3,2	–	-4.0	CP..060204	**MS1939**	T7
A12MSCLPR06	12	16,0	9,0	150	4,0	1/16-27 NPT	-3.0	CP..060204	**MS1153**	T7
A16RSCLPR06	16	20,0	11,0	200	–	1/8-27 NPT	-5.0	CP..060203	**MS1153**	T7
A16RSCLPR09	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCLPR06	20	25,0	13,0	250	–	1/8-27 NPT	-3.0	CP..060203	**MS1153**	T7
A20SSCLPR09	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	CP..09T308	**MS1155**	T15
left hand										
A08JSCLPL06	8	11,0	6,0	110	2,4	–	-6.0	CP..060204	**MS1939**	T7
A10KSCLPL06	10	13,0	7,0	125	3,2	–	-4.0	CP..060204	**MS1939**	T7
A12MSCLPL06	12	16,0	9,0	150	4,0	1/16-27 NPT	-3.0	CP..060204	**MS1153**	T7
A16RSCLPL06	16	20,0	11,0	200	–	1/8-27 NPT	-5.0	CP..060203	**MS1153**	T7
A16RSCLPL09	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15
A20SSCLPL06	20	25,0	13,0	250	–	1/8-27 NPT	-3.0	CP..060203	**MS1153**	T7
A20SSCLPL09	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	CP..09T308	**MS1155**	T15



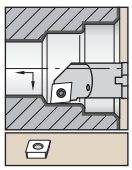
Carbide shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



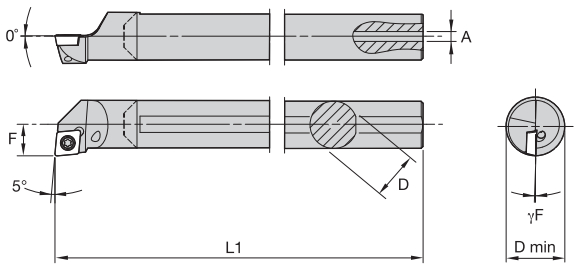
E-SCLP 95°

catalogue number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E08KSCLPR06A	8	11,0	6,0	122	2,4	-6.0	CP..060204	**MS1939**	T7
E10MSCLPR06A	10	13,0	7,0	150	3,2	-4.0	CP..060204	**MS1939**	T7
E12QSCLPR06	12	16,0	9,0	180	4,8	-3.0	CP..060204	**MS1153**	T7
E16RSCLPR09	16	20,0	11,0	200	5,5	-4.0	CP..09T308	**MS1155**	T15
E20SSCLPR09	20	25,0	13,0	250	7,1	-2.0	CP..09T308	**MS1155**	T15
left hand									
E08KSCLPL06A	8	11,0	6,0	122	2,4	-6.0	CP..060204	**MS1939**	T7
E10MSCLPL06A	10	13,0	7,0	150	3,2	-4.0	CP..060204	**MS1939**	T7
E12QSCLPL06	12	16,0	9,0	180	4,8	-3.0	CP..060204	**MS1153**	T7
E16RSCLPL09	16	20,0	11,0	200	5,5	-4.0	CP..09T308	**MS1155**	T15
E20SSCLPL09	20	25,0	13,0	250	7,1	-2.0	CP..09T308	**MS1155**	T15



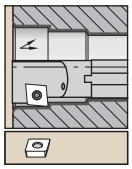
Heavy metal bar
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



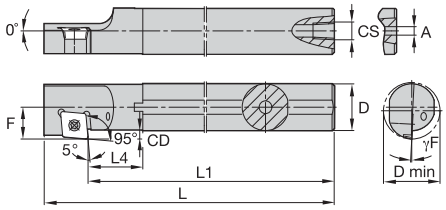
L-SCLP 95°

catalogue number	D	D min	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand										
L08KSCLPR06	8	11,0	6,0	123	17,62	2,4	-6.0	CPMT060204..	**MS1939**	T7
L10MSCLPR06	10	13,0	7,0	149	21,65	3,2	-4.0	CPMT060204..	**MS1939**	T7
L12QSCLPR06	12	16,0	9,0	181	22,35	4,0	-3.0	CPMT060204..	**MS1153**	T7
L16RSCLPR09	16	20,0	11,0	203	28,57	4,0	-4.0	CPMT09T308..	**MS1155**	T15
L20SSCLPR09	20	25,0	13,0	251	33,61	4,0	-2.0	CPMT09T308..	**MS1155**	T15
left hand										
L08KSCLPL06	8	11,0	6,0	123	17,62	2,4	-6.0	CPMT060204..	**MS1939**	T7
L10MSCLPL06	10	13,0	7,0	149	21,65	3,2	-4.0	CPMT060204..	**MS1939**	T7
L12QSCLPL06	12	16,0	9,0	181	22,35	4,0	-3.0	CPMT060204..	**MS1153**	T7
L16RSCLPL09	16	20,0	11,0	203	28,57	4,0	-4.0	CPMT09T308..	**MS1155**	T15
L20SSCLPL09	20	25,0	13,0	251	33,61	4,0	-2.0	CPMT09T308..	**MS1155**	T15



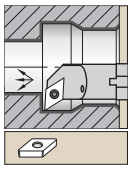
Steel shank
with through coolant.

See pages B92–B95 and
B189–B190 for inserts.



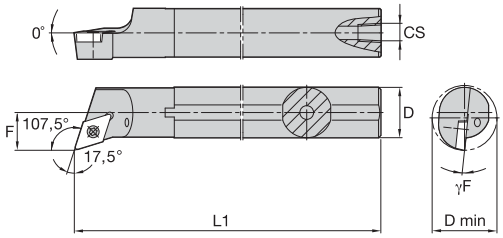
A-SCXP 95°

catalogue number	D	D min	F	L1	L	L4	CD	A	CS	γF°	gage insert	insert screw	Torx
right hand													
A10KSCXPR06	10	13,0	7,0	125	136,0	15,9	2,1	3,2	–	-4.0	CP..060204	**MS1153**	T7
A12MSCXPR06	12	16,0	9,0	150	161,0	16,4	3,1	–	1/16-27 NPT	-3.0	CP..060204	**MS1153**	T7
A16RSCXPR09	16	20,0	11,0	200	218,0	17,8	3,2	–	1/8-27 NPT	-4.0	CP..09T308	**MS1155**	T15



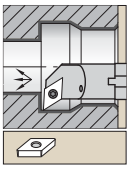
Steel shank
with through coolant.

See pages B95–B98 and
B191–B192 for inserts.



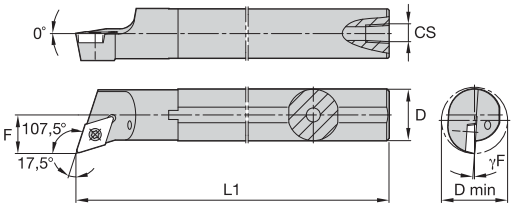
A-SDQC 107,5°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand									
A12MSDQCR07	12	16,0	9,0	150	1/16-27 NPT	-6.0	DC..070204	**MS1153**	T7
A16RSDQCR07	16	20,0	11,0	200	1/8-27 NPT	-5.0	DC..070204	**MS1153**	T7
A20SSDQCR11	20	25,0	13,0	250	1/8-27 NPT	-5.0	DC..11T308	**MS1155**	T15
A25TSDQCR11	25	32,0	17,0	300	1/4-18 NPT	-4.0	DC..11T308	**MS1155**	T15
left hand									
A12MSDQCL07	12	16,0	9,0	150	1/16-27 NPT	-6.0	DC..070204	**MS1153**	T7
A16RSDQCL07	16	20,0	11,0	200	1/8-27 NPT	-5.0	DC..070204	**MS1153**	T7
A20SSDQCL11	20	25,0	13,0	250	1/8-27 NPT	-5.0	DC..11T308	**MS1155**	T15
A25TSDQCL11	25	32,0	17,0	300	1/4-18 NPT	-4.0	DC..11T308	**MS1155**	T15



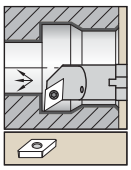
Steel shank
with through coolant.

See pages B98–B100 and
B192–B194 for inserts.



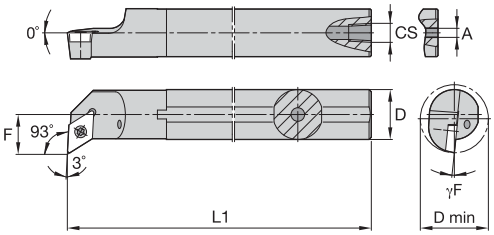
A-SDQP 107,5°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand									
A12MSDQPR07	12	16,0	9,0	150	1/16-27 NPT	-2.0	DP..070204	**MS1153**	T7
A16RSDQPR07	16	20,0	11,0	200	1/8-27 NPT	0.0	DP..070204	**MS1153**	T7
A20SSDQPR11	20	25,0	13,0	250	1/8-27 NPT	-2.0	DP..11T308	**MS1155**	T15
A25TSDQPR11	25	32,0	17,0	300	1/4-18 NPT	0.0	DP..11T308	**MS1155**	T15
left hand									
A12MSDQPL07	12	16,0	9,0	150	1/16-27 NPT	-2.0	DP..070204	**MS1153**	T7
A16RSDQPL07	16	20,0	11,0	200	1/8-27 NPT	0.0	DP..070204	**MS1153**	T7
A20SSDQPL11	20	25,0	13,0	250	1/8-27 NPT	-2.0	DP..11T308	**MS1155**	T15
A25TSDQPL11	25	32,0	17,0	300	1/4-18 NPT	0.0	DP..11T308	**MS1155**	T15



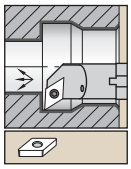
Steel shank
with through coolant.

See pages B95–B98 and
B191–B192 for inserts.



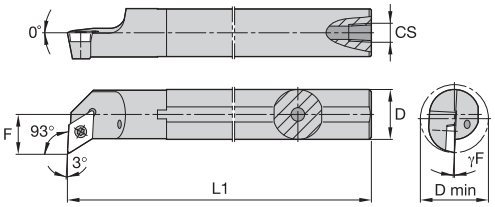
A-SDUC 93°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	shim	shim screw	hex (mm)	insert screw	Torx
right hand													
A10KSDUCR07	10	13,0	7,0	125	3,2	–	-7.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A12MSDUCR07	12	16,0	9,0	150	–	1/16-27 NPT	-4.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A16RSDUCR07	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A16RSDUCR11	16	20,0	11,0	200	–	1/8-27 NPT	-6.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A20SSDUCR11	20	25,0	13,0	250	–	1/8-27 NPT	-5.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A25TSDUCR11	25	32,0	17,0	300	–	1/4-18 NPT	-4.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A32TSDUCR15	32	40,0	22,0	300	–	1/4-18 NPT	-7.0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15
left hand													
A10KSDUCL07	10	13,0	7,0	125	3,2	–	-7.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A12MSDUCL07	12	16,0	9,0	150	–	1/16-27 NPT	-4.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A16RSDUCL07	16	20,0	11,0	200	–	1/8-27 NPT	-4.0	DC..070204	**–**	**–**	–	**MS1153**	T7
A16RSDUCL11	16	20,0	11,0	200	–	1/8-27 NPT	-6.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A20SSDUCL11	20	25,0	13,0	250	–	1/8-27 NPT	-5.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A25TSDUCL11	25	32,0	17,0	300	–	1/4-18 NPT	-4.0	DC..11T308	**–**	**–**	–	**MS1155**	T15
A32TSDUCL15	32	40,0	22,0	300	–	1/4-18 NPT	-7.0	DC..150408	**SKDP453**	**SRS4**	4 mm	**MS1158**	T15



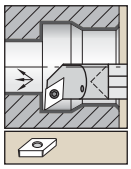
Steel shank
with through coolant.

See pages B98–B100 and
B192–B194 for inserts.



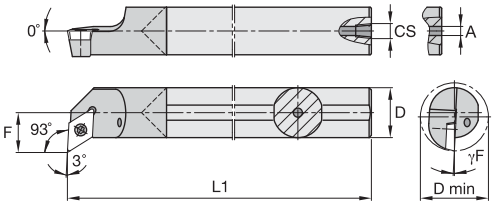
A-SDUP 93°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand									
A12MSDUPR07	12	16,0	9,0	150	1/16-27 NPT	-2.0	DP..070204	**MS1153**	T7
A16RSDUPR07	16	20,0	11,0	200	1/8-27 NPT	0.0	DP..070204	**MS1153**	T7
A20SSDUPR11	20	25,0	13,0	250	1/8-27 NPT	-2.0	DP..11T308	**MS1155**	T15
A25TSDUPR11	25	32,0	17,0	300	1/4-18 NPT	0.0	DP..11T308	**MS1155**	T15
left hand									
A12MSDUPL07	12	16,0	9,0	150	1/16-27 NPT	-2.0	DP..070204	**MS1153**	T7
A16RSDUPL07	16	20,0	11,0	200	1/8-27 NPT	0.0	DP..070204	**MS1153**	T7
A20SSDUPL11	20	25,0	13,0	250	1/8-27 NPT	-2.0	DP..11T308	**MS1155**	T15
A25TSDUPL11	25	32,0	17,0	300	1/4-18 NPT	0.0	DP..11T308	**MS1155**	T15



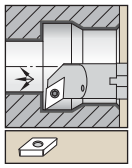
Carbide shank
with through coolant.

See pages B98–B100 and
B192–B194 for inserts.



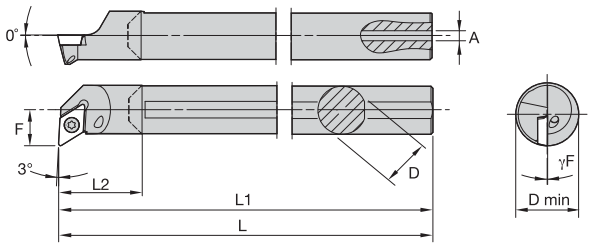
E-SDUP 93°

catalogue number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E12QSDUPR07	12	16,0	9,0	180	4,8	-2.0	DP..070204	**MS1153**	T7
E16RSDUPR07	16	20,0	11,0	200	5,5	0.0	DP..070204	**MS1153**	T7
E20SSDUPR11	20	25,0	13,0	250	7,1	-2.0	DP..11T308	**MS1155**	T15
left hand									
E12QSDUPL07	12	16,0	9,0	180	4,8	-2.0	DP..070204	**MS1153**	T7
E16RSDUPL07	16	20,0	11,0	200	5,5	0.0	DP..070204	**MS1153**	T7
E20SSDUPL11	20	25,0	13,0	250	7,1	-2.0	DP..11T308	**MS1155**	T15



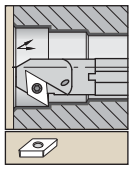
Heavy metal bar
with through coolant.

See pages B98–B100 and
B192–B194 for inserts.



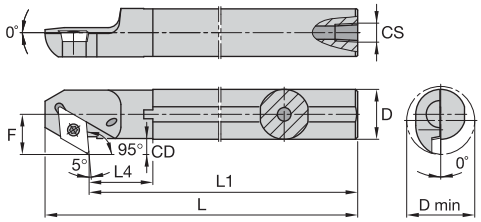
L-SDUP 93°

catalogue number	D	D min	F	L1	L	L2	A	γF°	gage insert	insert screw	Torx
right hand											
L12QSDUPR07	12	16,0	9,0	181	181,170	22,4	4,0	-2.0	DP..070204..	**MS1153**	T7
L16RSDUPR07	16	20,0	11,0	199	199,410	25,4	4,0	0.0	DP..070204..	**MS1153**	T7
L20SSDUPR11	20	25,0	13,0	251	251,450	33,6	4,0	-2.0	DP..11T308..	**MS1155**	T15
left hand											
L12QSDUPL07	12	16,0	9,0	181	181,170	22,4	4,0	-2.0	DP..070204..	**MS1153**	T7
L16RSDUPL07	16	20,0	11,0	199	199,410	25,4	4,0	0.0	DP..070204..	**MS1153**	T7
L20SSDUPL11	20	25,0	13,0	251	251,450	33,6	4,0	-2.0	DP..11T308..	**MS1155**	T15



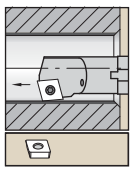
Carbide shank
with through coolant.

See pages B98–B100 and
B192–B194 for inserts.



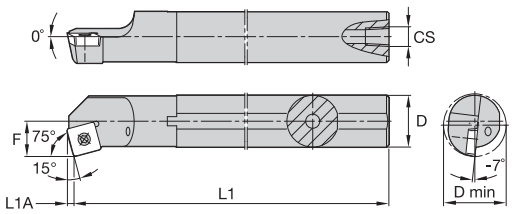
A-SDXP 95°

catalogue number	D	D min	F	L1	L	L4	CD	CS	gage insert	insert screw	Torx
right hand											
A12MSDXPR07	12	16,0	9,0	150	162,0	17,07	3,09	1/16-27 NPT	DP..070204	**MS1153**	T7
A16RSDXPR07	16	20,0	11,0	200	212,0	18,15	3,20	1/8-27 NPT	DP..070204	**MS1153**	T7
A20SSDXPR11	20	25,0	13,0	250	270,0	50,80	4,31	1/8-27 NPT	DP..11T308	**MS1155**	T15
left hand											
A12MSDXPL07	12	16,0	9,0	150	162,0	17,07	3,09	1/16-27 NPT	DP..070204	**MS1153**	T7
A16RSDXPL07	16	20,0	11,0	200	212,0	18,15	3,20	1/8-27 NPT	DP..070204	**MS1153**	T7
A20SSDXPL11	20	25,0	13,0	250	270,0	50,80	4,31	1/8-27 NPT	DP..11T308	**MS1155**	T15



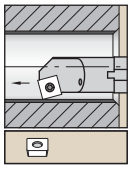
Steel shank
with through coolants.

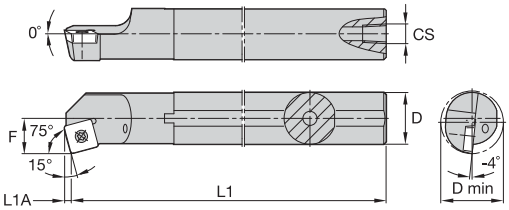
See pages B103–B104 for inserts.



A-SSKC 75°

catalogue number	D	D min	F	L1	L1A	CS	gage insert	insert screw	Torx
right hand									
A16RSSKCR09	16	20,0	11,0	200	2,2	1/8-27 NPT	SC..09T308	**MS1155**	T15



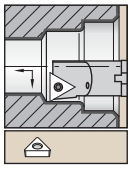


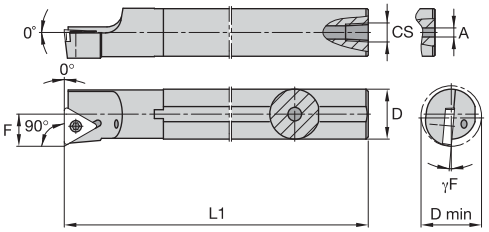
Steel shank
with through coolant.

See pages B104–B106 for inserts.

A-SSKP 75°

catalogue number	D	D min	F	L1	L1A	CS	gage insert	insert screw	Torx
right hand									
A20SSSKPR09	20	25,0	13,0	250	2,2	1/8-27 NPT	SP..09T308	**MS1155**	T15



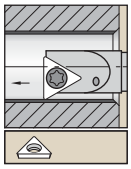


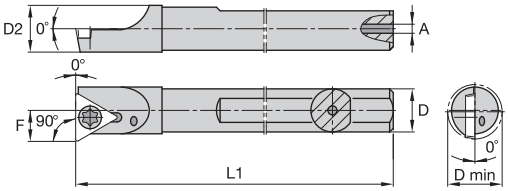
Steel shank
with through coolant.

See pages B106–B108 for inserts.

A-STFC 90°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	shim	shim screw	hex (mm)	insert screw	Torx
right hand													
A10KSTFCR11	10	13,0	7,0	125	3,2	–	-7.0	TC..110204	**–**	**–**	–	**MS1153**	T7
A12MSTFCR11	12	16,0	9,0	150	–	1/16-27 NPT	-6.0	TC..110204	**–**	**–**	–	**MS1153**	T7
A32TSTFCR16	32	40,0	22,0	300	–	1/4-18 NPT	-2.0	TC..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand													
A10KSTFCL11	10	13,0	7,0	125	3,2	–	-7.0	TC..110204	**–**	**–**	–	**MS1153**	T7
A12MSTFCL11	12	16,0	9,0	150	–	1/16-27 NPT	-6.0	TC..110204	**–**	**–**	–	**MS1153**	T7



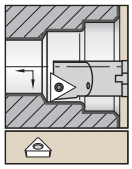


Steel shank
with through coolant.

See pages B104 and
B195 for inserts.

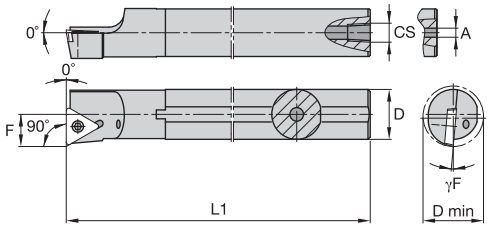
A-STFD 90°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A06HSTFDR07	6	7,1	6,2	3,7	100	1,0	TD..07T1202	**FC11**	T7
A08HSTFDR07	8	9,2	8,2	4,8	100	2,0	TD..07T1202	**FC14**	T7
left hand									
A12MSTFDL11	12	13,2	12,2	6,8	150	3,0	TP..110202	**QC26**	T9



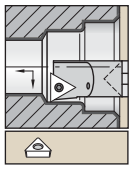
Steel shank
with through coolant.

See pages B109–B112 and B195–B196 for inserts.



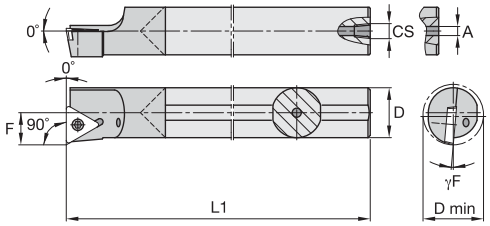
A-STFP 90°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	shim	shim screw	hex (mm)	insert screw	Torx
right hand													
A08JSTFPR09	8	11,0	6,0	110	2,4	–	-8.0	TP..090204	–	–	–	**MS1933**	T7
A10KSTFPR11	10	13,0	7,0	125	3,2	–	-4.0	TP..110204	–	–	–	**MS1153**	T7
A12MSTFPR11	12	16,0	9,0	150	4,0	1/16-27 NPT	-2.0	TP..110204	–	–	–	**MS1153**	T7
A16RSTFPR11	16	20,0	11,0	200	–	1/16-27 NPT	0.0	TP..110204	–	–	–	**MS1153**	T7
A20SSTFPR16	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	TP..16T308	–	–	–	**MS1155**	T15
A25TSTFPR16	25	32,0	17,0	300	–	1/4-18 NPT	0.0	TP..16T308	–	–	–	**MS1155**	T15
A32TSTFPR16	32	40,0	22,0	300	–	1/4-18 NPT	-2.0	TP..16T308	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand													
A08JSTFPL09	8	11,0	6,0	110	2,4	–	-8.0	TP..090204	–	–	–	**MS1933**	T7
A10KSTFPL11	10	13,0	7,0	125	3,2	–	-4.0	TP..110204	–	–	–	**MS1153**	T7
A12MSTFPL11	12	16,0	9,0	150	4,0	1/16-27 NPT	-2.0	TP..110204	–	–	–	**MS1153**	T7
A16RSTFPL11	16	20,0	11,0	200	–	1/16-27 NPT	0.0	TP..110204	–	–	–	**MS1153**	T7
A20SSTFPL16	20	25,0	13,0	250	–	1/8-27 NPT	-2.0	TP..16T308	–	–	–	**MS1155**	T15
A25TSTFPL16	25	32,0	17,0	300	–	1/4-18 NPT	0.0	TP..16T308	–	–	–	**MS1155**	T15



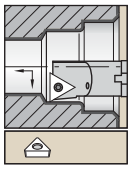
Carbide shank
with through coolant.

See pages B109–B112 and B195–B196 for inserts.



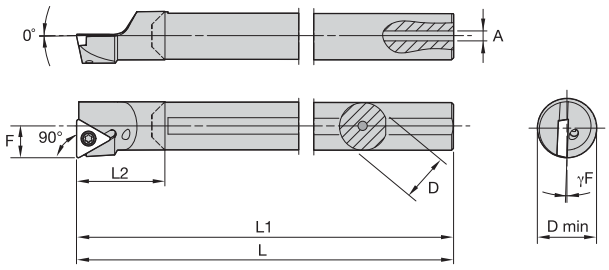
E-STFP 90°

catalogue number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E08KSTFPR09A	8	11,0	6,0	125	2,4	-6.0	TP..090204	**MS1933**	T7
E10MSTFPR11A	10	13,0	7,0	150	3,2	-4.0	TP..110204	**MS1153**	T7
E12QSTFPR11	12	16,0	9,0	180	4,8	-2.0	TP..110204	**MS1153**	T7
E16RSTFPR11	16	20,0	11,0	200	5,5	0.0	TP..110204	**MS1153**	T7
E20SSTFPR16	20	25,0	13,0	250	7,1	-2.0	TP..16T308	**MS1155**	T15
left hand									
E08KSTFPL09A	8	11,0	6,0	125	2,4	-6.0	TP..090204	**MS1933**	T7
E10MSTFPL11A	10	13,0	7,0	150	3,2	-4.0	TP..110204	**MS1153**	T7
E12QSTFPL11	12	16,0	9,0	180	4,8	-2.0	TP..110204	**MS1153**	T7
E16RSTFPL11	16	20,0	11,0	200	5,5	0.0	TP..110204	**MS1153**	T7
E20SSTFPL16	20	25,0	13,0	250	7,1	-2.0	TP..16T308	**MS1155**	T15



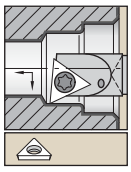
Heavy-metal bar
with through coolant.

See pages B109–B112 and
B195–B196 for inserts.



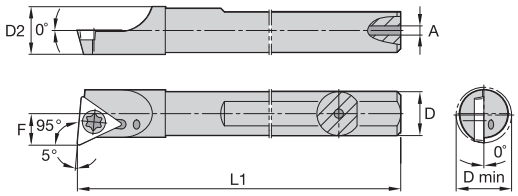
L-STFP 90°

catalogue number	D	D min	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand										
L08KSTFPR09	8	11,0	6,0	125	19,1	2,4	-6.0	TP..090204..	**MS1933**	T7
L10MSTFPR11	10	13,0	7,0	151	23,7	3,2	-4.0	TP..110204..	**MS1153**	T7
L12QSTFPR11	12	16,0	9,0	183	24,4	4,0	-2.0	TP..110204..	**MS1153**	T7
L16RSTFPR11	16	20,0	11,0	201	27,4	4,0	0.0	TP..110204..	**MS1153**	T7
L20SSTFPR16	20	25,0	13,0	251	33,6	4,0	-2.0	TP..16T308..	**MS1155**	T15
left hand										
L08KSTFPL09	8	11,0	6,0	125	19,1	2,4	-6.0	TP..090204..	**MS1933**	T7
L10MSTFPL11	10	13,0	7,0	151	23,7	3,2	-4.0	TP..110204..	**MS1153**	T7
L12QSTFPL11	12	16,0	9,0	183	24,4	4,0	-2.0	TP..110204..	**MS1153**	T7
L16RSTFPL11	16	20,0	11,0	201	27,4	4,0	0.0	TP..110204..	**MS1153**	T7
L20SSTFPL16	20	25,0	13,0	251	33,6	4,0	-2.0	TP..16T308..	**MS1155**	T15



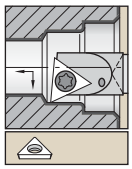
Steel shank
with through coolant.

See pages B109 and
B195 for inserts.



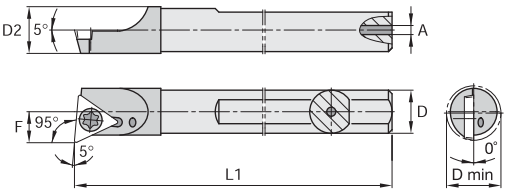
A-STLD 95°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A06HSTLDR07	6	7,1	6,2	3,7	100	1,0	TD..07T1202	**FC11**	T7
A08HSTLDR07	8	9,2	8,2	4,8	100	2,0	TD..07T1202	**FC14**	T7
A20RSTLDR6P	20	21,3	20,2	10,9	200	7,2	TD..160308	**SC30**	T10



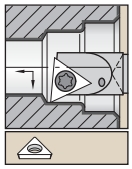
Carbide shank
with through coolant.

See pages B109 and
B195 for inserts.



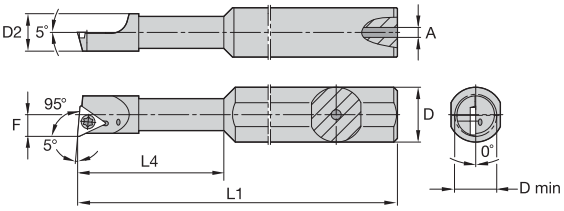
E-STLD 95°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E06MSTLDR07	6	7,1	6,2	3,7	150	1,2	TD..07T1202	**FC11**	T7
E08MSTLDR07	8	9,2	8,2	4,8	150	2,4	TD..07T1202	**FC14**	T7
left hand									
E06MSTLDL07	6	7,1	6,2	3,7	150	1,2	TD..07T1202	**FC11**	T7
E08MSTLDL07	8	9,2	8,2	4,8	150	2,4	TD..07T1202	**FC14**	T7



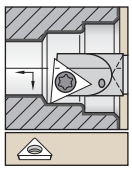
Necked steel shank
with through coolant.

See pages B109 and
B195 for inserts.



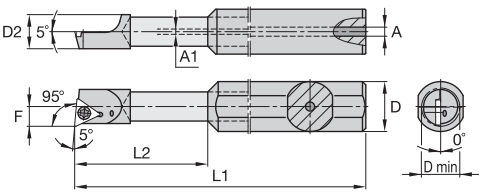
A-STLD 95°

catalogue number	D	D min	D2	F	L1	L4	A	gage insert	insert screw	Torx
right hand										
A0512XSTLDR0725	12	7,0	5,16	3,2	76	25,4	1,0	TD..07T1202	**FC11**	T7
A0612XSTLDR0731	12	7,5	6,58	4,0	76	31,8	1,0	TD..07T1202	**FC14**	T7
left hand										
A0616HSTLDR0731	16	7,5	6,58	4,0	100	31,8	1,0	TD..07T1202	**FC14**	T7



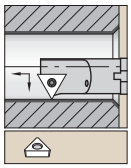
Necked carbide shank
with through coolant.

See pages B109 and
B195 for inserts.



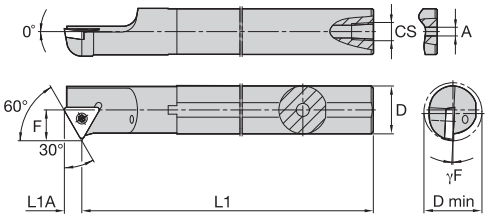
E-STLD 95°

catalogue number	D	D min	D2	F	L1	L2	A	A1	gage insert	insert screw	Torx
right hand											
E0612ESTLDR0731	12	7,5	6,35	4,0	70	31,7	3,18	1,2	TD..07T1202	**FC14**	T7
E0812XSTLDR0738	12	9,1	7,92	4,8	76	38,1	3,18	2,4	TD..07T1202	**FC14**	T7
E0616XSTLDR0731	16	7,5	6,35	4,0	95	31,7	3,18	1,2	TD..07T1202	**FC14**	T7



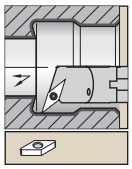
Steel shank
with through coolant.

See pages B109–B112 and
B195–B196 for inserts.



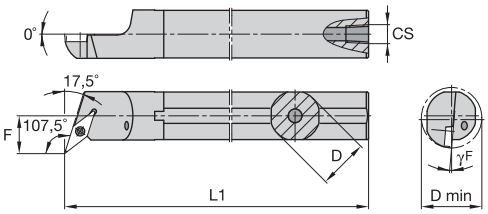
A-STWP 60°

catalogue number	D	D min	F	L1	L1A	A	CS	γF°	gage insert	insert screw	Torx
right hand											
A10KSTWPR11	10	13,0	7,0	125	5,0	3,2	–	-4.0	TP..110204	**MS1153**	T7
A12MSTWPR11	12	16,0	9,0	150	5,0	–	1/16-27 NPT	-2.0	TP..110204	**MS1153**	T7
A16RSTWPR11	16	20,0	11,0	200	5,0	–	1/8-27 NPT	-2.0	TP..110204	**MS1153**	T7
left hand											
A10KSTWPL11	10	13,0	7,0	125	5,0	3,2	–	-4.0	TP..110204	**MS1153**	T7
A12MSTWPL11	12	16,0	9,0	150	5,0	–	1/16-27 NPT	-2.0	TP..110204	**MS1153**	T7
A16RSTWPL11	16	20,0	11,0	200	5,0	–	1/8-27 NPT	-2.0	TP..110204	**MS1153**	T7



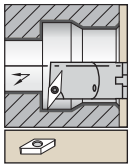
Steel shank
with through coolant.

See pages B113–B114 and
B196–B197 for inserts.



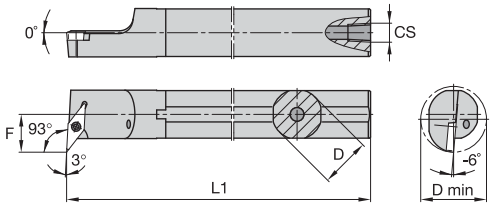
A-SVQB 107,5°

catalogue number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand									
A16RSVQBR11	16	20,0	11,0	200	1/8-27 NPT	-7.0	VB..110304	**MS1153**	T7
A20SSVQBR11	20	25,0	13,0	250	1/8-27 NPT	-6.0	VB..110304	**MS1153**	T7
A25TSVQBR16	25	32,0	17,0	300	1/4-18 NPT	-6.0	VB..160408	**MS1155**	T15
left hand									
A16RSVQBL11	16	20,0	11,0	200	1/8-27 NPT	-7.0	VB..110304	**MS1153**	T7
A20SSVQBL11	20	25,0	13,0	250	1/8-27 NPT	-6.0	VB..110304	**MS1153**	T7
A25TSVQBL16	25	32,0	17,0	300	1/4-18 NPT	-6.0	VB..160408	**MS1155**	T15



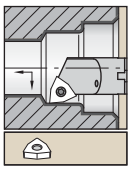
Steel shank
with through coolant.

See pages B113–B114 and
B196–B197 for inserts.



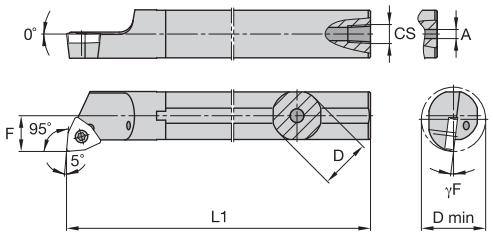
A-SVUB 93°

catalogue number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A20SSVUBR11	20	25,0	13,0	250	1/8-27 NPT	VB..110304	**MS1153**	T7
A25TSVUBR16	25	32,0	17,0	300	1/4-18 NPT	VB..160408	**MS1155**	T15
left hand								
A20SSVUBL11	20	25,0	13,0	250	1/8-27 NPT	VB..110304	**MS1153**	T7
A25TSVUBL16	25	32,0	17,0	300	1/4-18 NPT	VB..160408	**MS1155**	T15



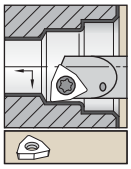
Steel shank
with through coolant.

See pages B114–B115 for inserts.



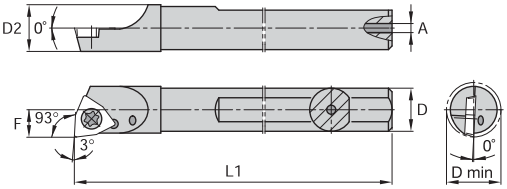
A-SWLC 95°

catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A10KSWLCR04	10	13,0	7,0	125	3,0	–	-7.0	WC..040204	**MS1153**	T7
A12MSWLCR04	12	16,0	9,0	150	–	1/16-27 NPT	-6.0	WC..040204	**MS1153**	T7
A16RSWLCR06	16	20,0	11,0	200	–	1/8-27 NPT	-7.0	WC..06T308	**MS1155**	T15
A20SSWLCR06	20	25,0	13,0	250	–	1/8-27 NPT	-5.0	WC..06T308	**MS1155**	T15
left hand										
A12MSWLCL04	12	16,0	9,0	150	–	1/16-27 NPT	-6.0	WC..040204	**MS1153**	T7
A16RSWLCL06	16	20,0	11,0	200	–	1/8-27 NPT	-7.0	WC..06T308	**MS1155**	T15



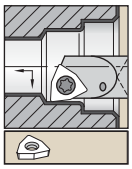
Steel shank
with through coolant.

See page B115 for inserts.



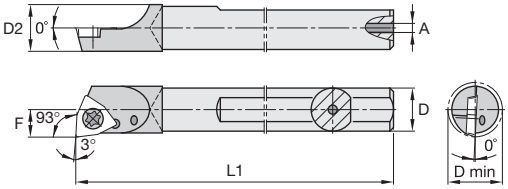
A-SWUP 93°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A06HSWUPRS3	6	6,8	6,2	3,4	100	1,0	WP..S30102	**CT11**	T6
A08HSWUPRS3	8	8,8	8,2	4,4	100	2,0	WP..S30102	**CT15**	T6
A12MSWUPR04	12	12,8	12,2	6,6	150	3,0	WP..040202	**QTM26**	T6
left hand									
A06HSWUPLS3	6	6,8	6,2	3,4	100	1,0	WP..S30102	**CT11**	T6



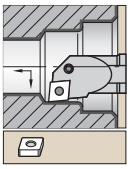
Carbide shank
with through coolant.

See page B115 for inserts.



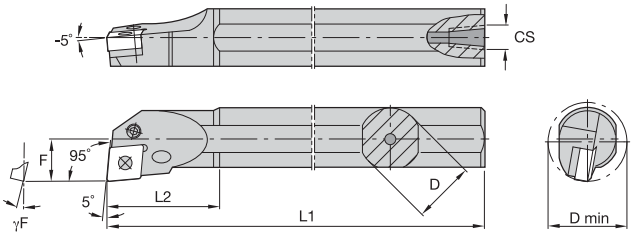
E-SWUP 93°

catalogue number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E06MSWUPRS3	6	6,8	6,2	3,4	150	1,2	WP..S30104	**CT11**	T6
E08MSWUPRS3	8	8,8	8,2	4,4	150	2,4	WP..S30104	**CT15**	T6
E10SSWUPR04	10	10,8	10,2	5,6	250	3,2	WP..040204	**QTM20**	T7
E12SSWUPR04	12	12,8	12,2	6,6	250	4,7	WP..040204	**QTM26**	T7
left hand									
E06MSWUPLS3	6	6,8	6,2	3,4	150	1,2	WP..S30104	**CT11**	T6
E08MSWUPLS3	8	8,8	8,2	4,4	150	2,4	WP..S30104	**CT15**	T6

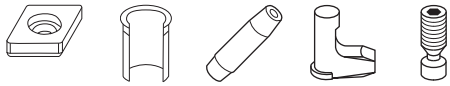


Steel shank
with through coolant.

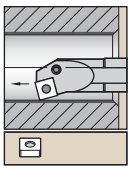
See pages B40–B49 and
B174–B176 for inserts.



A-PCLN 95°

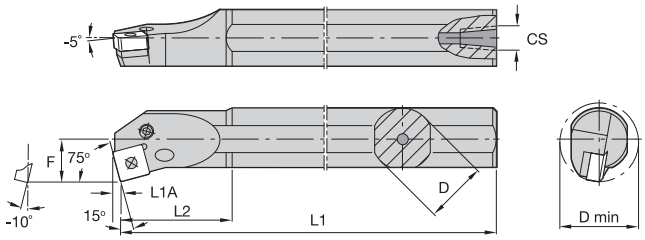


catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	shim pin	pin	toggle lever	lever screw	Torx Plus
right hand														
A25TPCLNR12	25	32,0	17,0	300	40	1/4-18 NPT	-12.0	CN..120408	–	–	–	**511.022**	**514.122**	10 IP
A32UPCLNR12	32	40,0	22,0	350	50	1/4-18 NPT	-10.0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A40VPCLNR12	40	50,0	27,0	400	55	1/4-18 NPT	-10.0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A32UPCLNR16	32	50,0	22,0	350	50	1/4-18 NPT	-10.0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
A40VPCLNR16	40	50,0	27,0	400	55	1/4-18 NPT	-11.0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
left hand														
A25TPCLNL12	25	32,0	17,0	300	40	1/4-18 NPT	-12.0	CN..120408	–	–	–	**511.022**	**514.122**	10 IP
A32UPCLNL12	32	40,0	22,0	350	50	1/4-18 NPT	-10.0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A40VPCLNL12	40	50,0	27,0	400	55	1/4-18 NPT	-10.0	CN..120408	**512.112**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A32UPCLNL16	32	50,0	22,0	350	50	1/4-18 NPT	-10.0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP
A40VPCLNL16	40	50,0	27,0	400	55	1/4-18 NPT	-11.0	CN..160612	**512.117**	**513.025**	**515.022**	**511.025**	**514.125**	15 IP

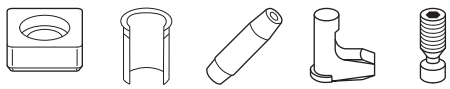


Steel shank
with through coolant.

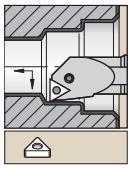
See pages B59–B66 and
B178–B179 for inserts.



A-PSKN 75°

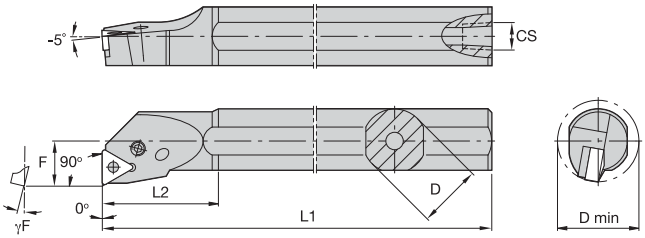


catalogue number	D	D min	F	L1	L2	L1A	CS	gage insert	shim	shim pin	pin	toggle lever	lever screw	Torx Plus
right hand														
A25TPSKNR12	25	30,0	17,0	300	43	3	1/4-18 NPT	SN..120408	–	–	–	**511.022**	**514.122**	10 IP
A32UPSKNR12	32	40,0	22,0	350	52	3	1/4-18 NPT	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.124**	15 IP
A40VPSKNR12	40	48,0	27,0	400	57	3	1/4-18 NPT	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.124**	15 IP
left hand														
A25TPSKNL12	25	30,0	17,0	300	43	3	1/4-18 NPT	SN..120408	–	–	–	**511.022**	**514.122**	10 IP
A32UPSKNL12	32	40,0	22,0	350	52	3	1/4-18 NPT	SN..120408	**512.063**	**513.023**	**515.018**	**511.023**	**514.124**	15 IP

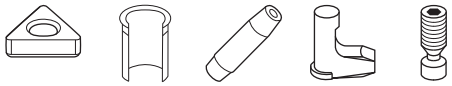


Steel shank
with through coolant.

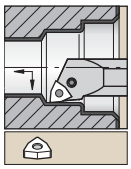
See pages B66–B73 and
B179–B180 for inserts.



A-PTFN 90°

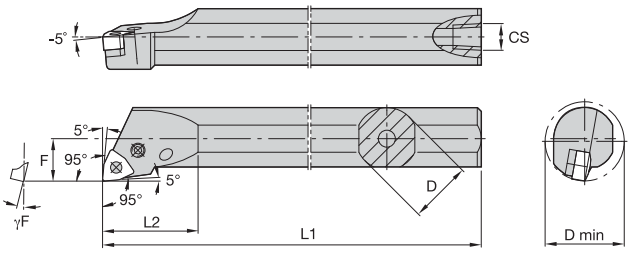


catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	shim pin	pin	toggle lever	lever screw	Torx Plus
right hand														
A16RPTFNR11	16	20,0	11,0	200	28	1/8-27 NPT	-14.0	TN..110304	–	–	–	**511.011**	**514.111**	8 IP
A20SPTFNR11	20	25,0	13,0	250	30	1/8-27 NPT	-12.0	TN..110304	–	–	–	**511.011**	**514.111**	8 IP
A25TPTFNR16	25	32,0	17,0	300	40	1/4-18 NPT	-12.0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
A32UPTFNR16	32	40,0	22,0	350	50	1/4-18 NPT	-10.0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
A40VPTFNR22	40	48,0	27,0	400	55	1/4-18 NPT	-10.0	TN..220408	**512.023**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
left hand														
A16RPTFNL11	16	20,0	11,0	200	28	1/8-27 NPT	-14.0	TN..110304	–	–	–	**511.011**	**514.111**	8 IP
A20SPTFNL11	20	25,0	13,0	250	30	1/8-27 NPT	-12.0	TN..110304	–	–	–	**511.011**	**514.111**	8 IP
A25TPTFNL16	25	32,0	17,0	300	40	1/4-18 NPT	-12.0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
A32UPTFNL16	32	40,0	22,0	350	50	1/4-18 NPT	-10.0	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
A40VPTFNL22	40	48,0	27,0	400	55	1/4-18 NPT	-10.0	TN..220408	**512.023**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP

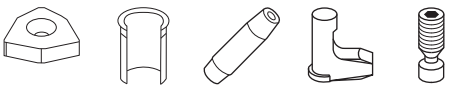


Steel shank
with through coolant.

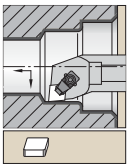
See pages B79–B83 and
B181 for inserts.



A-PWLN 95°

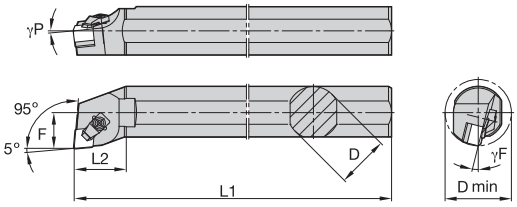


catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	shim pin	pin	toggle lever	lever screw	Torx Plus
right hand														
A16RPWLNR06	16	27,0	11,0	200	32	1/8-27 NPT	-12.0	WN..060404	–	–	–	**511.030**	**514.112**	8 IP
A20SPWLNR06	20	25,0	13,0	250	32	1/8-27 NPT	-14.0	WN..060408	–	–	–	**511.030**	**514.112**	8 IP
A25RPWLNR08	25	32,0	17,0	200	40	1/4-18 NPT	-12.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A32SPWLNR08	32	40,0	22,0	250	50	1/4-18 NPT	-10.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A40TPWLNR08	40	50,0	27,0	300	55	1/4-18 NPT	-8.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
left hand														
A16RPWLNL06	16	27,0	11,0	200	32	1/8-27 NPT	-12.0	WN..060404	–	–	–	**511.030**	**514.112**	8 IP
A20SPWLNL06	20	25,0	13,0	250	32	1/8-27 NPT	-14.0	WN..060408	–	–	–	**511.030**	**514.112**	8 IP
A25RPWLNL08	25	32,0	17,0	200	40	1/4-18 NPT	-12.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A32SPWLNL08	32	40,0	22,0	250	50	1/4-18 NPT	-10.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP
A40TPWLNL08	40	50,0	27,0	300	55	1/4-18 NPT	-8.0	WN..080408	**512.135**	**513.023**	**515.018**	**511.023**	**514.123**	15 IP



Steel shank
without through coolant.

See pages B122 and
B183 for inserts.



S-CCLN 95° • MX

catalogue number	D	D min	F	L1	L2	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand													
S32SCCLNR12MX7	32	40,0	22,0	251	42,8	-14.0	-5.0	CN.X120708	**–**	**–**	–	**551.316**	4 mm
S40T-CCLNR12-MX7	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm
left hand													
S32SCCLNL12MX7	32	40,0	22,0	251	42,8	-14.0	-5.0	CN.X120708	**–**	**–**	–	**551.316**	4 mm
S40T-CCLNL12-MX7	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.X120708	**552.221**	**554.252**	2.5 mm	**551.316**	4 mm

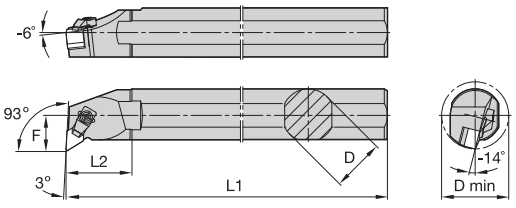
S-CCLN 95° • MN

catalogue number	D	D min	F	L1	L2	γF°	γP°	gage insert	shim	shim screw	hex (mm)	thrust plate	clamp assembly	hex (mm)
right hand														
S40T-CCLNR12-MN4	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
S40T-CCLNR12-MN7	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand														
S40T-CCLNL12-MN4	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.N120408	**552.220**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
S40T-CCLNL12-MN7	40	55,0	27,0	300	40,0	-14.0	-6.0	CN.N120708	**552.221**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

NOTE: MN clamping version is shown.

Steel shank
without through coolant.

See pages B122 and
B183 for inserts.



S-CDUN 93° • MX

catalogue number	D	D min	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand											
S40T-CDUNR15-MX7	40	55,0	27,0	300	50,0	DN.X150708	**552.228**	**554.252**	2.5 mm	**551.332**	4 mm
left hand											
S40T-CDUNL15-MX7	40	55,0	27,0	300	50,0	DN.X150708	**552.228**	**554.252**	2.5 mm	**551.332**	4 mm

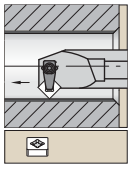
(continued)

(S-CDUN 93° • MX continued)

S-CDUN 93° • MN

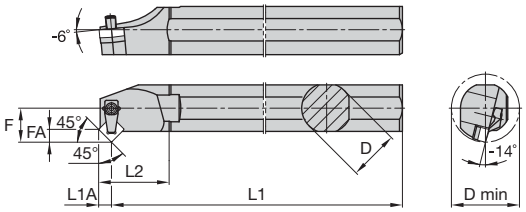
catalogue number	D	D min	F	L1	L2	gage insert	shim	shim screw	hex (mm)	thrust plate	clamp assembly	hex (mm)
right hand												
S40T-CDUNR15-MN7	40	55,0	27,0	300	50,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand												
S40T-CDUNL15-MN7	40	55,0	27,0	300	50,0	DN.N150708	**552.228**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

NOTE: MN clamping version is shown.
Basic holder may be ordered separately:
S40T-V. DUN R/L 15



Steel shank
without through coolant.

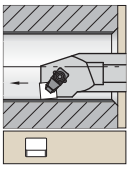
See pages B125–B126 and B184 for inserts.



S-CSSN 45° • MX

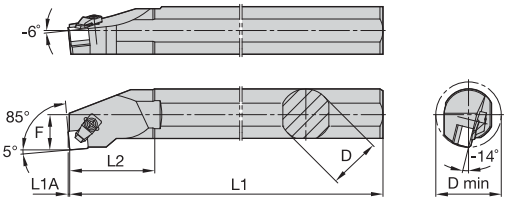
catalogue number	D	D min	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand													
S40TCSSNR12MX7	40	55	27,0	300	67,0	8,23	8,50	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
left hand													
S40TCSSNL12MX7	40	55	27,0	300	67,0	8,23	8,50	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

NOTE: MX clamping version is shown.
Basic holder may be ordered separately:
S40T-V.SSN R/L 12



Steel shank
without through coolant.

See pages B125–B126 and B184 for inserts.



S-CSYN 85° • MX

catalogue number	D	D min	F	L1	L2	L1A	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand												
S40T-CSYNR12-MX7	40	55,0	27,0	300	67,0	0,97	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm
left hand												
S40T-CSYNL12-MX7	40	55,0	27,0	300	67,0	0,97	SN.X120708	**552.232**	**554.252**	2.5 mm	**551.316**	4 mm

NOTE: MN clamping version is shown.
Basic holder may be ordered separately:
S40T-V.SYN R/L 08

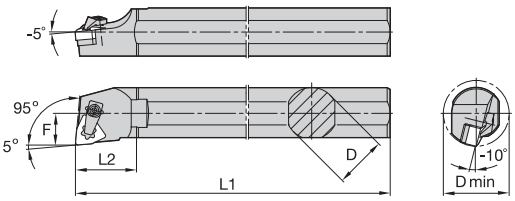
S-CSYN 85° • MN

catalogue number	D	D min	F	L1	L2	L1A	gage insert	shim	shim screw	hex (mm)	thrust plate	clamp assembly	hex (mm)
right hand													
S40T-CSYNR12-MN7	40	55,0	27,0	300	67,0	0,97	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm
left hand													
S40T-CSYNL12-MN7	40	55,0	27,0	300	67,0	0,97	SN.N120708	**552.232**	**554.252**	2.5 mm	**557.111**	**551.317**	4 mm

NOTE: MN clamping version is shown.

Steel shank
without through coolant.

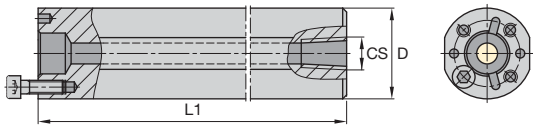
See page B127 for inserts.



S-CWLN 95° • MX

catalogue number	D	D min	F	L1	L2	gage insert	shim	shim screw	hex (mm)	clamp assembly	hex (mm)
right hand											
S40TCWLNR08MX7	40	80	27,0	300	55,0	WN.X080708	**552.210**	**554.252**	2.5 mm	**551.316**	4 mm
left hand											
S40TCWLNL08MX7	40	80	27,0	300	55,0	WN.X080708	**552.210**	**554.252**	2.5 mm	**551.316**	4 mm

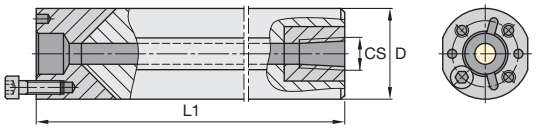
NOTE: Basic holder may be ordered separately:
S40T-V. WLN R/L 12



Steel shank with through coolant.
Max 4:1 overhang ratio.

BS

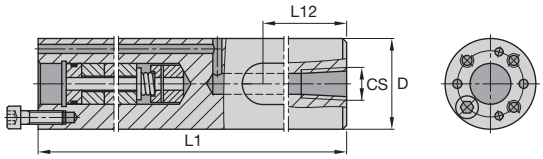
catalogue number	D	L1	CS	screw 3 required	screw	hex (mm)
BS32S	32	210	RP3/8	**MS412**	**MS330**	4 mm
BS40T	40	260	RP3/8	**MS412**	**MS330**	4 mm
BS50U	50	310	RP3/8	**MS337**	**MS339**	5 mm
BS60V	60	360	RP3/8	**MS337**	**MS339**	5 mm



Carbide shank with through coolant.
Max 6:1 overhang ratio.

BC

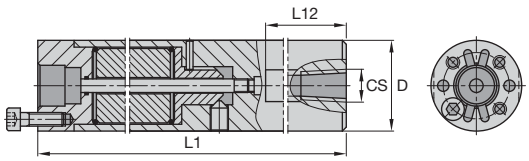
catalogue number	D	L1	CS	screw 3 required	screw	hex (mm)
BC25T	25	260	RP1/4	**MS322**	**MS322**	3 mm
BC32U	32	310	RP3/8	**MS330**	**MS330**	4 mm
BC40V	40	360	RP3/8	**MS330**	**MS330**	4 mm
BC50W	50	410	RP3/8	**MS339**	**MS339**	5 mm



Steel shank DeVibrator with through coolant.
Max 6:1 overhang ratio.

BSD

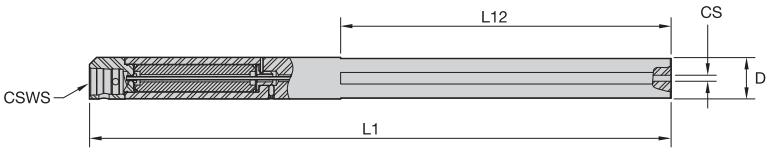
catalogue number	D	L1	CS	L12	L1 min	screw 3 required	screw	hex (mm)
BSD32U	32	310	RP3/8	200	200	**MS330**	**MS330**	4 mm
BSD40V	40	360	RP3/8	248	228	**MS330**	**MS330**	4 mm
BSD50W	50	410	RP3/8	280	276	**MS339**	**MS339**	5 mm



Tunable steel shank with through coolant.

D...TTB

catalogue number	D	L1	CS	L12	L1 min	screw 3 required	screw	hex
D25MTTB400	25	381	RP1/4	203	227	**MS1499**	**MS319**	3 mm
D32MTTB447	32	422	RP3/8	267	332	**MS325**	**MS1130**	4 mm
D40MTTB530	40	492	RP3/8	305	300	**MS326**	**MS330**	4 mm
D50MTTB700	50	670	RP3/8	470	309	**MS337**	**MS339**	5 mm

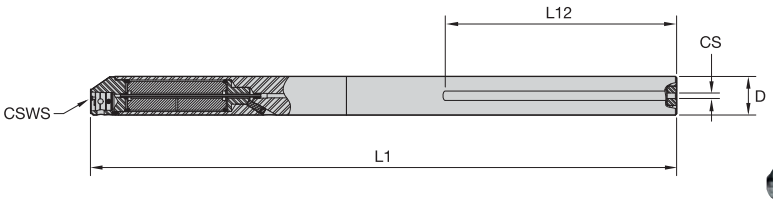


Tunable steel shank with through coolant and front end KM™ clamping unit.

KM QUICK CHANGE

D...TTB-KM

catalogue number	CSWS system size	D	L1	CS	L12	L1 min
D40MTTB560KM40	KM40	40	520	RP 3/8-19	305	330
D50MTTB737KM40	KM40	50	697	RP 3/8-19	470	337
D60MTTB1000KM40	KM40	60	976	RP 3/8-19	686	396
D80MTTB1120KM63	KM63	80	1060	RP 3/8-19	610	560
D100MTTB1330KM63	KM63	100	1384	RP 3/8-19	622	695

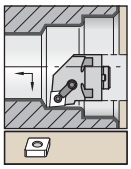


• Carbide tunable boring bar with KM Quick Change connection.

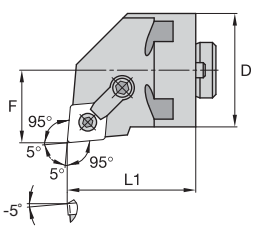
KM QUICK CHANGE

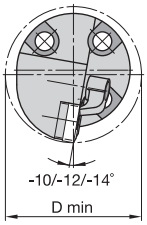
G-KM-TTB • Metric

order number	catalogue number	D	L1	CS	L12	CSWS system size
3954298	**G50MTTB1026KM40**	50	986	RP 3/8-19	300	KM40
3954299	**G60MTTB1226KM40**	60	1186	RP 3/8-19	381	KM40
3954300	**G80MTTB1666KM63**	80	1606	RP 3/8-19	480	KM63
3954301	**G100MTTB2066KM63**	100	1975	RP 3/8-19	600	KM63



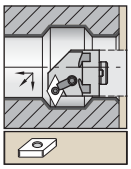
With through coolant.
See pages B40–B49 and B174–B176 for inserts.



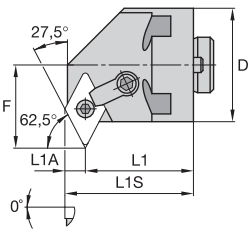


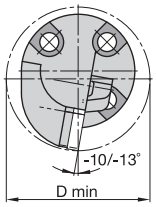
H-MCLN 95°

catalogue number	D	F	L1	D min	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand											
H25MCLNR12	25	17	41	32	CN..120408	–	**KLM43**	2 mm	**CKM7**	**STCM9**	2.5 mm
H32MCLNR12	32	22	41	40	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
H40MCLNR16	40	27	41	50	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H40MCLNR19	40	27	41	50	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
H50MCLNR12	50	35	41	63	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm
H50MCLNR16	50	35	41	63	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H50MCLNR19	50	35	41	63	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
left hand											
H25MCLNL12	25	17	41	32	CN..120408	–	**KLM43**	2 mm	**CKM7**	**STCM9**	2.5 mm
H32MCLNL12	32	22	41	40	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM21**	**STCM20**	3 mm
H40MCLNL16	40	27	41	50	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H40MCLNL19	40	27	41	50	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm
H50MCLNL12	50	35	41	63	CN..120408	**ICSN432**	**KLM46**	2.5 mm	**CKM20**	**STCM20**	3 mm
H50MCLNL16	50	35	41	63	CN..160612	**ICSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H50MCLNL19	50	35	41	63	CN..190612	**ICSN633**	**KLM68**	4 mm	**CKM12**	**STCM4**	4 mm



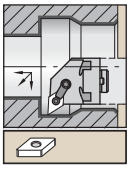
With through coolant.
See pages B50–B58 and B176–B178 for inserts.



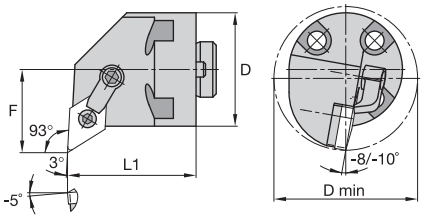


H-MDPN 62,5°

catalogue number	D	F	L1	L1A	L1S	D min	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
H25MDPNR11	25	19	37	5	41	32	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
H32MDPNR15	32	25	35	7	41	43	DN..150408	**IDSN442**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H40MDPNR15	40	28	35	7	41	50	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H40MDPNR19	40	28	33	8	41	50	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H50MDPNR15	50	35	35	7	41	63	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H50MDPNR19	50	35	33	8	41	63	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
left hand													
H25MDPNL11	25	19	37	5	41	32	DN..110408	**IDSN322**	**KLM34L**	2 mm	**CKM7**	**STCM5**	2.5 mm
H32MDPNL15	32	25	35	7	41	43	DN..150408	**IDSN442**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H40MDPNL15	40	28	35	7	41	50	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H40MDPNL19	40	28	33	8	41	50	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
H50MDPNL15	50	35	35	7	41	63	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H50MDPNL19	50	35	33	8	41	63	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm

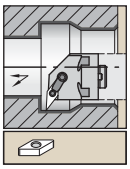


With through coolant.
See pages B50–B58 and B176–B178 for inserts.

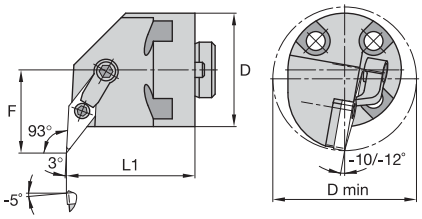


H-MDUN 93°

catalogue number	D2	F	L1	D min	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand											
H40MDUNR15	40	27	41	50	DN..150608	**IDSN432**	**KLM46L**	2.5 mm	**CKM22**	**STCM20**	3 mm
H50MDUNR19	50	35	41	63	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm
left hand											
H50MDUNL19	50	35	41	63	DN..190612	**IDSN533**	**KLM58**	3 mm	**CKM12**	**STCM4**	4 mm

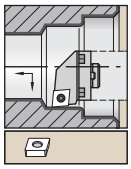


With through coolant.
See pages B74–B78 and B180–B181 for inserts.



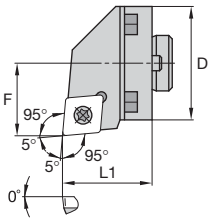
H-MVUN 93°

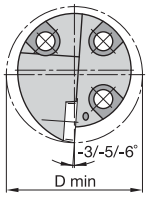
catalogue number	D	F	L1	D min	gage insert	shim	lock pin	hex (mm)	clamp	clamp screw	hex (mm)
right hand											
H32MVUNR16	32	25	41	43	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM23**	**STCM20**	3 mm
H40MVUNR16	40	27	41	50	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM22**	**STCM20**	3 mm
H50MVUNR16	50	35	41	63	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM22**	**STCM20**	3 mm
H50MVUNR22	50	35	41	63	VN..220408	**IVSN432**	**KLM46**	2.5 mm	**CKM22**	**STCM20**	3 mm
left hand											
H32MVUNL16	32	25	41	43	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM23**	**STCM20**	3 mm
H40MVUNL16	40	27	41	50	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM22**	**STCM20**	3 mm
H50MVUNL16	50	35	41	63	VN..160408	**IVSN322**	**KLM34L**	2 mm	**CKM22**	**STCM20**	3 mm
H50MVUNL22	50	35	41	63	VN..220408	**IVSN432**	**KLM46**	2.5 mm	**CKM22**	**STCM20**	3 mm



With through coolant.

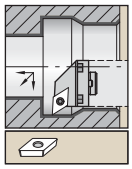
See pages B88–B91 and B187–B188 for inserts.



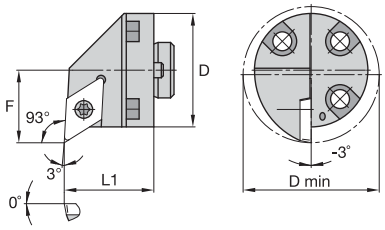


H-SCLC 95°

catalogue number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H25SCLCR09	25	17	20	32,000	CC..09T308	**MS1155**	T15
H25SCLCR12	25	17	25	32,000	CC..120408	**MS1157**	T15
H32SCLCR09	32	22	25	40,000	CC..09T308	**MS1155**	T15
H32SCLCR12	32	22	25	40,000	CC..120408	**MS1158**	T15
H40SCLCR09	40	27	41	50,000	CC..09T308	**MS1156**	T15
H40SCLCR12	40	27	41	50,000	CC..120408	**MS1158**	T15
H50SCLCR09	50	35	41	63,000	CC..09T308	**MS1156**	T15
H50SCLCR12	50	35	41	63,000	CC..120408	**MS1158**	T15
left hand							
H25SCLCL09	25	17	20	32,000	CC..09T308	**MS1155**	T15
H25SCLCL12	25	17	25	32,000	CC..120408	**MS1157**	T15
H32SCLCL09	32	22	25	40,000	CC..09T308	**MS1155**	T15
H32SCLCL12	32	22	25	40,000	CC..120408	**MS1158**	T15
H40SCLCL09	40	27	41	50,000	CC..09T308	**MS1156**	T15
H40SCLCL12	40	27	41	50,000	CC..120408	**MS1158**	T15
H50SCLCL09	50	35	41	63,000	CC..09T308	**MS1156**	T15
H50SCLCL12	50	35	41	63,000	CC..120408	**MS1158**	T15

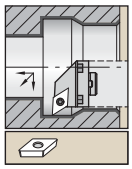


With through coolant.
See pages B95–B98 and B191–B192 for inserts.

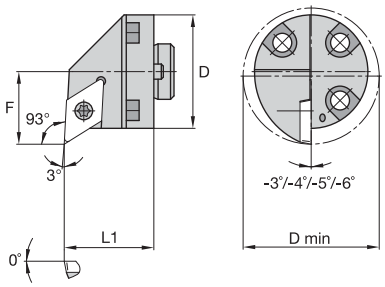


H-SDUC 93°

catalogue number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H25SDUCR11	25	17	20	32	DC..11T308	**MS1155**	T15
H32SDUCR11	32	22	25	40	DC..11T308	**MS1155**	T15
H40SDUCR11	40	27	41	50	DC..11T308	**MS1156**	T15
H50SDUCR11	50	35	41	63	DC..11T308	**MS1156**	T15
left hand							
H25SDUCL11	25	17	20	32	DC..11T308	**MS1155**	T15
H32SDUCL11	32	22	25	40	DC..11T308	**MS1155**	T15
H40SDUCL11	40	27	41	50	DC..11T308	**MS1156**	T15
H50SDUCL11	50	35	41	63	DC..11T308	**MS1156**	T15

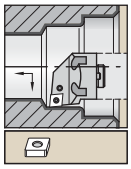


With through coolant.
See pages B113–B114 and B196–B197 for inserts.

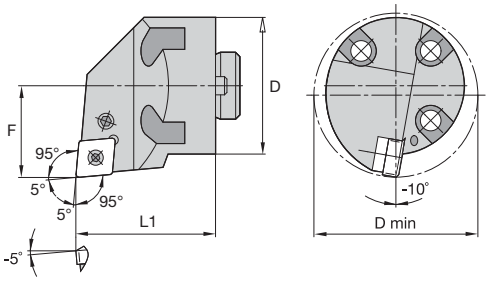


H-SVUB 93°

catalogue number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H25SVUBR11	25	17	25	32	VB..110304	**MS1153**	T7
H32SVUBR11	32	22	25	40	VB..110304	**MS1153**	T7
H32SVUBR16	32	22	25	40	VB..160408	**MS1156**	T15
H40SVUBR16	40	27	41	50	VB..160408	**MS1156**	T15
H50SVUBR16	50	35	41	63	VB..160408	**MS1156**	T15
left hand							
H25SVUBL11	25	17	25	32	VB..110304	**MS1153**	T7
H32SVUBL11	32	22	25	40	VB..110304	**MS1153**	T7
H32SVUBL16	32	22	25	40	VB..160408	**MS1156**	T15
H40SVUBL16	40	27	41	50	VB..160408	**MS1156**	T15
H50SVUBL16	50	35	41	63	VB..160408	**MS1156**	T15

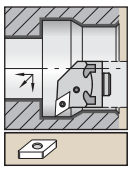


With through coolant.
See pages B40–B49 and B174–B176 for inserts.

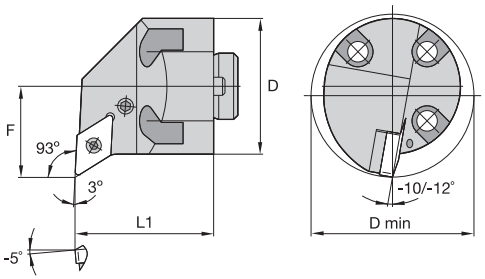


H-PCLN 95°

catalogue number	D	F	L1	D min	gage insert	shim	shim pin	lever	pin punch	lever lock screw	Torx Plus
right hand											
H32PCLNR12	32	22	41	40	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP
H40PCLNR12	40	27	41	50	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP
H50PCLNR12	50	35	41	63	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP
left hand											
H32PCLNL12	32	22	41	40	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP
H40PCLNL12	40	27	41	50	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP
H50PCLNL12	50	35	41	63	CN..120408	**512.112**	**513.023**	**511.023**	**515.018**	**514.123**	15 IP

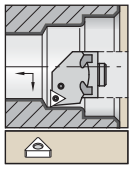


With through coolant.
See pages B50–B58 and B176–B178 for inserts.

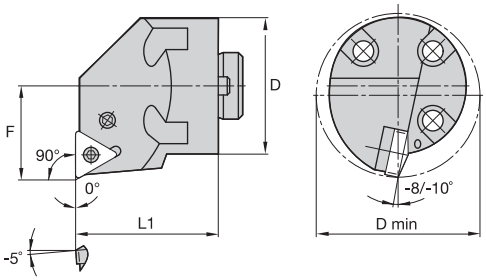


H-PDUN 93°

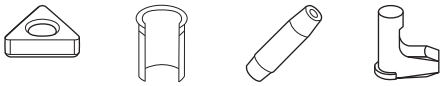
catalogue number	D	F	L1	D min	gage insert	shim	shim pin	pin punch	toggle lever	lever lock screw	Torx Plus
right hand											
H32PDUNR15	32	25	41	43	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
H40PDUNR15	40	27	41	50	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
H50PDUNR15	50	35	41	63	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
left hand											
H32PDUNL15	32	25	41	43	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
H40PDUNL15	40	27	41	50	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP
H50PDUNL15	50	35	41	63	DN..150608	**512.153**	**513.023**	**515.018**	**511.024**	**514.128**	15 IP



With through coolant.
See pages B66–B73 and B179–B180 for inserts.



H-PTFN 90°



catalogue number	D	F	L1	D min	gage insert	shim	shim pin	pin punch	toggle lever	lever lock screw	Torx Plus
right hand											
H32PTFNR16	32	22	41	40	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
H40PTFNR16	40	27	41	50	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
H50PTFNR16	50	35	41	63	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
left hand											
H32PTFNL16	32	22	41	40	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP
H40PTFNL16	40	27	41	50	TN..160408	**512.013**	**513.018**	**515.018**	**511.018**	**514.118**	10 IP

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Check the Kennametal website!

Online product catalogue available 24/7

Visit **http://www.kennametal.com/turning/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, drilling, and tooling systems applications.

Cartridges

Primary Application

Modern machining operations demand high-quality, high-performance toolholders that provide straightforward design and application versatility.

Standard Kennametal cartridges are ideal for turning tools with one, or several, cutting edges. A wide range of cartridge sizes and styles provide numerous combinations and application possibilities.

Features and Benefits

Kenloc™ Style (M-Clamping)

- Used for Kenloc inserts.
- Lock pin and top clamp provide rigid clamping.
- Wide variety of insert styles may be used.
- Tools may be used with or without top clamp.
- Optional hardware available for thicker inserts.
- Extreme sturdy clamping system, specially designed for interrupted cuts.
- Tool is protected by a carbide shim.

Kenlever™ Style (P-Clamping*)

- Proven superior system for holding ceramic inserts rigidly in turning and profiling operations.
- Can be used on Kendex or Kenloc inserts using optional hardware.
- Lever-type clamping system for negative indexable inserts with hole to DIN 4988 and positive round inserts more than 20mm in diameter.
- Inserts with one- and two-side chip control geometries have positive rakes from 6–18°.
- Advantages include fast insert changes and no interference with chip flow.

*NOTE: P-style available in metric sizes only.

Kendex™ Style (C-Clamping)

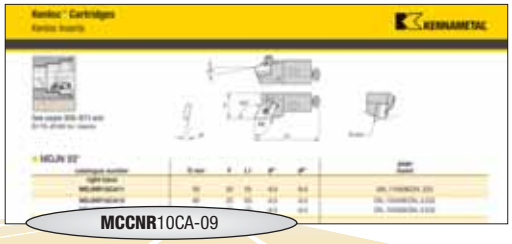
- Suitable for Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.
- Top clamping system for negative and positive indexable inserts to DIN 4968.
- Universal clamping system is robust and easy to handle.
- Some height-adjustable clamps enable the use of additional chipbreakers.
- Carbide shim provides additional tool protection.

Screw-On Style (S-Clamping)

- Used for Screw-On inserts.
- Top clamping by screw.
- Screw clamping system for positive indexable inserts with countersunk hole to DIN 4967.
- Compact design using a minimum of spare parts for high reliability and cost efficiency.
- Toolholders with cutting edge heights greater than 16mm (.625") and insert ICs from 9,52mm (.375") are secured by a threaded bushing.
- Carbide shim provides additional tool protection.

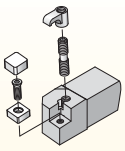
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



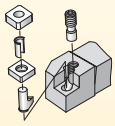
M — Insert Holding Method

C



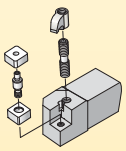
Kendex™

P



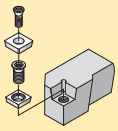
Kenlever™

M



Kenloc™

S

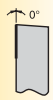
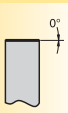
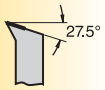


Screw-On

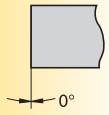
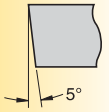
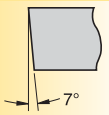
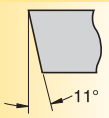
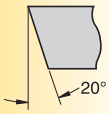
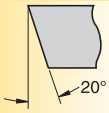
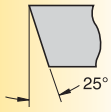
C — Insert Shape

C	
D	
R	
S	
T	
W	

C — Tool Style or Lead Angle

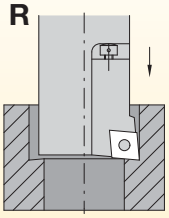
A		L	
B		M	
C		P	
D		Q	
E		R	
F		S	
G		U	
H		V	
J		Y	
K			

N — Insert Clearance Angle

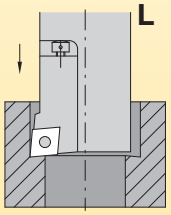
N	
B	
C	
P	
D	
E	
F	

R — Hand of Tool

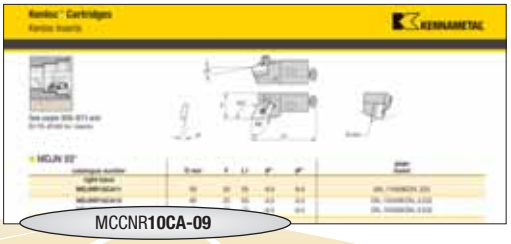
R = Right-hand boring bar



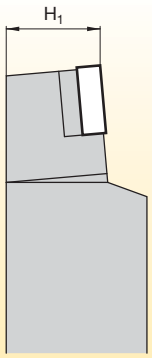
L = Left-hand boring bar



By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



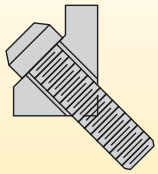
10	C	A	-	09
Cartridge Size	Cartridge Identification	Cartridge Mounting		Insert Size



H_1 =
Cutting edge height of cartridge, in millimetres

C =
Cartridge

A =
Angular acc.
ISO 5611



Cutting edge length L10

C

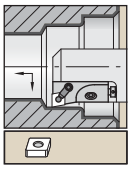
T

D

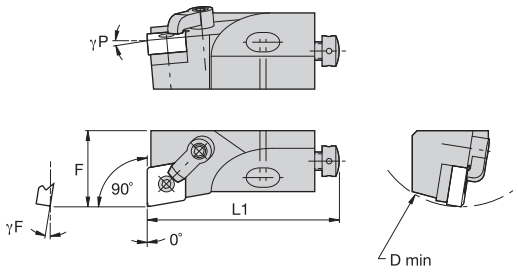
W

S

R



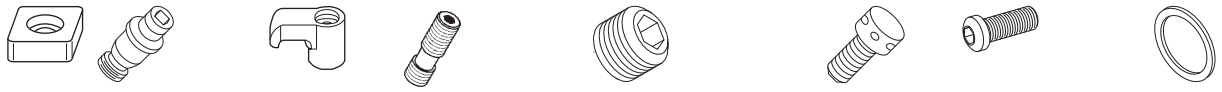
See pages B40–B49 and B174–B176 for inserts.



MCFN 90°

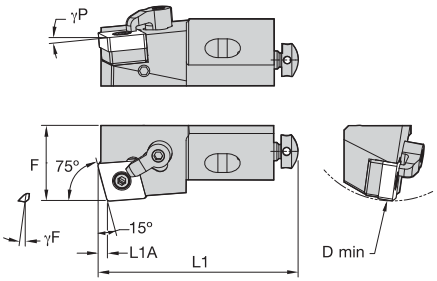
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MCFNR10CA09	40	14,0	50	-9.0	-9.0	CN..090308/CN..322
MCFNR12CA12	50	20,0	55	-9.0	-5.0	CN..120408/CN..432
MCFNR16CA12	60	25,0	63	-9.0	-5.0	CN..120408/CN..432
MCFNR20CA12	70	25,0	70	-9.0	-5.0	CN..120408\CN..432
left hand						
MCFNL10CA09	40	14,0	50	-9.0	-9.0	CN..090308/CN..322
MCFNL12CA12	50	20,0	55	-9.0	-5.0	CN..120408/CN..432
MCFNL16CA12	60	25,0	63	-9.0	-5.0	CN..120408/CN..432

Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B40–B49 and B174–B176 for inserts.

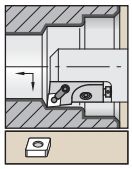


MCKN 75°

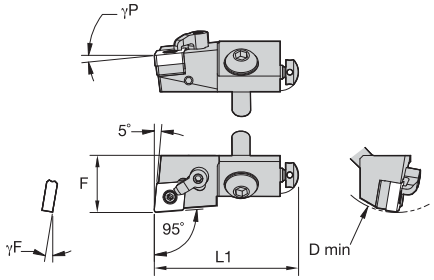
catalogue number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MCKNR12CA12	50	20,0	55	3	-9.0	-5.0	CN..120408/CN..432
MCKNR16CA12	60	25,0	63	3	-9.0	-5.0	CN..120408/CN..432
left hand							
MCKNL12CA12	50	20,0	55	3	-9.0	-5.0	CN..120408/CN..432
MCKNL16CA12	60	25,0	63	3	-9.0	-5.0	CN..120408/CN..432

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B40–B49 and B174–B176 for inserts.



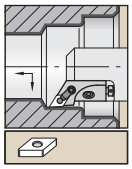
MCLN 95°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MCLNR12CA12	50	20,0	55	-9.0	-5.0	CN..120408/CN..432
MCLNR16CA12	60	25,0	63	-9.0	-5.0	CN..120408/CN..432
MCLNR20CA12	70	25,0	70	-9.0	-5.0	CN..120408/CN..432
MCLNR25CA12	100	32,0	100	-9.0	-5.0	CN..120408/CN..432
MCLNR25CA16	100	32,0	100	-9.0	-5.0	CN..160612/CN..543
MCLNR25CA19	100	32,0	100	-9.0	-5.0	CN..190612/CN..643
left hand						
MCLNL12CA12	50	20,0	55	-9.0	-5.0	CN..120408/CN..432
MCLNL16CA12	60	25,0	63	-9.0	-5.0	CN..120408/CN..432
MCLNL20CA12	70	25,0	70	-9.0	-5.0	CN..120408/CN..432
MCLNL25CA12	100	32,0	100	-9.0	-5.0	CN..120408/CN..432
MCLNL25CA16	100	32,0	100	-9.0	-5.0	CN..160612/CN..543
MCLNL25CA19	100	32,0	100	-9.0	-5.0	CN..190612/CN..643

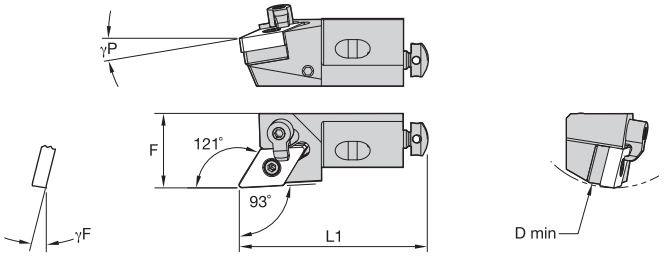
Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
100	**ICSN432**	**KLM46**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
100	**ICSN533**	**KLM58**	3 mm	**CKM41**	**STCM20**	3 mm	**KUAM26**	3 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
100	**ICSN633**	**KLM68**	4 mm	**CKM35**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**

NOTE: Select spare parts based off of D min and the insert size selected.



See pages B66–B73 and B179–B180 for inserts.



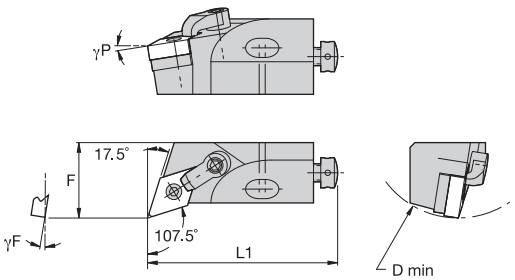
MDJN 93°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MDJNR12CA11	50	20	55	-9.0	-9.0	DN..110408/DN..322
MDJNR16CA15	60	25	63	-9.0	-9.0	DN..150408/DN..3.532
MDJNR20CA15	70	25	70	-8.5	-8.5	DN..150408/DN..3.532
left hand						
MDJNL12CA11	50	20	55	-9.0	-9.0	DN..110408/DN..322
MDJNL16CA15	60	25	63	-9.0	-9.0	DN..150408/DN..3.532
MDJNL20CA15	70	25	70	-8.5	-8.5	DN..150408/DN..3.532

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**IDSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**IDSN432**	**KLM46**	2.5 mm	**CKM41**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B66–B73 and B179–B180 for inserts.



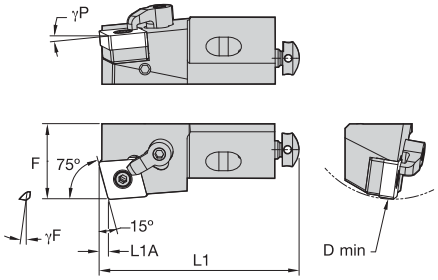
MDQN 107,5°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MDQNR16CA15	60	25,0	63	-9.0	-6.0	DN..150408/DN..3.532
MDQNR20CA15	70	25,0	70	-9.0	-8.0	DN..150408/DN..3.532
left hand						
MDQNL16CA15	60	25,0	63	-9.0	-6.0	DN..150408/DN..3.532
MDQNL20CA15	70	25,0	70	-9.0	-8.0	DN..150408/DN..3.532

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
60	**IDSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**IDSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B59–B66 and B178–B179 for inserts.



MSKN 75°

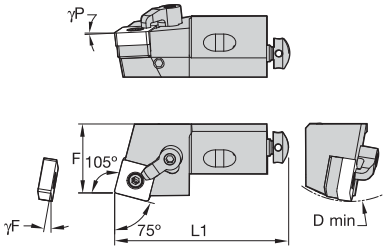
catalogue number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MSKNR10CA09	40	14,0	50	2,22	-9.0	-5.0	SN..090308/SN..322
MSKNR12CA12	50	20,0	55	3,04	-9.0	-5.0	SN..120408/SN..432
MSKNR16CA12	60	25,0	63	3,04	-9.0	-5.0	SN..120408/SN..432
MSKNR20CA15	70	25,0	70	3,74	-9.0	-5.0	SN..150612/SN..543
MSKNR25CA19	100	32,0	100	4,56	-9.0	-5.0	SN..190612/SN..543
left hand							
MSKNL10CA09	40	14,0	50	2,22	-9.0	-5.0	SN..090308/SN..322
MSKNL12CA12	50	20,0	55	3,04	-9.0	-5.0	SN..120408/SN..432
MSKNL16CA12	60	25,0	63	3,04	-9.0	-5.0	SN..120408/SN..432
MSKNL20CA15	70	25,0	70	3,74	-9.0	-5.0	SN..150612/SN..543
MSKNL25CA12	100	32,0	100	3,04	-9.0	-5.0	SN..120408/SN..432

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
100	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
100	**ICSN633**	**KLM68**	4 mm	**CKM35**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**

NOTE: Select spare parts based off of D min and the insert size selected.

See pages B59–B66 and B178–B179 for inserts.

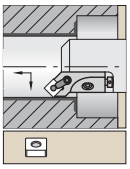


MSRN 75°

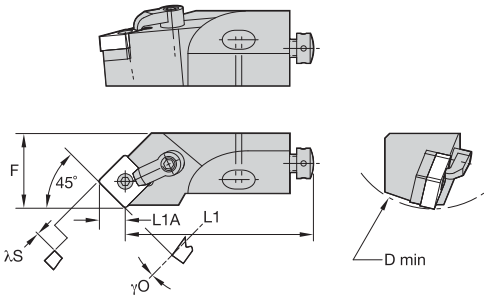
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MSRNR10CA09	40	14,0	50	-9.0	-5.0	SN..090308/SN..322
MSRNR12CA12	50	20,0	55	-9.0	-5.0	SN..120408/SN..432
MSRNR16CA12	60	25,0	63	-9.0	-5.0	SN..120408/SN..432
MSRNR20CA15	70	25,0	70	-9.0	-5.0	SN..150612/SN..543
left hand						
MSRNL10CA09	40	14,0	50	-9.0	-5.0	SN..090308/SN..322
MSRNL12CA12	50	20,0	55	-9.0	-5.0	SN..120408/SN..432
MSRNL16CA12	60	25,0	63	-9.0	-5.0	SN..120408/SN..432
MSRNL20CA15	70	25,0	70	-9.0	-5.0	SN..150612/SN..543

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



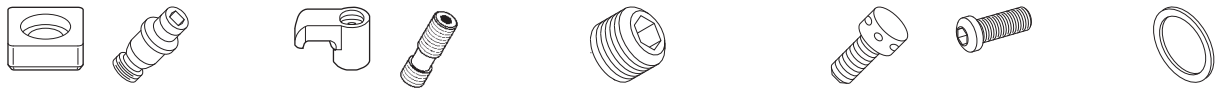
See pages B59–B66 and B178–B179 for inserts.



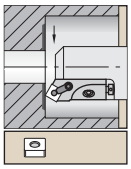
MSSN 45°

catalogue number	D min	F	L1	L1A	λS°	γO°	gage insert
right hand							
MSSNR10CA09	40	14,0	44	6,09	-13.0	0.0	SN..090308/SN..322
MSSNR12CA12	50	20,0	47	8,33	-13.0	0.0	SN..120408/SN..432
MSSNR16CA12	60	25,0	53	8,33	-13.0	0.0	SN..120408/SN..432
MSSNR20CA15	70	25,0	60	10,25	-13.0	0.0	SN..150612/SN..543
left hand							
MSSNL10CA09	40	14,0	44	6,09	-13.0	0.0	SN..090308/SN..322
MSSNL12CA12	50	20,0	47	8,33	-13.0	0.0	SN..120408/SN..432
MSSNL16CA12	60	25,0	53	8,33	-13.0	0.0	SN..120408/SN..432
MSSNL20CA15	70	25,0	60	10,25	-13.0	0.0	SN..150612/SN..543

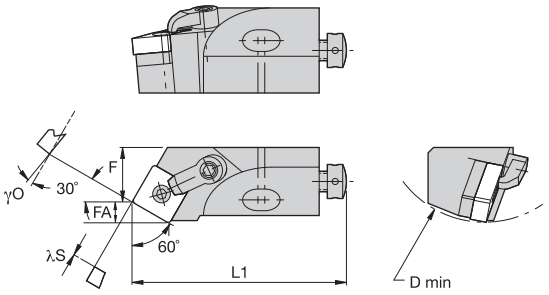
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



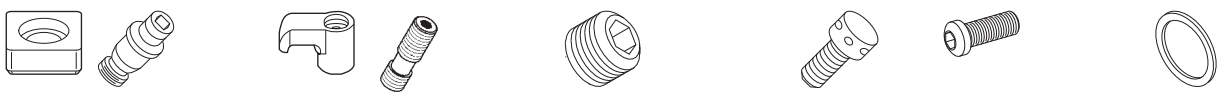
See pages B59–B66 and B178–B179 for inserts.



MSTN 60°

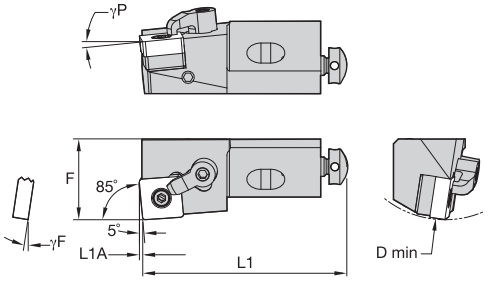
catalogue number	D min	F	L1	FA	λS°	γO°	gage insert
right hand							
MSTNR10CA09	40	9,0	50	13,31	-11.0	0.0	SN..090308/SN..322
MSTNR12CA12	50	13,0	55	5,86	-11.0	0.0	SN..120408/SN..432
left hand							
MSTNL10CA09	40	9,0	50	13,31	-11.0	0.0	SN..090308/SN..322
MSTNL16CA12	60	15,0	63	5,90	-11.0	0.0	SN..120408/SN..432

Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B59–B66 and B178–B179 for inserts.

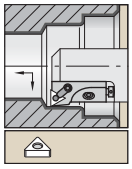


MSYN 85°

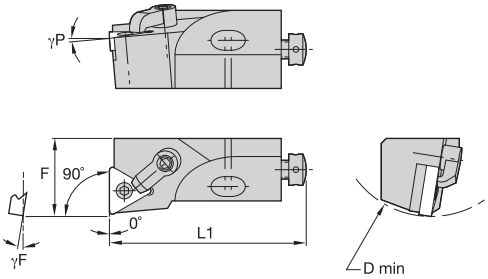
catalogue number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MSYNR10CA09	40	14,0	50	0,75	-9.0	-5.0	SN..090308/SN..322
MSYNR12CA12	50	20,0	55	1,02	-9.0	-5.0	SN..120408/SN..432
MSYNR16CA12	60	25,0	63	1,02	-9.0	-5.0	SN..120408/SN..432
MSYNR25CA19	100	32,0	100	1,54	-9.0	-5.0	SN..190612/SN..643
left hand							
MSYNL10CA09	40	14,0	50	0,75	-9.0	-5.0	SN..090308/SN..322
MSYNL12CA12	50	20,0	55	1,02	-9.0	-5.0	SN..120408/SN..432
MSYNL16CA12	60	25,0	63	1,02	-9.0	-5.0	SN..120408/SN..432
MSYNL20CA15	70	25,0	70	1,26	-9.0	-5.0	SN..150612/SN..543

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
60	**ISSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	6 mm	**CSWM 080 050**
100	**ISSN633**	**KLM68**	4 mm	**CKM34**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	8 mm	**CSWM 100 080**



See pages B66–B73 and B179–B180 for inserts.



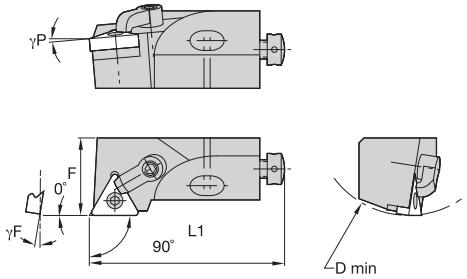
MTFN 90°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTFNR12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
MTFNR16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTFNR20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432
left hand						
MTFNL12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
MTFNL16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTFNL20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432

Spare Parts

D min	shim	lock pin	hex	clamp	clamping screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**ITSN433**	**KLM46**	2.5 mm	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B66–B73 and B179–B180 for inserts.



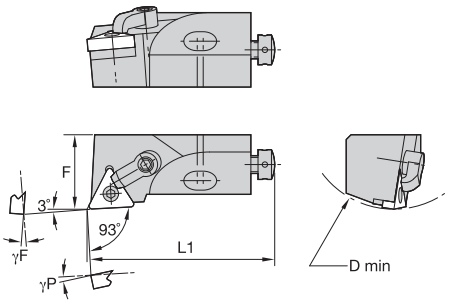
MTGN 90°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTGNR12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
MTGNR16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTGNR20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432
left hand						
MTGNL12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
MTGNL16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTGNL20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**ITSN433**	**KLM46**	2.5 mm	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B66–B73 and B179–B180 for inserts.

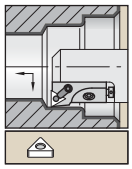


MTJN 93°

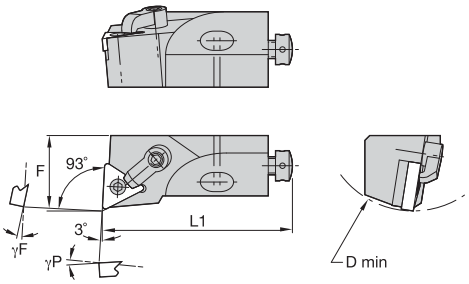
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTJNR12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
left hand						
MTJNL12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332

Spare Parts

D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	—	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



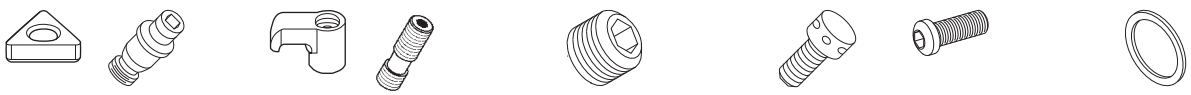
See pages B66–B73 and B179–B180 for inserts.



MTUN 93°

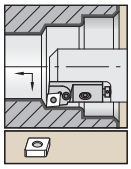
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTUNR16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTUNR20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432
left hand						
MTUNL12CA16	50	20,0	55	-9.0	-5.0	TN..160408/TN..332
MTUNL16CA16	60	25,0	63	-9.0	-5.0	TN..160408/TN..332
MTUNL20CA22	70	25,0	70	-9.0	-5.0	TN..220408/TN..432

Spare Parts

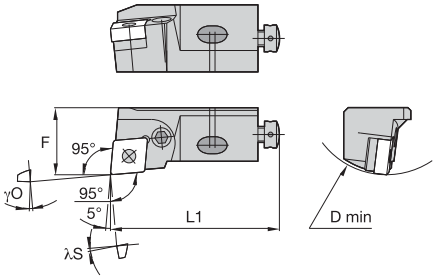


D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	—	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**ITSN433**	**KLM46**	—	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	5 mm	**CSWM 080 050**
70	**ITSN433**	**KLM46**	—	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	5 mm	**CSWM 080 050**

NOTE: Select spare parts based off of D min and the insert size selected.



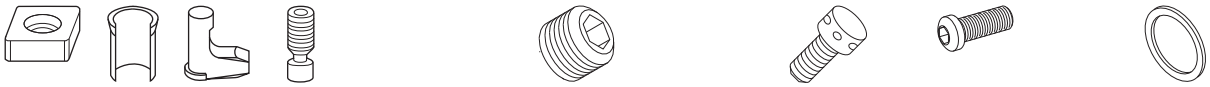
See pages B40–B49 and B174–B176 for inserts.



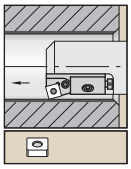
PCLN 95°

catalogue number	D min	F	L1	λS°	γO°	gage insert
right hand						
PCLNR12CA12	50	20,0	55	-6.0	-9.0	CN..120408/CN..432
PCLNR16CA12	60	25,0	63	-6.0	-7.0	CN..120408/CN..432
left hand						
PCLNL16CA12	60	25,0	63	-6.0	-7.0	CN..120408/CN..432

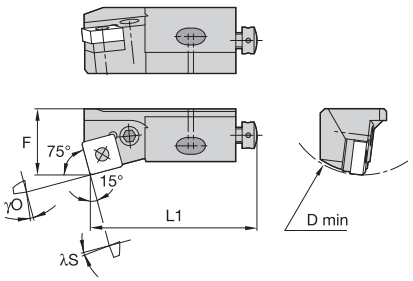
Spare Parts



D min	shim	shim pin	toggle lever	lever screw	wrench size lever screw	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	–	**511.022**	**514.122**	10 IP	**KUAM28**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**512.112**	**513.023**	**511.023**	**514.123**	15 IP	**KUAM23**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



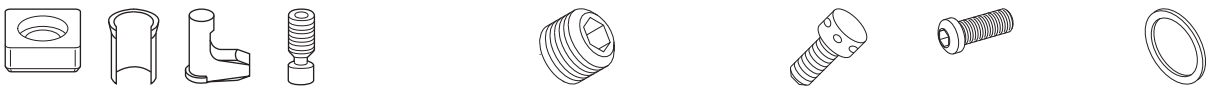
See pages B59–B66 and B178–B179 for inserts.



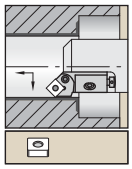
PSKN 75°

catalogue number	D min	F	L1	L1A	λS°	γO°	gage insert
right hand							
PSKNR12CA-12	50	20,0	55	3	-8.0	-6.0	SN..120408/SN..432
left hand							
PSKNL16CA-12	60	25,0	63	3	-6.0	-6.0	SN..120408/SN..432

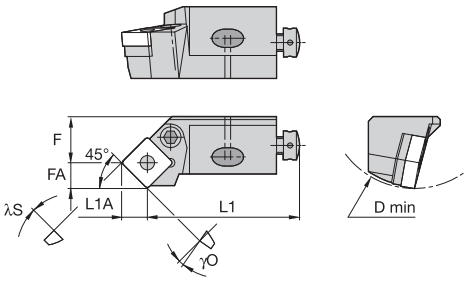
Spare Parts



D min	shim	shim pin	toggle lever	lever screw	wrench size lever screw	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	–	–	**511.022**	**514.122**	10 IP	**KUAM28**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**512.063**	**513.023**	**511.023**	**514.123**	15 IP	**KUAM23**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B59–B66 and B178–B179 for inserts.

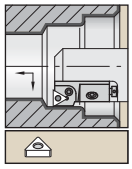


PSSN 45°

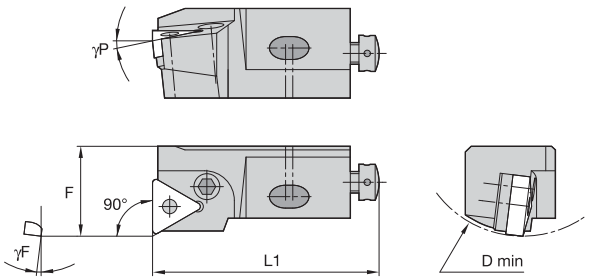
catalogue number	D min	F	L1	FA	L1A	λS°	γO°	gage insert
right hand								
PSSNR12CA-12	50	20,0	47	8,7	8,3	-10.0	0.0	SN..120408/SN..432
PSSNR16CA-12	60	25,0	53	8,7	8,3	-10.0	0.0	SN..120408/SN..432
left hand								
PSSNL12CA12	50	11,3	47	8,7	8,3	0.0	-10.0	SN..120408/SN..432
PSSNL16CA12	60	16,3	53	8,7	8,3	0.0	-10.0	SN..120408/SN..432

Spare Parts

D min	shim	shim pin	toggle lever	lever screw	wrench size lever screw	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	—	—	**511.022**	**514.122**	10 IP	**KUAM28**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**512.063**	**513.023**	**511.023**	**514.123**	15 IP	**KUAM23**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B66–B73 and B179–B180 for inserts.

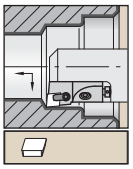


PTFN 90°

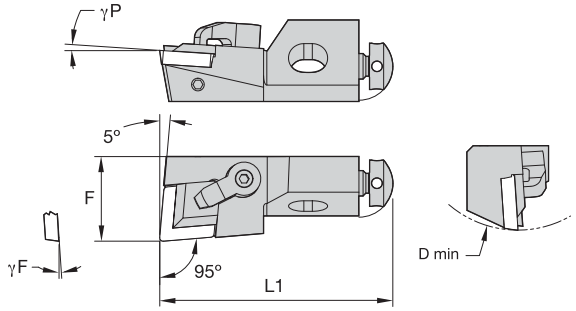
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
PTFNR12CA-16	50	20,0	55	-7.0	-6.0	TN..160408/TN..332
left hand						
PTFNL12CA-16	50	20,0	55	-7.0	-6.0	TN..160408/TN..332

Spare Parts

D min	toggle lever	lever screw	wrench size lever screw	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**511.030**	**514.112**	8 IP	**KUAM28**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B84 and B185 for inserts.



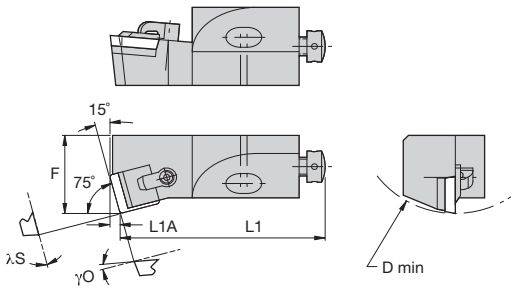
CCLP 95°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
CCLPR12CA12	50	20,0	55	3.5	3.5	CP..120308/CP..422
left hand						
CCLPL12CA12	50	20,0	55	3.5	3.5	CP..120308/CP..422

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**

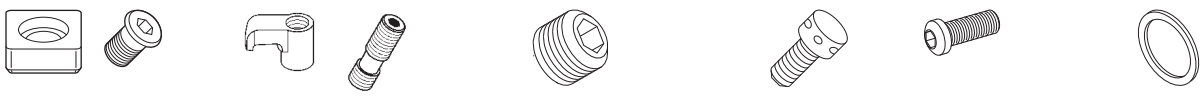
See pages B85–B86 and B130 for inserts.



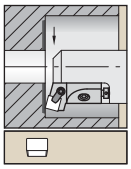
CSKP 75°

catalogue number	D min	F	L1	L1A	λS°	γO°	gage insert
right hand							
CSKPR10CA09	40	14,0	50	2,2	0.0	5.0	SP..090308/SP..322
CSKPR12CA12	50	20,0	55	3,1	0.0	5.0	SP..120308/SP..422
CSKPR20CA12	70	25,0	70	3,1	0.0	5.0	SP..120308/SP..422
left hand							
CSKPL12CA12	50	20,0	55	3,1	0.0	5.0	SP..120308/SP..422
CSKPL20CA12	70	25,0	70	3,1	0.0	5.0	SP..120308/SP..422

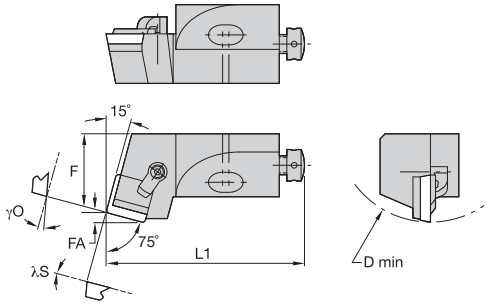
Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
70	**SM840**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B85–B86 and B130 for inserts.



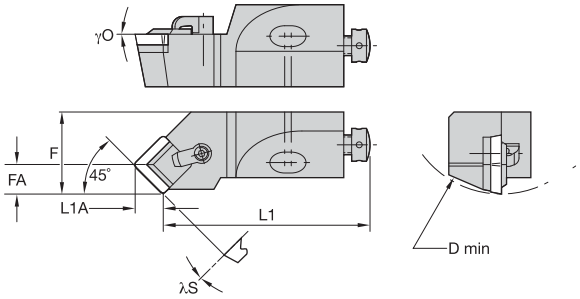
CSRP 75°

catalogue number	D min	F	L1	FA	λS°	γO°	gage insert
right hand							
CSRPR10CA09	40	14,0	50	2,2	0.0	0.0	SP..090308/SP..322
CSRPR12CA12	50	20,0	55	3,0	3.0	0.0	SP..120308/SP..422
left hand							
CSRPL10CA09	40	14,0	50	2,2	0.0	0.0	SP..090308/SP..322
CSRPL12CA12	50	20,0	55	3,0	3.0	0.0	SP..120308/SP..422

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**

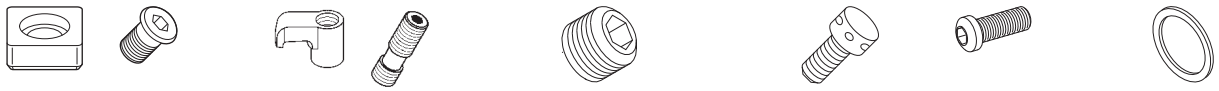
See pages B85–B86 and B130 for inserts.



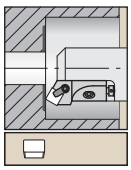
CSSP 45°

catalogue number	D min	F	L1	FA	L1A	λS°	γO°	gage insert
right hand								
CSSPR10CA09	40	14,0	44	6,5	6,1	0.0	0.0	SP..090308/SP..322
CSSPR12CA12	50	20,0	47	8,3	8,3	0.0	0.0	SP..120308/SP..422
CSSPR16CA12	60	25,0	53	8,3	8,3	0.0	0.0	SP..120308/SP..422
left hand								
CSSPL10CA09	40	14,0	44	6,5	6,1	0.0	0.0	SP..090308/SP..322
CSSPL12CA12	50	20,0	47	8,3	8,3	0.0	0.0	SP..120308/SP..422
CSSPL16CA12	60	25,0	53	8,3	8,3	0.0	0.0	SP..120308/SP..422
CSSPL20CA12	70	25,0	60	8,3	8,3	0.0	0.0	SP..120308/SP..422

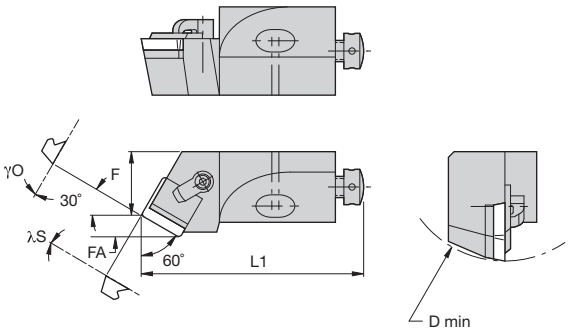
Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**SM840**	**CS109PKG**	2 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SM840**	**MS111**	2 mm	**CKM20**	**STCM11**	3 mm	**KUAM26**	3 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B85–B86 and B130 for inserts.

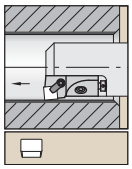


CSTP 60°

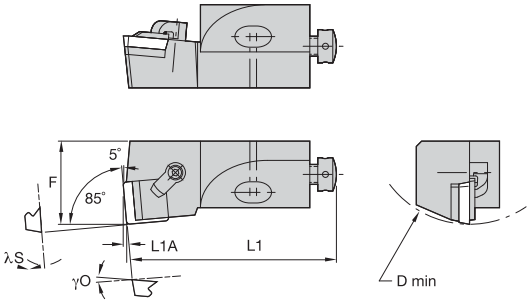
catalogue number	D min	F	L1	FA	λS°	γO°	gage insert
right hand							
CSTPR10CA09	40	9,0	50	4,3	0.0	0.0	SP..090308/SP..322

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B86–B87 and B130 for inserts.

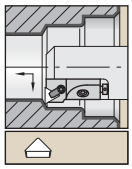


CSYP 85°

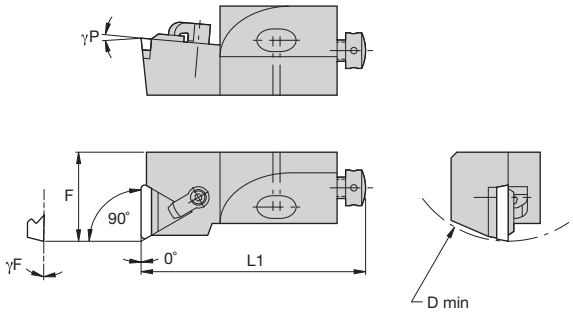
catalogue number	D min	F	L1	L1A	λS°	γO°	gage insert
right hand							
CSYPR10CA09	40	14,0	50	0,8	0.0	5.0	SP..090308/SP..322
left hand							
CSYPL10CA09	40	14,0	50	0,8	0.0	5.0	SP..090308/SP..322

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



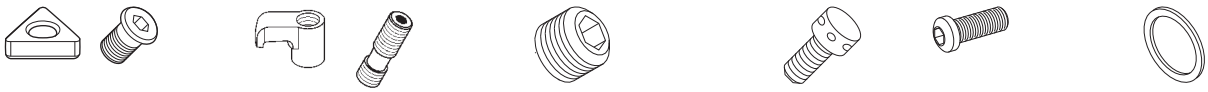
See pages B86–B87 and B130 for inserts.



CTFP 90°

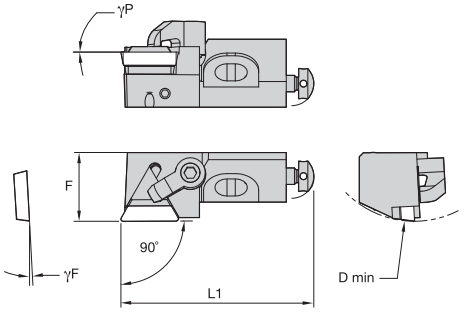
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
CTFPR10CA11	40	14,0	50	0.0	5.0	TP..110304/TP..421
CTFPR12CA16	50	20,0	55	0.0	5.0	TP..160308/TP..322
CTFPR16CA16	60	25,0	63	0.0	5.0	TP..160308/TP..322
CTFPR20CA22	70	25,0	70	0.0	5.0	TP..220408/TP..432
left hand						
CTFPL10CA11	40	14,0	50	0.0	5.0	TP..110304/TP..421
CTFPL12CA16	50	20,0	55	0.0	5.0	TP..160308/TP..322
CTFPL16CA16	60	25,0	63	0.0	5.0	TP..160308/TP..322

Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**SM841**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SM837**	**MS125**	2.5 mm	**CKM35**	**STCM8**	4 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

See pages B86–B87 and B130 for inserts.

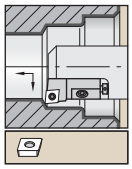


CTGP 90°

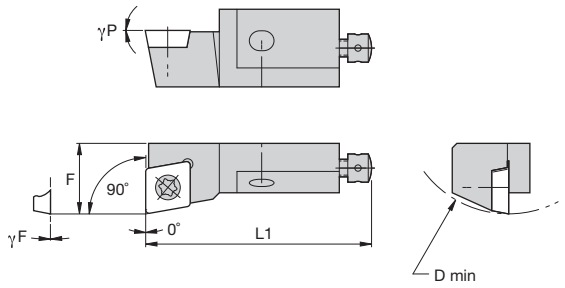
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
CTGPR10CA11	40	14,0	50	3.0	0.0	TP..110304/TP..421
CTGPR12CA16	50	20,0	55	3.0	0.0	TP..160308/TP..322
CTGPR16CA16	60	25,0	63	3.0	0.0	TP..160308/TP..322
CTGPR20CA22	70	25,0	70	3.0	0.0	TP..220408/TP..432
left hand						
CTGPL12CA16	50	20,0	55	3.0	0.0	TP..160308/TP..322
CTGPL20CA22	70	25,0	70	3.0	0.0	TP..220408/TP..432

Spare Parts

D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**SM841**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
70	**SM837**	**MS125**	2.5 mm	**CKM35**	**STCM8**	4 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B92–B95 and B189–B190 for inserts.

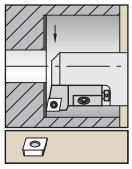


SCFP 90°

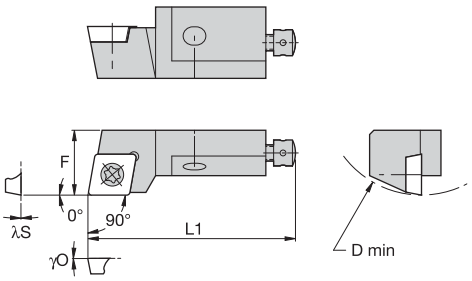
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCFPR06CA05	20	8,0	25	0.0	0.0	CP..050204/CP..18151
SCFPR08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151
SCFPR10CA09	40	14,0	50	0.0	0.0	CPMT09T308
left hand						
SCFPL06CA05	20	8,0	25	0.0	0.0	CP..050204/CP..18151
SCFPL08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
20	**MS1933**	T7	**KUAM34**	1.5 mm	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B92–B95 and B189–B190 for inserts.

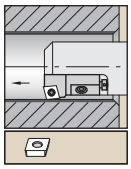


SCGP 90°

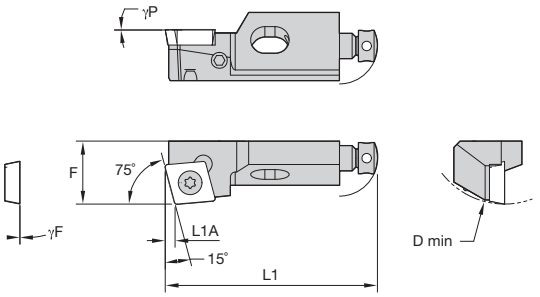
catalogue number	D min	F	L1	λS°	γO°	gage insert
right hand						
SCGPR08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151
left hand						
SCGPL08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**



See pages B92–B95 and B189–B190 for inserts.

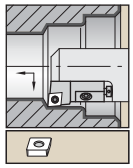


SCKP 75°

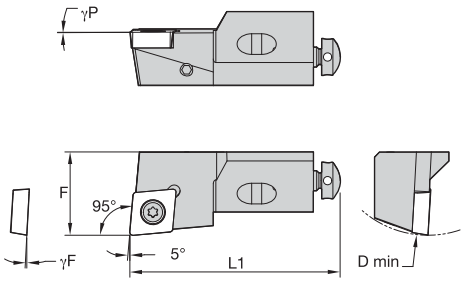
catalogue number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
SCKPR08CA06	25	10,0	32	1,6	0.0	0.0	CP..060204/CP..2151
left hand							
SCKPL08CA06	25	10,0	32	1,6	0.0	0.0	CP..060204/CP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
25	**MS1153**	T7	**KUAM34**	2 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**



See pages B88–B91 and B187–B188 for inserts.

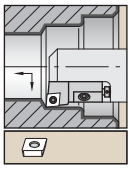


SCLC 95°

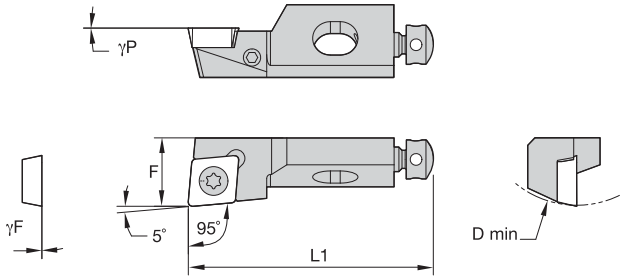
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCLCR12CA12	50	20,0	55	-3.0	0.0	CC..120408/CC..432
SCLCR16CA12	60	25,0	63	-3.0	0.0	CC..120408/CC..432
left hand						
SCLCL12CA12	50	20,0	55	-3.0	0.0	CC..120408/CC..432
SCLCL16CA12	60	25,0	63	-3.0	0.0	CC..120408/CC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



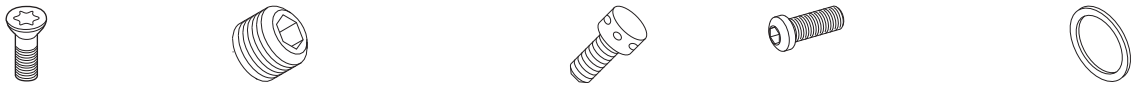
See pages B92–B95 and B189–B190 for inserts.



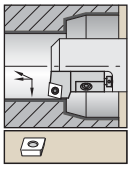
SCLP 95°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCLPR06CA05	20	8,0	25	0.0	0.0	CP..050204/CP..18151
SCLPR08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151
SCLPR10CA09	40	14,0	50	0.0	0.0	CP..09T308/CP..3252
left hand						
SCLPL06CA05	20	8,0	25	0.0	0.0	CP..050204/CP..18151
SCLPL08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151
SCLPL10CA09	40	14,0	50	0.0	0.0	CP..09T308/CP..3252

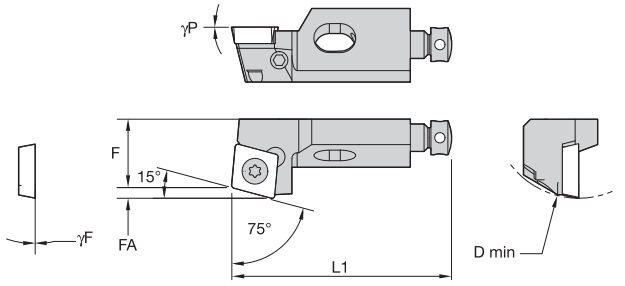
Spare Parts



D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
20	**MS1933**	T7	**KUAM34**	1.5 mm	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B92–B95 and B189–B190 for inserts.

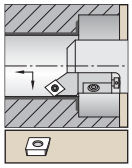


SCRP 75°

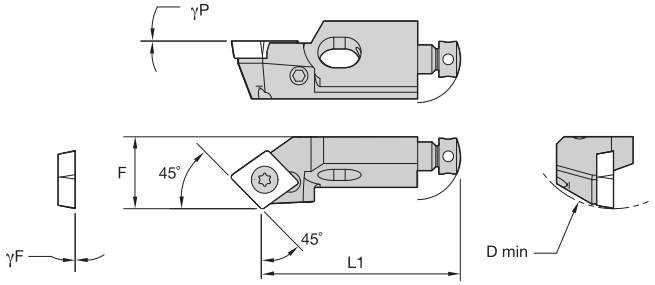
catalogue number	D min	F	L1	FA	γF°	γP°	gage insert
right hand							
SCRPR08CA06	25	10,0	32	1,5	0.0	0.0	CP..060204/CP..2151
left hand							
SCRPL08CA06	25	10,0	32	1,5	0.0	0.0	CP..060204/CP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**



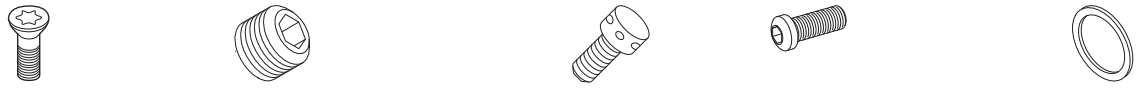
See pages B92–B95 and B189–B190 for inserts.



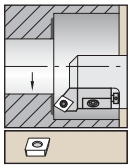
SCSP 45°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCSPR06CA05	20	8,0	21	0.0	0.0	CP..050204/CP..18151
SCSPR08CA06	25	10,0	28	0.0	0.0	CP..060204/CP..2151
left hand						
SCSPL06CA05	20	8,0	21	0.0	0.0	CP..050204/CP..18151
SCSPL08CA06	25	10,0	28	0.0	0.0	CP..060204/CP..2151

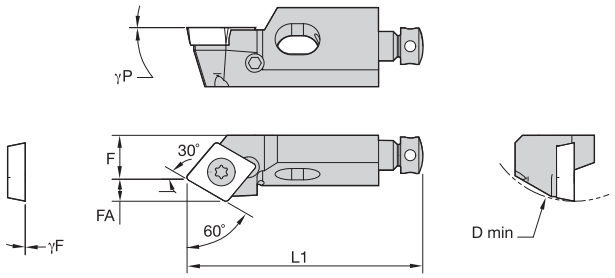
Spare Parts



D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
20	**MS1933**	T7	**–**	–	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**



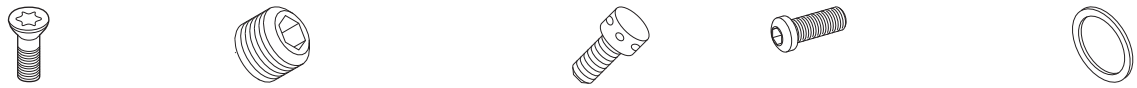
See pages B92–B95 and B189–B190 for inserts.



SCTP 60°

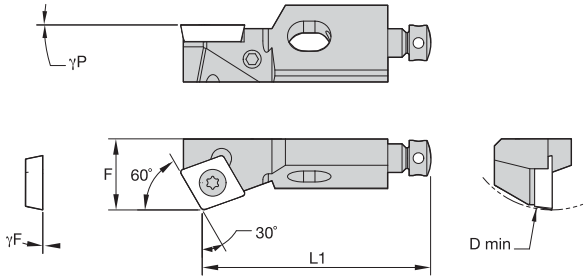
catalogue number	D min	F	L1	FA	γF°	γP°	gage insert
right hand							
SCTPR06CA05	20	5,5	25	2,6	0.0	0.0	CP..050204/CP..18151
SCTPR08CA06	25	6,0	32	3,0	0.0	0.0	CP..060204/CP..2151
left hand							
SCTPL08CA06	25	6,0	32	3,0	0.0	0.0	CP..060204/CP..2151

Spare Parts



D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
20	**MS1933**	T7	**–**	–	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

See pages B92–B95 and B189–B190 for inserts.

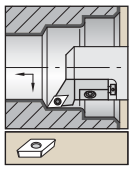


SCWP 60°

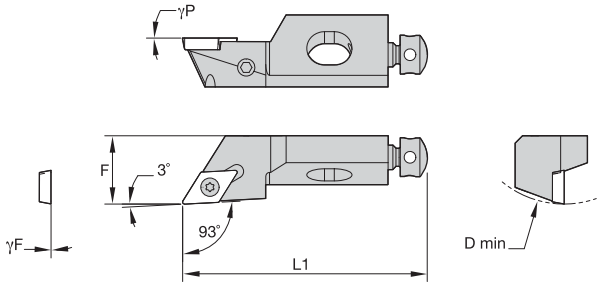
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCWPR08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151
left hand						
SCWPL08CA06	25	10,0	32	0.0	0.0	CP..060204/CP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**



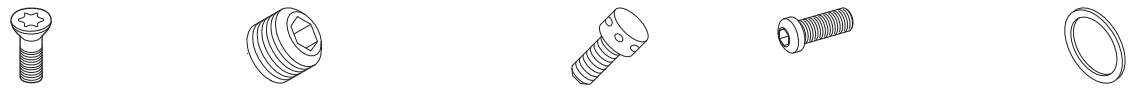
See pages B98–B100 and B192–B194 for inserts.



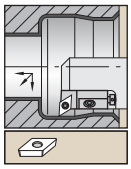
SDJP 93°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SDJPR10CA07	40	14,0	50	0.0	0.0	DP..070204/DP..2151
left hand						
SDJPL10CA07	40	14,0	50	0.0	0.0	DP..070204/DP..2151

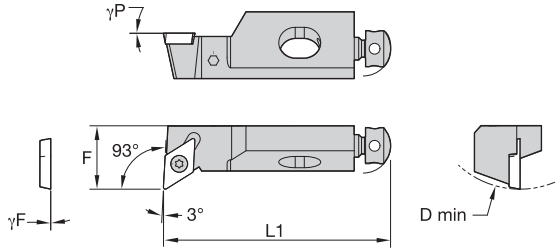
Spare Parts



D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B98–B100 and B192–B194 for inserts.

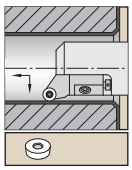


SDUP 93°

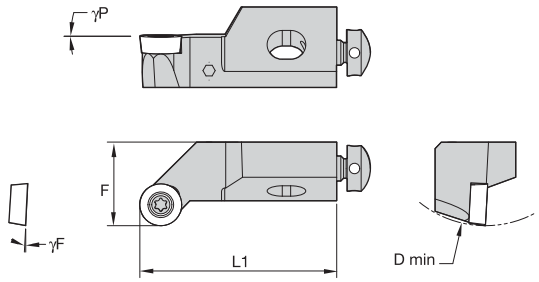
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SDUPR10CA07	40	14,0	50	0.0	0.0	DP..070204/DP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B100–B102 for inserts.

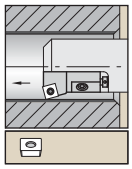


SRGC

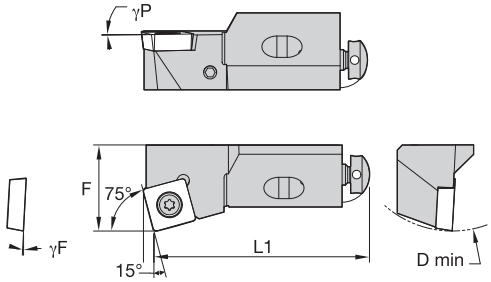
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SRGCR08CA06	25	10,0	32	-4.0	0.0	RC..0602M0/RC..215
SRGCR10CA08	40	14,0	50	-3.0	0.0	RC..0803M0/RC..0803M0
SRGCR12CA10	50	20,0	55	-3.0	0.0	RC..10T3M0/RC..10T3M0
left hand						
SRGCL08CA06	25	10,0	32	-4.0	0.0	RC..0602M0/RC..215
SRGCL12CA10	50	20,0	55	-3.0	0.0	RC..10T3M0/RC..10T3M0

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1154**	T9	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

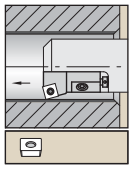


SSKC 75°

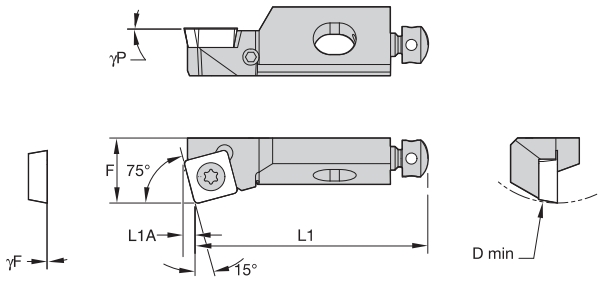
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSKCR12CA12	50	20,0	55	-3.0	0.0	SC..120408/SC..432
SSKCR16CA12	60	25,0	63	-3.0	0.0	SC..120408/SC..432
left hand						
SSKCL12CA12	50	20,0	55	-3.0	0.0	SC..120408/SC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



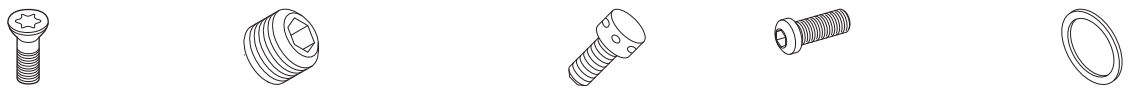
See pages B104–B106 for inserts.



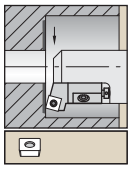
SSKP 75°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSKPR10CA09	40	14,0	50	0.0	0.0	SP..09T308/SP..3252
left hand						
SSKPL10CA09	40	14,0	50	0.0	0.0	SP..09T308/SP..3252

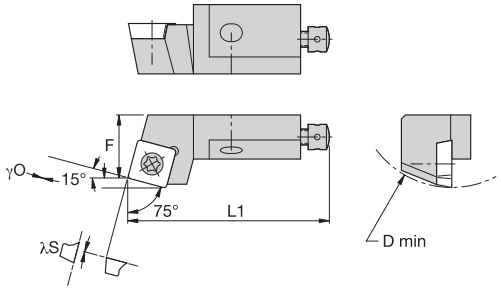
Spare Parts



D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

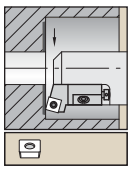


SSRC 75°

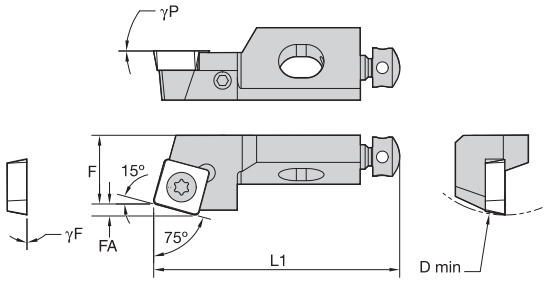
catalogue number	D min	F	L1	γO°	λS°	gage insert
right hand						
SSRCR12CA12	50	20,0	55	0.0	-3.0	SC..120408/SC..432
left hand						
SSRCL12CA12	50	20,0	55	0.0	-3.0	SC..120408/SC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B104–B106 for inserts.

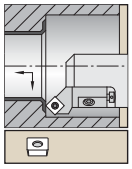


SSRP 75°

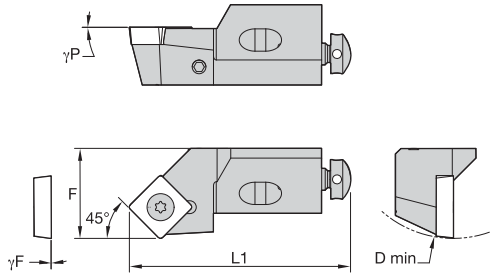
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSRPR10CA09	40	14,0	50	0.0	0.0	SP..09T308/SP..3252
left hand						
SSRPL10CA09	40	14,0	50	0.0	0.0	SP..09T308/SP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

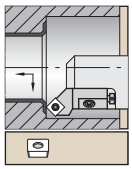


SSSC 45°

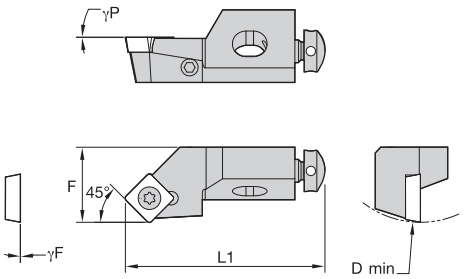
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSSCR12CA12	50	20,0	47	-3.0	0.0	SC..120408/SC..432
SSSCR16CA12	60	25,0	53	0.0	0.0	SC..120408/SC..432
left hand						
SSSCL12CA12	50	20,0	47	-3.0	0.0	SC..120408/SC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
50	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B104–B106 for inserts.

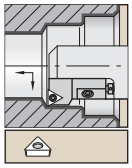


SSSP 45°

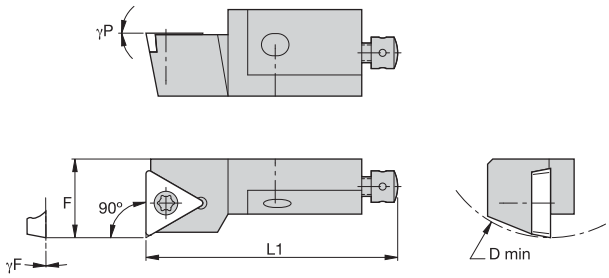
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSSPR10CA09	40	14,0	44	0.0	0.0	SP..09T308/SP..3252
SSSPR12CA09	50	20,0	47	0.0	0.0	SP..09T308/SP..3252
left hand						
SSSPL10CA09	40	14,0	44	0.0	0.0	SP..09T308/SP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
40	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B109–B112 and B195–B196 for inserts.

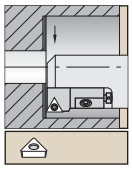


STFP 90°

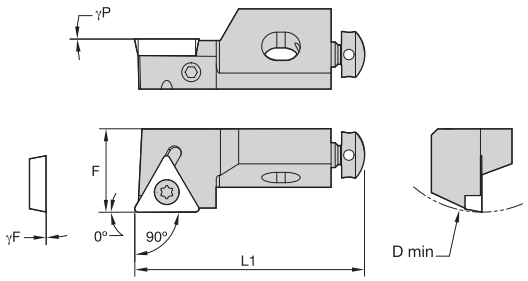
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
STFPR08CA09	25	10,0	32	0.0	0.0	TP..090204/TP..18151
STFPR10CA11	40	14,0	50	0.0	0.0	TP..110204/TP..2151
STFPR12CA16	50	20,0	55	0.0	0.0	TP..16T308/TP..3252
STFPR16CA16	60	25,0	63	0.0	0.0	TP..16T308/TP..3252
left hand						
STFPL08CA09	25	10,0	32	0.0	0.0	TP..090204/TP..18151
STFPL10CA11	40	14,0	50	0.0	0.0	TP..110204/TP..2151
STFPL12CA16	50	20,0	55	0.0	0.0	TP..16T308/TP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1152**	**T7**	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1153**	**T7**	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	**T15**	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**MS1155**	**T15**	**KUAM25**	4 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B109–B112 and B195–B196 for inserts.

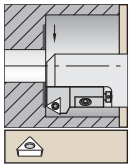


STGP 90°

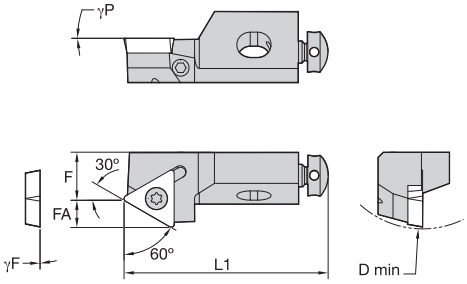
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
STGPR08CA09	25	10,0	32	0.0	0.0	TP..090204/TP..18151
STGPR10CA11	40	14,0	50	0.0	0.0	TP..110204/TP..2151
STGPR12CA16	50	20,0	55	0.0	0.0	TP..16T308/TP..3252
left hand						
STGPL08CA09	25	10,0	32	0.0	0.0	TP..090204/TP..18151
STGPL10CA11	40	14,0	50	0.0	0.0	TP..110204/TP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B109–B112 and B195–B196 for inserts.

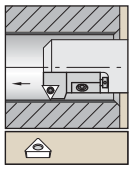


STTP 60°

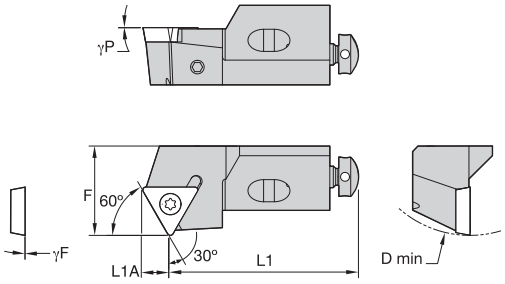
catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
STTPR08CA09	25	6,0	32	0.0	0.0	TP..090204/TP..18151
STTPR10CA11	40	9,0	50	0.0	0.0	TP..110204/TP..2151
STTPR12CA16	50	13,0	55	0.0	0.0	TP..16T308/TP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B109–B112 and B195–B196 for inserts.



STWP 60°

catalogue number	D min	F	L1	γF°	γP°	gage insert
right hand						
STWPR08CA09	25	10,0	28	0.0	0.0	TP..090204/TP..18151
STWPR10CA11	40	14,0	44	0.0	0.0	TP..110204/TP..2151
STWPR12CA16	50	20,0	47	0.0	0.0	TP..16T308/TP..3252
STWPR16CA16	60	25,0	53	0.0	0.0	TP..16T308/TP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
25	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
40	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
50	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
60	**MS1155**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

Grooving and Cut-Off

Grooving Application Guide D2–D3

Grades and Grade Descriptions D4–D7

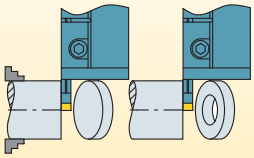
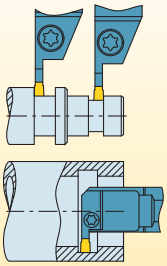
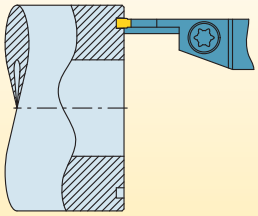
A2 Cut-Off D8–D25

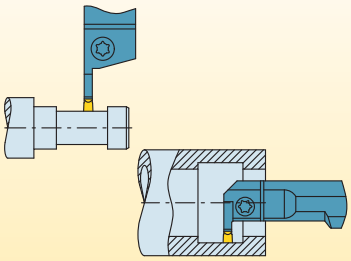
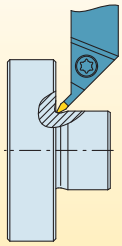
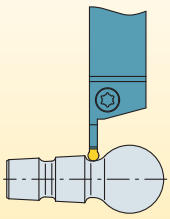
A3 Deep Grooving D26–D61

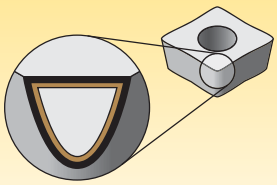
A4 Grooving and Turning D62–D111

Top Notch Grooving D112–D139

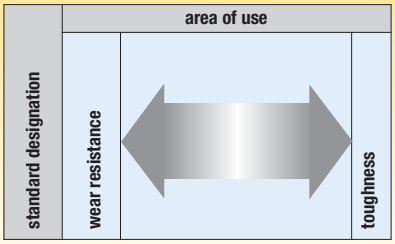
KGF and KGT Cut-Off Inserts D142–D145

	Cut-Off	Grooving	Face Grooving
Application			
Top Notch™ Grooving generally recommended for cutting depth/width ratios of 1,5 or less		**Inserts** • Cutting widths from 0,8–9,5mm. • Cutting depths from 1,27–12,70mm. • Chip control, positive rake, and neutral flat top inserts are available. **O.D. Application** • Integral shank toolholders and KM™ heads are available. **I.D. Application** • Boring bars with a 11,5mm minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • Standard inserts: 54–330mm depending on size. • NF/NFD face grooving inserts: 24–57mm. • All have unlimited maximum diameter. **Cutting Width Range** • Standard inserts: 0,8–9,5mm. • NF/NFD face grooving inserts: 2–6,35mm. **Cutting Depth Range** • Standard inserts: 1,27–12,7mm. • NF/NFD face grooving inserts: 3,8–6,35mm.
A4™ Grooving and Turning	**Cut-Off Capabilities** • Cut-off widths from 1,5–4,05mm. • Satisfies extreme demands for rigidity and dimensional accuracy. • Integral screw-clamping toolholders with 17mm maximum cutting depth available. • Economical double-edge inserts.	**Inserts** • Cutting widths from 2–10,05mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 14–26mm. **I.D. Application** • Boring bars with 25mm minimum bore diameter. • Cutting widths from 2–6,35mm.	**Minimum Face Groove Diameter Capabilities** • 16mm minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from 2–10,05mm. **Cutting Depth Range** • Cutting depths from 12mm–24mm.
A3™ Deep Grooving generally recommended for cutting depth/width ratios of more than 1,5		**Inserts** • Cutting widths from 2,36–10,05mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 10–32mm. **I.D. Application** • Boring bars with 32mm minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • 25mm minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from 3–6,35mm. **Cutting Depth Range** • Cutting depths from 10–32mm.
A2™ Cut-Off	**Cut-Off Capabilities** • Cut-off widths from 1,4–8mm. • Left- and right-hand styles with 6–16° lead angles. • Self-clamping blades and screw-clamping integral shank toolholders are available. • Single-edge inserts for maximum depth capability.		

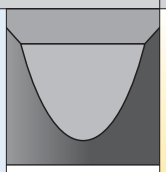
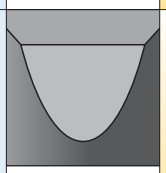
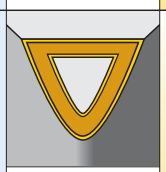
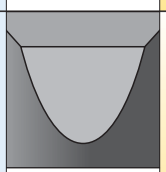
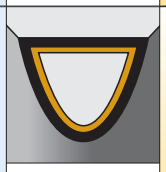
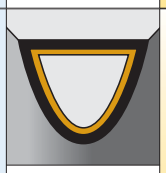
	Grooving and Turning	Undercutting	Profiling
Application			
Top Notch™ Grooving generally recommended for cutting depth/width ratios of 1,5 or less		**Top Notch Undercutting Capabilities** • Undercutting insert widths from 2,4–4mm. • Economical double-ended inserts.	**Recommended for Moderate to Heavy Stock Removal at Shallow Profile Depths** **Full Radius Inserts** • Cutting widths from 1,57–6,35mm. • Cutting depths from 2,39–6,35mm. **O.D. Application** • Integral shank toolholders and KM heads are available.
A4™ Grooving and Turning	**Recommended for Heavy Stock Removal, Particularly in Turning Applications** **Inserts** • Cutting widths from 2–10,05mm. • Double-ended, precision ground, and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM™ heads are available. • Cutting depths from 14–26mm. **I.D. Application** • Boring bars with 25mm minimum bore diameter. • Cutting widths from 2–6,35mm.		**Recommended for Heavy Stock Removal** **Full Radius Inserts** • Cutting widths from 2–10,05mm. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 14–26mm.
A3™ Deep Grooving generally recommended for cutting depth/width ratios of more than 1,5	**Recommended for Light Cutting** **Inserts** • Cutting widths from 2,36–10mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 10–32mm. **I.D. Application** • Boring bars with 32mm minimum bore diameter.	**Full Radius Undercutting** • Full radius inserts with cutting widths from 3–8mm at 45° lead angle. **35° Insert Undercutting** • 35° V-form inserts for profiling undercuts. • Toolholder lead angles of 45°, 93°, and 117.5°.	**Recommended for Light Cutting** • Full radius inserts with cutting widths from 3–8mm. • 32mm maximum cutting depth. • Integral shank toolholders and modular KM heads are available. • 35° V-form inserts are also available.
A2™ Cut-Off			

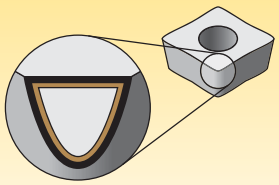


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

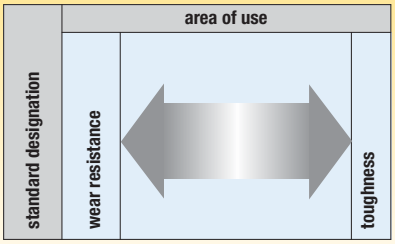


Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
K68  C3	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and as an alternative to the K313 grade on most high-temp alloys. Use as a general-purpose grade for non-ferrous materials.									
		M								
		K								
		N								
		S								
K313  C3–C4	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temp alloys. Superior thermal deformation and depth-of-cut notch resistance. The grain structure is well controlled for minimal pits and flaws, which contributes to long, reliable service.									
		M								
		K								
		N								
		S								
KT315  C3, C7	**Composition:** A multilayered, PVD TiN/TiCN/TiN-coated cermet turning grade. **Application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications too. Provides long and consistent tool life and will produce excellent workpiece finishes.									
		P								
		M								
		K								
K1025 (KMF)  C2, C6	**Composition:** Medium in hardness and binder content unalloyed WC/Co fine-grain grade. **Application:** For machining high-temp alloys, titanium, and non-ferrous workpiece materials under unfavourable conditions.									
		N								
		S								
KCP10  C3, C7	**Composition:** A specially engineered cobalt-enriched carbide grade with thick MTCVD-TiCN-Al_2O_3 coating for maximum crater-wear, deformation, and abrasion resistance for high-speed machining. **Application:** An excellent finishing to medium machining grade for a variety of workpiece materials including most steels, ferritic and martensitic stainless steels, and cast irons. The smooth coating provides good resistance to edge build-up and microchipping and produces excellent surface finishes.									
		P								
		M								
		K								
KCP25  C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer MTCVD-TiCN-Al_2O_3 coating with superior interlayer adhesion. **Application:** General-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance along with excellent insert edge strength. Coating layers offer wear resistance and the post-coat treatment minimises microchipping and improves coating adhesion to the substrate for long tool life.									
		P								
		M								
		K								

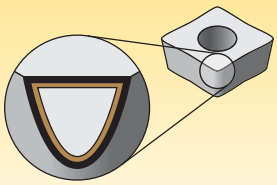


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

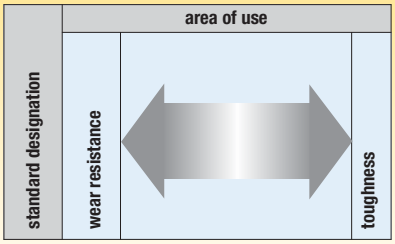


Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KCU10	C3–C4	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10 grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability.		P M K N S H								
KC5010	C3–C4	**Composition:** An advanced PVD TiAlN coating over a very deformation-resistant unalloyed carbide substrate. **Application:** The KC5010 grade is ideal for finishing to general machining of most workpiece materials at higher speeds. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys under stable conditions. It also performs well machining hardened and short chipping materials.		P M K N S H								
KC5510	C3–C4	**Composition:** An advanced PVD TiAlN-coated fine-grain tungsten carbide grade. **Application:** The KC5510 grade is specifically engineered for the productive machining of high-temp alloys. The fine-grained tungsten carbide 6% cobalt substrate has excellent toughness and deformation resistance while the advanced PVD coating enables metal cutting speeds double those of conventional PVD-coated cutting tools.		P M K N S H								
KCU25	C2, C6	**Composition:** An advanced PVD grade with hard AlTiN coating and ultra-fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25 grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons and non-ferrous materials, in a wide range of speeds and feeds, with improved edge toughness for interrupted cut and high feed rates.		P M K N S								
KC5025	C2, C6	**Composition:** An advanced PVD TiAlN-coated grade with a tough, ultra-fine-grain unalloyed substrate. **Application:** For general-purpose machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium and will handle interruptions and high feed rates.		P M K N S								
KC5525	C2–C6	**Composition:** Advanced PVD TiAlN-coated fine-grain high-cobalt carbide grade. **Application:** The KC5525 grade utilises the same advanced PVD coating as the KC5510 grade in conjunction with a fine-grained tungsten carbide 10% cobalt substrate. The higher cobalt enables added security in interrupted cuts while the fine-grained WC maintains hardness-resisting deformation at higher speeds. Designed for medium to heavy interruptions in high-temp alloys.		P M K N S								

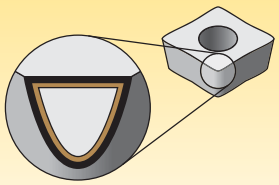


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

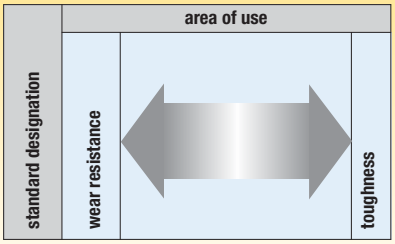


Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KC5410	C3–C4	**Composition:** PVD TiB_2 coating over a thermal deformation-resistant unalloyed substrate. **Application:** The KC5410 grade is designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12,2% Si) aluminium, aluminium alloys, and magnesium alloys. Harder than TiN and TiAlN coatings, TiB_2 has an extremely smooth surface for improved surface friction, chip flow, and wear and built-up edge resistance. Unalloyed and fine-grained offering sharp edges and excellent edge integrity. Inserts with a ground periphery are polished before coating; moulded inserts have a light hone.									
KC9110	C3, C7	**Composition:** Specially engineered, cobalt-enriched carbide grade with thick K-MTCVD-TiCN coating layer, an Al_2O_3 layer of controlled grain size, and outer layers of TiCN and TiN for maximum abrasion and wear resistance for high-speed machining. **Application:** An excellent finishing to medium machining grade for a variety of workpiece materials including most steels, ferritic and martensitic stainless steels, and cast irons. A balanced combination of deformation resistance and edge toughness. The smooth coating resists built-up edge and microchipping. For rougher cutting, use the KC9125 grade.									
KC9125	C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer K-MTCVD $TiCNAl_2O_3$-TiCN-TiN coating with superior interlayer adhesion. **Application:** General-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance along with excellent bulk toughness and insert edge strength. Coating layers offer wear resistance over a wide range of machining conditions and reduce frictional heat, minimise microchipping, and improve workpiece surface finishes. Performs well in moderately heavy roughing to semi-finishing cuts. Use the KC9110 grade for finishing cuts.									
KC9320	C3–C4	**Composition:** A proprietary specially toughened MTCVD-TICN and Al_2O_3 coating over a wear-resistant substrate. **Application:** KC9320 is specifically engineered to maximise coating adhesion and edge strength making this grade ideal in wet interrupted cutting of ductile and gray irons. It can be in a wide range of applications from finishing to roughing to maximise productivity wherever strength and reliability are needed.									
KY3500	C2	**Composition:** Pure silicon nitride grade. **Application:** Maximum toughness; used at high feed rates for rough machining of grey cast iron, including machining through interruptions.									
KD1400	C4	**Composition:** An ultra-fine-grain polycrystalline diamond (PCD) tip brazed onto a carbide substrate. **Application:** Designed for general-purpose turning of primarily non-ferrous materials. It can be applied over a wide range of continuous to interrupted cuts where superior surface finish is needed. Use on low to medium silicon-content aluminum alloys, non-metallics, copper, and brass- and zinc-based alloys. The ultra-fine-grain diamond particle size enables superior surface finishes while ensuring the best mechanical shock resistance of any PCD cutting tool.									



Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.



Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KD1405	C4	**Composition:** A pure CVD deposited diamond sheet tool directly brazed to a carbide substrate. **Application:** The KD1405 grade is Kennametal's and the industry's most abrasion-resistant tool material for non-ferrous and non-metallic materials. The KD1405 grade inserts are not as tough as the KD1400 and KD1425 grades but can withstand moderate interruptions when turning and traditional face milling operations.	N	N							
KB1630	—	**Composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **Application:** The KB1630 grade is designed for roughing to finishing in interrupted cuts on hardened steels (>45 HRC). It can also be applied on grey cast iron, chilled irons, high-chrome alloyed steels, and sintered powdered metals. The tipped PCBN insert is available in a wide range of insert styles including positive rake geometries that are ideally suited for boring applications.	K	K	K						
			S		S	S					
			H				H	H	H		
KB5625	C4, C8	**Composition:** A PVD TiAlN coating over a low content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing of hardened steels (>45 HRC). Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case hardened steels, carburised and nitrided irons, and some hard coatings.	H	H	H	H	H	H			

A2™ Cut-Off • High-Performance Tools to Maximise Productivity!

The A2 platform is the ideal system for parting operations on a wide variety of workpiece materials. It works well in smooth and interrupted cuts in both wet and dry operations. Now it is available in KCU25™ for superior edge toughness and excellent wear resistance.

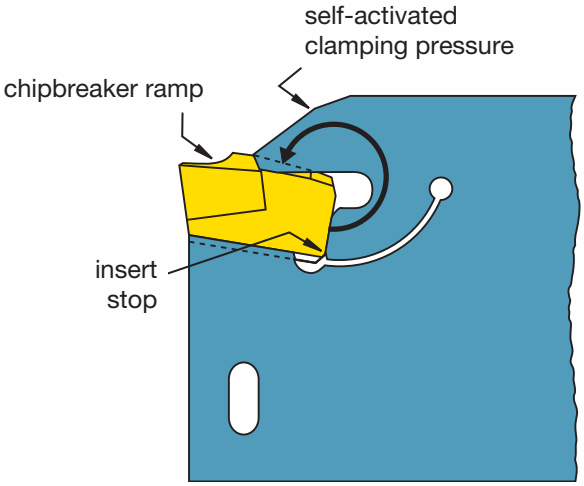
Features and Benefits

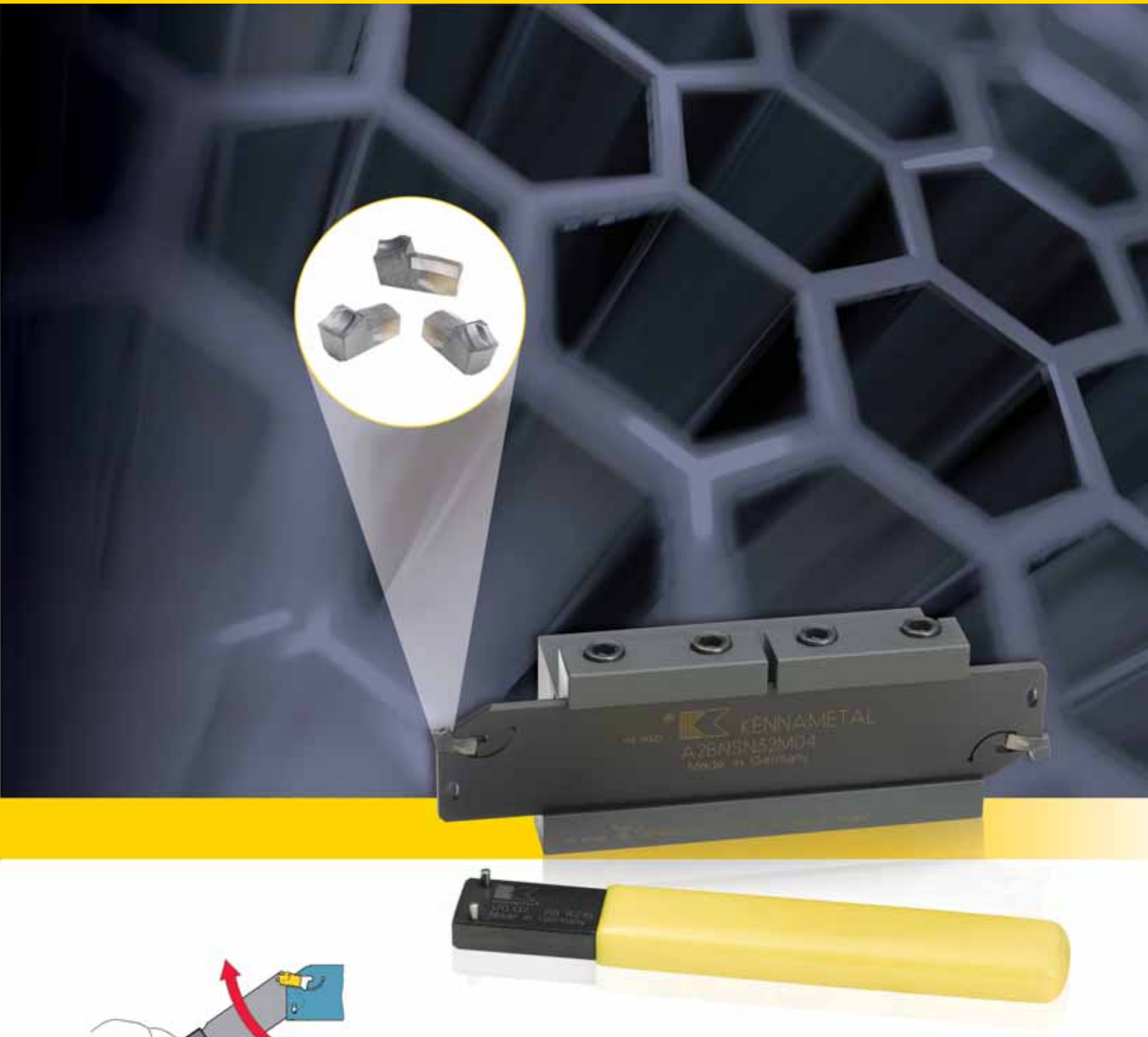
Innovative A2 Insert Design

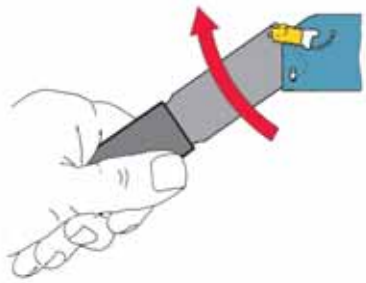
- V-prisms on both top and bottom enable higher clamping force to prevent insert movement, even when cutting at high-feed rates.
- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Positive rake cutting action combined with Kennametal's high-performance PVD coatings result in superior tool life and chip control.

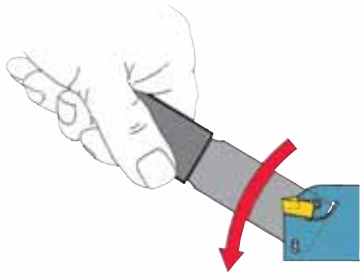
A2™ Insert Stop Design

- As cutting forces increase, clamping forces also increase for secure holding power.
- Fixed insert stop ensures solid seating with every index and delivers up to 30% longer life.
- Cutting height is accurately controlled for maximum reliability and performance on even small-diameter parts.





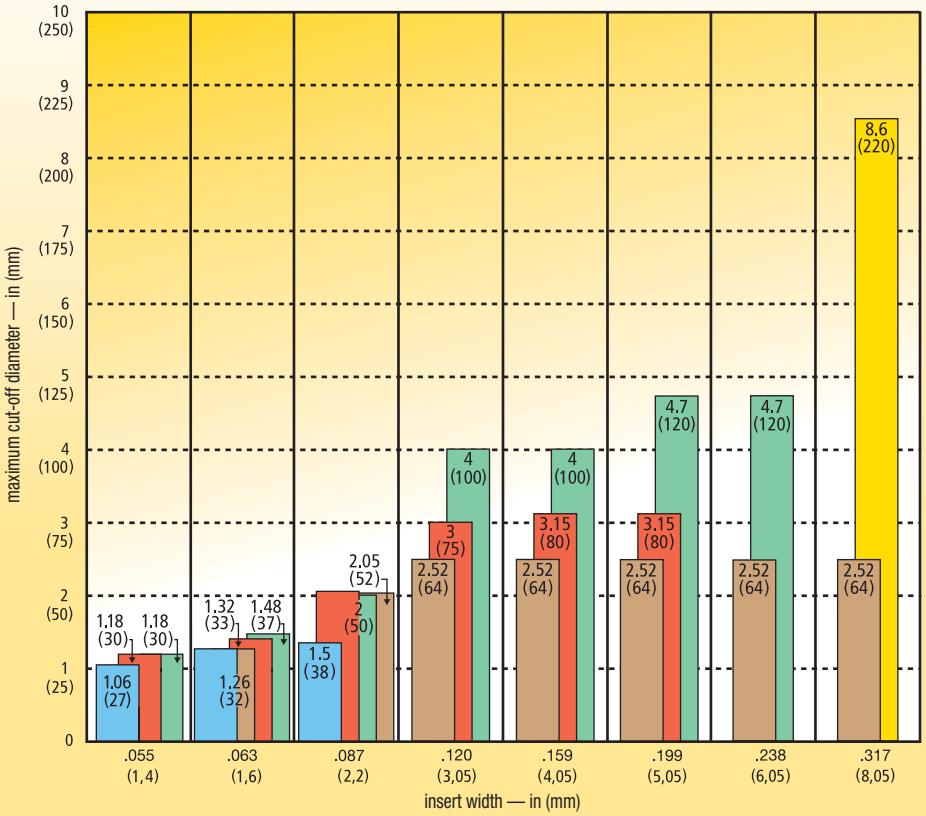




Quick and Easy Insert Indexing

- A convenient indexing wrench is available to minimise downtime by enabling fast removal and insertion without damage to the cutting edge.

Step 1 • Select insert width and holder type



blade height
19mm
26mm
32mm
52mm

Integral Shank Toolholders

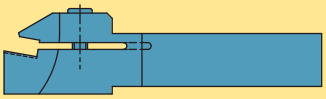
What you need to know:

- Cut-off diameter.
- Part/machine requirements.

For required cut-off diameter, select insert width and holder type based on the part and machine requirement:

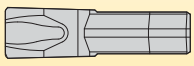
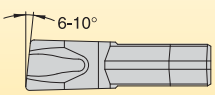
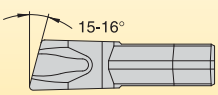
- To maximise rigidity, select the largest possible blade height or an integral shank toolholder.
- Diameters shown are for cut-off to centre. Maximum cut-off depth to a through-hole depth is one half of the diameter.
- To determine depth capability for cut-off to a through-hole on integral shank or reinforced blades, please refer to listing for that tool in this catalogue.

Toolholder Type

blade: (self-clamping)	**blade: (self-clamping, reinforced version)**	**toolholder: (with clamping screw)**
	Available in 26mm and 32mm heights	
• Frequently used tool. • Two insert seats. • Deepest depth-of-cut capability.	• Efficient tooling solution with improved stability. • Limited depth-of-cut capability.	• Shank tool with the highest stability. • Limited depth of cut. • Single insert seat.

Step 2 • Select the insert lead angle

- Part type.
- Burr and centre stub considerations.
- Cut-off to centre or through hole.

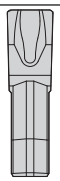
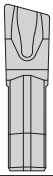
	neutral (0°)	**right/left 6–10°**	**right/left 15–16°**
insert type			
recommended application	• For cutting off solid workpieces. • Centre stub will form on cut-off part. • Eliminates lateral deflection. • Best for deep cut-off depths.	• For cutting off solid workpieces with reduced formation of centre stub. • For cut-off to a through-hole with reduced burr.	• For thin-walled workpieces. • For cutting off small diameter workpieces with minimal burr or centre stub.
tool life	Best tool life	Better tool life	Good tool life

Step 3 • Select chipbreaker style and feed rate

- Lead angle or neutral insert.
- Workpiece material.

-CL Cut-Off Low Feed	-CF Cut-Off Fine	-CM Cut-Off Medium	-CR Cut-Off Rough
• Excellent chip evacuation in low feed applications. • Offers improved stability and rigidity in difficult-to-control applications.	• Cut-off insert with precision ground cutting edge for low feeds. • Curved cutting edge.	• Cut-off insert with precision moulded cutting edge for medium feeds. • Stabilised straight cutting edge.	• Cut-off insert with precision moulded cutting edge for higher feed rates. • Curved cutting edge.

Chipbreaker Style and Feed Rates • mm/rev

insert type	P	M	K	N	S	H
	N-CR 0,08–0,3	N-CF 0,05–0,12	N-CM 0,05–0,2	N-CF 0,05–0,18	N-CF 0,04–0,10	CBN available upon request
	N-CF 0,05–0,15	—	—	—	—	—
	N-CL 0,05–0,15	N-CL 0,05–0,12	—	N-CL 0,05–0,18	N-CL 0,04–0,10	—
	R/L-CR 0,05–0,12	R/L-CF 0,04–0,08	R/L-CM 0,05–0,12	R/L-CF 0,04–0,10	R/L-CF 0,04–0,08	CBN available upon request
	R/L-CF 0,04–0,08	—	—	—	—	—
	R/L-CL 0,04–0,08	R/L-CL 0,04–0,08	—	R/L-CL 0,04–0,10	R/L-CL 0,04–0,08	—

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • m/min

machining condition		workpiece material					
		P	M	K	N	S	H
Beyond™	high-performance, optimum conditions, higher speeds	KT315 395–625	KT315 230–560	KCU25/KC5025 265–560	KT315 600–1300	KCU25/KC5025 100–325	—
	first choice for general machining conditions	KCU25/KC5025 265–560	KCU25/KC5025 265–500	KCU25/KC5025 230–500	KCU25/KC5025 500–980	KCU25/KC5025 80–250	CBN available upon request
	unfavourable conditions, interrupted cuts, low speeds	KCU25/KC5025 200–325	KMF 135–265	KMF 80–265	KMF 200–600	KMF 30–80	—

Step 5 • Select insert and holder from catalogue page

NOTE: The insert seat size must match the seat size of your holder selection.

Example for A2 • Cut-Off

Material ..... low carbon steel
Workpiece diameter 27mm
Depth of cut 4mm

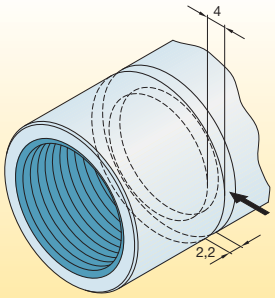
Recommendation

Insert A2022R10CF00
Grade KC5025
Cutting width 2,2mm
Insert seat size 2

Toolholder A2BNSN3202
Seat size 2

Congratulations!

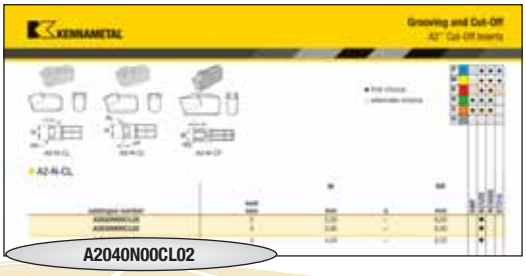
You have successfully maximised cut-off productivity by selecting the best insert, toolholder, grade, and cutting specifications for your application!



Speed: 140 m/min
Feed: 0,05 mm/rev

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A2 — Insert Type

A2 = Cut-Off

040 — Cutting Width

(in 1/10mm)

cutting width (mm)	pocket seat size
1,40	1B
1,60	01
2,20	02
3,05	03
4,05	04
5,05	05
6,05	06
8,05	08

N — Hand of Insert

N = Neutral
R = Right hand
L = Left hand

00 — Approach Angle of Main Cutting Edge

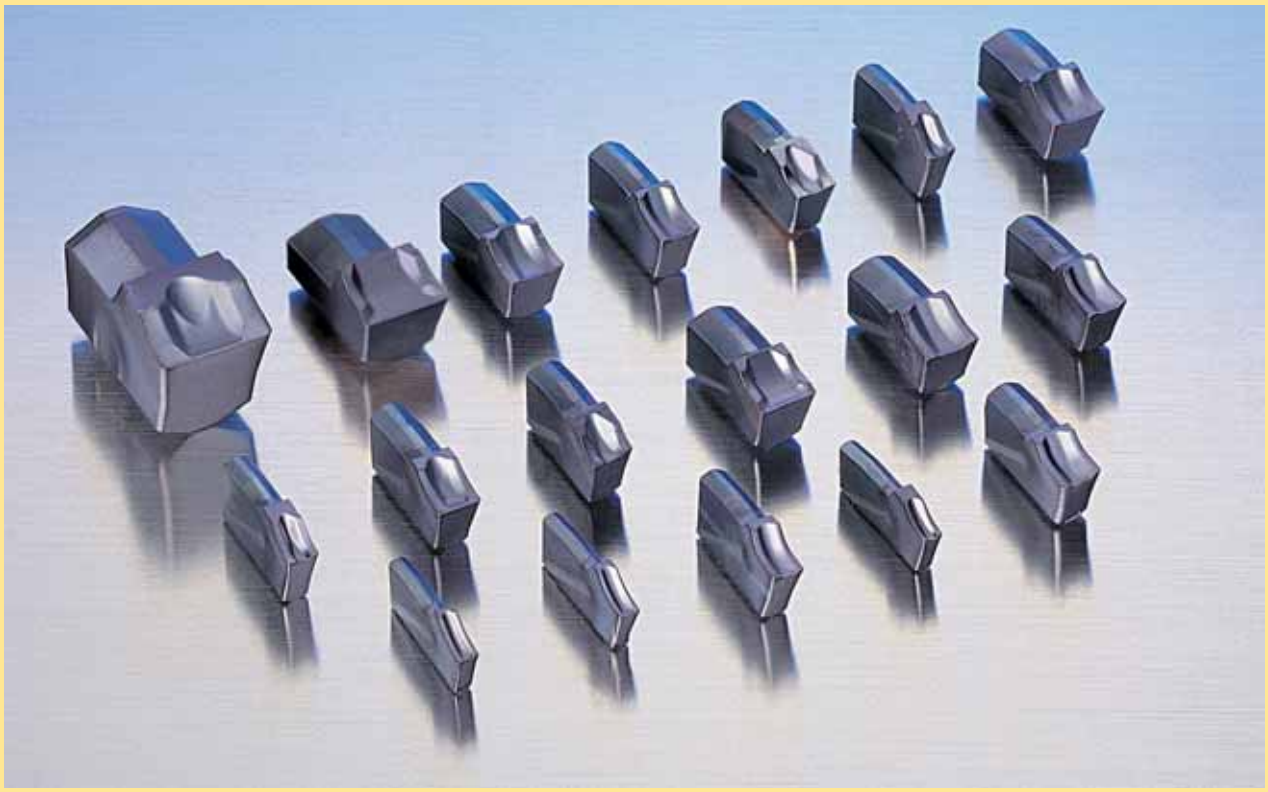
00 = neutral
06 = 6°
10 = 10°
15 = 15°
16 = 16°

CL — Chipbreaker

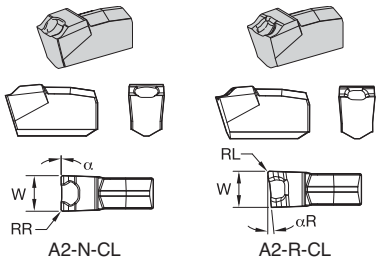
-CF
(**Cut-Off F**ine)
-CM
(**Cut-Off M**edium)
-CR
(**Cut-Off R**ough)
-CL
(**Cut-Off L**ow Feed)

02 — Corner Radius

	mm
00	0,0
01	0,1
02	0,2
03	0,3
04	0,4



With more than 140 insert line items in four grades and four chipbreaker styles, Kennametal offers a complete line of inserts designed to productively handle any cut-off application.



● first choice
○ alternate choice

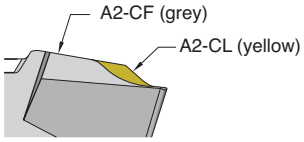
		KMF	KCU25	KC5025	KT315
P		○	●	●	●
M		○	●	●	●
K		○	●	●	○
N		●	●	●	
S		●	●	●	
H					

A2-N-CL

catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2022N00CL02	2	2,20	–	0,20		●		
A2030N00CL02	3	3,05	–	0,20		●		
A2040N00CL02	4	4,05	–	0,20		●		

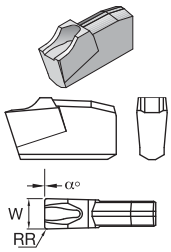
A2-R-CL

catalogue number	seat size	W mm	αR	RL mm	KMF	KCU25	KC5025	KT315
right hand								
A2016R16CL01	1	1,60	16	0,15		●		
A2022R06CL02	2	2,20	6	0,20		●		
A2030R06CL02	3	3,05	6	0,20		●		
A2040R06CL02	4	4,05	6	0,20		●		

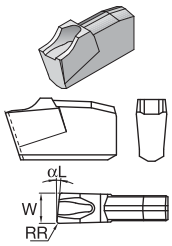


Tolerance on "W" Dimension
metric

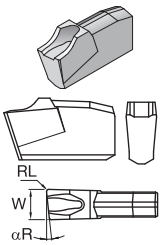
width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00



A2-N-CF



A2-L-CF



A2-R-CF

● first choice
○ alternate choice

P	○	●	●	●	
M	○	●	●	●	
K	○	●	●	○	
N	●	●	●		
S	●	●	●		
H					

A2-N-CF

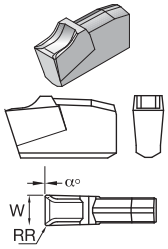
catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2014N00CF01	1B	1,40	–	0,15		●	●	
A2016N00CF00	1	1,55	–	–		●	●	
A2016N00CF01	1	1,60	–	0,15	●	●	●	●
A2022N00CF00	2	2,20	–	–		●	●	
A2022N00CF02	2	2,20	–	0,20	●	●	●	●
A2030N00CF02	3	3,00	–	0,20	●	●	●	●
A2030N00CF00	3	3,10	–	–		●	●	
A2040N00CF02	4	4,00	–	0,20	●	●	●	●
A2040N00CF00	4	4,05	–	–		●	●	
A2050N00CF03	5	5,00	–	0,30	●	●	●	

A2-L-CF

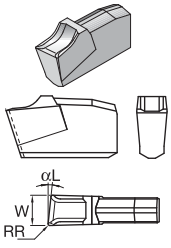
catalogue number	seat size	W mm	αL	RR mm				
left hand								
A2014L06CF01	1B	1,40	6	0,15		●	●	
A2016L06CF00	1	1,60	6	–		●	●	
A2016L10CF00	1	1,60	10	–		●	●	
A2016L16CF00	1	1,60	16	–		●	●	
A2022L06CF02	2	2,20	6	0,20		●	●	
A2022L10CF00	2	2,20	10	–		●	●	
A2022L16CF00	2	2,20	16	–		●	●	
A2030L06CF02	3	3,00	6	0,20	●	●	●	●
A2030L10CF00	3	3,00	10	–		●	●	
A2030L15CF00	3	3,00	15	–		●	●	
A2040L06CF02	4	4,00	6	0,20		●	●	
A2050L06CF03	5	5,00	6	0,30		●	●	

A2-R-CF

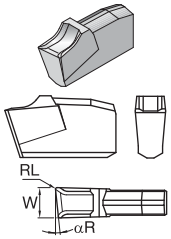
catalogue number	seat size	W mm	αR	RL mm				
right hand								
A2014R06CF01	1B	1,40	6	0,15		●	●	
A2016R06CF00	1	1,60	6	–	●	●	●	
A2016R10CF00	1	1,60	10	–		●	●	
A2016R16CF00	1	1,60	16	–		●	●	
A2022R06CF02	2	2,20	6	0,20	●	●	●	●
A2022R10CF00	2	2,20	10	–		●	●	
A2022R16CF00	2	2,20	16	–		●	●	
A2030R06CF02	3	3,00	6	0,20	●	●	●	●
A2030R10CF00	3	3,00	10	–		●	●	
A2030R15CF00	3	3,00	15	–		●	●	
A2040R06CF02	4	4,00	6	0,20		●	●	
A2050R06CF03	5	5,00	6	0,30		●	●	



A2-N-CM



A2-L-CM



A2-R-CM

● first choice
○ alternate choice

P	○	●	●	●	
M	○	●	●	●	
K	○	●	●	○	
N	●	●	●		
S	●	●	●		
H					

A2-N-CM

catalogue number	seat size	W mm	W α	RR mm	KMF	KCU25	KC5025	KT315
A2014N00CM01	1B	1,40	–	0,15		●	●	
A2016N00CM01	1	1,60	–	0,10		●	●	●
A2022N00CM02	2	2,20	–	0,20		●	●	
A2030N00CM02	3	3,00	–	0,20		●	●	
A2040N00CM02	4	4,00	–	0,20		●	●	
A2050N00CM03	5	5,00	–	0,30		●	●	
A2060N00CM03	6	6,00	–	0,30		●	●	
A2080N00CM04	8	8,00	–	0,40		●	●	

A2-L-CM

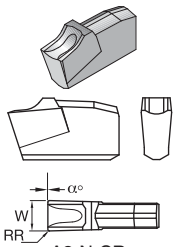
catalogue number	seat size	W mm	W αL	RR mm	KMF	KCU25	KC5025	KT315
left hand								
A2016L06CM00	1	1,60	6	–		●	●	
A2016L16CM00	1	1,60	16	–		●	●	
A2022L06CM00	2	2,20	6	–		●	●	
A2030L06CM01	3	3,00	6	0,10		●	●	

A2-R-CM

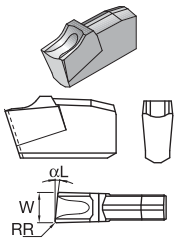
catalogue number	seat size	W mm	W αR	RL mm	KMF	KCU25	KC5025	KT315
right hand								
A2016R06CM00	1	1,60	6	–		●	●	
A2016R16CM00	1	1,60	16	–		●	●	
A2022R06CM00	2	2,20	6	–		●	●	
A2030R06CM01	3	3,00	6	0,10		●	●	

Tolerance on "W" Dimension
metric

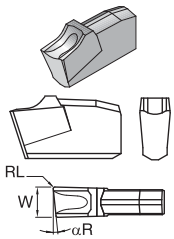
width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00



A2-N-CR



A2-L-CR



A2-R-CR

● first choice
○ alternate choice

P	○	●	●	●	
M	○	●	●	●	
K	○	●	●	○	
N	●	●	●		
S	●	●	●		
H					

A2-N-CR

catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2022N00CR02	2	2,20	–	0,20		●	●	●
A2030N00CR02	3	3,00	–	0,20		●	●	●
A2040N00CR02	4	4,00	–	0,20		●	●	●
A2050N00CR03	5	5,00	–	0,30		●	●	
A2060N00CR03	6	6,00	–	0,30		●	●	
A2080N00CR04	8	8,00	–	0,40		●	●	

A2-L-CR

catalogue number	seat size	W mm	αL	RR mm				
left hand								
A2022L06CR03	2	2,20	6	0,30		●	●	
A2030L06CR03	3	3,00	6	0,30		●	●	
A2040L06CR03	4	4,00	6	0,30		●	●	
A2050L06CR04	5	5,00	6	0,40		●	●	

A2-R-CR

catalogue number	seat size	W mm	αR	RL mm				
right hand								
A2022R06CR03	2	2,20	6	0,30		●	●	
A2030R06CR03	3	3,00	6	0,30		●	●	
A2040R06CR03	4	4,00	6	0,30		●	●	
A2050R06CR04	5	5,00	6	0,40		●	●	
A2060R06CR04	6	6,00	6	0,40		●	●	

Tolerance on "W" Dimension
metric

width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00

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KENNAMETAL

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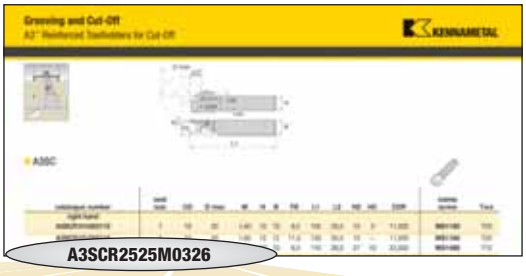


A3	S	C	R	2525M	03	26
A3 Screw-Clamp Holder*	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max. Cutting Depth
	S = Straight		**R** = Right **L** = Left			in millimeters

pocket seat size	cutting width (mm)
01	1,60
02	2,20
03	3,05
04	4,05
05	5,05
06	6,05
08	8,05

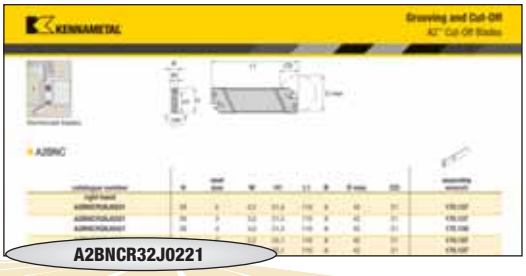
*NOTE:
A3™ screw-clamp O.D. holders are also designed to hold A2 inserts

S = Standard (straight clearance)
M = Max support (straight clearance)
C = Reinforced max support (circular clearance)

Metric:
Height x width in mm, letter indicates tool length according to ISO (see table in tool block identification system on the next page)

How Do Catalogue Numbers Work?

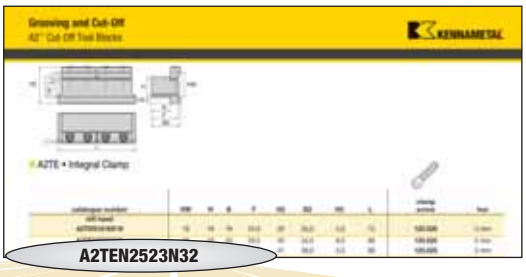
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A2BNCR32J0221

Cut-Off • Blades

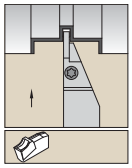
A2	BN	C	R	32	J	02	21
A2 Cut-Off Blade	Tool Style	Support Style	Hand of Tool	Blade Size	Overall Length	Seat Size	Max. Cutting Depth
	BN = 2 pocket blade **BH** = 1 pocket blade	**S** = Standard **C** = Reinforced	**R** = Right **L** = Left **N** = Neutral	in (mm) 19/26/32/52	Letter designation according to ISO (see table in tool block identification system below) **G** = 90mm **J** = 110mm **M** = 150mm **X** = Special	**1B** = 1,40mm **01** = 1,60mm **02** = 2,20mm **03** = 3,05mm **04** = 4,05mm **05** = 5,05mm **06** = 6,05mm **08** = 8,05mm	in (mm) (reinforced blade only)

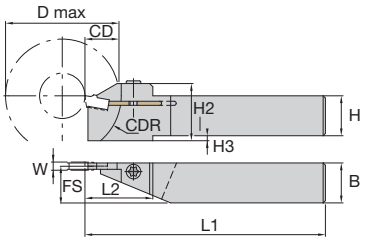


A2TEN2523N32

Cut-Off • Tool Blocks

A2	T	E	N	25	23	N	32
A2 Cut-Off	Tool Block	Clamping Style	Hand of Tool	Shank Height	Shank Width	Tool Length in (mm)	Blade Size
		E = Integral clamp **Z** = Removable clamp	**R** = Right **L** = Left **N** = Neutral	in millimeters	in millimeters	**J** = 110 **X** = Other length	in millimeters



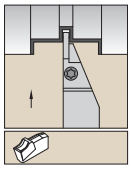


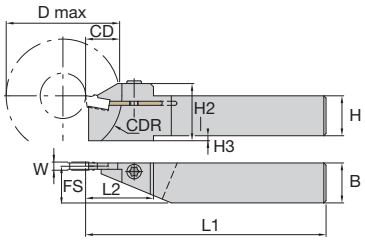
A3SC

catalogue number	seat size	CD	D max	W	H	B	FS	L1	L2	H2	H3	CDR	clamp screw	Torx
right hand														
A3SCR1010X0110	1	10	20	1,60	10	10	9,3	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0110	1	10	20	1,60	12	12	11,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1010J0116	1	16	42	1,60	10	10	9,3	110	28,0	27	10	22,000	**MS1488**	T15
A3SCR1212J0116	1	16	42	1,60	12	12	11,3	110	30,0	27	8	22,000	**MS1944**	T25
A3SCR1616J0116	1	16	42	1,60	16	16	15,3	110	30,0	27	4	22,000	**MS1944**	T25
A3SCR2020K0116	1	16	42	1,60	20	20	19,3	125	30,0	27	–	22,000	**MS1944**	T25
A3SCR1010X0210	2	10	20	2,20	10	10	9,1	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0210	2	10	20	2,20	12	12	11,1	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1212J0216	2	16	42	2,20	12	12	11,1	110	30,0	27	8	22,000	**MS1944**	T25
A3SCR1616J0216	2	16	42	2,20	16	16	15,1	110	30,0	27	4	22,000	**MS1944**	T25
A3SCR2020K0216	2	16	42	2,20	20	20	19,1	125	30,0	27	–	22,000	**MS1944**	T25
A3SCR2525M0226	2	26	62	2,20	25	25	24,1	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR1010X0310	3	10	20	3,00	10	10	8,8	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0310	3	10	20	3,00	12	12	10,8	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1212J0316	3	16	52	3,00	12	12	10,8	110	30,0	27	8	27,000	**MS1944**	T25
A3SCR1616J0316	3	16	52	3,00	16	16	14,8	110	30,0	27	4	27,000	**MS1944**	T25
A3SCR2020K0316	3	16	52	3,00	20	20	18,8	125	30,0	27	–	27,000	**MS1944**	T25
A3SCR2525M0316	3	16	62	3,00	25	25	23,8	150	30,0	32	–	32,000	**MS1944**	T25
A3SCR2020K0326	3	26	62	3,00	20	20	18,8	125	42,0	27	–	32,000	**MS1595**	T30
A3SCR2525M0326	3	26	62	3,00	25	25	23,8	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR3225P0332	3	32	62	3,00	32	25	23,8	170	52,0	43	4	32,000	**MS1595**	T30
A3SCR1212X0410	4	10	20	4,00	12	12	10,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1616J0416	4	16	52	4,00	16	16	14,3	110	30,0	27	4	27,000	**MS1944**	T25
A3SCR2020K0416	4	16	52	4,00	20	20	18,3	125	30,0	27	–	27,000	**MS1944**	T25
A3SCR2525M0416	4	16	62	4,00	25	25	23,3	150	30,0	32	–	32,000	**MS1944**	T25
A3SCR2020K0426	4	26	62	4,00	20	20	18,3	125	42,0	27	–	32,000	**MS1595**	T30
A3SCR2525M0426	4	26	62	4,00	25	25	23,3	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR3225P0432	4	32	62	4,00	32	25	23,3	170	52,0	43	4	32,000	**MS1595**	T30

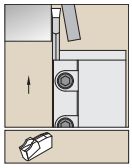
(continued)

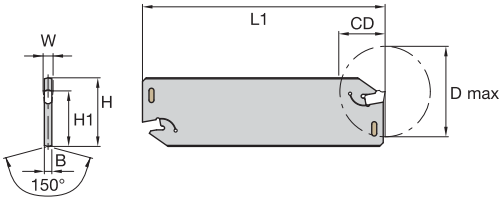
(A3SC continued)





catalogue number	seat size	CD	D max	W	H	B	FS	L1	L2	H2	H3	CDR	clamp screw	Torx
left hand														
A3SCL0808X0110	1	10	20	1,60	8	8	7,3	130	20,0	15	4	11,000	**191.916**	T15
A3SCL1010X0110	1	10	20	1,60	10	10	9,3	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0110	1	10	20	1,60	12	12	11,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1010J0116	1	16	42	1,60	10	10	9,3	110	28,0	27	10	22,000	**MS1488**	T15
A3SCL1212J0116	1	16	42	1,60	12	12	11,3	110	30,0	27	8	22,000	**MS1944**	T25
A3SCL1616J0116	1	16	42	1,60	16	16	15,3	110	30,0	27	4	22,000	**MS1944**	T25
A3SCL2020K0116	1	16	42	1,60	20	20	19,3	125	30,0	27	–	22,000	**MS1944**	T25
A3SCL1010X0210	2	10	20	2,20	10	10	9,1	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0210	2	10	20	2,20	12	12	11,1	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1212J0216	2	16	42	2,20	12	12	11,1	110	30,0	27	8	22,000	**MS1944**	T25
A3SCL1616J0216	2	16	42	2,20	16	16	15,1	110	30,0	27	4	22,000	**MS1944**	T25
A3SCL2020K0216	2	16	42	2,20	20	20	19,1	125	30,0	27	–	22,000	**MS1944**	T25
A3SCL2525M0226	2	26	62	2,20	25	25	24,1	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL1010X0310	3	10	20	3,00	10	10	8,8	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0310	3	10	20	3,00	12	12	10,8	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1212J0316	3	16	52	3,00	12	12	10,8	110	30,0	27	8	27,000	**MS1944**	T25
A3SCL1616J0316	3	16	52	3,00	16	16	14,8	110	30,0	27	4	27,000	**MS1944**	T25
A3SCL2020K0316	3	16	52	3,00	20	20	18,8	125	30,0	27	–	27,000	**MS1944**	T25
A3SCL2525M0316	3	16	62	3,00	25	25	23,8	150	30,0	32	–	32,000	**MS1944**	T25
A3SCL2020K0326	3	26	62	3,00	20	20	18,8	125	42,0	27	–	32,000	**MS1595**	T30
A3SCL2525M0326	3	26	62	3,00	25	25	23,8	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL3225P0332	3	32	62	3,00	32	25	23,8	170	52,0	43	4	32,000	**MS1595**	T30
A3SCL1212X0410	4	10	20	4,00	12	12	10,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1616J0416	4	16	52	4,00	16	16	14,3	110	30,0	27	4	27,000	**MS1944**	T25
A3SCL2020K0416	4	16	52	4,00	20	20	18,3	125	30,0	27	–	27,000	**MS1944**	T25
A3SCL2525M0416	4	16	62	4,00	25	25	23,3	150	30,0	32	–	32,000	**MS1944**	T25
A3SCL2020K0426	4	26	62	4,00	20	20	18,3	125	42,0	27	–	32,000	**MS1595**	T30
A3SCL2525M0426	4	26	62	4,00	25	25	23,3	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL3225P0432	4	32	62	4,00	32	25	23,3	170	52,0	43	4	32,000	**MS1595**	T30

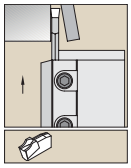




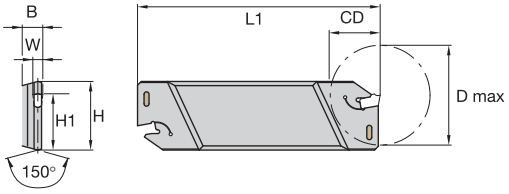
A2BNSN

catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
left hand									
A2BNSN19X1B13	19	1B	1,4	15,5	86	2	27	14	**170.137**
A2BNSN19X0116	19	1	1,6	15,5	86	2	30	16	**170.137**
A2BNSN19X02	19	2	2,2	15,5	86	2	–	20	**170.137**
A2BNSN26G1B15	26	1B	1,4	21,5	90	2	30	15	**170.137**
A2BNSN26J1B15	26	1B	1,4	21,5	110	2	30	15	**170.137**
A2BNSN26J0117	26	1	1,6	21,5	110	2	34	17	**170.137**
A2BNSN26M02	26	2	2,2	21,5	150	2	–	25	**170.137**
A2BNSN26G02	26	2	2,2	21,5	90	2	–	25	**170.137**
A2BNSN26J02	26	2	2,2	21,5	110	2	–	25	**170.137**
A2BNSN26M03	26	3	3,0	21,5	150	2	–	40	**170.137**
A2BNSN26J03	26	3	3,0	21,5	110	2	–	40	**170.137**
A2BNSN26G03	26	3	3,0	21,5	90	2	–	40	**170.137**
A2BNSN26J04	26	4	4,0	21,5	110	3	–	40	**170.137**
A2BNSN26J05	26	5	5,0	21,4	110	4	–	40	**170.130**
A2BNSN26J06	26	6	6,0	21,4	110	5	–	40	**170.130**
A2BNSN32M1B15	32	1B	1,4	25,1	150	2	30	15	**170.137**
A2BNSN32M0119	32	1	1,6	25,1	150	2	38	19	**170.137**
A2BNSN32M02	32	2	2,2	25,1	150	2	–	60	**170.137**
A2BNSN32H03	32	3	3,0	25,1	100	2	–	50	**170.137**
A2BNSN32M03	32	3	3,0	25,1	150	2	–	50	**170.137**
A2BNSN32M04	32	4	4,0	25,1	150	3	–	50	**170.137**
A2BNSN32M05	32	5	5,0	25,0	150	4	–	60	**170.130**
A2BNSN32M06	32	6	6,0	25,0	150	5	–	60	**170.130**
A2BNSN52X08	52	8	8,0	45,2	260	7	–	120	**170.132**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.



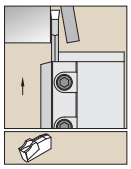
Reinforced blades.

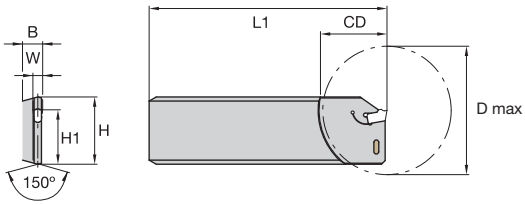


A2BNC

catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BNCR26J0221	26	2	2,2	21,5	110	8	42	21	**170.137**
A2BNCR26J0321	26	3	3,0	21,5	110	8	42	21	**170.137**
A2BNCR26J0421	26	4	4,0	21,5	110	8	42	21	**170.130**
A2BNCR32J0221	32	2	2,2	25,1	110	8	42	21	**170.137**
A2BNCR32J0321	32	3	3,0	25,1	110	8	42	21	**170.137**
left hand									
A2BNCL26J0221	26	2	2,2	21,5	110	8	42	21	**170.137**
A2BNCL26J0321	26	3	3,0	21,5	110	8	42	21	**170.137**
A2BNCL26J0421	26	4	4,0	21,5	110	8	42	21	**170.130**
A2BNCL32J0221	32	2	2,2	25,1	110	8	42	21	**170.137**
A2BNCL32J0321	32	3	3,0	25,1	110	8	42	21	**170.137**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
Size 19 blades require careful insert installation using a plastic hammer.

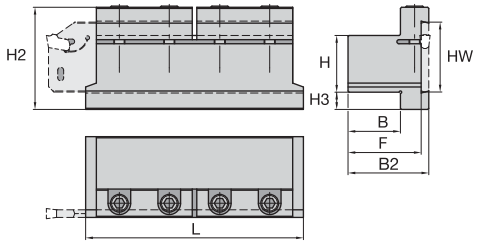




A2BHC

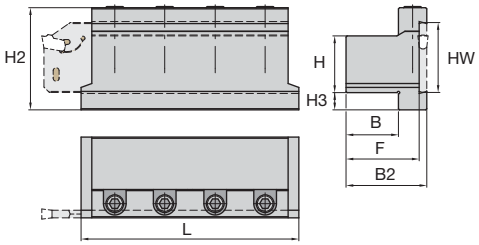
catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BHCR32K0333	32	3	3,0	25,1	125	8	66	33	**170.137**
A2BHCR32K0433	32	4	4,0	25,1	125	8	66	33	**170.137**
left hand									
A2BHCL32K0333	32	3	3,0	25,1	125	8	66	33	**170.137**
A2BHCL32K0433	32	4	4,0	25,1	125	8	66	33	**170.137**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
170.130 is designed for the larger cutting widths size 4–6. It has two small pins on one side — these are designed to remove the insert only. On the opposite side, there is a large pin and a rotating tang — these are designed to assemble the insert into the pocket. The large pin and tang are a better design for assembling the larger inserts because the smaller insertion pins will bend or break if used repeatedly for assembly.
170.137 is designed for the smaller widths below 4mm. It has only the two small pins that are used for both assembly and removal.
When using the smallest 1,4mm and 1,6mm cut-off blades, please note that the wrench can only be used to remove the insert.
The insert must be installed by tapping the edge of the insert with a plastic hammer.



A2TE • Integral Clamp

catalogue number	HW	H	B	F	H2	B2	H3	L	clamp screw	hex
left hand										
A2TEN1616X19	19	16	16	24,0	30	26,0	4,0	75	**125.520**	4 mm
A2TEN2020X26	26	20	20	29,5	40	34,0	8,0	86	**125.625**	5 mm
A2TEN2523X26	26	25	23	33,5	41	38,0	3,0	86	**125.625**	5 mm
A2TEN2020J32	32	20	20	30,5	48	36,0	13,0	110	**125.630**	5 mm
A2TEN2520J32	32	25	20	30,5	48	36,0	8,0	110	**125.630**	5 mm
A2TEN3228J32	32	32	28	38,5	50	44,0	3,0	110	**125.630**	5 mm
A2TEN4038J32	32	40	38	48,5	59	54,0	4,0	110	**125.630**	5 mm
A2TEN4035X52	53	40	35	50,0	80	58,0	20,0	135	**125.835**	6 mm
A2TEN5038X52	53	50	38	51,0	80	59,0	9,0	135	**125.835**	6 mm



A2TZ • Removable Clamp

catalogue number	HW	H	B	F	H2	B2	H3	L	clamp	clamp screw	hex
left hand											
A2TZN2019X26	26	20	19	33,5	44	38,0	9,0	86	**168.682**	**125.616**	5 mm
A2TZN2523J32	32	25	23	34,5	48	40,0	8,0	110	**168.936**	**125.616**	5 mm
A2TZN3225J32	32	32	25	36,5	50	42,0	3,0	110	**168.936**	**125.616**	5 mm

Definitions and Guidelines

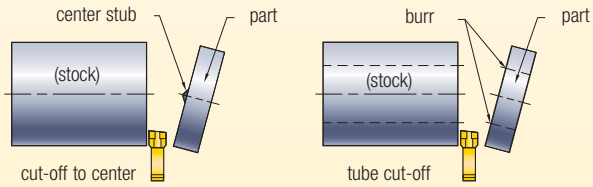
1. Width of cut (W) = width of the insert.

2. Lead angle = 0° (neutral); 4°, 5°, 12°, 18° (RH or LH).

Reduce burr of cut-off faces:

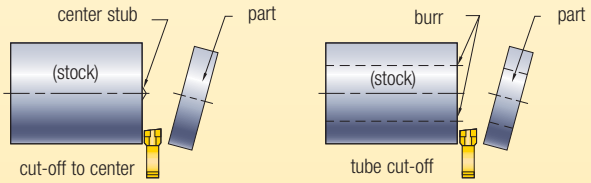
- Use lead angle-type inserts (Figures 1 and 2). Lead angle on a cut-off insert reduces the burr that remains on the part but decreases tool life and increases tool-side deflection and possibly cycle time.

Figure 1
Insert selection **left-hand lead**



Left-hand lead insert leaves center stub or burr on part and produces clean stock surface.

Figure 2
Insert selection **right-hand lead**

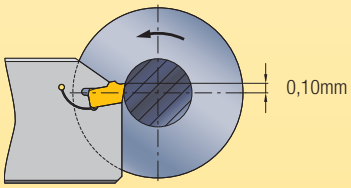


Right-hand lead insert leaves center stub or burr on stock and produces clean part surface.

- Check total height and maintain on center with part diameter.

- The cutting edge height should be within ±0,1mm to the center; recommended cutting position is 0,05mm above center.

Figure 3
Above center



- If 0° lead angle is mandatory, use the narrowest possible cut-off insert and blade. This will minimise the center stub or cut-off burr length. Decrease the feed rate to maximum 0,05mm or less at the point where diameter equals insert width.

- On tubing-type parts that require a chamfer on the ID, align ID chamfer tool with cut-off surface. This will enable the chamfering operation to actually separate the part from the bar (see Figure 4). Note the part may drop onto the chamfering bar, which, in this case, will act like a catcher for the part.

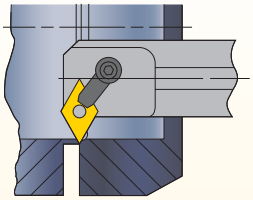


Figure 4
Internal chamfer line up

Improve surface finish of cut-off faces:

- Use insert with 0° lead angle.

- Increase coolant flow or improve application technique, as shown in Figure 5.

- Decrease the feed rate near the break-through point of the cut.

- Check that the grooving tool is set at the correct angle.

- Use blades with the greatest possible face height and smallest possible cutting width.

- Increase the speed.

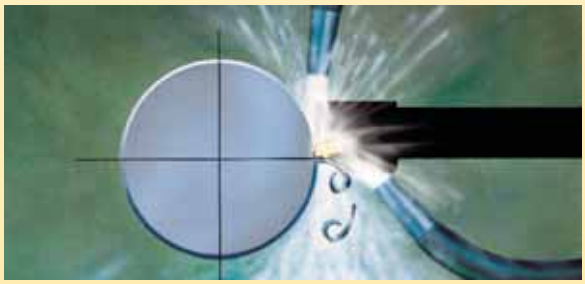


Figure 5
Preferred method for applying coolant

- Mount cut-off tool upside down. This enables gravity to remove chips and avoid cutting the chips twice. Another benefit of mounting the tool upside down is preventing chips from wedging between the tool insert and the groove side walls, which galls the side wall surfaces.

A3™ Deep Grooving Is the Best Choice for High Productivity — with Outstanding Application Flexibility!

Primary Application

The A3 System is designed specifically for deep grooving operations. The A3 platform enables customers to reach deeper depths while maintaining chip control and tool rigidity.

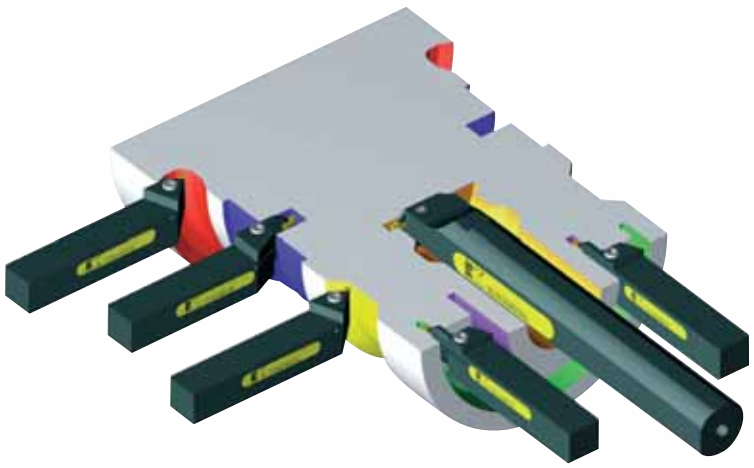
Features and Benefits

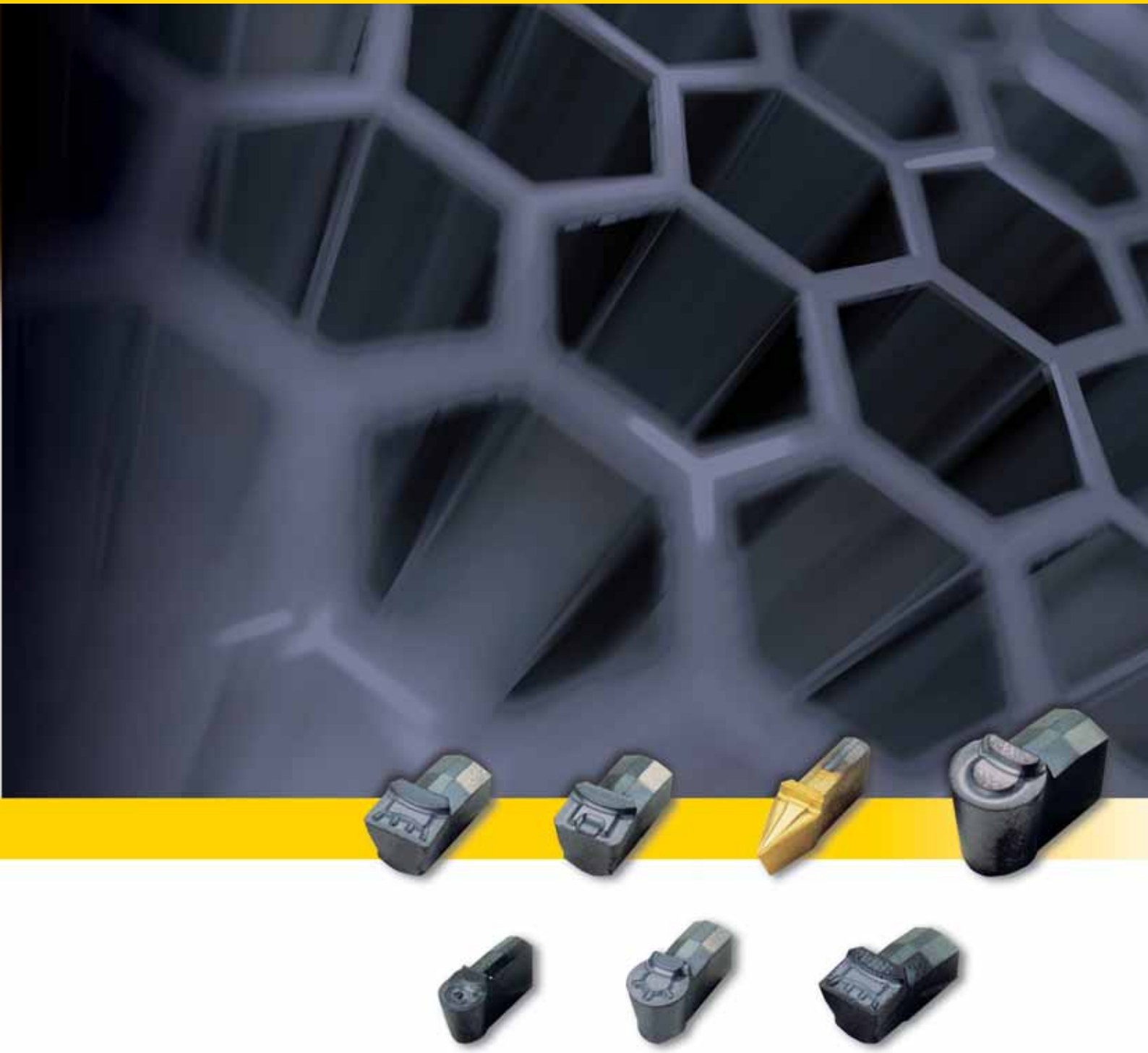
Performance

- One insert performs:
  - O.D. operations
  - I.D. operations
  - Face grooving operations
- In addition, the A3 system's performance is enhanced by:
  - Beyond™ CVD grades
  - The Beyond Tooling Selection System

Compatibility

- A3 deep grooving tooling is compatible with square shank, KM™, and Kennametal Capto® platforms.





Step 1 • Select system based on the groove depth required

What you need to know:

- Groove depth, width, and profile.
- Material to be machined.
- Application to be performed (face, O.D., or I.D. grooving).
- Toolholder requirements (e.g., KM™, square shank, right/left).

Top Notch™

Grooving
For grooving depth ≤1,5x grooving width, see Top Notch grooving, page D112.

A3™ or A4™

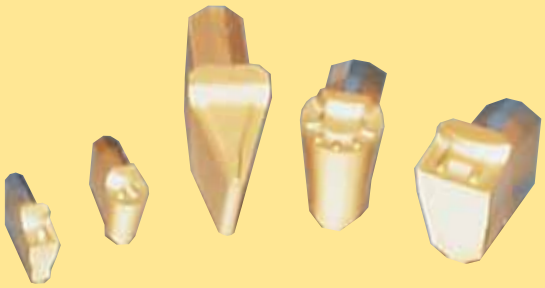
Deep Grooving
For grooving depth ≥1,5x grooving width, proceed to Step 2 for the A3 Deep Grooving program or see A4 Grooving and Turning program on page D62.

A3 Deep Grooving for Deep Internal, External, and Face Grooving Applications

System Capabilities

groove	min	max
width	2,25mm	10,05mm
depth	—	32mm

Face grooving diameter range 25mm to ∞



Step 2 • Select toolholder based on the application

NOTE: Toolholders are available as conventional square shank versions as well as quick-change versions. Please select equal seat sizes for the insert and the toolholder.

I.D. grooving applications.....see page D44
Face grooving with integral square shank toolholders .....see page D38
O.D. grooving with integral square shank toolholders .....see page D36
Face and O.D. grooving with modular toolholders .....see pages D48–D57

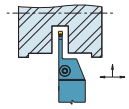
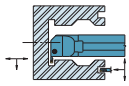
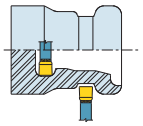
Step 3 • Select chipbreaker style and feed rate

DF — Deep Finishing	DM — Deep Medium	DR — Deep Roughing

(continued)

(continued)

Chipbreaker and Feed Rates • mm/rev

workpiece material and application	P	M	K	N	S	H
 deep O.D. grooving	DM 0,05–0,25	DF 0,05–0,15	DM 0,05–0,23	DF 0,05–0,25	DF 0,05–0,13	CBN tip on request 0,05–0,10
	DF 0,05–0,18	—	—	—	—	—
 face and I.D. grooving	DF 0,05–0,15	DF 0,05–0,13	DM 0,05–0,18	DF 0,05–0,18	DF 0,04–0,10	CBN tip on request 0,05–0,10
	—	—	DF 0,05–0,15	—	—	—
 profiling*	DR 0,10–0,40	DF 0,05–0,25	DR 0,10–0,40	DF 0,05–0,25	DF 0,05–0,25	CBN tip on request 0,05–0,10
	DF 0,05–0,25	—	—	—	—	—

*For profiling, the maximum recommended depth of cut is 1/3 the insert width.

NOTE: Use minimum feed rates for narrower grooves and heavier feed rates for wider grooves. Increase feed rate as operation allows.

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • m/min

machining condition	workpiece material P	M	K	N	S	H
high-performance for optimal conditions (clean cuts, good machine condition, higher speed capability)	KT315 330–750	KT315 230–560	KCU10/KC5010 230–720	KCU10/KC5010 590–2800	KCU10/KC5010 35–360	KB5625* 390–500
	KC9110 360–720	—	—	—	—	—
general purpose (first choice for general machining)	KCU10/KC5010 200–525	KCU10/KC5010 160–450	KCU25/KC5025 230–500	KCU10/KC5010 500–2400	KCU25/KC5025 35–200	KB5625* 260–425
unfavourable conditions (roughing, poor machine condition, interrupted cuts, low speed)	KCU25/KC5025 160–360	KCU25/KC5025 130–300	KCU25/KC5025 80–450	KCU25/KC5025 200–1000	KCU25/KC5025 35–150	KCU10/KC5010 35–115
	—	—	—	KMF 200–650	KMF 35–100	—

*NOTE: PCBN-tipped inserts in KB5625 are available on request.

Step 5 • Select insert and holder from catalogue page

NOTE: The insert seat size and cutting width must match the seat size and cutting width of your toolholder selection.

Example for A3 • Deep Grooving

Material ..... low-alloyed steel
Groove depth 12mm
Groove width 6,35mm
Smooth cut

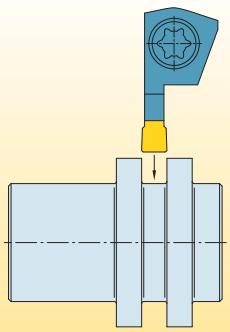
Recommendation

Insert A3G250I06P1DF
Grade KC5010
Insert width 6,35mm
Insert seat size 6

Toolholder A3SML2525M0616
Grooving depth 16mm
Seat size 2

Congratulations!

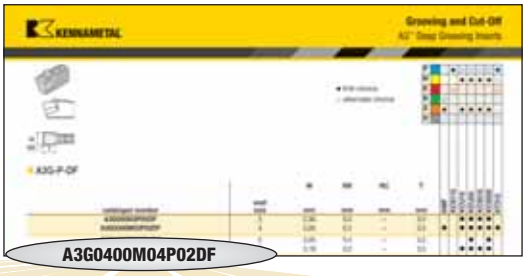
You have successfully maximised your productivity by selecting the best A3 insert geometry, grade, and cutting specifications for your application!



Speed: 180 m/min
Feed: 0,15 mm/rev

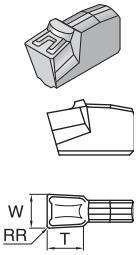
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A3	G	0400	M	04	P	02	DF
Type of Program	Insert Style	Groove Width	Units	Insert Size	Insert Tolerance	Corner Radii	Chipbreaker
A3 = Deep Grooving	**G** = Square **R** = Full radius **V** = V-style 35º	Expressed in 1/100mm 0000 for V shape	**M** = Metric	03 (*)3S 04 (*)4S 05 06 08 10	**P** = Precision ground grooving width tolerance: ±.001" (0,025mm) **U** = Utility moulded grooving width tolerance: 3,05-4,05: +0,15mm / -0 5,05-10,05: +0,15mm / -0	**metric** 01 02 04 08 12 16 **full radius = 00**	**DF** = Deep Finishing **DM** = Deep Medium **DR** = Deep Roughing

(*) 3S/4S designates a small size insert for face grooving of small diameters.



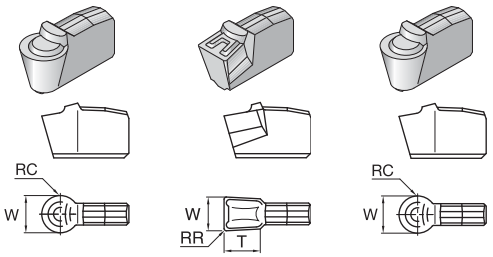
● first choice
○ alternate choice

P	●	○	○	○	○	○	●
M			●	●	●	●	○
K		○					○
N	○						
S	●		●	●	●	●	
H							

A3G-P-DF

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G093I03P05DF	3	2,36	0,2	–	3,5			●	●	●	●	
A3G0300M03P02DF	3	3,00	0,2	–	3,5	●		●	●	●	●	●
A3G0300M03P04DF	3	3,00	0,4	–	3,5				●		●	
A3G125I03P05DF	3	3,18	0,2	–	3,5			●	●	●	●	
A3G125I04P05DF	4	3,18	0,2	–	3,5	●		●	●	●	●	●
A3G0400M04P08DF	4	4,00	0,8	–	3,5				●		●	
A3G0400M04P02DF	4	4,00	0,2	–	3,5	●		●	●	●	●	
A3G0400M04P04DF	4	4,00	0,4	–	3,5	●	●	●	●	●	●	●
A3G187I05P05DF	5	4,75	0,2	–	4,5			●	●	●	●	
A3G0500M05P04DF	5	5,00	0,4	–	4,5	●	●	●	●	●	●	
A3G0500M05P02DF	5	5,00	0,2	–	4,5			●	●	●	●	
A3G0500M05P08DF	5	5,00	0,8	–	4,5				●		●	
A3G218I06P1DF	6	5,54	0,4	–	4,5			●	●	●	●	
A3G218I06P2DF	6	5,54	0,8	–	4,5				●	●	●	
A3G0600M06P08DF	6	6,00	0,8	–	4,5	●		●	●	●	●	
A3G0600M06P12DF	6	6,00	1,2	–	4,5				●		●	
A3G0600M06P04DF	6	6,00	0,4	–	4,5	●		●	●	●	●	
A3G250I06P2DF	6	6,35	0,8	–	4,5			●	●	●	●	
A3G250I06P1DF	6	6,35	0,4	–	4,5			●	●	●	●	
A3G250I08P2DF	8	6,35	0,8	–	6,0			●	●	●	●	
A3G250I08P1DF	8	6,35	0,4	–	6,0			●	●	●	●	
A3G312I08P1DF	8	7,93	0,4	–	6,0			●	●	●	●	
A3G312I08P2DF	8	7,93	0,8	–	6,0					●	●	
A3G0800M08P08DF	8	8,00	0,8	–	6,0			●	●	●	●	
A3G0800M08P04DF	8	8,00	0,4	–	6,0			●	●	●	●	

NOTE: RR=RL



A3R-P-DF A3G-P-DF A3R-P-DF

● first choice
○ alternate choice

P		●	○	○	○	○	●	
M			●	●	●	●	○	
K		○					○	
N	○							
S	●		●	●	●	●		
H								

A3R-P-DF

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R093I03P00DF	3	2,36	–	1,2	–			●	●	●	●	
A3R0300M03P00DF	3	3,00	–	1,5	–	●		●	●	●	●	●
A3R125I03P00DF	3	3,18	–	1,6	–			●	●	●	●	
A3R125I04P00DF	4	3,18	–	1,6	–	●		●	●	●	●	
A3R0400M04P00DF	4	4,00	–	2,0	–	●		●	●	●	●	
A3R187I05P00DF	5	4,75	–	2,4	–			●	●	●	●	
A3R0500M05P00DF	5	5,00	–	2,5	–			●	●	●	●	
A3R218I06P00DF	6	5,54	–	2,8	–			●	●	●	●	
A3R0600M06P00DF	6	6,00	–	3,0	–	●		●	●	●	●	
A3R250I06P00DF	6	6,35	–	3,2	–			●	●	●	●	
A3R250I08P00DF	8	6,35	–	3,2	–			●	●	●	●	
A3R312I08P00DF	8	7,93	–	4,0	–	●					●	
A3R0800M08P00DF	8	8,00	–	4,0	–				●		●	

A3G-P-DF • Face Grooving

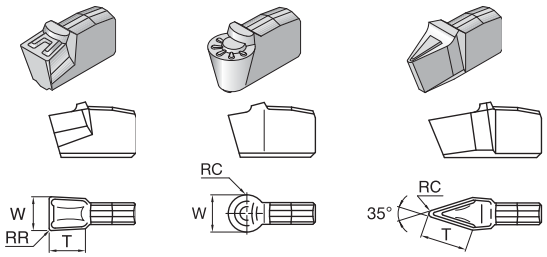
catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0300M3SP02DF	3S	3,00	0,2	–	3,5				●	●	●	
A3G0300M3SP04DF	3S	3,00	0,4	–	3,5			●	●	●	●	
A3G125I3SP05DF	3S	3,18	0,2	–	3,5						●	
A3G0400M4SP04DF	4S	4,00	0,4	–	3,5			●	●	●	●	
A3G0400M4SP02DF	4S	4,00	0,2	–	3,5			●	●	●	●	
A3G0400M4SP08DF	4S	4,00	0,8	–	3,5						●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").

A3R-P-DF • Face Grooving

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0300M3SP00DF	3S	3,00	–	1,5	–			●		●	●	
A3R0400M4SP00DF	4S	4,00	–	2,0	–			●	●	●	●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").



A3G-U-DM A3R-U-DR A3V-U-DM

● first choice
○ alternate choice

		KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
P			●	○	○	○	○	●
M					●	●	●	○
K			○					○
N		○						
S		●			●	●	●	
H								

A3G-U-DM

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0305M03U02DM	3	3,05	0,2	–	3,5				●		●	●
A3G0405M04U02DM	4	4,05	0,2	–	3,5				●		●	●
A3G0505M05U02DM	5	5,05	0,2	–	4,5		●		●		●	
A3G0605M06U04DM	6	6,05	0,4	–	4,5		●		●		●	
A3G0805M08U04DM	8	8,05	0,4	–	6,0				●		●	
A3G1005M10U05DM	10	10,05	0,5	–	6,0				●		●	

A3R-U-DR

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0305M03U00DR	3	3,05	–	1,5	–				●		●	●
A3R0405M04U00DR	4	4,05	–	2,0	–				●		●	
A3R0505M05U00DR	5	5,12	–	2,6	–				●		●	
A3R0605M06U00DR	6	6,05	–	3,0	–				●		●	
A3R0805M08U00DR	8	8,18	–	4,1	–		●		●		●	

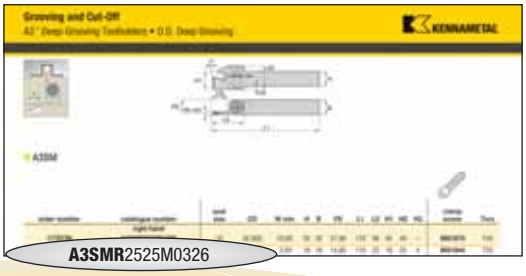
A3V-U-DM

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3V0000M04U02DM	4	–	–	0,2	6,0				●		●	
A3V0000M08U08DM	8	–	–	0,8	11,0				●		●	

NOTE: A3V-U-DM insert can be used in A3PS... or A3US... toolholders only.

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



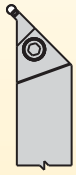
A3
Type of Program

A3 = Screw Clamp Holder

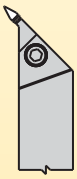
S
Tool Style

S = Straight

D = 45° profiling



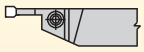
P = 117,5° V-profiling
U = 93° V-profiling



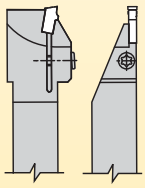
M
Support Type

S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters

M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

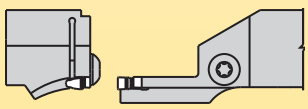


C = Reinforced maximum support width circular clearance



A = Inboard sweep face grooving toolholder

B = Outboard sweep face grooving toolholder



R
Hand of Tool

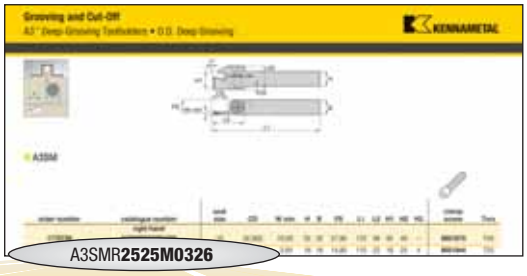
R = Right

L = Left

N = Neutral

NOTE: A2™ inserts can be used in A3 toolholders with equal seat sizes.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



2525M

Shank Size

metric:
Height x width in mm, letter indicates tool length according to ISO

inch:
For square shanks, the number indicates the height and width in 1/16" increments (rectangular: 1st digit = width in 1/8" increments, 2nd digit = height in 1/4" increments)

metric tool length (mm)

J = 110 **K** = 125 **X** = Other length
M = 150
P = 170

03

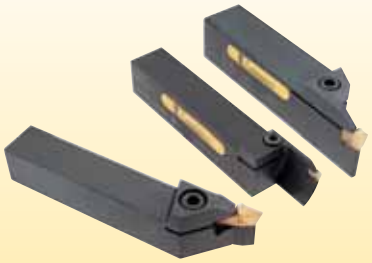
Seat Size

pocket seat size	nominal cutting width (mm)
03/3S	3,05
04/4S	4,05
05	5,05
06	6,05
08	8,05
10	10,05

26

Max Cutting Depth

in millimetres



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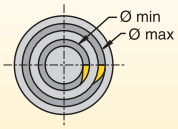
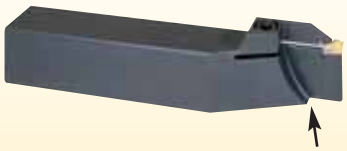
Face Grooving Diameter *(optional)*

Ø min – Ø max

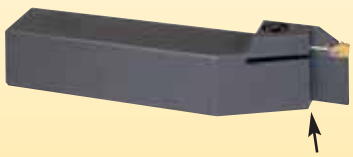


Screw-Clamping Holder Options



Example: **A3SCR-1603-26**

circular clearance



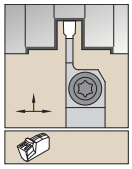
Example: **A3SSR-1605-26**

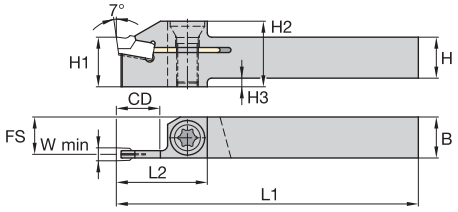
straight clearance

Both A2™ and A3 inserts are designed to fit all A3-style holders.

C-style reinforced maximum support toolholder with circular clearance:
- Provides maximum support for cut-off operations.
- For cut-off to center or small through-hole applications.
- Ideal for A3 deep grooving operations as well.

S-style standard support toolholder with straight clearance:
- Provides maximum flexibility.
- Unlimited diameter capability for cut-off to through-hole applications.
- Narrower support blade width allows full insert width flexibility for A3 deep grooving operations.
- Straight clearance is also available in selected M-style maximum support integral shank and modular toolholders.



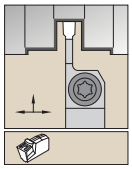


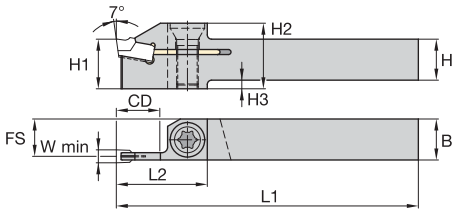
A3SM

order number	catalogue number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	right hand													
1775738	**A3SMR3232P1032**	10	32,000	10,00	32	32	27,80	170	58	32	40	–	**MS1875**	T45
1775526	**A3SMR1616J0310**	3	10,000	3,00	16	16	14,80	110	23	16	25	4	**MS1944**	T25
1775528	**A3SMR2020K0310**	3	10,000	3,00	20	20	18,80	125	23	20	25	–	**MS1944**	T25
1775530	**A3SMR2525M0310**	3	10,000	3,00	25	25	23,80	150	23	25	30	–	**MS1944**	T25
1775532	**A3SMR1616J0316**	3	16,000	3,00	16	16	14,80	110	30	16	27	4	**MS1944**	T25
1775624	**A3SMR2020K0316**	3	16,000	3,00	20	20	18,80	125	30	20	27	–	**MS1944**	T25
1775626	**A3SMR2525M0316**	3	16,000	3,00	25	25	23,80	150	30	25	32	–	**MS1944**	T25
1775628	**A3SMR1616J0410**	4	10,000	4,00	16	16	14,30	110	23	16	25	4	**MS1944**	T25
1775630	**A3SMR2020K0410**	4	10,000	4,00	20	20	18,30	125	23	20	25	–	**MS1944**	T25
1775632	**A3SMR2525M0410**	4	10,000	4,00	25	25	23,30	150	23	25	30	–	**MS1944**	T25
1775656	**A3SMR2020K0416**	4	16,000	4,00	20	20	18,30	125	30	20	27	–	**MS1944**	T25
1775659	**A3SMR2525M0416**	4	16,000	4,00	25	25	23,30	150	30	25	32	–	**MS1944**	T25
1775673	**A3SMR2020K0426**	4	26,000	4,00	20	20	18,30	125	42	20	27	–	**MS1595**	T30
1775677	**A3SMR2525M0426**	4	26,000	4,00	25	25	23,30	150	43	25	32	–	**MS1595**	T30
1777836	**A3SMR2020K0516**	5	16,000	5,00	20	20	17,80	125	33	20	27	–	**MS1595**	T30
1775681	**A3SMR2525M0516**	5	16,000	5,00	25	25	22,80	150	33	25	32	–	**MS1595**	T30
1775683	**A3SMR3225P0516**	5	16,000	5,00	32	25	22,80	170	32	32	39	–	**MS1595**	T30
1775685	**A3SMR2525M0526**	5	26,000	5,00	25	25	22,80	150	43	25	32	–	**MS1595**	T30
1775687	**A3SMR3225P0526**	5	26,000	5,00	32	25	22,80	170	42	32	39	–	**MS1595**	T30
1775689	**A3SMR3225P0532**	5	32,000	5,00	32	25	22,80	170	52	32	39	–	**MS1595**	T30
1777833	**A3SMR2020K0616**	6	16,000	6,00	20	20	17,30	125	32	20	27	–	**MS1595**	T30
1775691	**A3SMR2525M0616**	6	16,000	6,00	25	25	22,30	150	32	25	32	–	**MS1595**	T30
1775715	**A3SMR2525M0626**	6	26,000	6,00	25	25	22,30	150	42	25	32	–	**MS1595**	T30
1775717	**A3SMR3225P0626**	6	26,000	6,00	32	25	22,30	170	42	32	39	–	**MS1595**	T30
1775720	**A3SMR3225P0632**	6	32,000	6,00	32	25	22,30	170	52	32	39	–	**MS1595**	T30
1775722	**A3SMR2525M0816**	8	16,000	8,00	25	25	21,30	150	42	25	33	–	**MS1875**	T45
1775734	**A3SMR2525M0826**	8	26,000	8,00	25	25	21,30	150	50	25	33	–	**MS1875**	T45
1775736	**A3SMR3232P0832**	8	32,000	8,00	32	32	28,30	170	53	32	40	–	**MS1875**	T45

(continued)

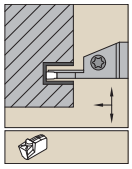
(A3SM continued)

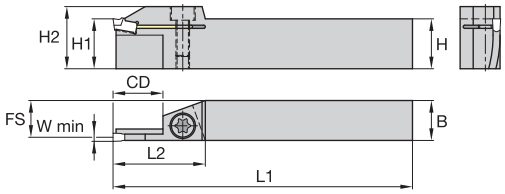


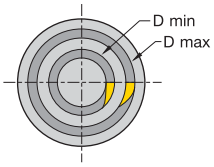


order number	catalogue number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	left hand													
1775739	**A3SML3232P1032**	10	32,000	10,00	32	32	27,80	170	58	32	40	—	**MS1875**	T45
1775527	**A3SML1616J0310**	3	10,000	3,00	16	16	14,80	110	23	16	25	4	**MS1944**	T25
1775529	**A3SML2020K0310**	3	10,000	3,00	20	20	18,80	125	23	20	25	—	**MS1944**	T25
1775531	**A3SML2525M0310**	3	10,000	3,00	25	25	23,80	150	23	25	30	—	**MS1944**	T25
1775623	**A3SML1616J0316**	3	16,000	3,00	16	16	14,80	110	30	16	27	4	**MS1944**	T25
1775625	**A3SML2020K0316**	3	16,000	3,00	20	20	18,80	125	30	20	27	—	**MS1944**	T25
1775627	**A3SML2525M0316**	3	16,000	3,00	25	25	23,80	150	30	25	32	—	**MS1944**	T25
1775631	**A3SML2020K0410**	4	10,000	4,00	20	20	18,30	125	23	20	25	—	**MS1944**	T25
1775653	**A3SML2525M0410**	4	10,000	4,00	25	25	23,30	150	23	25	30	—	**MS1944**	T25
1775657	**A3SML2020K0416**	4	16,000	4,00	20	20	18,30	125	30	20	27	—	**MS1944**	T25
1775661	**A3SML2525M0416**	4	16,000	4,00	25	25	23,30	150	30	25	32	—	**MS1944**	T25
1775675	**A3SML2020K0426**	4	26,000	4,00	20	20	18,30	125	42	20	27	—	**MS1595**	T30
1775679	**A3SML2525M0426**	4	26,000	4,00	25	25	23,30	150	43	25	32	—	**MS1595**	T30
1777837	**A3SML2020K0516**	5	16,000	5,00	20	20	17,80	125	33	20	27	—	**MS1595**	T30
1775682	**A3SML2525M0516**	5	16,000	5,00	25	25	22,80	150	33	25	32	—	**MS1595**	T30
1775684	**A3SML3225P0516**	5	16,000	5,00	32	25	22,80	170	32	32	39	—	**MS1595**	T30
1775686	**A3SML2525M0526**	5	26,000	5,00	25	25	22,80	150	43	25	32	—	**MS1595**	T30
1775688	**A3SML3225P0526**	5	26,000	5,00	32	25	22,80	170	42	32	39	—	**MS1595**	T30
1775690	**A3SML3225P0532**	5	32,000	5,00	32	25	22,80	170	52	32	39	—	**MS1595**	T30
1777835	**A3SML2020K0616**	6	16,000	6,00	20	20	17,30	125	32	20	27	—	**MS1595**	T30
1775692	**A3SML2525M0616**	6	16,000	6,00	25	25	22,30	150	32	25	32	—	**MS1595**	T30
1775716	**A3SML2525M0626**	6	26,000	6,00	25	25	22,30	150	42	25	32	—	**MS1595**	T30
1775718	**A3SML3225P0626**	6	26,000	6,00	32	25	22,30	170	42	32	39	—	**MS1595**	T30
1775721	**A3SML3225P0632**	6	32,000	6,00	32	25	22,30	170	52	32	39	—	**MS1595**	T30
1775735	**A3SML2525M0826**	8	26,000	8,00	25	25	21,30	150	50	25	33	—	**MS1875**	T45
1775737	**A3SML3232P0832**	8	32,000	8,00	32	32	28,30	170	53	32	40	—	**MS1875**	T45

NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Seat size 8 inserts can be used in seat size 8 and 10 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.





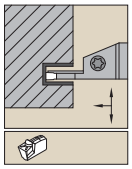


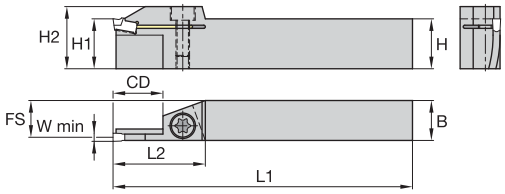
A3SA

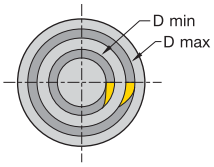
order number	catalogue number	seat size	CD	D min	D max	W min	H	B	FS	L1	L2	H1	H2	clamp screw	Torx
	right hand														
1125452	A3SAR2020M0425-060-075	4	25	60,00	75,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125715	A3SAR2520M0425-060-075	4	25	60,00	75,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125468	A3SAR2020M0425-075-100	4	25	75,00	100,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125728	A3SAR2520M0425-075-100	4	25	75,00	100,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125476	A3SAR2020M0425-100-180	4	25	100,00	180,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125734	A3SAR2520M0425-100-180	4	25	100,00	180,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125484	A3SAR2020M0425-180-250	4	25	180,00	250,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125746	A3SAR2520M0425-180-250	4	25	180,00	250,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125495	A3SAR2020M0425-250-350	4	25	250,00	350,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125751	A3SAR2520M0425-250-350	4	25	250,00	350,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125504	A3SAR2020M0425-350-999	4	25	350,00	–	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125768	A3SAR2520M0425-350-999	4	25	350,00	–	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1596756	A3SAR2020M4S10-025-030	4S	10	25,00	30,00	4,00	20	20	18,50	150	27	20	30	MS1970	T30
1596718	A3SAR2520M4S10-025-030	4S	10	25,00	30,00	4,00	25	20	18,50	150	27	25	30	MS1970	T30
1596758	A3SAR2020M4S10-030-035	4S	10	30,00	35,00	4,00	20	20	18,50	150	27	20	30	MS1970	T30
1596720	A3SAR2520M4S10-030-035	4S	10	30,00	35,00	4,00	25	20	18,50	150	27	25	30	MS1970	T30
1596760	A3SAR2020M4S20-035-040	4S	20	35,00	40,00	4,00	20	20	18,50	150	37	20	30	MS1970	T30
1596741	A3SAR2520M4S20-035-040	4S	20	35,00	40,00	4,00	25	20	18,50	150	37	25	30	MS1970	T30
1596781	A3SAR2020M4S25-040-050	4S	25	40,00	50,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1596744	A3SAR2520M4S25-040-050	4S	25	40,00	50,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1596782	A3SAR2020M4S25-050-060	4S	25	50,00	60,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1596746	A3SAR2520M4S25-050-060	4S	25	50,00	60,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125833	A3SAR2520M0525-060-075	5+6	25	60,00	75,00	5,00	25	20	17,80	150	42	25	30	MS1970	T30
1125586	A3SAR2020M0530-075-100	5+6	30	75,00	100,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125850	A3SAR2520M0530-075-100	5+6	30	75,00	100,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125602	A3SAR2020M0530-100-180	5+6	30	100,00	180,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125859	A3SAR2520M0530-100-180	5+6	30	100,00	180,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125611	A3SAR2020M0530-180-250	5+6	30	180,00	250,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125868	A3SAR2520M0530-180-250	5+6	30	180,00	250,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125628	A3SAR2020M0530-250-350	5+6	30	250,00	350,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125877	A3SAR2520M0530-250-350	5+6	30	250,00	350,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125637	A3SAR2020M0530-350-999	5+6	30	350,00	–	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125885	A3SAR2520M0530-350-999	5+6	30	350,00	–	5,00	25	20	17,80	150	47	25	30	MS1970	T30

(continued)

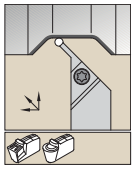
(A3SA continued)

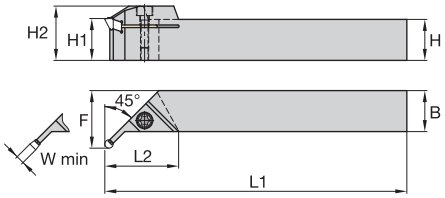






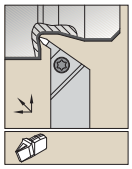
order number	catalogue number	seat size	CD	D min	D max	W min	H	B	FS	L1	L2	H1	H2	clamp screw	Torx
	left hand														
1125393	**A3SAL2020M0425-060-075**	4	25	60,00	75,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125654	**A3SAL2520M0425-060-075**	4	25	60,00	75,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125403	**A3SAL2020M0425-075-100**	4	25	75,00	100,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125663	**A3SAL2520M0425-075-100**	4	25	75,00	100,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125411	**A3SAL2020M0425-100-180**	4	25	100,00	180,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125671	**A3SAL2520M0425-100-180**	4	25	100,00	180,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125418	**A3SAL2020M0425-180-250**	4	25	180,00	250,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125682	**A3SAL2520M0425-180-250**	4	25	180,00	250,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125426	**A3SAL2020M0425-250-350**	4	25	250,00	350,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125689	**A3SAL2520M0425-250-350**	4	25	250,00	350,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125435	**A3SAL2020M0425-350-999**	4	25	350,00	–	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125704	**A3SAL2520M0425-350-999**	4	25	350,00	–	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1596784	**A3SAL2020M4S10-025-030**	4S	10	25,00	30,00	4,00	20	20	18,50	150	27	20	30	**MS1970**	T30
1596747	**A3SAL2520M4S10-025-030**	4S	10	25,00	30,00	4,00	25	20	18,50	150	27	25	30	**MS1970**	T30
1596748	**A3SAL2520M4S10-030-035**	4S	10	30,00	35,00	4,00	25	20	18,50	150	27	25	30	**MS1970**	T30
1596787	**A3SAL2020M4S20-035-040**	4S	20	35,00	40,00	4,00	20	20	18,50	150	37	20	30	**MS1970**	T30
1596750	**A3SAL2520M4S20-035-040**	4S	20	35,00	40,00	4,00	25	20	18,50	150	37	25	30	**MS1970**	T30
1596788	**A3SAL2020M4S25-040-050**	4S	25	40,00	50,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1596752	**A3SAL2520M4S25-040-050**	4S	25	40,00	50,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1596789	**A3SAL2020M4S25-050-060**	4S	25	50,00	60,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1596755	**A3SAL2520M4S25-050-060**	4S	25	50,00	60,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125772	**A3SAL2520M0525-060-075**	5+6	25	60,00	75,00	5,00	25	20	17,80	150	42	25	30	**MS1970**	T30
1125787	**A3SAL2520M0530-075-100**	5+6	30	75,00	100,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125531	**A3SAL2020M0530-100-180**	5+6	30	100,00	180,00	5,00	20	20	17,80	150	47	20	30	**MS1970**	T30
1125797	**A3SAL2520M0530-100-180**	5+6	30	100,00	180,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125804	**A3SAL2520M0530-180-250**	5+6	30	180,00	250,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125561	**A3SAL2020M0530-250-350**	5+6	30	250,00	350,00	5,00	20	20	17,80	150	47	20	30	**MS1970**	T30
1125813	**A3SAL2520M0530-250-350**	5+6	30	250,00	350,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125825	**A3SAL2520M0530-350-999**	5+6	30	350,00	–	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30

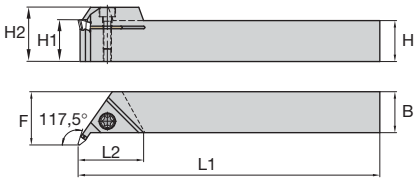




A3DS

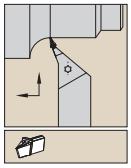
order number	catalogue number	seat size	W min	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand											
1245699	A3DSR1616J04	3+4	3,00	16	16	22,00	110	34	16	23	MS1944	T25
1245658	A3DSR2020K04	3+4	3,00	20	20	26,00	125	33	20	27	MS1944	T25
1245652	A3DSR2525M06	5+6	5,00	25	25	31,00	150	40	25	32	MS1595	T30
1245649	A3DSR3232P08	8	8,00	32	32	41,00	170	48	32	40	MS1595	T30
	left hand											
1245697	A3DSL1616J04	3+4	3,00	16	16	22,00	110	34	16	23	MS1944	T25
1245655	A3DSL2020K04	3+4	3,00	20	20	26,00	125	33	20	27	MS1944	T25
1245677	A3DSL2525M06	5+6	5,00	25	25	31,00	150	40	25	32	MS1595	T30
1245637	A3DSL3232P08	8	8,00	32	32	41,00	170	48	32	40	MS1595	T30

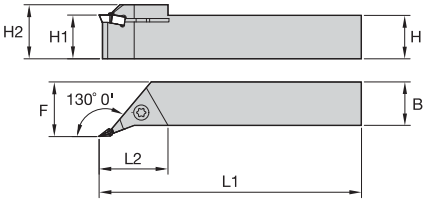




A3PS

order number	catalogue number	seat size	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand										
1245657	A3PSR2020K04	4	20	20	25,00	125	34	20	27	MS1595	T30
1245681	A3PSR2525M04	4	25	25	32,00	150	34	25	32	MS1595	T30
1245653	A3PSR2525M08	8	25	25	32,00	150	50	25	33	MS1875	T45
1245632	A3PSR3225P08	8	32	25	32,00	170	50	32	40	MS1875	T45
	left hand										
1245706	A3PSL2020K04	4	20	20	25,00	125	34	20	27	MS1595	T30
1245675	A3PSL2525M04	4	25	25	32,00	150	34	25	32	MS1595	T30
1245678	A3PSL2525M08	8	25	25	32,00	150	50	25	33	MS1875	T45





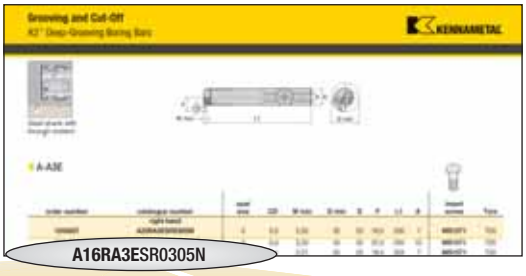
A3US

order number	catalogue number	seat size	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand										
1245672	**A3USR2525M04**	4	25	25	32,00	150	40	25	32	**MS1595**	T30
	left hand										
1245670	**A3USL2525M04**	4	25	25	32,00	150	40	25	32	**MS1595**	T30

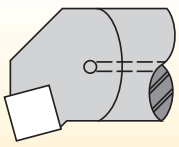
NOTE: Approach angle 93°.
Only insert A3V-U-DM can be used with these toolholders.

How Do Catalogue Numbers Work?

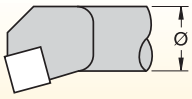
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A
Steel Bar with Coolant



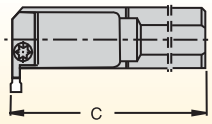
16
Bar Diameter



metric bars:
Bar diameter in millimetres

inch bars:
A two-digit number which indicates the bar diameter in 1/16" increments.

R
Bar Length

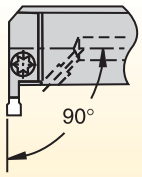


metric bars:
R = 200mm
S = 250mm
T = 300mm

inch bars:
R = 8"
S = 10"
T = 12"

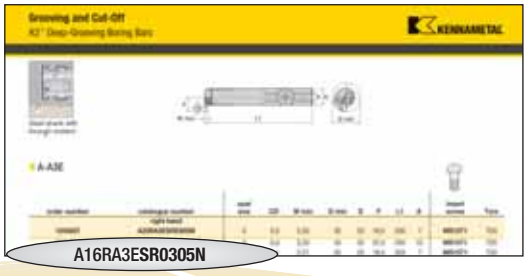
A3
A3 System

E
Tool Style



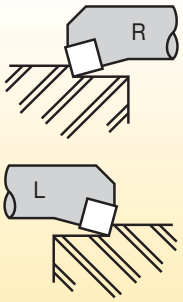
E = End mounted (90°)

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

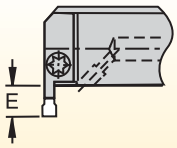


S	R	03	05	N
Support Type	Hand of Tool	Seat Size	Grooving Depth in mm	Tool Units

S = Standard support for a wide range of groove widths



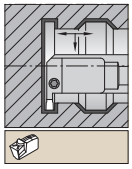
pocket seat size	cutting width (mm)
03	2,25–3,05
04	3,05–4,05
05	4,05–5,05
06	5,05–6,05
08	6,05–8,05



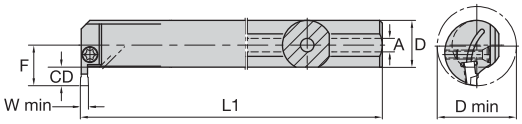
conversions:

mm		inch
5mm	=	.20"
8mm	=	.32"
10mm	=	.39"
12mm	=	.47"
15mm	=	.59"

M = Metric
N = Inch



Steel shank with through coolant.



A-A3E

order number	catalogue number	seat size	CD	W min	D min	D	F	L1	A	insert screw	Torx
	right hand										
1245607	**A25RA3ESR0305M**	3	5,0	2,20	32	25	18,5	200	7	**MS1571**	T20
1245611	**A32SA3ESR0305M**	3	5,0	2,20	45	32	22,0	250	10	**MS1571**	T20
1245609	**A25RA3ESR0408M**	3+4	8,0	3,00	40	25	20,5	200	7	**MS1571**	T20
1245613	**A32SA3ESR0408M**	3+4	8,0	3,00	48	32	25,0	250	10	**MS1571**	T20
1245615	**A40TA3ESR0408M**	3+4	8,0	3,00	56	40	28,0	300	10	**MS1571**	T20
1245619	**A40TA3ESR0510M**	5	10,0	4,00	60	40	30,0	300	10	**MS1162**	T25
1245621	**A32SA3ESR0612M**	5+6	12,0	5,00	45	32	28,0	250	10	**MS1162**	T25
1245623	**A40TA3ESR0612M**	5+6	12,0	5,00	64	40	32,0	300	10	**MS1162**	T25
1245625	**A40TA3ESR0815M**	8	15,0	6,00	70	40	35,0	300	10	**MS1163**	T30
	left hand										
1245606	**A25RA3ESL0305M**	3	5,0	2,20	32	25	18,5	200	7	**MS1571**	T20
1245610	**A32SA3ESL0305M**	3	5,0	2,20	45	32	22,0	250	10	**MS1571**	T20
1245608	**A25RA3ESL0408M**	3+4	8,0	3,00	40	25	20,5	200	7	**MS1571**	T20
1245612	**A32SA3ESL0408M**	3+4	8,0	3,00	48	32	25,0	250	10	**MS1571**	T20
1245614	**A40TA3ESL0408M**	3+4	8,0	3,00	56	40	28,0	300	10	**MS1571**	T20
1245616	**A32SA3ESL0510M**	5	10,0	4,00	45	32	26,0	250	10	**MS1162**	T25
1245620	**A32SA3ESL0612M**	5+6	12,0	5,00	45	32	28,0	250	10	**MS1162**	T25
1245622	**A40TA3ESL0612M**	5+6	12,0	5,00	64	40	32,0	300	10	**MS1162**	T25
1245624	**A40TA3ESL0815M**	8	15,0	6,00	70	40	35,0	300	10	**MS1163**	T30

A2-CL Geometry with Beyond™ Insert Technology

Maximise your cut-off productivity.

A2-CL Geometry

- Beyond grades enable optimum performance and extended tool life.
- Tighter chipbreaker capability when machining low carbon steel.
- Excellent chip evacuation in low-feed applications.
- Provides an expansion to existing -CR, -CM, and -CF geometries.
- Offers improved stability and rigidity.

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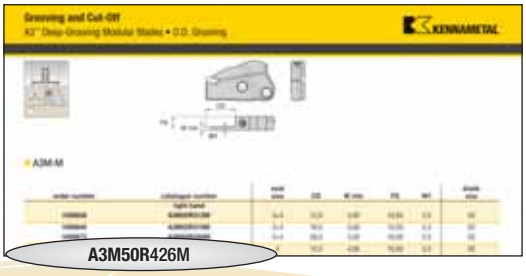
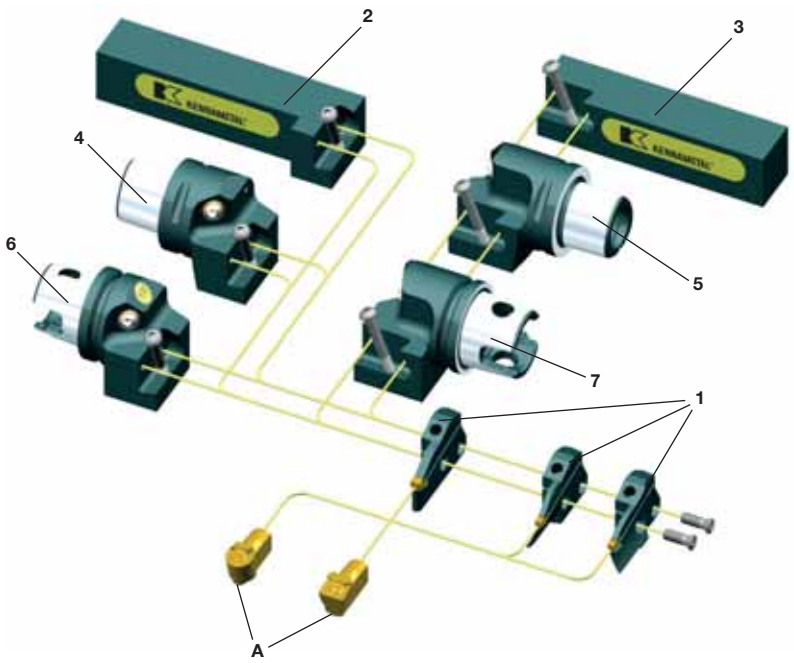


A3M	50	R
A3 Modular Grooving System	Blade Size	Hand of Tool

R = Right hand

L = Left hand



Legend		page(s)
A	A2™/A3 Inserts	D30–D33
1	O.D. and Face Grooving Blades	D48–D50
2	KGME Toolholder	D54
3	KGMS Toolholder	D54
4	Capto® KGME Cutting Unit	D57
5	Capto KGMS Cutting Unit	D57
6	KM™ KGME Cutting Unit	D55–D56
7	KM KGMS Cutting Unit	D55–D56

By customer demand, Kennametal Inc. and Sandvik® Coromant have entered into an agreement that allows both companies to manufacture, market, and sell KM and Coromant Capto products worldwide. Using the trademark Kennametal Capto, we make available a variety of leading and innovative Kennametal tooling designs utilising the Coromant Capto coupling.

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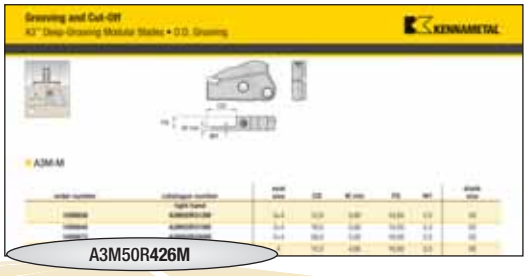
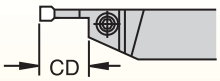


4
Seat Size

pocket seat size	nominal cutting width (mm)
03/3S	3,05
04/4S	4,05
05	5,05
06	6,05

26
Grooving Depth in mm

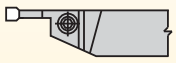


conversions:

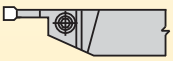
mm		inch
12mm	=	.47
16mm	=	.63
20mm	=	.79
26mm	=	1.02
32mm	=	1.26

M
Tool Style

S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters

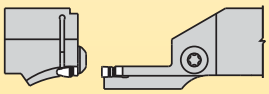


M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

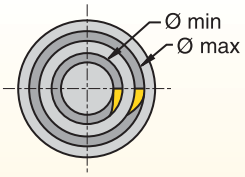


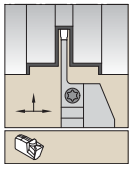
A = Inboard sweep face grooving toolholder

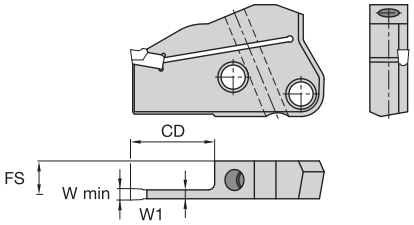
B = Outboard sweep face grooving toolholder



Face Grooving Diameter Range



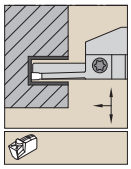


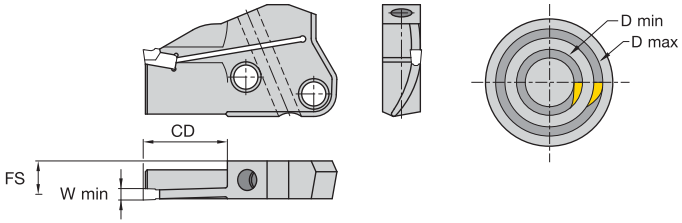


A3M-M

order number	catalogue number	seat size	CD	W min	FS	W1	blade size
	right hand						
1599838	**A3M50R312M**	3+4	12,0	3,00	10,50	2,3	50
1599840	**A3M50R316M**	3+4	16,0	3,00	10,50	2,3	50
1599873	**A3M50R326M**	3+4	26,0	3,00	10,50	2,3	50
1599875	**A3M50R412M**	4	12,0	4,00	10,00	3,3	50
1599912	**A3M50R416M**	4	16,0	4,00	10,00	3,3	50
1599915	**A3M50R426M**	4	26,0	4,00	10,00	3,3	50
1599917	**A3M50R432M**	4	32,0	4,00	10,00	3,3	50
1599919	**A3M50R516M**	5+6	16,0	4,75	9,50	4,3	50
1599921	**A3M50R526M**	5+6	26,0	4,75	9,50	4,3	50
1599923	**A3M50R532M**	5+6	32,0	4,75	9,50	4,3	50
1599925	**A3M50R616M**	6	16,0	6,00	9,00	5,3	50
1599927	**A3M50R626M**	6	26,0	6,00	9,00	5,3	50
1599929	**A3M50R632M**	6	32,0	6,00	9,00	5,3	50
	left hand						
1599839	**A3M50L312M**	3+4	12,0	3,00	10,50	2,3	50
1599872	**A3M50L316M**	3+4	16,0	3,00	10,50	2,3	50
1599874	**A3M50L326M**	3+4	26,0	3,00	10,50	2,3	50
1599911	**A3M50L412M**	4	12,0	4,00	10,00	3,3	50
1599913	**A3M50L416M**	4	16,0	4,00	10,00	3,3	50
1599916	**A3M50L426M**	4	26,0	4,00	10,00	3,3	50
1599918	**A3M50L432M**	4	32,0	4,00	10,00	3,3	50
1599920	**A3M50L516M**	5+6	16,0	4,75	9,50	4,3	50
1599922	**A3M50L526M**	5+6	26,0	4,75	9,50	4,3	50
1599924	**A3M50L532M**	5+6	32,0	4,75	9,50	4,3	50
1599926	**A3M50L616M**	6	16,0	6,00	9,00	5,3	50
1599928	**A3M50L626M**	6	26,0	6,00	9,00	5,3	50
1599930	**A3M50L632M**	6	32,0	6,00	9,00	5,3	50

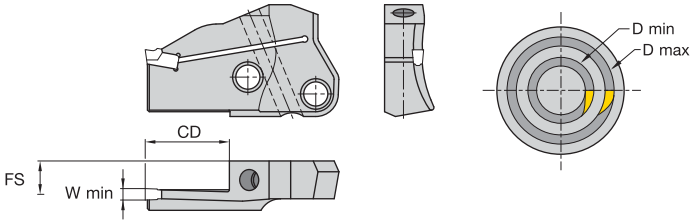
NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.





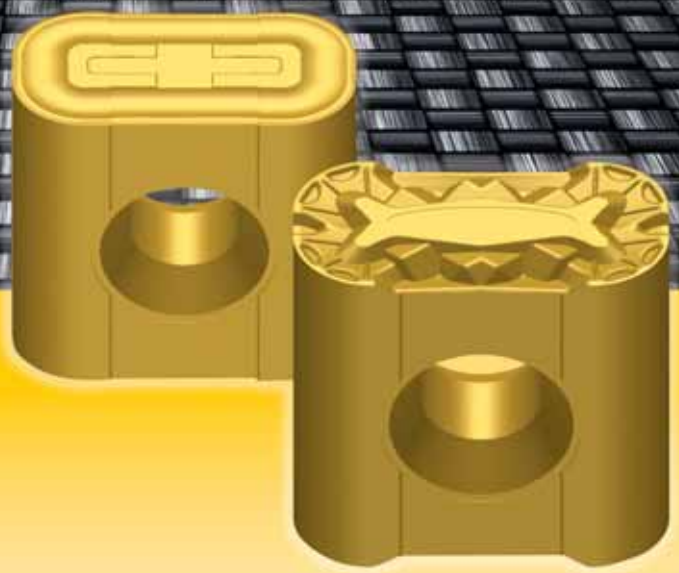
A3M-A Inboard Sweep

order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542476	**A3M50R312A025030**	3S	25	30	3,00	12,0	10,50	50
2542477	**A3M50R312A030035**	3S	30	35	3,00	12,0	10,50	50
2542478	**A3M50R316A035040**	3S	35	40	3,00	16,0	10,50	50
2542479	**A3M50R316A040050**	3S	40	50	3,00	16,0	10,50	50
2542480	**A3M50R316A050060**	3S	50	60	3,00	16,0	10,50	50
1599952	**A3M50R426A060075**	4	60	75	4,00	26,0	10,00	50
1599953	**A3M50R426A075100**	4	75	100	4,00	26,0	10,00	50
1599955	**A3M50R426A100180**	4	100	180	4,00	26,0	10,00	50
1599956	**A3M50R426A180250**	4	180	250	4,00	26,0	10,00	50
1599957	**A3M50R426A250350**	4	250	350	4,00	26,0	10,00	50
1599958	**A3M50R426A350999**	4	350	–	4,00	26,0	10,00	50
1599937	**A3M50R412A025030**	4S	25	30	4,00	12,0	10,00	50
1599938	**A3M50R412A030035**	4S	30	35	4,00	12,0	10,00	50
1599939	**A3M50R420A035040**	4S	35	40	4,00	20,0	10,00	50
1599940	**A3M50R420A040050**	4S	40	50	4,00	20,0	10,00	50
1599951	**A3M50R420A050060**	4S	50	60	4,00	20,0	10,00	50
1599959	**A3M50R526A060075**	5+6	60	75	5,00	26,0	9,50	50
1599960	**A3M50R532A075100**	5+6	75	100	5,00	32,0	9,50	50
1599961	**A3M50R532A100180**	5+6	100	180	5,00	32,0	9,50	50
1599962	**A3M50R532A180250**	5+6	180	250	5,00	32,0	9,50	50
1599963	**A3M50R532A250350**	5+6	250	350	5,00	32,0	9,50	50
1599964	**A3M50R532A350999**	5+6	350	–	5,00	32,0	9,50	50
	left hand							
2542481	**A3M50L312A025030**	3S	25	30	3,00	12,0	10,50	50
2542482	**A3M50L312A030035**	3S	30	35	3,00	12,0	10,50	50
2542483	**A3M50L316A035040**	3S	35	40	3,00	16,0	10,50	50
2542484	**A3M50L316A040050**	3S	40	50	3,00	16,0	10,50	50
2542485	**A3M50L316A050060**	3S	50	60	3,00	16,0	10,50	50
1600142	**A3M50L426A060075**	4	60	75	4,00	26,0	10,00	50
1600143	**A3M50L426A075100**	4	75	100	4,00	26,0	10,00	50
1600144	**A3M50L426A100180**	4	100	180	4,00	26,0	10,00	50
1600145	**A3M50L426A180250**	4	180	250	4,00	26,0	10,00	50
1600146	**A3M50L426A250350**	4	250	350	4,00	26,0	10,00	50
1600147	**A3M50L426A350999**	4	350	–	4,00	26,0	10,00	50
1599965	**A3M50L412A025030**	4S	25	30	4,00	12,0	10,00	50
1599966	**A3M50L412A030035**	4S	30	35	4,00	12,0	10,00	50
1600096	**A3M50L420A035040**	4S	35	40	4,00	20,0	10,00	50
1600098	**A3M50L420A040050**	4S	40	50	4,00	20,0	10,00	50
1600099	**A3M50L420A050060**	4S	50	60	4,00	20,0	10,00	50
1600149	**A3M50L526A060075**	5+6	60	75	5,00	26,0	9,50	50
1600150	**A3M50L532A075100**	5+6	75	100	5,00	32,0	9,50	50
1600161	**A3M50L532A100180**	5+6	100	180	5,00	32,0	9,50	50
1600162	**A3M50L532A180250**	5+6	180	250	5,00	32,0	9,50	50
1600163	**A3M50L532A250350**	5+6	250	350	5,00	32,0	9,50	50
1600164	**A3M50L532A350999**	5+6	350	–	5,00	32,0	9,50	50



A3M-B Outboard Sweep

order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542486	A3M50R312B025030	3S	25	30	3,00	12,0	10,50	50
2542487	A3M50R312B030035	3S	30	35	3,00	12,0	10,50	50
2542488	A3M50R316B035040	3S	35	40	3,00	16,0	10,50	50
2542489	A3M50R316B040050	3S	40	50	3,00	16,0	10,50	50
2542490	A3M50R316B050060	3S	50	60	3,00	16,0	10,50	50
1600165	A3M50R412B025030	4S	25	30	4,00	12,0	10,00	50
1600166	A3M50R412B030035	4S	30	35	4,00	12,0	10,00	50
1600167	A3M50R420B035040	4S	35	40	4,00	20,0	10,00	50
1600168	A3M50R420B040050	4S	40	50	4,00	20,0	10,00	50
1600169	A3M50R420B050060	4S	50	60	4,00	20,0	10,00	50
1600170	A3M50R426B060075	4	60	75	4,00	26,0	10,00	50
1600171	A3M50R426B075100	4	75	100	4,00	26,0	10,00	50
1600172	A3M50R426B100180	4	100	180	4,00	26,0	10,00	50
1600173	A3M50R426B180250	4	180	250	4,00	26,0	10,00	50
1600174	A3M50R426B250350	4	250	350	4,00	26,0	10,00	50
1600175	A3M50R426B350999	4	350	–	4,00	26,0	10,00	50
1600176	A3M50R526B060075	5+6	60	75	5,00	26,0	9,50	50
1600177	A3M50R532B075100	5+6	75	100	5,00	32,0	9,50	50
1600178	A3M50R532B100180	5+6	100	180	5,00	32,0	9,50	50
1600179	A3M50R532B180250	5+6	180	250	5,00	32,0	9,50	50
1600180	A3M50R532B250350	5+6	250	350	5,00	32,0	9,50	50
1600191	A3M50R532B350999	5+6	350	–	5,00	32,0	9,50	50
	left hand							
2542491	A3M50L312B025030	3S	25	30	3,00	12,0	10,50	50
2542492	A3M50L312B030035	3S	30	35	3,00	12,0	10,50	50
2542493	A3M50L316B035040	3S	35	40	3,00	16,0	10,50	50
2542494	A3M50L316B040050	3S	40	50	3,00	16,0	10,50	50
2542495	A3M50L316B050060	3S	50	60	3,00	16,0	10,50	50
1600192	A3M50L412B025030	4S	25	30	4,00	12,0	10,00	50
1600193	A3M50L412B030035	4S	30	35	4,00	12,0	10,00	50
1600194	A3M50L420B035040	4S	35	40	4,00	20,0	10,00	50
1600195	A3M50L420B040050	4S	40	50	4,00	20,0	10,00	50
1600196	A3M50L420B050060	4S	50	60	4,00	20,0	10,00	50
1600197	A3M50L426B060075	4	60	75	4,00	26,0	10,00	50
1600198	A3M50L426B075100	4	75	100	4,00	26,0	10,00	50
1600212	A3M50L426B100180	4	100	180	4,00	26,0	10,00	50
1600213	A3M50L426B180250	4	180	250	4,00	26,0	10,00	50
1600214	A3M50L426B250350	4	250	350	4,00	26,0	10,00	50
1600215	A3M50L426B350999	4	350	–	4,00	26,0	10,00	50
1600216	A3M50L526B060075	5+6	60	75	5,00	26,0	9,50	50
1600217	A3M50L532B075100	5+6	75	100	5,00	32,0	9,50	50
1600218	A3M50L532B100180	5+6	100	180	5,00	32,0	9,50	50
1600219	A3M50L532B180250	5+6	180	250	5,00	32,0	9,50	50
1600241	A3M50L532B250350	5+6	250	350	5,00	32,0	9,50	50
1600242	A3M50L532B350999	5+6	350	–	5,00	32,0	9,50	50



Kennametal™ Tools for Railways and Wheel Machining

Kennametal offers a complete line of tooling for wheel and axle maintenance in railroad shops. All tools incorporate the latest in tooling technology for maximum metal removal and higher productivity. All tools are proven performers in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs. Included in this range are tools for reconditioning mounted wheel sets, wheel boring, wheel truing, axle turning, and journal burnishing.

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www.kennametal.com

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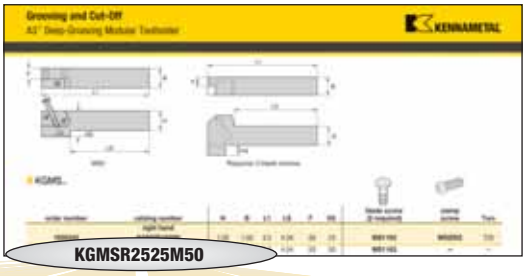
How Do Catalogue Numbers Work?

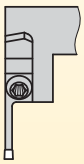
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

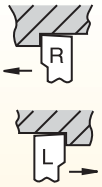


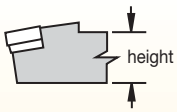
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

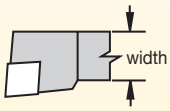
E







shank height in millimetres



shank width in millimetres

square shanks:
The number indicates the toolholder cross section in 1/16" increments.

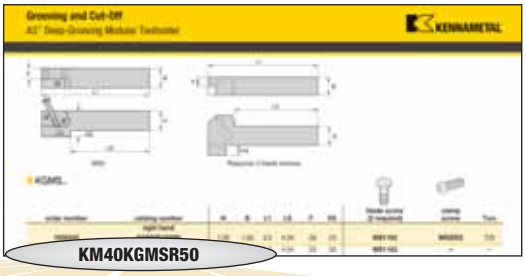
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

M = 150mm
N = Inch
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

How Do Catalogue Numbers Work?

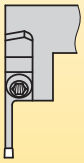
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

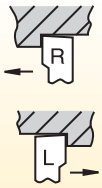


KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S

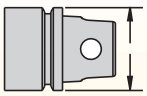
E



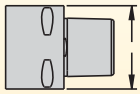


Y = Mazak® INTEGREX® Y-series machines

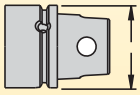
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



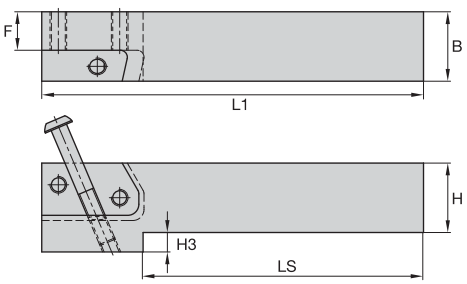
Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



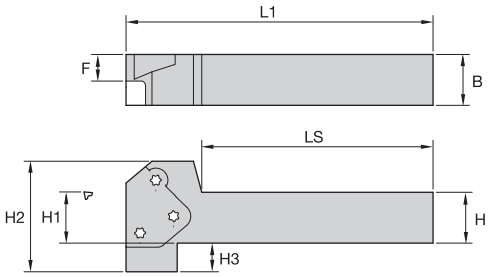
KMXMZ size
KM63XMZ™ = 63mm dia.



(KM-KGMSR...) **(KM-KGMEL...)**



M50
2 blade screws required

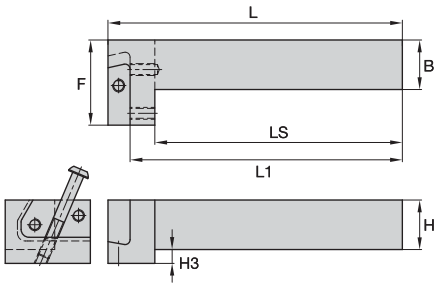


M65
3 blade screws required

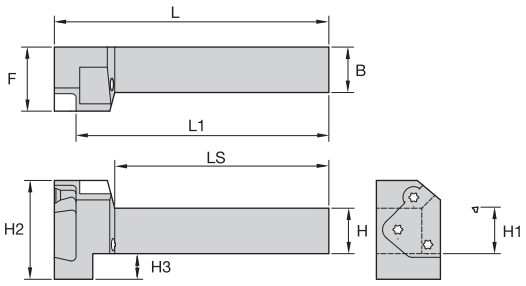
KGMS..

order number	catalogue number	B	H	L1	F	LS	H3	blade screw	Torx	clamp screw	Torx
	right hand										
1600249	**KGMSR2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553429	**KGMSR2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621083	**KGMSR3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553431	**KGMSR3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–
	left hand										
1600250	**KGMSL2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553430	**KGMSL2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621084	**KGMSL3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553432	**KGMSL3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D58–D59.



M50
2 blade screws required

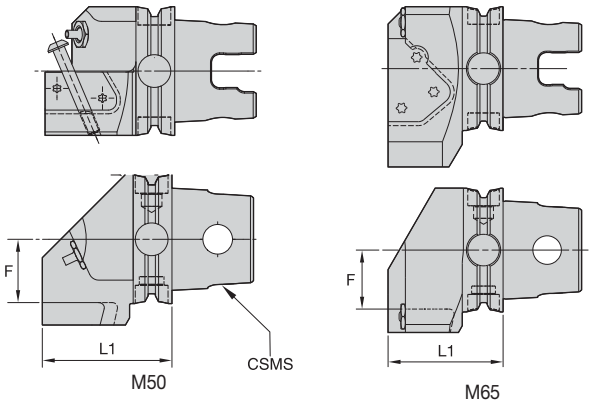


M65
3 blade screws required

KGME..

order number	catalogue number	B	H	L1	F	LS	H3	L	blade screw	Torx	clamp screw	Torx
	right hand											
1600270	**KGMER2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553453	**KGMER2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621085	**KGMER3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553455	**KGMER3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–
	left hand											
1600271	**KGMEL2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553454	**KGMEL2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621086	**KGMEL3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553456	**KGMEL3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–

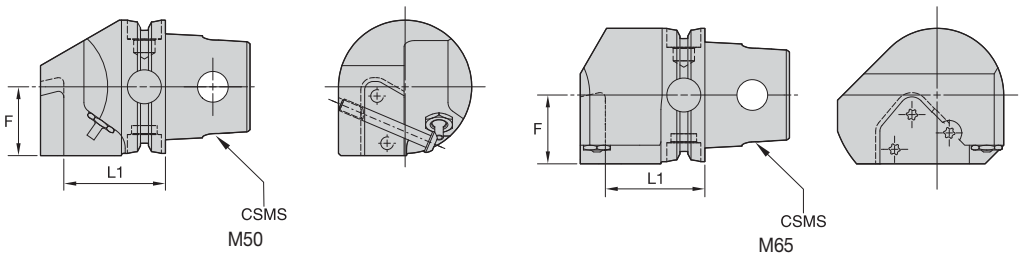
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D58–D59.



KM-KGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
3950268	**KM40TSKGMSR50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590203	**KM63TSKGMSR65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670383	**KM80TSKGMSR50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–
	left hand							
3950267	**KM40TSKGMSL50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590204	**KM63TSKGMSL65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670371	**KM80TSKGMSL50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.

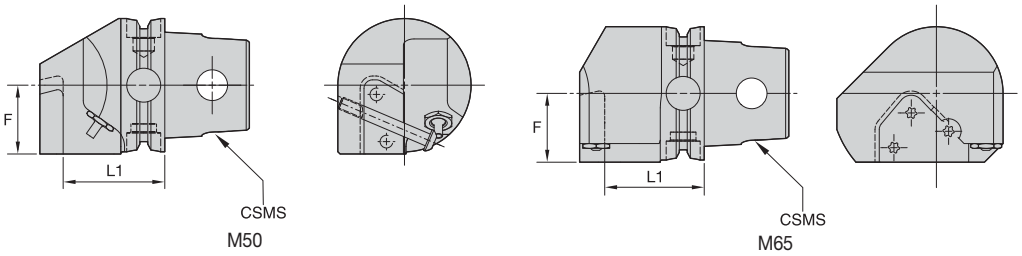


KM-KGME..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
3950266	**KM40TSKGMER50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

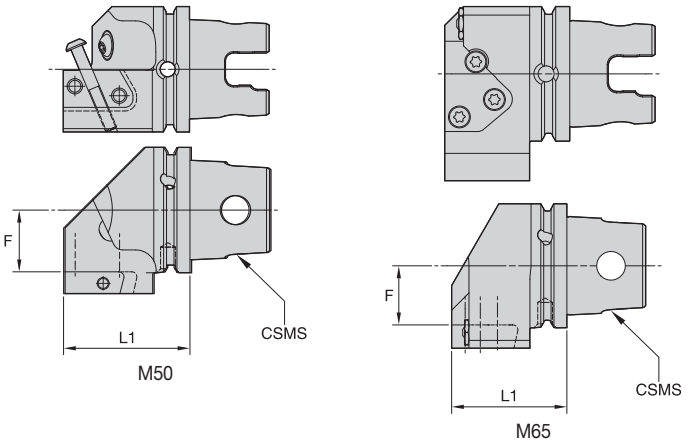
(continued)

(KM-KGME.. continued)



order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	left hand							
3950265	**KM40TSKGMEL50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

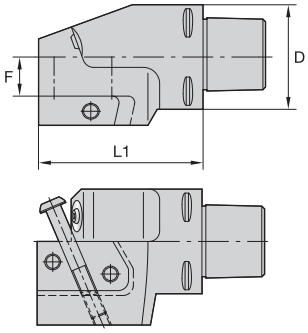
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.



KM-XMZKGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–
	left hand							
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–

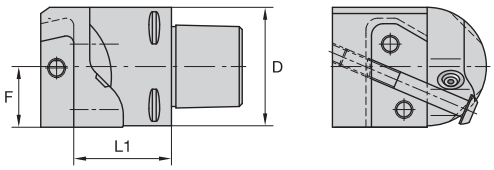
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.



C-KGMS

order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756576	**C4KGMSR50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25
	left hand							
1756578	**C4KGMSL50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.



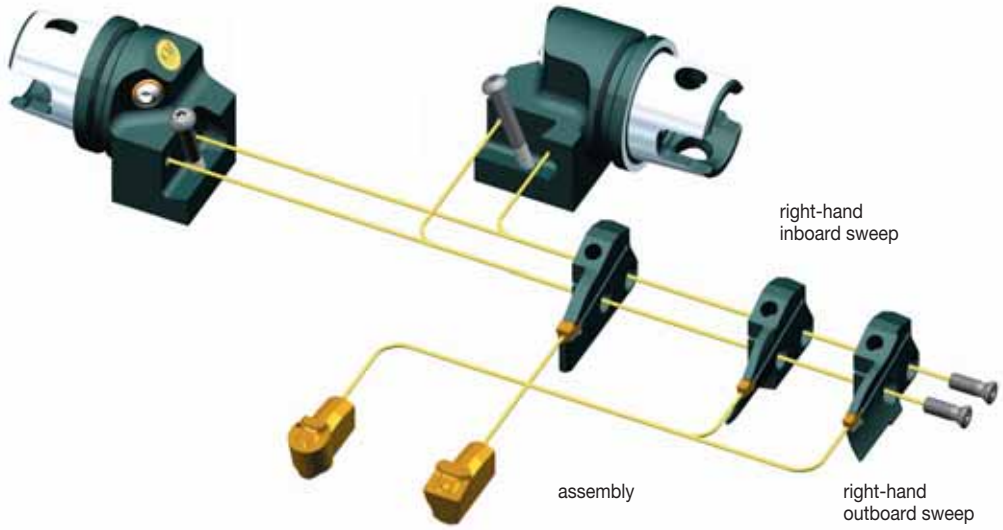
C-KGME

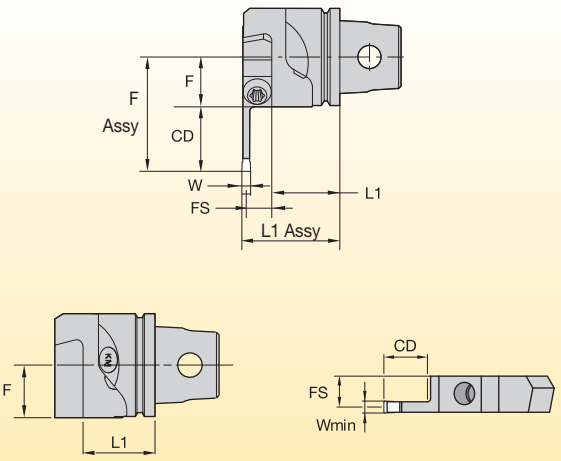
order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756579	**C4KGMER50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25
	left hand							
1756583	**C4KGMEL50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.

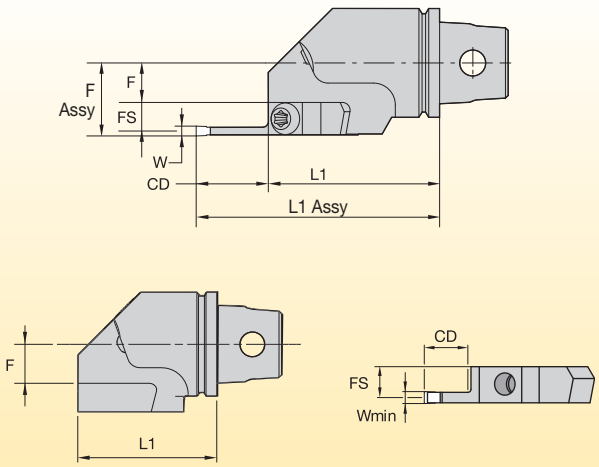
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





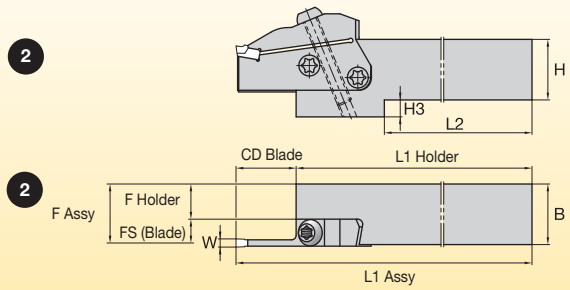
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

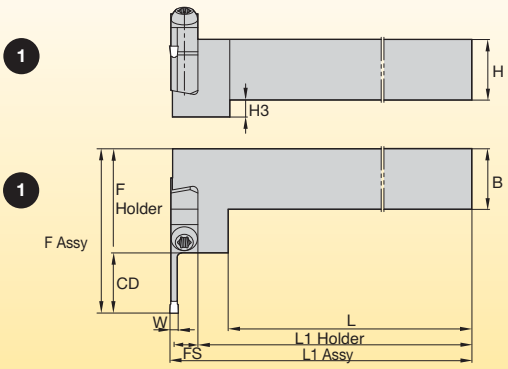
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



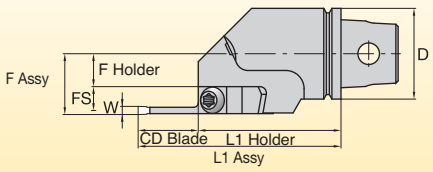
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



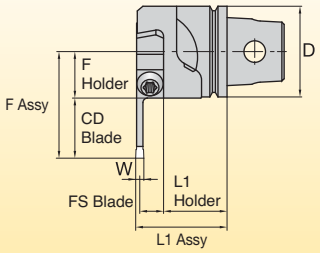
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



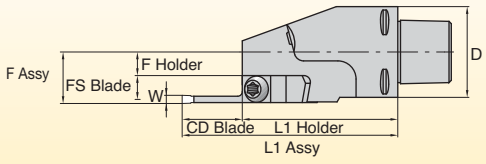
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



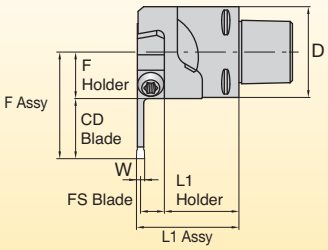
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

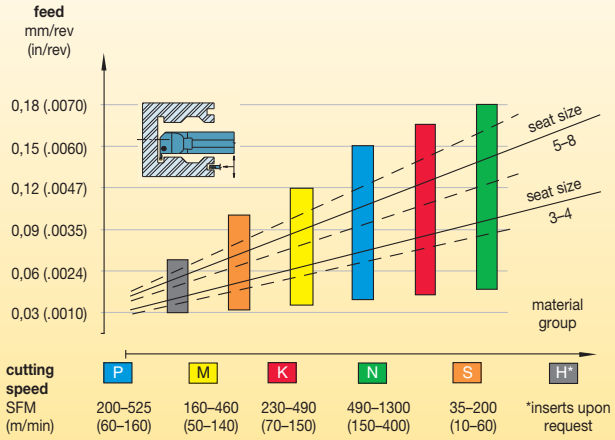
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

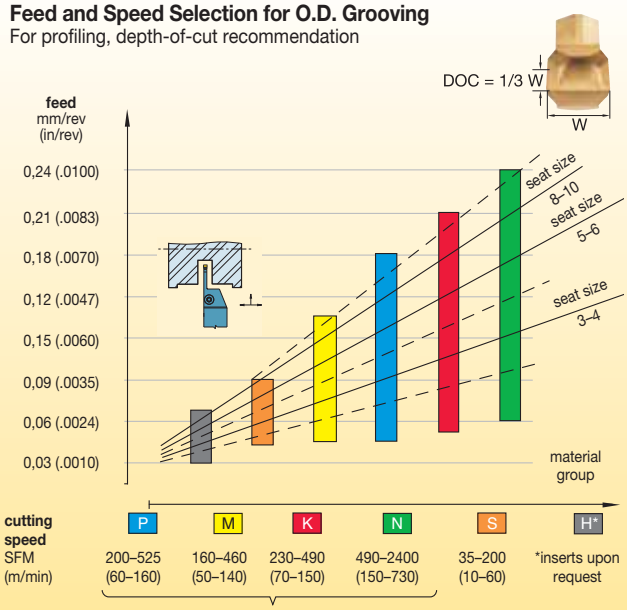
Application Guidelines

Feed and Speed Selection for I.D. and Face Grooving



Feed and Speed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

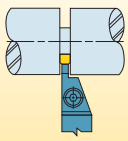


For radial grooving under stable conditions, feed can be increased by up to 50%.

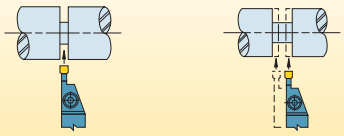
Tool Application Guidelines

- Always use good general machining practices.
- Make the machine and workpiece setup as rigid as possible.
- Integral shank toolholders offer the best rigidity. They should be your first toolholder choice, when possible.
- Use the toolholder with the shortest possible depth of cut for the application ("CD" dimension).
- When changing inserts, make sure the new insert locates securely against the toolholder's positive stop.
- Never tighten the clamping screw without an insert in the pocket.
- Toolholder projection out of the tool block should be as short as possible.
- Inserts should cut as close to center as possible.
- Dwell time in bottom of groove should be less than three revolutions.
- Recommended cutting speeds and feeds are a starting point. Adjust, as necessary, for optimum tool life and chip control.

Deep Grooves

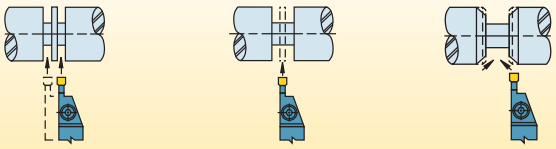


Deep Grooves Slightly Wider than the Tool



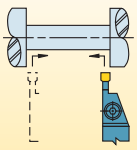
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

Extra Wide Deep Grooves



1. Plunge out both sides of the groove width.
2. Plunge center area to remove web of remaining material.
3. Plunge both sides of groove at the required angle, using approximately one-half the width of the grooving tool for maximum width of cut.

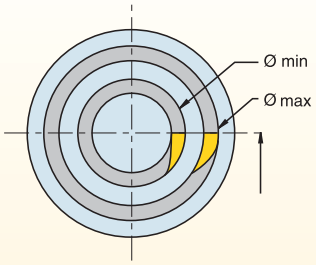
Finish Turning of the Groove/Light Profiling



1. Follow recommendations explained above.
2. To avoid insert chipping and to achieve groove wall perpendicularity, follow the tool path shown here.
3. Use the lightest depth of cut possible while still maintaining good chip breaking, tool life, and surface finish.

Grooving Tool Failure and Solution Guide

Face Grooving Application Guidelines



Tool Selection

- When selecting the toolholder, always start at the largest diameter possible and work toward the smaller diameter. This will allow the strongest tool to be used.

Cutting the First Groove

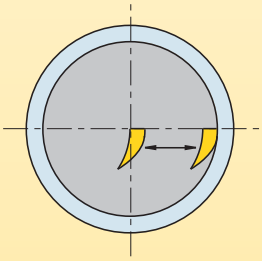
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

Chip Control

- Adjust speed and feed for good chip control and evacuation from the groove. Chip compaction can cause poor surface finish, tool breakage, and reduced tool life.

Tool Setting

- The tool should be set as close to the center as possible to avoid extreme formation of burrs.
- Align the cutting edge square to the workpiece.



Widening a Face Groove

- After the first groove has been cut, the groove width can be widened in either direction using the same tool. The best practice is to work from the O.D. to the I.D.

Practical Solutions to Grooving Problems

problem	remedy
burr	1. Verify tool center height. 2. Use sharp tools (index more often). 3. Use positive rake PVD coated insert. 4. Use correct grade for workpiece material. 5. Use correct geometry (e.g., positive rake for workhardening material). 6. Change tool path.
poor surface finish	1. Increase speed. 2. Use sharp tools (index more often). 3. Dwell time in bottom 1–3 revolutions (max). 4. Use proper chip control geometry. 5. Increase coolant flow. 6. Verify proper setup (overhang, shank size). 7. Use correct geometry (e.g., positive rake for workhardening material).
groove bottom not flat	1. Use sharp tools (index more often). 2. Dwell time in bottom 1–3 revolutions (max). 3. Reduce tool overhang (increase rigidity). 4. Reduce feed rate at groove bottom. 5. Use a wider insert. 6. Verify tool center height.
poor chip control	1. Use sharp tools (index more often). 2. Increase coolant concentration. 3. Adjust feed rate (usually increase first).
chatter	1. Reduce tool and workpiece overhang. 2. Adjust speed (usually increase first). 3. Adjust feed (usually increase first). 4. Verify tool center height.
insert chipping	1. Use correct grade for workpiece material. 2. Increase speed. 3. Reduce feed. 4. Use a stronger grade. 5. Increase tool and setup rigidity.
built-up edge	1. Use positive rake PVD coated insert. 2. Increase speed. 3. Reduce feed. 4. Increase coolant flow/concentration. 5. Use cermets.
side walls not straight	1. Check tool alignment for square. 2. Reduce workpiece and tool overhang. 3. Use sharp inserts (index more often).

A4™ Tooling and Beyond™ Inserts for All Your O.D. and I.D. Applications

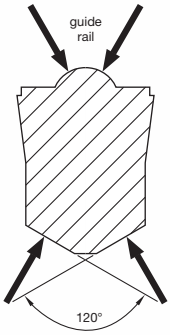
Primary Application

Choose A4 tooling for turning, facing, grooving, face grooving, and cut-off applications across a broad range of workpiece materials. The unique clamping system and versatile insert geometry deliver the highest metal removal rates in the industry.

Features and Benefits

A4 Grooving and Turning System

- One tool for turning, facing, grooving, face-grooving, and cut-off in O.D. and I.D. applications means exceptionally fast cycle times, no turret indexes!
- Extra-long clamping area, ground 120° bottom prism seating surface, and an exclusive top guide rail combine to deliver unsurpassed grooving and side-turning stability!
- Precise insert positioning is ensured for accurate cuts!
- Rigid clamping securely locks insert in place through the toughest cuts.
- Versatile design enables one system to handle O.D. and I.D. grooving, face grooving, back turning, undercutting, and even threading operations.
- Chip control inserts provide excellent chip evacuation in grooving, and offer better chip control in multidirectional turning.



A4 Chipbreakers

GMN Chipbreaker

GMP Chipbreaker

GMN Chipbreaker

GMP Chipbreaker

GUP Chipbreaker

The A4™ System Increases Productivity

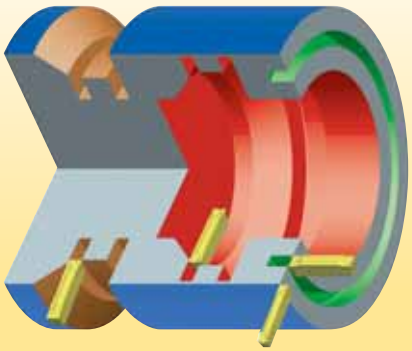
- Covers multiple applications.
- Reduces tool cost.
- Minimises machining time.

To learn more, ***scan here****.*
For instructions on how to scan, please see page xxix.

Step 1 • Select A4 size for grooving and turning application

What you need to know:

- Groove depth, width, and profile.
- Material being machined.
- Application to be performed (O.D. and I.D. grooving, turning, face grooving, and cut-off).



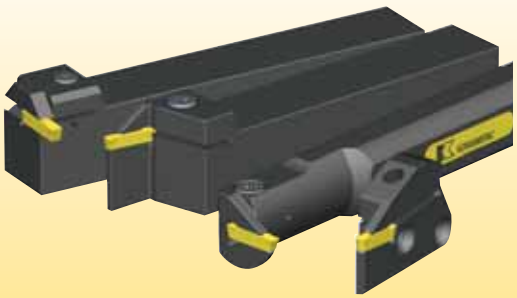
General Recommendation to Select the Insert Size

for workpiece diameters	insert seat size
<25mm	3
25–50mm	4
>50mm	5–10

Step 2 • Select toolholder based on the application

	conventional toolholders	modular blades
O.D. grooving, cut-off, and turning	page D82	page D94
face grooving	page D85	page D95
I.D. grooving, cut-off, and turning	page D87	—

NOTE: Insert seat size must match the seat size of the toolholder.



Step 3 • Select chipbreaker style and feed rate

Choose Chipbreaker Based on Material Type

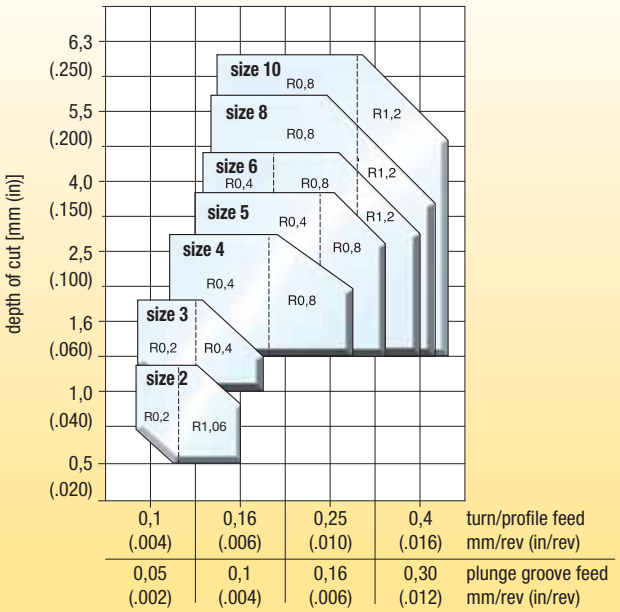
P	M	N	S	H
GMN	GUP/GMP	GUP/GMP precision ground (-E for KD 1405)	GUP/GMP precision ground	GMN

NOTE: Precision ground A4-P-GMN inserts can be applied on all material groups for inch-width grooving.

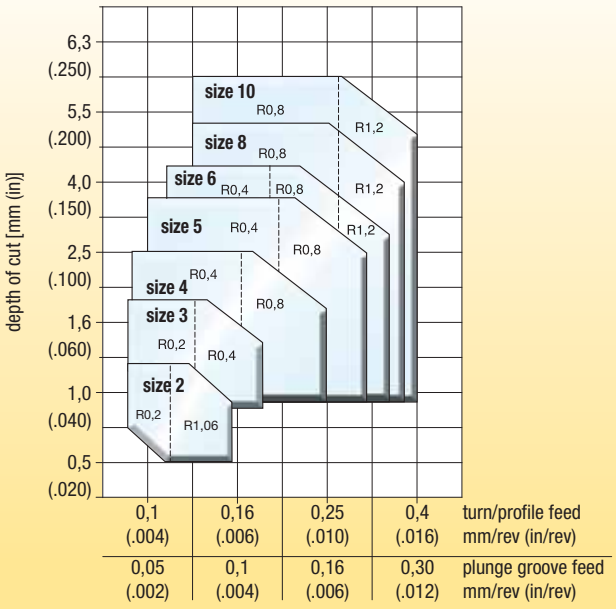
Depth of Cut and Feed Guidelines

square inserts (A4G...)			full radius inserts (A4R...)	
GMN chipbreaker	**GMP chipbreaker**	**GUP chipbreaker**	**GMN chipbreaker**	**GMP chipbreaker**
• Groove and turn moulded and precision ground inserts. • Stable cutting edge. • Available in metric and inch widths.	• Groove and turn inserts. • Available in moulded and precision-ground styles. • Positive rake angle. • Available in metric widths only.	• Groove and turn inserts in new Beyond™ grades. • Available in moulded and precision-ground styles. • Positive rake angle with enhanced chip control. • Available in metric widths only.	• Maximum turning and profiling depth of cut equals half the insert width. • The maximum turn and profile feed rate depends on the material to be machined and the depth of cut. For easy-to-machine materials, feed can be increased up to 1,5 times.	• Groove and turn inserts. • Available in moulded and precision-ground styles. • Positive rake angle. • Available in metric widths only.

GMN



GMP/GUP



NOTE: Select feed based on nose radius.
Diagram explanation: R0,2 - R = corner radius; 0,2 = 0,2mm radius.

Step 4 • Select grade and speed

Recommended Beyond™ Grades

cutting condition		P	M	K	N	S	H
heavily interrupted cut		KCU25/KC5025	KCU25/KC5025	KC9125	KCU25/KC5025	KCU25/KC5025	—
lightly interrupted cut		KCP25/KC9125/ KC9125/KCU25/ KC5025	KCU25/KC5025	KC9125	KCU25/KC5025	KCU25/KC5025	—
varying depth of cut, casting, or forging skin		KCU10/KC5010	KCU10/KC5010	KC9110	KCU10/KC5010/ KD1405	K313/KU10/ KCU10/KC5010	KCU10/KC5010
smooth cut, pre-turned surface		KT315/KCP10/ KC9110	KT315	KC9110	KCU10/KC5010/ KD1405	K313/KU10/ KCU10/KC5010	KCU10/KC5010

Recommended Beyond Cutting Speeds

Steel — speed — m/min (SFM) — starting conditions ◇

material group	grade	60	120	185	245	300	360	m/min
P	KCU10		◇					120
	KCP10				◇			275
	KCP25			◇				220
	KC5025		◇					120
	KC9110				◇			250
	KC9125			◇				200
	KT315**					◇		260

**KT315 is an alternative choice for steel; primarily available in the GMP chipbreaker.

Stainless Steel — speed — m/min (SFM) — starting conditions ◇

material group	grade	45	90	140	185	230	275	m/min
M	KU10	◇						55
	KCU10			◇				140
	KCU25		◇					110
	KC5010			◇				135
	KC5025		◇					105
	KT315				◇			170

Non-Ferrous Metals — speed — m/min (SFM) — starting conditions ◇

material group	grade	150	300	460	610	760	900	m/min
N	KC5025		◇					365
	KC5010			◇				455
	KD1405***				◇			610

***Recommended for high-silicon aluminium alloys and abrasive nonmetallics.

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◇

material group	grade	15	35	55	75	90	140	m/min
S	KU10	◇						22
	KCU10				◇			65
	KCU25			◇				50
	KC5010				◇			60
	KC5025			◇				45
	KT315		◇					30

Hardened Materials — speed — m/min (SFM) — starting conditions ◇

material group	grade	15	35	55	75	95	115	m/min
H	KC5010		◇					30

Step 5 • Select insert and holder from catalogue page

NOTE: The insert seat size must match the seat size of your toolholder selection.

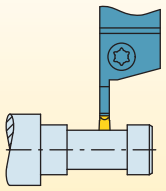
Example for A4 — Groove and Turn

Material.....low-alloyed steel
Workpiece O.D. 38mm
Groove depth 12mm
Groove width 22mm
Lightly interrupted cut

Recommendation

Insert A4G0405M04U08GMN
Grade KC9125
Insert width 4,05mm
Insert seat size 4

Toolholder A4SMR160417
Grooving depth..... 17mm
Seat size 4



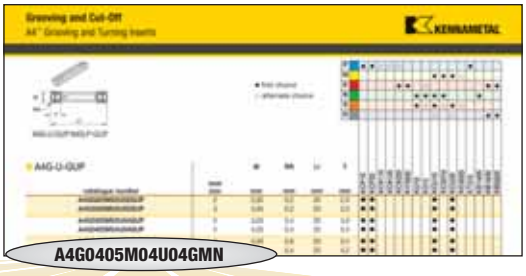
Speed: 200 m/min
Feed: 0,25 mm/rev
Plunge feed: 0,14 mm/rev

Congratulations!

You have successfully maximised your productivity by selecting the best A4 insert geometry, grade, and cutting specifications for your application!

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Grooving and Turning Inserts

A4	G	0405	M	04	U	04	GMN
Tooling System	Insert Type	Groove Width	Unit of Measurement for Grooving Width	Seat Size	Insert Tolerance	Corner Radii	Chipbreaker Type/Edge Prep
A4 = Grooving and Turning	**G** = Square **R** = Full radius **C** = Cut-off	Expressed in 1/100mm	**M** = Metric				

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
03	3,0–3,05
04	4,0–4,05
05	5,0–5,05
06	6,0–6,05
08	8,0–8,05
10	10,0–10,05
2S	2,00–2,62
3S	3,00–3,05
4S	4,00–4,05
5S	5,00–5,05

P = Precision ground grooving width tolerance: ± 0,025mm (.001")

U = Utility moulded grooving width tolerance:

3,05-4,05: $\frac{+0{,}15\text{mm}}{-0}$

5,05-10,05: $\frac{+0{,}25\text{mm}}{-0}$

metric
01 = 0,1
02 = 0,2
04 = 0,4
08 = 0,8
12 = 1,2
full radius = 00

GMN = Grooving and turning medium machining stable cutting edge

GMP = Grooving and turning medium machining positive rake angle

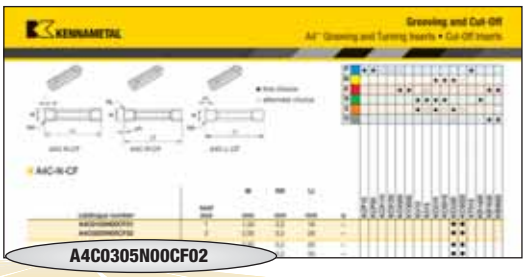
GUP = Grooving and turning high positive geometry. Especially in stainless steels and high-temp alloys

B = Flat top for special forms and applications

E = Flat top, slight honed edge

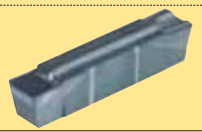
S = Negative land plus hone

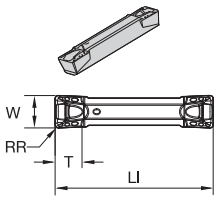
ST = Single tip



Cut-Off Inserts

A4	C	0305	N	00	CF	02
Tooling System	Insert Type	Cutting Width	Hand of Insert	Main Cutting Edge Lead Angle	Chipbreaker Type	Corner Radius
A4 = Grooving and Turning	**C** = Cut-off	Expressed in 1/100mm	**R** = Right hand **L** = Left hand **N** = Neutral	**00** = Neutral **06** = 6° **10** = 10°	**CF** = Cut-off fine positive rake	**metric** 02 = 0,2

insert type and chipbreaker designation		application range	metric widths (mm)	P	M	N	S	H
Moulded: A4G-U-GUP		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	2–10	●	●	●	●	○
Precision Ground: A4G-P-GUP		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	2–10	●	●	●	●	○
Moulded: A4G-U-GMN		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	3,05–10,05	●				●
Precision Ground: A4G-P-GMN		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	—	●	○	○	○	●
Moulded: A4G-U-GMP		Groove and Turn: • Positive rake angle. • Reduced cutting force. • Small to medium feed rates. • Utility moulded.	3,05–10,05	○	●			
Precision Ground: A4G-P-GMP		• Positive rake angle. • Precision ground cutting edge. • ± 0,025mm width tolerance.	3–10		○	●	●	
Moulded: A4R-U-GMN		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	3,05–10,05	●				●
Precision Ground: A4R-P-GMN		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	—	●	○	○	○	●
Precision Ground: A4R-P-GMP		Groove and Turn: • Positive rake angle. • Precision ground cutting edge. • ± 0,025mm width tolerance.	3–10		●	●	●	
Moulded: A4G-U-B		Groove and Turn: • For special profiles and for PCBN-tipped inserts (by request only). • Secondary choice for cast iron and high-temp alloys.	3,05–10,05				○	
Precision Ground: A4G-P-E-PCD		• Diamond sheet-tipped tool for high-performance non-ferrous machining.	3–5			●		
Moulded: A4C-CF		Cut-Off: • High positive rake angle. • Sharp cutting edge. • Available in neutral lead angle in 6° and 10° right- and left-hand styles.	3,05–4,05	●	●	●	●	



A4G-U-GUP/A4G-P-GUP

● first choice
○ alternate choice

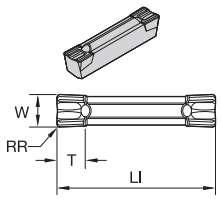
		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GUP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GUP	2	2,05	0,2	20	2,0	●	●							●		●					
A4G0305M03U02GUP	3	3,05	0,2	20	3,0	●	●							●		●					
A4G0305M03U04GUP	3	3,05	0,4	20	3,0	●	●							●		●					
A4G0405M04U04GUP	4	4,05	0,4	20	3,4	●	●							●		●					
A4G0405M04U08GUP	4	4,05	0,8	20	3,4	●	●							●		●					
A4G0505M05U04GUP	5	5,05	0,4	25	4,2	●	●							●		●					
A4G0505M05U08GUP	5	5,05	0,8	25	4,2	●	●							●		●					
A4G0605M06U04GUP	6	6,05	0,4	30	4,5	●	●							●		●					
A4G0605M06U08GUP	6	6,05	0,8	30	4,5	●	●							●		●					
A4G0605M06U12GUP	6	6,05	1,2	30	4,5	●	●							●		●					
A4G0805M08U08GUP	8	8,05	0,8	30	6,0	●	●							●		●					
A4G0805M08U12GUP	8	8,05	1,2	30	6,0	●	●							●		●					
A4G1005M10U08GUP	10	10,05	0,8	30	6,0	●	●							●		●					
A4G1005M10U12GUP	10	10,05	1,2	30	6,1	●	●							●		●					

A4G-P-GUP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GUP	2	2,00	0,2	20	1,9							●		●		●					
A4G0300M03P02GUP	3	3,00	0,2	20	2,9							●		●		●					
A4G0300M03P04GUP	3	3,00	0,4	20	2,9							●		●		●					
A4G0400M04P02GUP	4	4,00	0,2	20	3,3							●		●		●					
A4G0400M04P04GUP	4	4,00	0,4	20	3,3							●		●		●					
A4G0400M04P08GUP	4	4,00	0,8	20	3,3							●		●		●					
A4G0500M05P04GUP	5	5,00	0,4	25	4,1							●		●		●					
A4G0500M05P08GUP	5	5,00	0,8	25	4,1							●		●		●					
A4G0600M06P04GUP	6	6,00	0,4	30	4,5							●		●		●					
A4G0600M06P08GUP	6	6,00	0,8	30	4,5							●		●		●					
A4G0800M08P08GUP	8	8,00	0,8	30	6,0							●		●		●					
A4G0800M08P12GUP	8	8,00	1,2	30	6,0							●		●		●					
A4G1000M10P08GUP	10	10,00	0,8	30	6,0							●		●		●					
A4G1000M10P12GUP	10	10,00	1,2	30	6,0							●		●		●					



A4G-U-GMP/A4G-P-GMP

● first choice
○ alternate choice

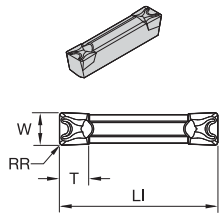
		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GMP

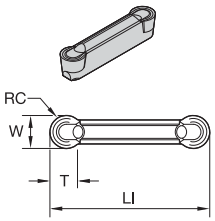
catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GMP	2	2,05	0,2	20	2,0			●						●	●	●	●				
A4G0255M2BU02GMP	2B	2,62	0,2	20	2,0											●	●				
A4G0305M03U02GMP	3	3,05	0,2	20	3,5			●	●					●	●	●	●	●			
A4G0305M03U04GMP	3	3,05	0,4	20	3,5			●	●					●	●	●	●	●			
A4G0405M04U04GMP	4	4,05	0,4	20	3,5			●	●					●	●	●	●	●			
A4G0405M04U08GMP	4	4,05	0,8	20	3,5			●	●					●	●	●	●	●			
A4G0505M05U04GMP	5	5,05	0,4	25	4,2			●	●					●	●	●	●				
A4G0505M05U08GMP	5	5,05	0,8	25	4,2			●	●					●	●	●	●	●			
A4G0605M06U04GMP	6	6,05	0,4	30	4,9			●	●					●	●	●	●				
A4G0605M06U08GMP	6	6,05	0,8	30	4,9			●	●					●	●	●	●	●			
A4G0605M06U12GMP	6	6,05	1,2	30	4,9									●	●		●				
A4G0805M08U08GMP	8	8,05	0,8	30	6,4			●	●							●	●				
A4G0805M08U12GMP	8	8,05	1,2	30	6,4												●				
A4G1005M10U08GMP	10	10,05	0,8	30	8,1									●	●	●	●				
A4G1005M10U12GMP	10	10,05	1,2	30	8,1				●								●				

A4G-P-GMP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GMP	2	2,00	0,2	20	2,0									●	●	●	●				
A4G0250M2BP02GMP	2B	2,50	0,2	20	2,0									●	●						
A4G0300M03P02GMP	3	3,00	0,2	20	3,5								●	●	●	●	●				
A4G0300M03P04GMP	3	3,00	0,4	20	3,5								●	●	●	●	●				
A4G0400M04P02GMP	4	4,00	0,2	20	3,5								●	●	●	●	●				
A4G0400M04P04GMP	4	4,00	0,4	20	3,5								●	●	●	●	●				
A4G0400M04P08GMP	4	4,00	0,8	20	3,5									●	●	●	●				
A4G0500M05P04GMP	5	5,00	0,4	25	4,2								●	●	●	●	●				
A4G0500M05P08GMP	5	5,00	0,8	25	4,2								●	●	●	●	●				
A4G0600M06P04GMP	6	6,00	0,4	30	4,8									●	●	●	●				
A4G0600M06P08GMP	6	6,00	0,8	30	4,8									●	●	●	●				
A4G0800M08P08GMP	8	8,00	0,8	30	6,3								●	●	●	●	●				
A4G0800M08P12GMP	8	8,00	1,2	30	6,3									●	●						
A4G1000M10P08GMP	10	10,00	0,8	30	8,0								●	●	●	●	●				
A4G1000M10P12GMP	10	10,00	1,2	30	8,0									●	●						



A4G-U-GMN/A4G-P-GMN



A4R-P-GMP

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GMN

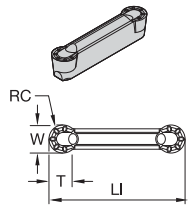
catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M02U02GMN	2	2,05	0,2	20	2,0
A4G0255M2BU02GMN	2B	2,62	0,2	20	2,0
A4G0305M03U02GMN	3	3,05	0,2	20	3,5
A4G0305M03U04GMN	3	3,05	0,4	20	3,5
A4G0405M04U04GMN	4	4,05	0,4	20	3,5
A4G0405M04U08GMN	4	4,05	0,8	20	3,5
A4G0505M05U04GMN	5	5,05	0,4	25	4,2
A4G0505M05U08GMN	5	5,05	0,8	25	4,2
A4G0605M06U04GMN	6	6,05	0,4	30	4,9
A4G0605M06U08GMN	6	6,05	0,8	30	4,9
A4G0605M06U12GMN	6	6,05	1,2	30	4,9
A4G0805M08U08GMN	8	8,05	0,8	30	6,4
A4G0805M08U12GMN	8	8,05	1,2	30	6,4
A4G1005M10U08GMN	10	10,05	0,8	30	8,1
A4G1005M10U12GMN	10	10,05	1,2	30	8,1

A4G-P-GMN

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G094I2BP05GMN	2B	2,39	0,2	20	1,9
A4G125I03P05GMN	3	3,18	0,2	20	3,4
A4G125I03P1GMN	3	3,18	0,4	20	3,4
A4G187I04P1GMN	4	4,76	0,4	20	3,5
A4G187I04P2GMN	4	4,76	0,8	20	3,5
A4G250I06P1GMN	6	6,35	0,4	30	4,7
A4G250I06P2GMN	6	6,35	0,8	30	4,7
A4G312I08P1GMN	8	7,94	0,4	30	6,2
A4G312I08P2GMN	8	7,94	0,8	30	6,2
A4G375I10P1GMN	10	9,53	0,4	30	7,9
A4G375I10P2GMN	10	9,53	0,8	30	7,9

A4R-P-GMP

catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0200M02P00GMP	2	2,00	1,0	20	1,7
A4R0300M03P00GMP	3	3,00	1,5	20	2,5
A4R0400M04P00GMP	4	4,00	2,0	20	3,4
A4R0500M05P00GMP	5	5,00	2,5	25	4,1
A4R0600M06P00GMP	6	6,00	3,0	30	4,9
A4R0800M08P00GMP	8	8,00	4,0	30	6,5
A4R1000M10P00GMP	10	10,00	5,0	30	8,1



A4R-U-GMN/A4R-P-GMN
A4R-U-GUP/A4R-U-GUP

● first choice
○ alternate choice

P	●	●	○	○	○							●				
M								●	●	●	○					
K					●	●		○						●	●	
N							●	●	●	●						
S							●	○	●	○	●	○				
H									○		○				●	●

A4R-U-GMN

catalogue number	seat size	W mm	RC mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0205M02U00GMN	2	2,05	1,1	20	1,8			●						●	●	●	●				
A4R0305M03U00GMN	3	3,05	1,5	20	2,6			●	●					●	●	●	●				
A4R0405M04U00GMN	4	4,05	2,0	20	3,4			●	●					●	●	●	●				
A4R0505M05U00GMN	5	5,05	2,5	25	4,1			●	●					●	●	●	●				
A4R0605M06U00GMN	6	6,05	3,0	30	4,9			●	●					●	●	●	●				
A4R0805M08U00GMN	8	8,05	4,0	30	6,5			●	●					●	●	●	●				
A4R1005M10U00GMN	10	10,05	5,0	30	8,1				●					●	●	●	●				

A4R-P-GMN

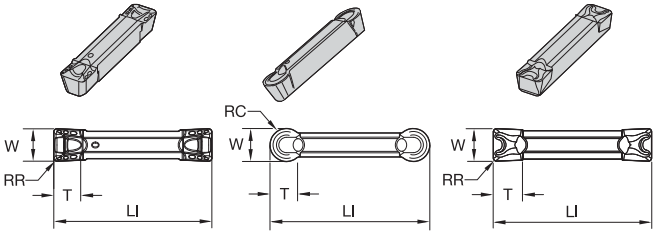
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R125I03P00GMN	3	3,18	1,6	20	2,7
A4R187I04P00GMN	4	4,76	2,4	20	3,8
A4R250I06P00GMN	6	6,35	3,2	30	5,2
A4R312I08P00GMN	8	7,94	4,0	30	6,4
A4R375I10P00GMN	10	9,53	4,8	30	7,3

A4R-U-GUP

catalogue number	seat size	W mm	RC mm	LI mm
A4R0305M03U00GUP	3	3,05	1,5	20
A4R0505M05U00GUP	5	5,05	2,5	25
A4R1005M10U00GUP	10	10,05	5,0	30

A4R-P-GUP

catalogue number	seat size	W mm	RC mm	LI mm
A4R0300M03P00GUP	3	3,00	1,5	20
A4R0400M04P00GUP	4	4,00	2,0	20
A4R0500M05P00GUP	5	5,00	2,5	25
A4R0600M06P00GUP	6	6,00	3,0	30
A4R0800M08P00GUP	8	8,00	4,0	30
A4R1000M10P00GUP	10	10,00	5,0	30
A4R125I03P00GUP	3	3,18	1,6	20
A4R187I04P00GUP	4	4,76	2,4	20
A4R250I06P00GUP	6	6,35	3,2	30
A4R312I08P00GUP	8	7,94	4,0	30
A4R375I10P00GUP	10	9,52	4,8	30



A4G-SU-GUP/A4G-SP-GUP A4R-SP-GMP A4G-SU-GMN

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-SU-GUP • Small Diameter Face Grooving

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M2SU02GUP	2S	2,05	0,2	20	2,0
A4G0305M3SU02GUP	3S	3,05	0,2	20	3,0
A4G0305M3SU04GUP	3S	3,05	0,4	20	3,0
A4G0405M4SU04GUP	4S	4,05	0,4	20	3,4
A4G0405M4SU08GUP	4S	4,05	0,8	20	3,4
A4G0505M5SU04GUP	5S	5,05	0,4	25	4,2
A4G0505M5SU08GUP	5S	5,05	0,8	25	4,2

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

A4G-SP-GUP • Small Diameter Face Grooving

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0200M2SP02GUP	2S	2,00	0,2	20	1,9
A4G0300M3SP02GUP	3S	3,00	0,2	20	2,9
A4G0300M3SP04GUP	3S	3,00	0,4	20	2,9
A4G0400M4SP04GUP	4S	4,00	0,4	20	3,4
A4G0400M4SP08GUP	4S	4,00	0,8	20	3,4
A4G0500M5SP04GUP	5S	5,00	0,4	25	4,1
A4G0500M5SP08GUP	5S	5,00	0,8	25	4,1

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

A4R-SP-GMP • Small Diameter Face Grooving

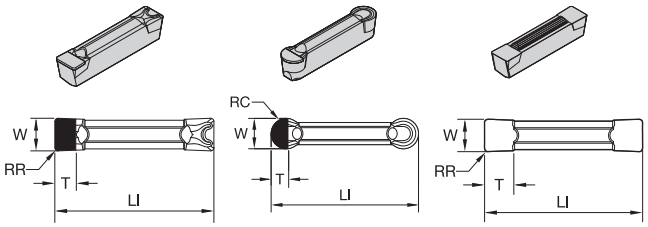
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0200M2SP00GMP	2S	2,00	1,0	20	1,7
A4R0300M3SP00GMP	3S	3,00	1,5	20	2,5
A4R0400M4SP00GMP	4S	4,00	2,0	20	3,4
A4R0500M5SP00GMP	5S	5,00	2,5	25	4,1

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

A4G-SU-GMN • Small Diameter Face Grooving

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M2SU02GMN	2S	2,05	0,2	20	2,0
A4G0305M3SU02GMN	3S	3,05	0,2	20	3,5
A4G0305M3SU04GMN	3S	3,05	0,4	20	3,5
A4G0405M4SU04GMN	4S	4,05	0,4	20	3,6
A4G0405M4SU08GMN	4S	4,05	0,8	20	3,6
A4G0505M5SU04GMN	5S	5,05	0,4	25	4,2
A4G0505M5SU08GMN	5S	5,05	0,8	25	4,2

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.



A4G-P-E A4R-P-E A4G-U-B

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-P-E • PCD Grooving

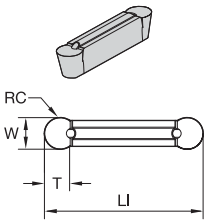
catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04E	3	3,00	0,4	20	3,5
A4G0400M04P04E	4	4,00	0,4	20	3,5
A4G0500M05P08E	5	5,00	0,8	25	4,2

A4R-P-E • PCD Grooving

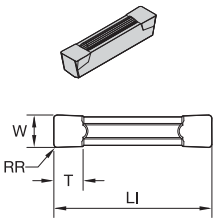
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0500M05P00E	5	5,00	2,5	25	4,1

A4G-U-B

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0305M03U02B	3	3,05	0,2	20	3,5
A4G0405M04U04B	4	4,05	0,4	20	3,4
A4G0505M05U04B	5	5,05	0,4	25	4,2
A4G0605M06U04B	6	6,05	0,4	30	4,9
A4G0805M08U08B	8	8,05	0,8	30	6,4
A4G1005M10U08B	10	10,05	0,8	30	8,1



A4R-P-T



A4G-P-T

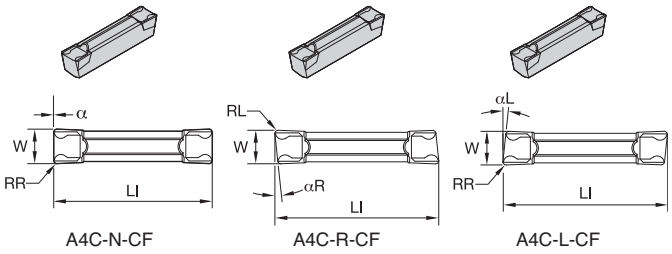
● first choice
○ alternate choice

A4G-P-T

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0300M03P04T01025	3	3,00	0,4	20	3,4						●										
A4G125I03P1T0425	3	3,18	0,4	20	3,4						●										
A4G0400M04P04T01025	4	4,00	0,4	20	3,4						●										
A4G187I04P2T0425	4	4,76	0,8	20	3,4						●										
A4G0500M05P08T01025	5	5,00	0,8	25	4,2						●										
A4G0600M06P08T01025	6	6,00	0,8	30	4,8						●										
A4G250I06P2T0425	6	6,35	0,8	30	4,9						●										
A4G0800M08P08T01025	8	8,00	0,8	30	6,4						●										

A4R-P-T

catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0300M03P00T01025	3	3,00	1,5	20	2,4
A4R125I03P00T0425	3	3,18	1,6	20	2,6
A4R0400M04P00T01025	4	4,00	2,0	20	3,0
A4R187I04P00T0425	4	4,76	2,4	20	4,3
A4R0500M05P00T01025	5	5,00	2,5	25	4,1
A4R0600M06P00T01025	6	6,00	3,0	30	4,3
A4R250I06P00T0425	6	6,35	3,2	30	4,8
A4R0800M08P00T01025	8	8,00	4,0	30	6,4



A4C-N-CF A4C-R-CF A4C-L-CF

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4C-N-CF

catalogue number	seat size	W mm	RR mm	LI mm	α
A4C0155N00CF01	1	1,50	0,2	16	–
A4C0205N00CF02	2	2,05	0,2	20	–
A4C0255N00CF02	2B	2,50	0,2	20	–
A4C0305N00CF02	3	3,05	0,2	20	–
A4C0405N00CF02	4	4,05	0,2	20	–

catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155N00CF01											●	●				
A4C0205N00CF02											●	●				
A4C0255N00CF02											●	●				
A4C0305N00CF02											●	●				
A4C0405N00CF02											●	●				

A4C-R-CF

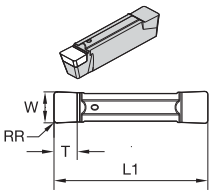
catalogue number	seat size	W mm	RL mm	LI mm	αR
A4C0155R16CF01	1	1,50	0,2	16	16.0
A4C0155R06CF01	1	1,50	0,2	16	6.0
A4C0155R10CF01	1	1,50	0,2	16	10.0
A4C0205R10CF02	2	1,99	0,2	20	10.0
A4C0205R06CF02	2	1,99	0,2	20	6.0
A4C0255R06CF02	2B	2,49	0,2	20	6.0
A4C0305R06CF02	3	3,05	0,2	20	6.0
A4C0305R10CF02	3	3,05	0,2	20	10.0
A4C0405R06CF02	4	4,05	0,2	20	6.0
A4C0405R10CF02	4	4,05	0,2	20	10.0

catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155R16CF01												●				
A4C0155R06CF01												●				
A4C0155R10CF01											●	●				
A4C0205R10CF02											●	●				
A4C0205R06CF02											●	●				
A4C0255R06CF02												●				
A4C0305R06CF02											●	●				
A4C0305R10CF02											●	●				
A4C0405R06CF02											●	●				
A4C0405R10CF02											●	●				

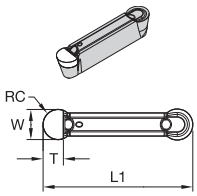
A4C-L-CF

catalogue number	seat size	W mm	RR mm	LI mm	αL
A4C0155L06CF01	1	1,50	0,2	16	6.0
A4C0205L06CF02	2	1,99	0,2	20	6.0
A4C0205L10CF02	2	1,99	0,2	20	10.0
A4C0305L06CF02	3	3,05	0,2	20	6.0
A4C0305L10CF02	3	3,05	0,2	20	10.0
A4C0405L06CF02	4	4,05	0,2	20	6.0
A4C0405L10CF02	4	4,05	0,2	20	10.0

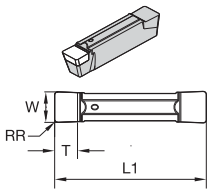
catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155L06CF01												●				
A4C0205L06CF02											●	●				
A4C0205L10CF02												●				
A4C0305L06CF02											●	●				
A4C0305L10CF02											●	●				
A4C0405L06CF02											●	●				
A4C0405L10CF02											●	●				



A4G-P-S-ST



A4R-P-E-ST



A4G-P-E-ST

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-P-S-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04S02025ST	3	3,00	0,4	20	3,0
A4G0400M04P04S02025ST	4	4,00	0,4	20	3,3
A4G0500M05P08S02025ST	5	5,00	0,8	25	3,5
A4G0600M06P08S02025ST	6	6,00	0,8	30	4,0

A4R-P-E-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4R0300M03P00EST	3	3,00	–	20	2,2
A4R0400M04P00EST	4	4,00	–	20	2,9
A4R0500M05P00EST	5	5,00	–	25	3,7
A4R0600M06P00EST	6	6,00	–	30	4,4

A4G-P-E-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04EST	3	3,00	0,4	20	3,0
A4G0400M04P04EST	4	4,00	0,4	20	3,3
A4G0500M05P08EST	5	5,00	0,8	25	3,5
A4G0600M06P08EST	6	6,00	0,8	30	4,0

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

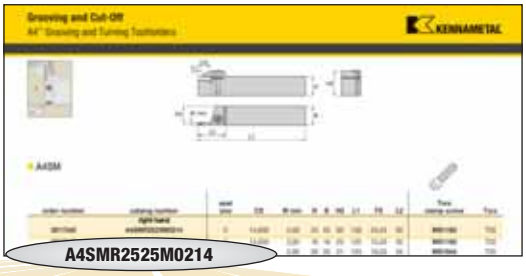
By using the Kennametal Carbide Recycling Program, you will receive:

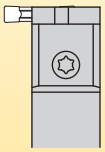
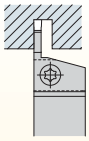
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

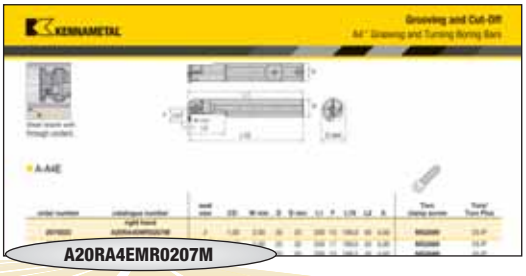
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A4	S	M	R	2525M	02	14
Tooling System	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max Grooving Depth
A4 = Grooving and Turning	**S** = Straight  **E** = End mounted 90°	**M** = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters **E** = No steel support for face grooving	 **R** = Right hand **L** = Left hand **N** = Neutral	**metric:** Height x width in mm, letter indicates tool length according to ISO **metric tool length (mm)** K = 125 M = 150 P = 170	02 03 04 05 06 08 10	in millimetres

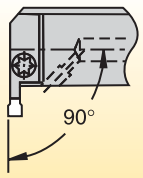
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



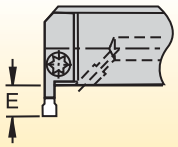
A20RA4EMR0207M

A	20	R	A4	E	M	R	02	07	M
Steel Bar with Coolant	Bar Diameter	Bar Length	A4 Groove & Turn System	Tool Style	Support Type	Hand of Tool	Insert Seat Size	Grooving Depth in mm	Tool Units

M = Metric
N = Inch

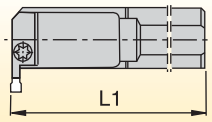


E = End mounted (90°)



conversions:

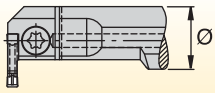
mm		inch
7mm	=	.28"
10mm	=	.39"
12mm	=	.47"
16mm	=	.63"



metric bars:
R = 200mm
S = 250mm
T = 300mm

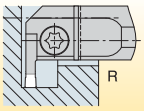
inch bars:
R = 8"
S = 10"
T = 12"

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
03	3,0–3,05
04	4,0–4,05
05	5,0–5,05
06	6,0–6,05
08	8,0–8,05
10	10,0–10,05

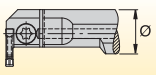


metric bars:
Bar diameter in millimetres

inch bars:
A two-digit number which indicates the bar diameter in 1/16" increments.

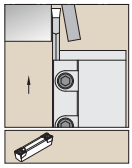


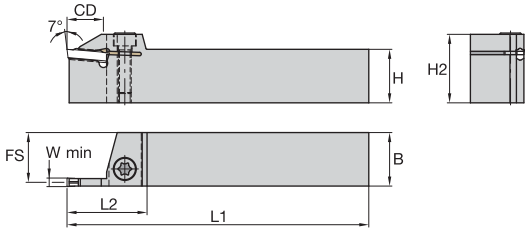
R = Right hand



L = Left hand

M = Maximum support



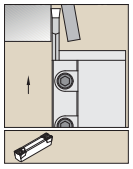


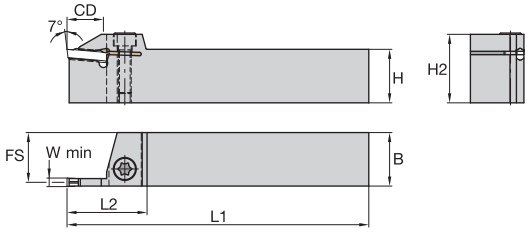
A4SM

order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3017340	A4SMR2525M0214	2	14,000	2,00	25	25	30	150	24,20	30	MS1160	T20
3017342	A4SMR1616K0214	2	14,000	2,00	16	16	25	125	15,20	30	MS1160	T20
2974425	A4SMR2020K0217	2	17,000	2,00	20	20	31	125	19,20	34	MS1944	T25
3017339	A4SMR2525M0217	2	17,000	2,00	25	25	31	150	24,20	34	MS1944	T25
1949635	A4SMR2020K0314	3	14,000	3,00	20	20	27	125	18,72	35	MS1595	T30
1949633	A4SMR1616K0314	3	14,000	3,00	16	16	27	125	14,72	35	MS2091	T25
1949637	A4SMR2525M0317	3	17,000	3,00	25	25	32	150	23,72	37	MS1970	T30
2503551	A4SMR2020K0317	3	17,000	3,00	20	20	32	125	18,70	37	MS1970	T30
2503557	A4SMR2016K0317	3	17,000	3,00	20	16	32	125	14,70	37	MS1970	T30
1949639	A4SMR2020K0414	4	14,000	4,00	20	20	27	125	18,22	35	MS1595	T30
1949643	A4SMR3225P0417	4	17,000	4,00	32	25	40	170	23,22	37	MS1970	T30
2503553	A4SMR2020K0417	4	17,000	4,00	20	20	32	125	18,20	37	MS1970	T30
1949641	A4SMR2525M0417	4	17,000	4,00	25	25	32	150	23,22	37	MS1970	T30
2503559	A4SMR2016K0417	4	17,000	4,00	20	16	32	125	14,20	37	MS1970	T30
1949645	A4SMR2020K0519	5	19,000	5,00	20	20	28	125	17,72	40	MS1595	T30
1949647	A4SMR2525M0520	5	20,000	5,00	25	25	33	150	22,72	40	MS1970	T30
1949649	A4SMR3225P0522	5	22,000	5,00	32	25	40	170	22,72	42	MS1970	T30
2503555	A4SMR2020K0620	6	20,000	6,00	20	20	33	125	17,30	40	MS1970	T30
2245484	A4SMR2525M0620	6	20,000	6,00	25	25	33	150	22,30	40	MS1970	T30
2263089	A4SMR3225P0626	6	26,000	6,00	32	25	40	170	22,30	45	MS1970	T30
2245485	A4SMR2525M0820	8	20,000	8,00	25	25	34	150	21,40	43	MS1490	T45
2263091	A4SMR3225P0826	8	26,000	8,00	32	25	41	170	21,40	47	MS1490	T45
2263173	A4SMR3225P1026	10	26,000	10,00	32	25	41	170	20,80	47	MS1490	T45
3017341	A4SMR2020K0214	2	14,000	–	20	20	25	125	19,20	30	MS1160	T20

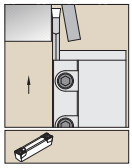
(continued)

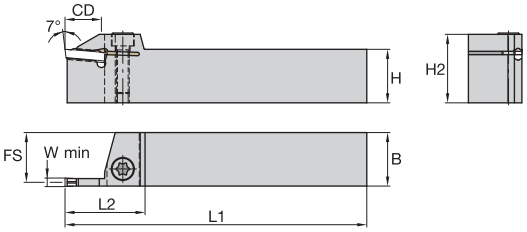
(A4SM continued)





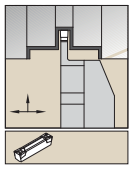
order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	left hand											
3017338	**A4SML1616K0214**	2	14,000	2,00	16	16	25	125	15,20	30	**MS1160**	T20
3017335	**A4SML2525M0214**	2	14,000	2,00	25	25	30	150	24,20	30	**MS1160**	T20
3017337	**A4SML2020K0217**	2	17,000	2,00	20	20	31	125	19,20	34	**MS1944**	T25
3017334	**A4SML2525M0217**	2	17,000	2,00	25	25	31	150	24,20	34	**MS1944**	T25
1949636	**A4SML2020K0314**	3	14,000	3,00	20	20	27	125	18,72	35	**MS1595**	T30
1949634	**A4SML1616K0314**	3	14,000	3,00	16	16	27	125	14,72	35	**MS2091**	T25
2503550	**A4SML2020K0317**	3	17,000	3,00	20	20	32	125	18,70	37	**MS1970**	T30
1949638	**A4SML2525M0317**	3	17,000	3,00	25	25	32	150	23,72	37	**MS1970**	T30
2503556	**A4SML2016K0317**	3	17,000	3,00	20	16	32	125	14,70	37	**MS1970**	T30
1949640	**A4SML2020K0414**	4	14,000	4,00	20	20	27	125	18,22	35	**MS1595**	T30
1949642	**A4SML2525M0417**	4	17,000	4,00	25	25	32	150	23,22	37	**MS1970**	T30
2503552	**A4SML2020K0417**	4	17,000	4,00	20	20	32	125	18,20	37	**MS1970**	T30
2503558	**A4SML2016K0417**	4	17,000	4,00	20	16	32	125	14,20	37	**MS1970**	T30
1949644	**A4SML3225P0417**	4	17,000	4,00	32	25	40	170	23,22	37	**MS1970**	T30
1949646	**A4SML2020K0519**	5	19,000	5,00	20	20	28	125	17,72	40	**MS1595**	T30
1949648	**A4SML2525M0520**	5	20,000	5,00	25	25	33	150	22,72	40	**MS1970**	T30
1949650	**A4SML3225P0522**	5	22,000	5,00	32	25	40	170	22,72	42	**MS1970**	T30
2245486	**A4SML2525M0620**	6	20,000	6,00	25	25	33	150	22,30	40	**MS1970**	T30
2503554	**A4SML2020K0620**	6	20,000	6,00	20	20	33	125	17,30	40	**MS1970**	T30
2263090	**A4SML3225P0626**	6	26,000	6,00	32	25	40	170	22,30	45	**MS1970**	T30
2245487	**A4SML2525M0820**	8	20,000	8,00	25	25	34	150	21,40	43	**MS1490**	T45
2263092	**A4SML3225P0826**	8	26,000	8,00	32	25	41	170	21,40	47	**MS1490**	T45
2263174	**A4SML3225P1026**	10	26,000	10,00	32	25	41	170	20,80	47	**MS1490**	T45
3017336	**A4SML2020K0214**	2	14,000	–	20	20	25	125	19,20	30	**MS1160**	T20

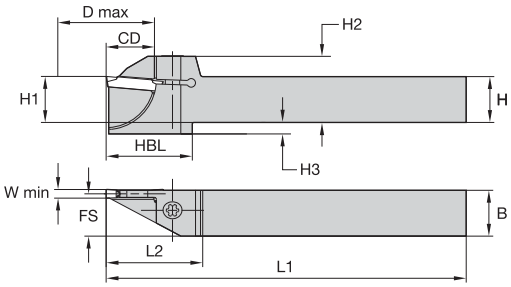




A4SM

order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854265	**A4SMR2020K0208**	2	8	2	20	20	24	125	19	26	**MS1160**	T20
3854267	**A4SMR2020K0308**	3	8	3	20	20	27	125	19	28	**MS1595**	T30
3854269	**A4SMR2020K0408**	4	8	4	20	20	27	125	18	28	**MS1595**	T30
3854271	**A4SMR2525M0510**	5	10	5	25	25	33	150	23	32	**MS1970**	T30
3854273	**A4SMR2525M0610**	6	10	6	25	25	33	150	22	37	**MS1970**	T30
	left hand											
3854266	**A4SML2020K0208**	2	8	2	20	20	24	125	19	26	**MS1160**	T20
3854268	**A4SML2020K0308**	3	8	3	20	20	27	125	19	28	**MS1595**	T30
3854270	**A4SML2020K0408**	4	8	4	20	20	27	125	18	28	**MS1595**	T30
3854272	**A4SML2525M0510**	5	10	5	25	25	33	150	23	32	**MS1970**	T30
3854274	**A4SML2525M0610**	6	10	6	25	25	33	150	22	37	**MS1970**	T30

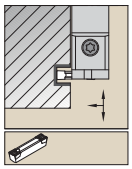


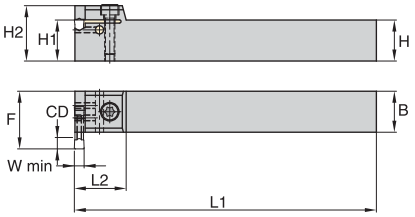


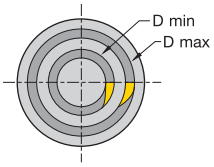
left-hand tool

A4SC

catalogue number	seat size	D max	CD	W min	H	B	FS	L1	L2	HBL	H1	H2	H3	clamp screw	Torx/ Torx Plus
right hand															
A4SCR1010K0113	1	27	13,5	1,50	10	10	9	125	25,00	22,0	10	21	6	**MS1156**	T15
A4SCR1212K0113	1	27	13,5	1,50	12	12	11	125	25,00	22,0	12	21	4	**MS1156**	T15
A4SCR1616K0113	1	27	13,5	1,50	16	16	15	125	25,00	–	16	21	–	**MS1156**	T15
A4SCR2020K0113	1	27	13,5	1,50	20	20	19	125	25,00	–	20	25	–	**MS1156**	T15
A4SCR1212K0214	2	28	14,0	2,00	12	12	11	125	28,00	23,0	12	21	4	**MS1160**	T20
A4SCR1616K0217	2	34	17,0	2,00	16	16	15	125	31,00	26,0	16	26	4	**MS1944**	T25
A4SCR1212K0314	3	28	14,0	3,00	12	12	11	125	30,00	25,0	12	23	4	**MS2091**	25 IP
A4SCR1616K0317	3	34	17,0	3,00	16	16	15	125	33,00	30,0	16	27	4	**MS2091**	25 IP
left hand															
A4SCL1010K0113	1	27	13,5	1,50	10	10	9	125	25,00	22,0	10	21	6	**MS1156**	T15
A4SCL1212K0113	1	27	13,5	1,50	12	12	11	125	25,00	22,0	12	21	4	**MS1156**	T15
A4SCL2020K0113	1	27	13,5	1,50	20	20	19	125	25,00	–	20	25	–	**MS1156**	T15
A4SCL1616K0113	1.5	27	13,5	1,50	16	16	15	125	25,00	–	16	21	–	**MS1156**	T15
A4SCL1212K0214	2	28	14,0	2,00	12	12	11	125	28,00	23,0	12	21	4	**MS1160**	T20
A4SCL1616K0217	2	34	17,0	2,00	16	16	15	125	31,00	26,0	16	26	4	**MS1944**	T25
A4SCL1212K0314	3	28	14,0	3,00	12	12	11	125	30,00	25,0	12	23	4	**MS2091**	25 IP
A4SCL1616K0317	3	34	17,0	3,00	16	16	15	125	33,00	30,0	16	27	4	**MS2091**	25 IP





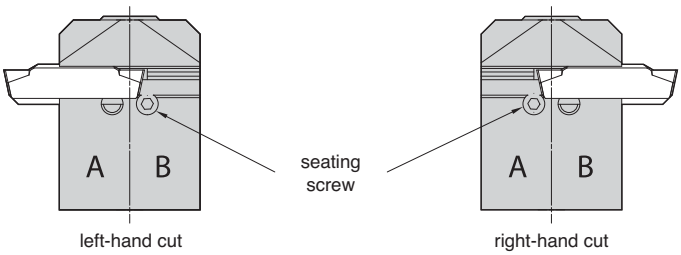


A4EN

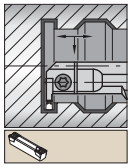
order number	catalogue number	seat size	CD	W min	D min	H	H1	B	H2	L1	F	L2	Torx clamp screw	Torx	hex seating screw	hex (mm)
2414136	**A4ENN2020K0305**	3	5	3,00	70	20	20	20	27	125,0	25,4	25	**MS2091**	T25	**MS2090**	1.5 mm
2414137	**A4ENN2525M0305**	3	5	3,00	70	25	25	25	32	150,0	30,4	25	**MS2091**	T25	**MS2090**	1.5 mm
1949652	**A4ENN2525M0407**	4	7	4,00	90	25	25	25	32	150,0	33,1	25	**MS2091**	T25	**MS2090**	1.5 mm
1949651	**A4ENN2020K0407**	4	7	4,00	90	20	20	20	27	125,0	27,9	25	**MS2091**	T25	**MS2090**	1.5 mm
1949654	**A4ENN2525M0509**	5	9	5,00	120	25	25	25	33	150,0	35,1	34	**MS1970**	T30	**193.297**	1.5 mm
2503545	**A4ENN3232P0611**	6	11	6,00	120	32	32	32	40	170,0	43,4	34	**MS1970**	T30	**193.297**	2 mm
2503543	**A4ENN2020K0611**	6	11	6,00	120	20	20	20	28	125,0	35,4	34	**MS1595**	T30	**193.297**	2 mm
2503544	**A4ENN2525M0611**	6	11	6,00	120	25	25	25	33	150,0	38,9	34	**MS1970**	T30	**193.297**	2 mm
2503547	**A4ENN3232P0811**	8	11	8,00	120	32	32	32	42	170,0	43,4	40	**MS1490**	T45	**193.407**	2.5 mm

NOTE: D min for face grooving applications.
A4EN-style toolholders are designed without steel support for face grooving capacity.
Cutting feed recommendations should be reduced by 25–30%.
Recommended clamp screw torque, 6–8 Nm (50–70 in. lbs.).
Minimum cutting width supplied for reference only; see insert listing for actual width. Always match seat size of insert to seat size of holder.

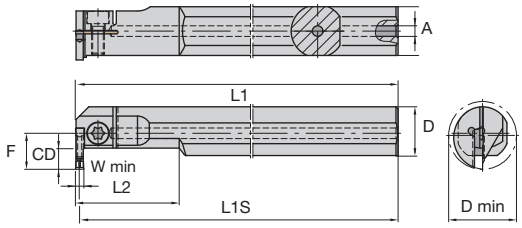
A4EN Insert Mounting



A4EN-style holders can be used for either left- or right-hand applications. The seating screw is to be used in position B for a left-hand cut and in position A for a right-hand cut.

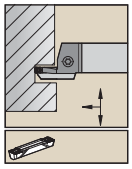


Steel shank with through coolant.

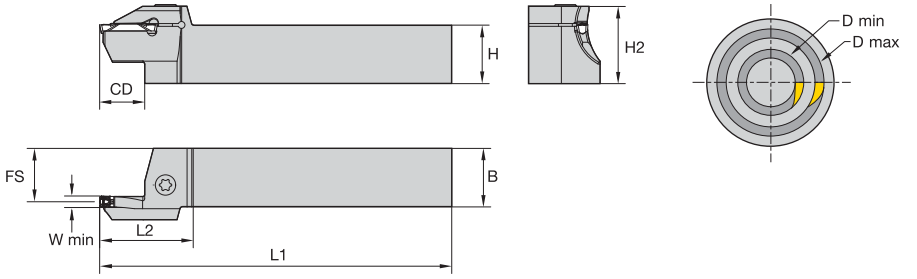


A-A4E

order number	catalogue number	seat size	CD	W min	D	D min	L1	F	L1S	L2	A	Torx clamp screw	Torx/ Torx Plus
	right hand												
2979223	A20RA4EMR0207M	2	7,00	2,00	20	25	200	13	199,0	40	4,00	MS2089	25 IP
2979225	A25RA4EMR0210M	2	10,00	2,00	25	32	200	17	199,0	50	5,00	MS2089	25 IP
1949655	A20RA4EMR0307M	3	7,00	3,00	20	25	200	13	198,5	40	4,00	MS2089	25 IP
1949657	A25RA4EMR0310M	3	10,00	3,00	25	32	200	17	198,5	50	5,00	MS1595	T30
1949659	A32SA4EMR0312M	3	12,00	3,00	32	40	250	22	248,5	64	6,00	MS1595	T30
1949661	A20RA4EMR0407M	4	7,00	4,00	20	25	200	13	198,0	40	4,00	MS2089	25 IP
1949663	A25RA4EMR0410M	4	10,00	4,00	25	32	200	17	198,0	50	5,00	MS1595	T30
1949665	A32SA4EMR0412M	4	12,00	4,00	32	40	250	22	248,0	64	6,00	MS1595	T30
1949667	A40TA4EMR0416M	4	16,00	4,00	40	52	300	30	298,0	80	6,00	MS1970	T30
1949669	A32SA4EMR0516M	5	16,00	5,00	32	44	250	26	247,5	64	6,00	MS1595	T30
1949671	A40TA4EMR0516M	5	16,00	5,00	40	52	300	30	297,5	80	6,00	MS1970	T30
2263197	A40TA4EMR0616M	6	16,00	6,00	40	52	300	30	297,0	80	6,00	MS1970	T30
	left hand												
2979192	A20RA4EML0207M	2	7,00	2,00	20	25	200	13	199,0	40	4,00	MS2089	25 IP
2979224	A25RA4EML0210M	2	10,00	2,00	25	32	200	17	199,0	50	5,00	MS2089	25 IP
1949656	A20RA4EML0307M	3	7,00	3,00	20	25	200	13	198,5	40	4,00	MS2089	25 IP
1949658	A25RA4EML0310M	3	10,00	3,00	25	32	200	17	198,5	50	5,00	MS1595	T30
1949660	A32SA4EML0312M	3	12,00	3,00	32	40	250	22	248,5	64	6,00	MS1595	T30
1949662	A20RA4EML0407M	4	7,00	4,00	20	25	200	13	198,0	40	4,00	MS2089	25 IP
1949664	A25RA4EML0410M	4	10,00	4,00	25	32	200	17	198,0	50	5,00	MS1595	T30
1949666	A32SA4EML0412M	4	12,00	4,00	32	40	250	22	248,0	64	6,00	MS1595	T30
1949668	A40TA4EML0416M	4	16,00	4,00	40	52	300	30	298,0	80	6,00	MS1970	T30
1949670	A32SA4EML0516M	5	16,00	5,00	32	44	250	26	247,5	64	6,00	MS1595	T30
1949672	A40TA4EML0516M	5	16,00	5,00	40	52	300	30	297,5	80	6,00	MS1970	T30
2263198	A40TA4EML0616M	6	16,00	6,00	40	52	300	30	297,0	80	6,00	MS1970	T30

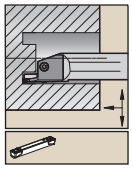


Right hand shown.

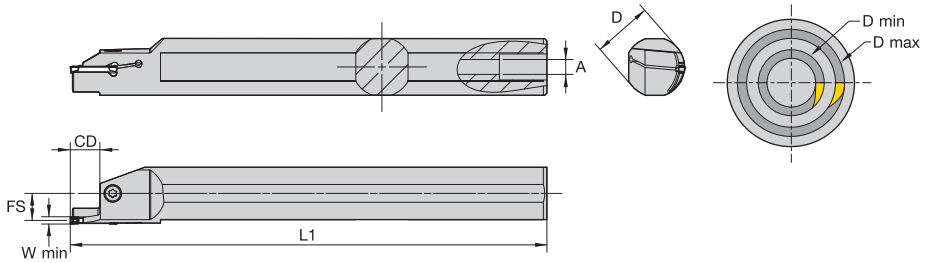


A4SB Outboard Sweep

order number	catalogue number	seat size	CD	D min	D max	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand													
3865921	**A4SBR2020K2S12020025**	2S	12	20	25	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865922	**A4SBR2020K2S12025036**	2S	12	25	36	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865920	**A4SBR2020K2S12016020**	2S	12	16	20	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865924	**A4SBR2020K3S14025036**	3S	14	25	36	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865923	**A4SBR2020K3S14020025**	3S	14	20	25	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865926	**A4SBR2020K4S14035048**	4S	14	35	48	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865925	**A4SBR2020K4S14025035**	4S	14	25	35	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865927	**A4SBR2525M5S19028038**	5S	19	28	38	5,00	25	25	33	150	22,70	40	**MS1970**	T30
3865928	**A4SBR2525M5S19038058**	5S	19	38	58	5,00	25	25	33	150	22,70	40	**MS1970**	T30
	left hand													
3865929	**A4SBL2020K2S12016020**	2S	12	16	20	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865930	**A4SBL2020K2S12020025**	2S	12	20	25	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865931	**A4SBL2020K2S12025036**	2S	12	25	36	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865932	**A4SBL2020K3S14020025**	3S	14	20	25	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865933	**A4SBL2020K3S14025036**	3S	14	25	36	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865935	**A4SBL2020K4S14035048**	4S	14	35	48	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865934	**A4SBL2020K4S14025035**	4S	14	25	35	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865936	**A4SBL2525M5S19028038**	5S	19	28	38	5,00	25	25	33	150	22,70	40	**MS1970**	T30
3865937	**A4SBL2525M5S19038058**	5S	19	38	58	5,00	25	25	33	150	22,70	40	**MS1970**	T30



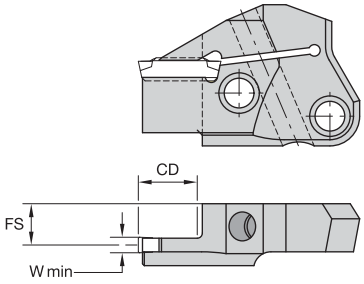
Right hand shown.

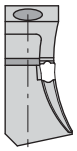


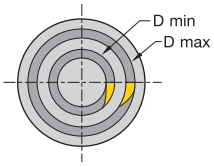
A4SS Inboard Sweep

order number	catalogue number	seat size	CD	D min	D max	W min	D	L1	FS	A	Torx clamp screw	Torx
	right hand											
3871038	**A16RA4SAR2S12M017021**	2S	12,00	17	21	2,00	16	201	7	4,00	**MS1160**	T20
3871039	**A20RA4SAR2S12M021026**	2S	12,00	21	23	2,00	20	201	9	4,00	**MS1160**	T20
3871040	**A25RA4SAR2S12M026036**	2S	12,00	26	36	2,00	25	201	12	6,35	**MS1160**	T20
3871041	**A20RA4SAR3S14M021026**	3S	14,00	21	26	3,00	20	201	9	4,00	**MS1160**	T20
3871042	**A25RA4SAR3S14M026036**	3S	14,00	26	36	3,00	25	201	11	6,35	**MS1160**	T20
	left hand											
3871033	**A16RA4SAL2S12M017021**	2S	12,00	17	21	2,00	16	201	7	4,00	**MS1160**	T20
3871034	**A20RA4SAL2S12M021026**	2S	12,00	21	26	2,00	20	201	9	4,00	**MS1160**	T20
3871035	**A25RA4SAL2S12M026036**	2S	12,00	26	36	2,00	25	201	12	6,35	**MS1160**	T20
3871036	**A20RA4SAL3S14M021026**	3S	14,00	21	26	3,00	20	201	9	4,00	**MS1160**	T20
3871037	**A25RA4SAL3S14M026036**	3S	14,00	26	36	3,00	25	201	11	6,35	**MS1160**	T20

Right hand shown.

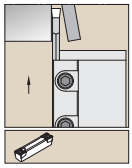


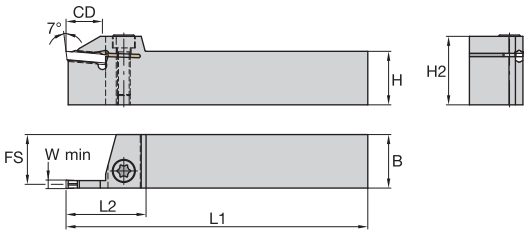




A4M-SB Outboard Sweep

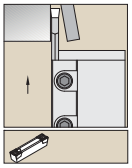
order number	catalogue number	seat size	D min	D max	CD	W min	FS	cartridge size
	right hand							
3867458	**A4M50R2S12B020025**	2S	20	25	12	2	10,90	50
3867459	**A4M50R2S12B025036**	2S	25	36	12	2	10,90	50
3867457	**A4M50R2S12B016020**	2S	16	20	12	2	10,90	50
3867461	**A4M50R3S14B025036**	3S	25	36	14	3	10,49	50
3867460	**A4M50R3S14B020025**	3S	20	25	14	3	10,49	50
3867463	**A4M50R4S14B035048**	4S	35	48	14	4	10,00	50
3867462	**A4M50R4S14B025035**	4S	25	35	14	4	10,00	50
3867465	**A4M50R5S17B038058**	5S	38	58	17	5	9,50	50
3867464	**A4M50R5S17B028038**	5S	28	38	17	5	9,50	50
	left hand							
3867467	**A4M50L2S12B020025**	2S	20	25	12	2	10,90	50
3867468	**A4M50L2S12B025036**	2S	25	36	12	2	10,90	50
3867466	**A4M50L2S12B016020**	2S	16	20	12	2	10,90	50
3867470	**A4M50L3S14B025036**	3S	25	36	14	3	10,49	50
3867469	**A4M50L3S14B020025**	3S	20	25	14	3	10,49	50
3867472	**A4M50L4S14B035048**	4S	35	48	14	4	10,00	50
3867471	**A4M50L4S14B025035**	4S	25	35	14	4	10,00	50
3867485	**A4M50L5S17B038058**	5S	38	58	17	5	9,50	50
3867484	**A4M50L5S17B028038**	5S	28	38	17	5	9,50	50

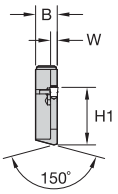


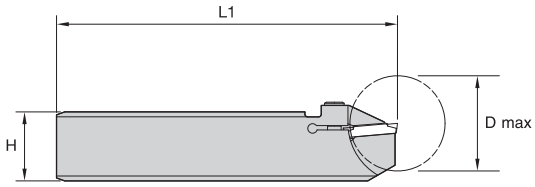


A4SM

order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854265	**A4SMR2020K0208**	2	8	2	20	20	24	125	19	26	**MS1160**	T20
3854267	**A4SMR2020K0308**	3	8	3	20	20	27	125	19	28	**MS1595**	T30
3854269	**A4SMR2020K0408**	4	8	4	20	20	27	125	18	28	**MS1595**	T30
3854271	**A4SMR2525M0510**	5	10	5	25	25	33	150	23	32	**MS1970**	T30
3854273	**A4SMR2525M0610**	6	10	6	25	25	33	150	22	37	**MS1970**	T30
	left hand											
3854266	**A4SML2020K0208**	2	8	2	20	20	24	125	19	26	**MS1160**	T20
3854268	**A4SML2020K0308**	3	8	3	20	20	27	125	19	28	**MS1595**	T30
3854270	**A4SML2020K0408**	4	8	4	20	20	27	125	18	28	**MS1595**	T30
3854272	**A4SML2525M0510**	5	10	5	25	25	33	150	23	32	**MS1970**	T30
3854274	**A4SML2525M0610**	6	10	6	25	25	33	150	22	37	**MS1970**	T30

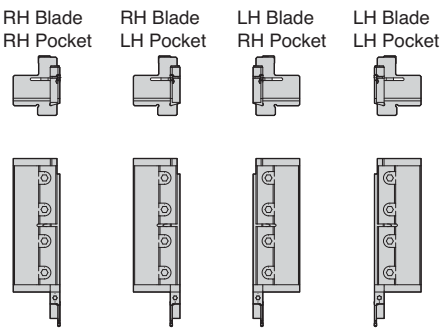


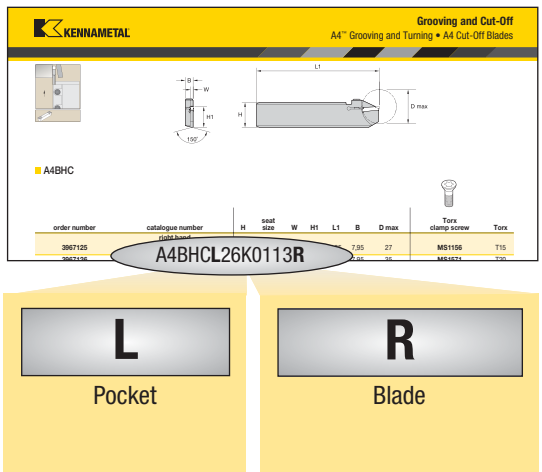




A4BHC

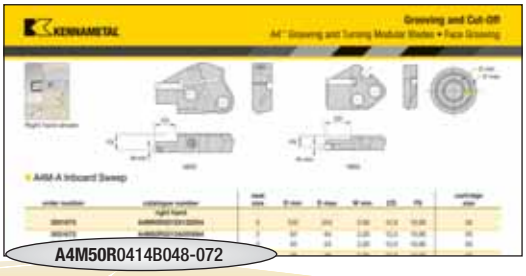
order number	catalogue number	H	seat size	W	H1	L1	B	D max	Torx clamp screw	Torx
	right hand									
3967125	A4BHCL26K0113R	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967126	A4BHCL26K0217R	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967127	A4BHCL26K0317R	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967122	A4BHCL32K0113R	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967123	A4BHCL32K0217R	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967124	A4BHCL32K0317R	32	3	3,0	25,0	125	7,95	35	MS1571	T20
3967119	A4BHCR26K0113R	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967120	A4BHCR26K0217R	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967121	A4BHCR26K0317R	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967116	A4BHCR32K0113R	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967117	A4BHCR32K0217R	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967118	A4BHCR32K0317R	32	3	3,0	25,0	125	7,95	35	MS1571	T20
	left hand									
3967138	A4BHCL26K0113L	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967139	A4BHCL26K0217L	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967140	A4BHCL26K0317L	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967135	A4BHCL32K0113L	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967136	A4BHCL32K0217L	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967137	A4BHCL32K0317L	32	3	3,0	25,0	125	7,95	35	MS1571	T20
3967131	A4BHCR26K0113L	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967132	A4BHCR26K0217L	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967134	A4BHCR26K0317L	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967128	A4BHCR32K0113L	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967129	A4BHCR32K0217L	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967130	A4BHCR32K0317L	32	3	3,0	25,0	125	7,95	35	MS1571	T20



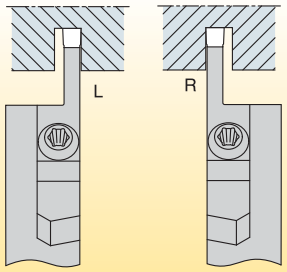


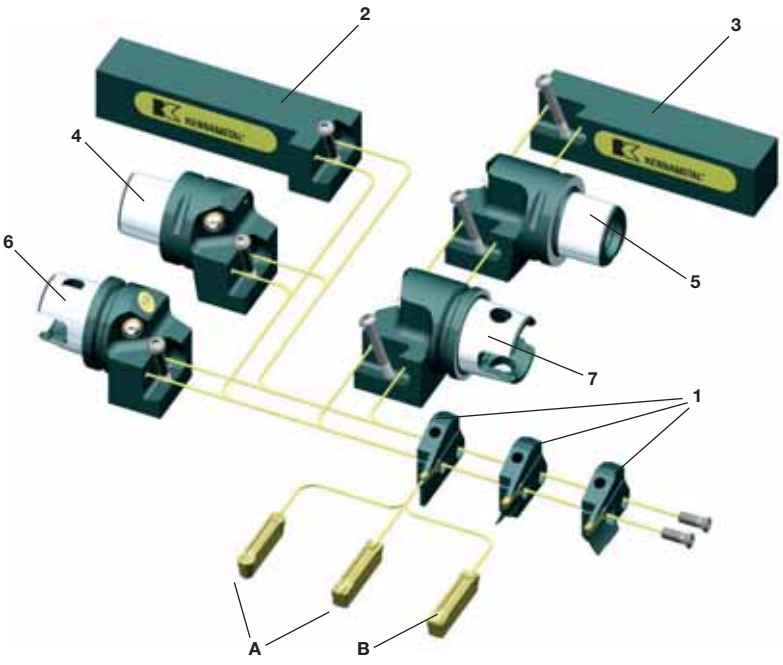
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A4M	50	R
A4 Tooling System	Modular System Size	Hand of Tool





Legend		page(s)
A	A4 Grooving and Turning Inserts	D64–D78
B	A4 Cut-Off Inserts	D77
1	O.D. and Face Grooving Blades	D94–D98
2	KGME Toolholder	D103
3	KGMS Toolholder	D102
4	Capto® KGME Cutting Unit	D107
5	Capto KGMS Cutting Unit	D107
6	KM™ KGME Cutting Unit	D104–D106
7	KM KGMS Cutting Unit	D105

By customer demand, Kennametal Inc. and Sandvik® Coromant have entered into an agreement that allows both companies to manufacture, market, and sell KM and Coromant Capto products worldwide. Using the trademark Kennametal Capto, we make available a variety of leading and innovative Kennametal tooling designs utilising the Coromant Capto coupling.

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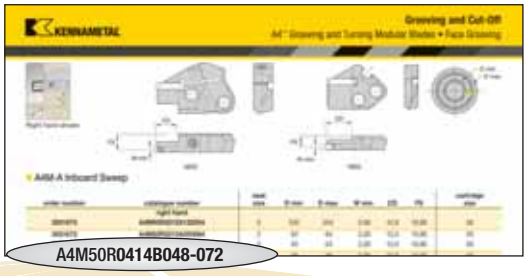
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



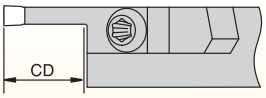
04

Seat Size

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
03	3,0–3,05
04	4,0–4,05
05	5,0–5,05
06	6,0–6,05
08	8,0–8,05
10	10,0–10,05

14

Maximum Groove Depth

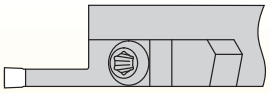


conversions:

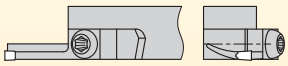
mm		inch
14mm	=	.55"
19mm	=	.75"
20mm	=	.79"
26mm	=	1.02"

B

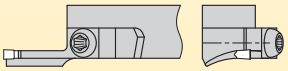
Tool Style



M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters



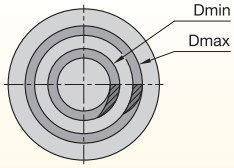
A = Inboard sweep face grooving toolholder



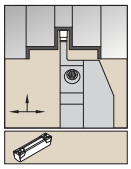
B = Outboard sweep face grooving toolholder

048-072

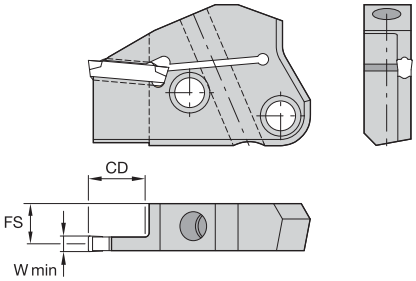
Face Grooving Diameter Range



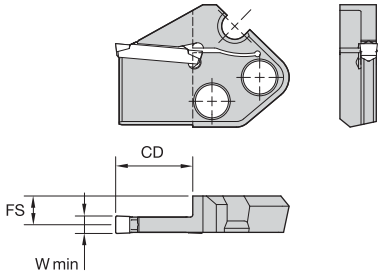
diameters are min and max for outer face groove dia. 999 = unlimited D max



Right hand shown.



M50

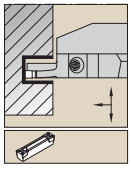


M65

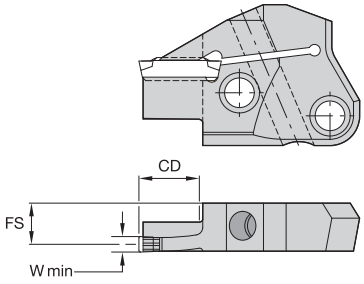
A4M-M

order number	catalogue number	seat size	CD	W min	FS	blade size
	right hand					
3051624	**A4M50R0214M**	2	14,0	2,00	10,87	50
1989348	**A4M50R0314M**	3	14,0	3,00	10,43	50
1989350	**A4M50R0414M**	4	14,0	4,00	9,93	50
1989352	**A4M50R0519M**	5	19,0	5,00	9,43	50
3557114	**A4M65R0620M**	6	20,0	6,00	9,88	65
3557116	**A4M65R0626M**	6	26,0	6,00	9,88	65
3557118	**A4M65R0820M**	8	20,0	8,00	9,00	65
3557120	**A4M65R0826M**	8	26,0	8,00	9,00	65
3557122	**A4M65R1020M**	10	20,0	10,00	8,35	65
3557124	**A4M65R1026M**	10	26,0	10,00	8,35	65
	left hand					
3022625	**A4M50L0214M**	2	14,0	2,00	10,87	50
3051623	**A4M50L2B14M**	2B	14,0	2,50	10,70	50
1989347	**A4M50L0314M**	3	14,0	3,00	10,43	50
1989349	**A4M50L0414M**	4	14,0	4,00	9,93	50
1989351	**A4M50L0519M**	5	19,0	5,00	9,43	50
3557115	**A4M65L0620M**	6	20,0	6,00	9,88	65
3557117	**A4M65L0626M**	6	26,0	6,00	9,88	65
3557119	**A4M65L0820M**	8	20,0	8,00	9,00	65
3557121	**A4M65L0826M**	8	26,0	8,00	9,00	65
3557123	**A4M65L1020M**	10	20,0	10,00	8,35	65
3557125	**A4M65L1026M**	10	26,0	10,00	8,35	65

NOTE: Seat size 2B only accepts 2B inserts. Seat size 2 accepts size 2 or 2B inserts.



Right hand shown.



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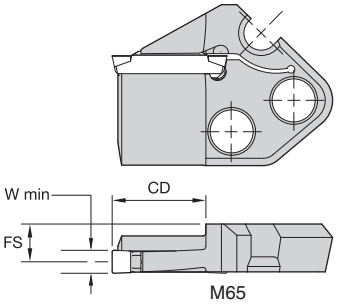

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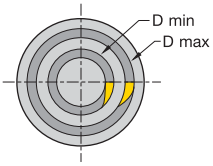
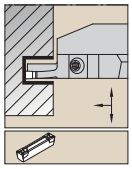


A4M-A Inboard Sweep

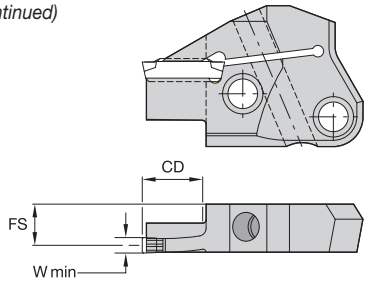
order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3051675	A4M50R0212A120254	2	120	254	2,00	12,0	10,90	50
3051672	A4M50R0212A050064	2	50	64	2,00	12,0	10,90	50
3051671	A4M50R0212A042054	2	42	54	2,00	12,0	10,90	50
3051670	A4M50R0212A036046	2	36	46	2,00	12,0	10,90	50
3051676	A4M50R0212A250999	2	250	–	2,00	12,0	10,90	50
3051673	A4M50R0212A060084	2	60	84	2,00	12,0	10,90	50
3051674	A4M50R0212A080124	2	80	124	2,00	12,0	10,90	50
2542521	A4M50R0314A090160	3	90	160	3,00	14,0	10,50	50
2542518	A4M50R0314A042058	3	42	58	3,00	14,0	10,50	50
2542522	A4M50R0314A130300	3	130	300	3,00	14,0	10,50	50
2542517	A4M50R0314A036048	3	36	48	3,00	14,0	10,50	50
2542523	A4M50R0314A290999	3	290	–	3,00	14,0	10,50	50
2542520	A4M50R0314A068100	3	68	100	3,00	14,0	10,50	50
2542519	A4M50R0314A052074	3	52	74	3,00	14,0	10,50	50
2542534	A4M50R0414A132300	4	132	300	4,00	14,0	10,00	50
2542535	A4M50R0414A290999	4	290	–	4,00	14,0	10,00	50
2542532	A4M50R0414A064100	4	64	100	4,00	14,0	10,00	50
2542531	A4M50R0414A048072	4	48	72	4,00	14,0	10,00	50
2542533	A4M50R0414A092150	4	92	150	4,00	14,0	10,00	50
2542541	A4M50R0519A058094	5	58	94	5,00	19,0	9,50	50
2542543	A4M50R0519A120300	5	120	300	5,00	19,0	9,50	50
2542544	A4M50R0519A250999	5	250	–	5,00	19,0	9,50	50
2542542	A4M50R0519A080136	5	80	136	5,00	19,0	9,50	50
3557131	A4M65R0624A070-112	6	70	112	6,00	24,0	9,88	65
3557165	A4M65R0624A200-999	6	200	999	6,00	24,0	9,88	65
3557163	A4M65R0624A100-212	6	100	212	6,00	24,0	9,88	65
3557169	A4M65R0824A184-999	8	184	999	8,00	24,0	9,00	65
3557167	A4M65R0824A090-200	8	90	200	8,00	24,0	9,00	65
3557173	A4M65R1024A200-999	10	200	999	10,00	24,0	8,35	65
3557171	A4M65R1024A100-220	10	100	220	10,00	24,0	8,35	65

(continued)

(A4M-A Inboard Sweep continued)



Right hand shown.



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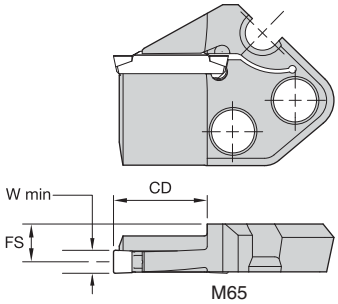

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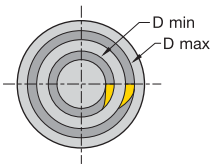
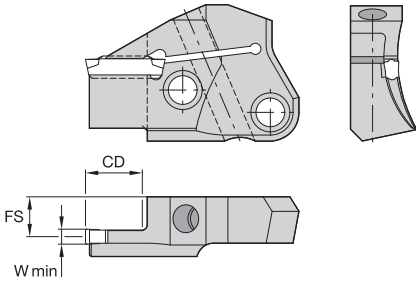


order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3051629	**A4M50L0212A060084**	2	60	84	2,00	12,0	10,90	50
3051626	**A4M50L0212A036046**	2	36	46	2,00	12,0	10,90	50
3051632	**A4M50L0212A250999**	2	250	–	2,00	12,0	10,90	50
3051627	**A4M50L0212A042054**	2	42	54	2,00	12,0	10,90	50
3051631	**A4M50L0212A120254**	2	120	254	2,00	12,0	10,90	50
3051628	**A4M50L0212A050064**	2	50	64	2,00	12,0	10,90	50
3051630	**A4M50L0212A080124**	2	80	124	2,00	12,0	10,90	50
2542524	**A4M50L0314A036048**	3	36	48	3,00	14,0	10,50	50
2542527	**A4M50L0314A068100**	3	68	100	3,00	14,0	10,50	50
2542529	**A4M50L0314A130300**	3	130	300	3,00	14,0	10,50	50
2542528	**A4M50L0314A090160**	3	90	160	3,00	14,0	10,50	50
2542530	**A4M50L0314A290999**	3	290	–	3,00	14,0	10,50	50
2542525	**A4M50L0314A042058**	3	42	58	3,00	14,0	10,50	50
2542526	**A4M50L0314A052074**	3	52	74	3,00	14,0	10,50	50
2542540	**A4M50L0414A290999**	4	290	–	4,00	14,0	10,00	50
2542537	**A4M50L0414A064100**	4	64	100	4,00	14,0	10,00	50
2542539	**A4M50L0414A132300**	4	132	300	4,00	14,0	10,00	50
2542538	**A4M50L0414A092150**	4	92	150	4,00	14,0	10,00	50
2542536	**A4M50L0414A048072**	4	48	72	4,00	14,0	10,00	50
2542546	**A4M50L0519A080136**	5	80	136	5,00	19,0	9,50	50
2542545	**A4M50L0519A058094**	5	58	94	5,00	19,0	9,50	50
2542547	**A4M50L0519A120300**	5	120	300	5,00	19,0	9,50	50
2542548	**A4M50L0519A250999**	5	250	–	5,00	19,0	9,50	50
3557164	**A4M65L0624A100-212**	6	100	212	6,00	24,0	9,88	65
3557166	**A4M65L0624A200-999**	6	200	999	6,00	24,0	9,88	65
3557132	**A4M65L0624A070-112**	6	70	112	6,00	24,0	9,88	65
3557170	**A4M65L0824A184-999**	8	184	999	8,00	24,0	9,00	65
3557168	**A4M65L0824A090-200**	8	90	200	8,00	24,0	9,00	65
3557172	**A4M65L1024A100-220**	10	100	220	10,00	24,0	8,35	65
3557174	**A4M65L1024A200-999**	10	200	999	10,00	24,0	8,35	65

Right hand shown.



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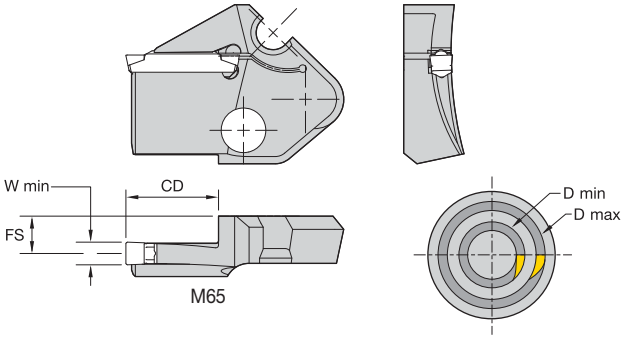


M65

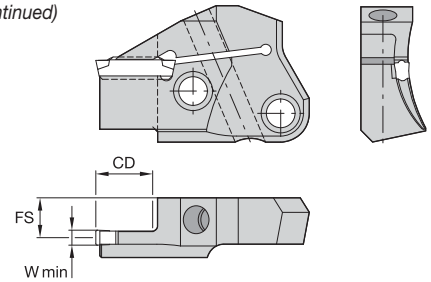
A4M-B Outboard Sweep

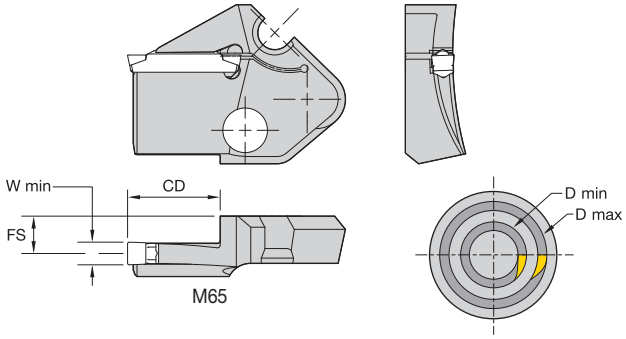
order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3867457	A4M50R2S12B016020	2S	16	20	2,00	12,0	10,90	50
3867458	A4M50R2S12B020025	2S	20	25	2,00	12,0	10,90	50
3867459	A4M50R2S12B025036	2S	25	36	2,00	12,0	10,90	50
3051677	A4M50R0212B036046	2	36	46	2,00	12,0	10,90	50
3051678	A4M50R0212B042054	2	42	54	2,00	12,0	10,90	50
3051679	A4M50R0212B050064	2	50	64	2,00	12,0	10,90	50
3051680	A4M50R0212B060084	2	60	84	2,00	12,0	10,90	50
3051681	A4M50R0212B080124	2	80	124	2,00	12,0	10,90	50
3051682	A4M50R0212B120254	2	120	254	2,00	12,0	10,90	50
3051683	A4M50R0212B250999	2	250	–	2,00	12,0	10,90	50
3867460	A4M50R3S14B020025	3S	20	25	3,00	14,0	10,49	50
3867461	A4M50R3S14B025036	3S	25	36	3,00	14,0	10,49	50
2398751	A4M50R0314B036048	3	36	48	3,00	14,0	10,50	50
2398752	A4M50R0314B042058	3	42	58	3,00	14,0	10,50	50
2398763	A4M50R0314B052074	3	52	74	3,00	14,0	10,50	50
2398764	A4M50R0314B068100	3	68	100	3,00	14,0	10,50	50
2398765	A4M50R0314B090160	3	90	160	3,00	14,0	10,50	50
2398766	A4M50R0314B130300	3	130	300	3,00	14,0	10,50	50
2398767	A4M50R0314B290999	3	290	–	3,00	14,0	10,50	50
3867462	A4M50R4S14B025035	4S	25	35	4,00	14,0	10,00	50
3867463	A4M50R4S14B035048	4S	35	48	4,00	14,0	10,00	50
2398775	A4M50R0414B048072	4	48	72	4,00	14,0	10,00	50
2398776	A4M50R0414B064100	4	64	100	4,00	14,0	10,00	50
2398777	A4M50R0414B092150	4	92	150	4,00	14,0	10,00	50
2398778	A4M50R0414B132300	4	132	300	4,00	14,0	10,00	50
2398779	A4M50R0414B290999	4	290	–	4,00	14,0	10,00	50
3867464	A4M50R5S17B028038	5S	28	38	5,00	17,0	9,50	50
3867465	A4M50R5S17B038058	5S	38	58	5,00	17,0	9,50	50
2398785	A4M50R0519B058094	5	58	94	5,00	19,0	9,50	50
2398786	A4M50R0519B080136	5	80	136	5,00	19,0	9,50	50
2398787	A4M50R0519B120300	5	120	300	5,00	19,0	9,50	50
2398788	A4M50R0519B250999	5	250	–	5,00	19,0	9,50	50
3557175	A4M65R0624B070-112	6	70	112	6,00	24,0	9,87	65
3557177	A4M65R0624B100-212	6	100	212	6,00	24,0	9,87	65
3557179	A4M65R0624B200-999	6	200	999	6,00	24,0	9,87	65
3557181	A4M65R0824B090-200	8	90	200	8,00	24,0	9,00	65
3557193	A4M65R0824B184-999	8	184	999	8,00	24,0	9,00	65
3557195	A4M65R1024B100-220	10	100	220	10,00	24,0	8,35	65
3557197	A4M65R1024B200-999	10	200	999	10,00	24,0	8,35	65

(continued)

(A4M-B Outboard Sweep continued)

Right hand shown.





order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3867466	**A4M50L2S12B016020**	2S	16	20	2,00	12,0	10,90	50
3867467	**A4M50L2S12B020025**	2S	20	25	2,00	12,0	10,90	50
3867468	**A4M50L2S12B025036**	2S	25	36	2,00	12,0	10,90	50
3051663	**A4M50L0212B036046**	2	36	46	2,00	12,0	10,90	50
3051664	**A4M50L0212B042054**	2	42	54	2,00	12,0	10,90	50
3051665	**A4M50L0212B050064**	2	50	64	2,00	12,0	10,90	50
3051666	**A4M50L0212B060084**	2	60	84	2,00	12,0	10,90	50
3051667	**A4M50L0212B080124**	2	80	124	2,00	12,0	10,90	50
3051668	**A4M50L0212B120254**	2	120	254	2,00	12,0	10,90	50
3867469	**A4M50L3S14B020025**	3S	20	25	3,00	14,0	10,49	50
3867470	**A4M50L3S14B025036**	3S	25	36	3,00	14,0	10,49	50
2398768	**A4M50L0314B036048**	3	36	48	3,00	14,0	10,50	50
2398769	**A4M50L0314B042058**	3	42	58	3,00	14,0	10,50	50
2398770	**A4M50L0314B052074**	3	52	74	3,00	14,0	10,50	50
2398771	**A4M50L0314B068100**	3	68	100	3,00	14,0	10,50	50
2398772	**A4M50L0314B090160**	3	90	160	3,00	14,0	10,50	50
2398773	**A4M50L0314B130300**	3	130	300	3,00	14,0	10,50	50
2398774	**A4M50L0314B290999**	3	290	—	3,00	14,0	10,50	50
3867471	**A4M50L4S14B025035**	4S	25	35	4,00	14,0	10,00	50
3867472	**A4M50L4S14B035048**	4S	35	48	4,00	14,0	10,00	50
2398780	**A4M50L0414B048072**	4	48	72	4,00	14,0	10,00	50
2398781	**A4M50L0414B064100**	4	64	100	4,00	14,0	10,00	50
2398782	**A4M50L0414B092150**	4	92	150	4,00	14,0	10,00	50
2398783	**A4M50L0414B132300**	4	132	300	4,00	14,0	10,00	50
2398784	**A4M50L0414B290999**	4	290	—	4,00	14,0	10,00	50
3867484	**A4M50L5S17B028038**	5S	28	38	5,00	17,0	9,50	50
3867485	**A4M50L5S17B038058**	5S	38	58	5,00	17,0	9,50	50
2398789	**A4M50L0519B058094**	5	58	94	5,00	19,0	9,50	50
2398790	**A4M50L0519B080136**	5	80	136	5,00	19,0	9,50	50
2398791	**A4M50L0519B120300**	5	120	300	5,00	19,0	9,50	50
2398792	**A4M50L0519B250999**	5	250	—	5,00	19,0	9,50	50
3557176	**A4M65L0624B070-112**	6	70	112	6,00	24,0	9,87	65
3557178	**A4M65L0624B100-212**	6	100	212	6,00	24,0	9,87	65
3557180	**A4M65L0624B200-999**	6	200	999	6,00	24,0	9,87	65
3557182	**A4M65L0824B090-200**	8	90	200	8,00	24,0	9,00	65
3557194	**A4M65L0824B184-999**	8	184	999	8,00	24,0	9,00	65
3557196	**A4M65L1024B100-220**	10	100	220	10,00	24,0	8,35	65
3557198	**A4M65L1024B200-999**	10	200	999	10,00	24,0	8,35	65

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The unique clamping system and versatile insert geometry deliver the highest metal removal rates in the industry.

- One tool for turning, facing, grooving, face-grooving, and cut-off in O.D. and I.D. applications means exceptionally fast cycle times, no turret indexes.
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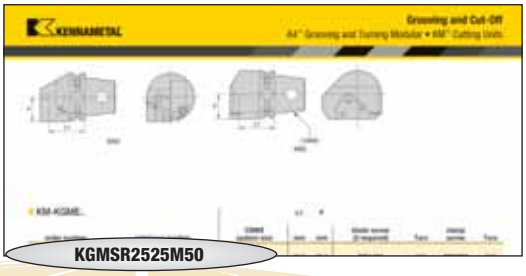
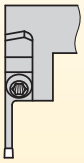
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

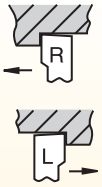


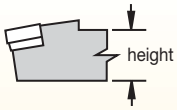
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

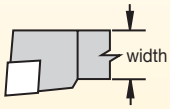
E







shank height in millimetres



shank width in millimetres

square shanks:
The number indicates the toolholder cross section in 1/16" increments.

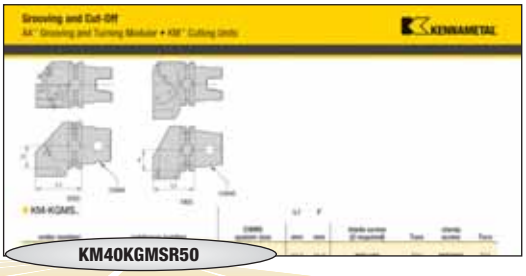
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

M = 150mm
N = Inch
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

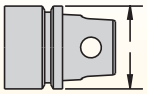
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

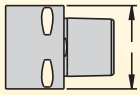


KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions
	G = Square **R** = Full radius **V** = V-style 35°	**S** **E**	R L		**Y** = Mazak® INTEGREX® Y-series machines

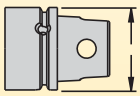
KM™ size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.

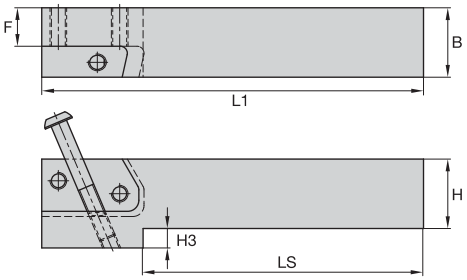


KMXMZ size
KM63XMZ™ = 63mm dia.

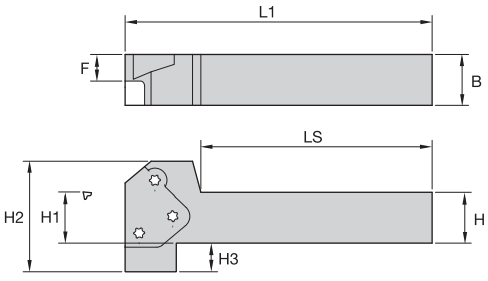


(KM-KGMSR...)

(KM-KGMEL...)



M50
2 blade screws required

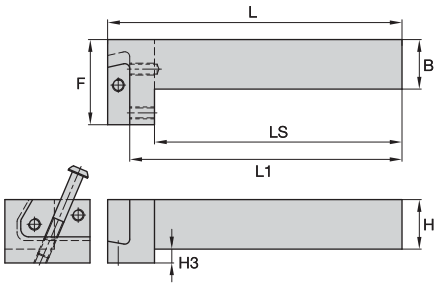


M65
3 blade screws required

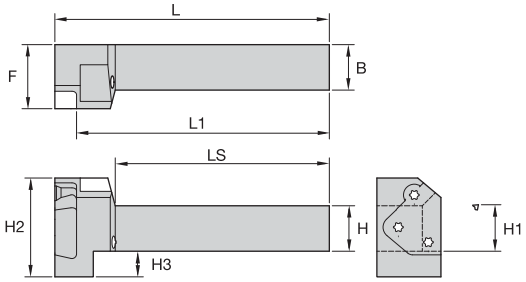
KGMS..

order number	catalogue number	B	H	L1	F	LS	H3	blade screw	Torx	clamp screw	Torx
	right hand										
1600249	**KGMSR2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553429	**KGMSR2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621083	**KGMSR3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553431	**KGMSR3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–
	left hand										
1600250	**KGMSL2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553430	**KGMSL2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621084	**KGMSL3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553432	**KGMSL3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



M50
2 blade screws required

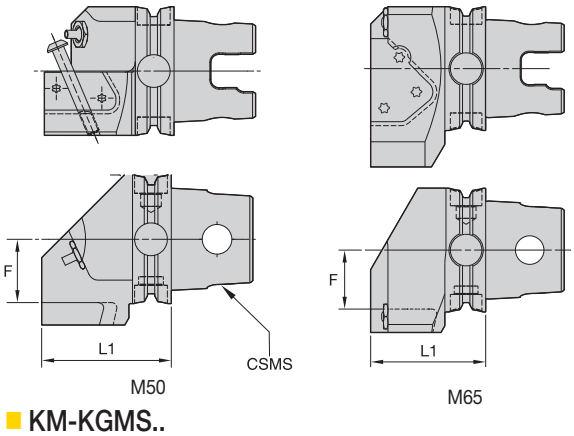


M65
3 blade screws required

KGME..

order number	catalogue number	B	H	L1	F	LS	H3	L	blade screw	Torx	clamp screw	Torx
	right hand											
1600270	**KGMER2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553453	**KGMER2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621085	**KGMER3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553455	**KGMER3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–
	left hand											
1600271	**KGMEL2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553454	**KGMEL2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621086	**KGMEL3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553456	**KGMEL3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–

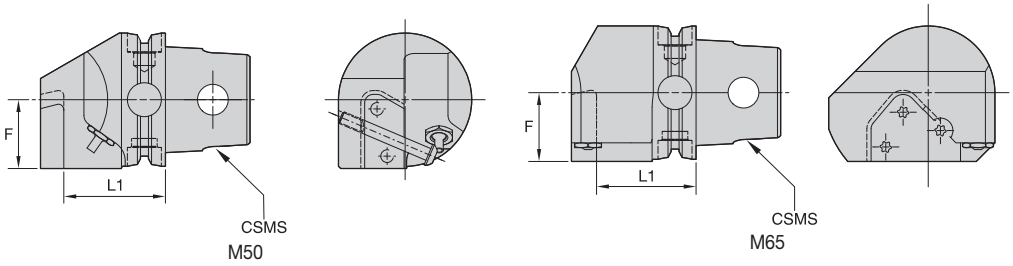
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-KGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
3950268	**KM40TSKGMSR50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590203	**KM63TSKGMSR65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670383	**KM80TSKGMSR50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–
	left hand							
3950267	**KM40TSKGMSL50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590204	**KM63TSKGMSL65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670371	**KM80TSKGMSL50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–

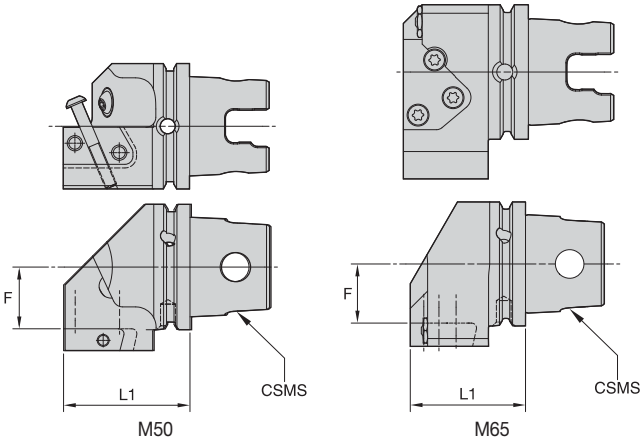
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-KGME..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
3950266	**KM40TSKGMER50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–
	left hand							
3950265	**KM40TSKGMEL50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

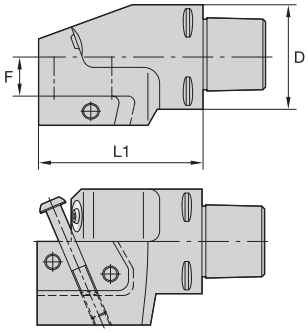
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-XMZKGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–
	left hand							
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–

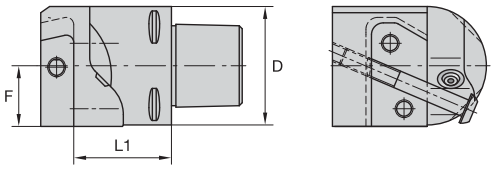
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



C-KGMS

order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756576	**C4KGMSR50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25
	left hand							
1756578	**C4KGMSL50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



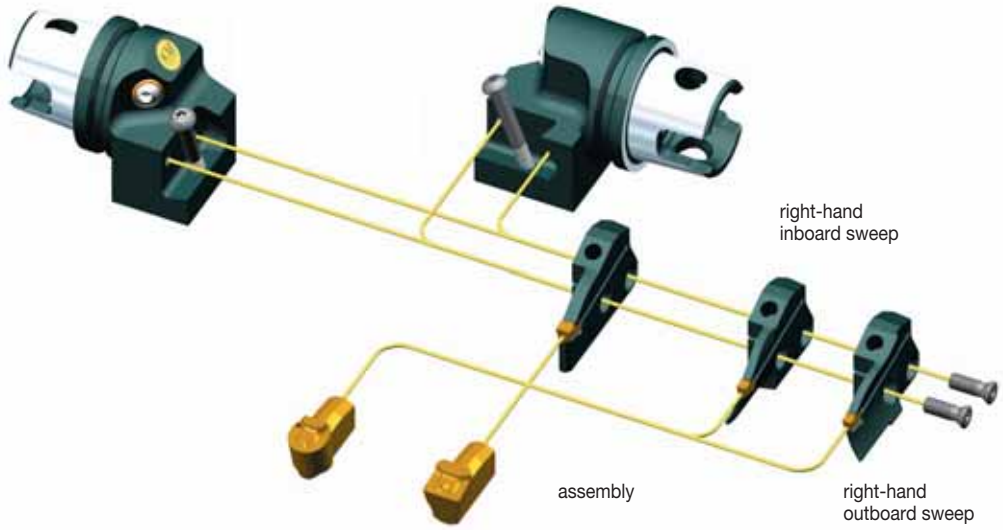
C-KGME

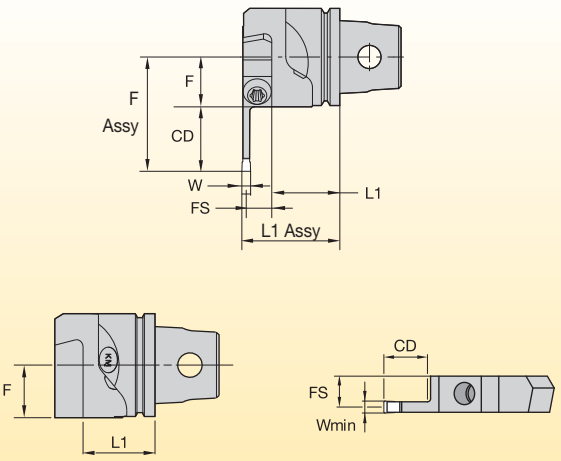
order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756579	**C4KGMER50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25
	left hand							
1756583	**C4KGMEL50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.

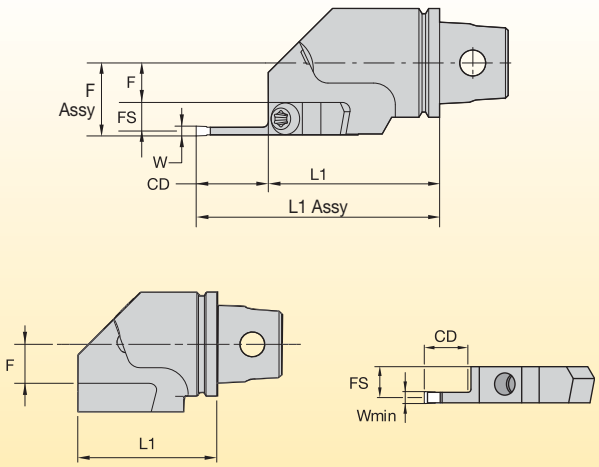
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





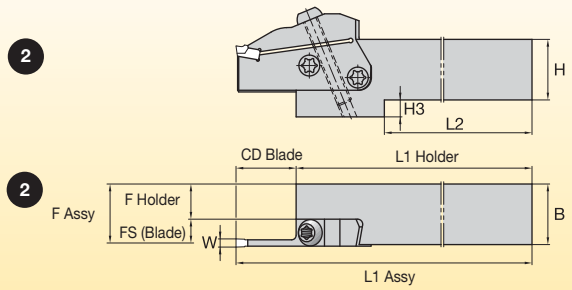
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

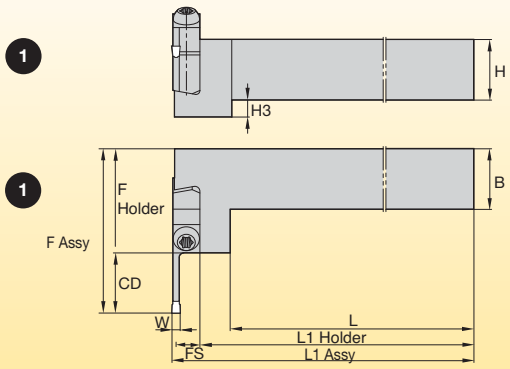
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



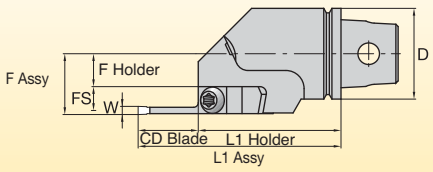
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



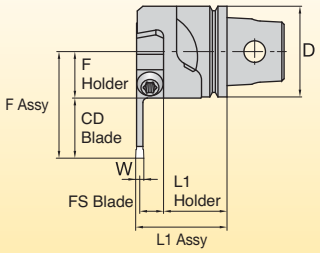
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



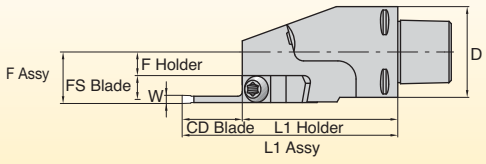
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



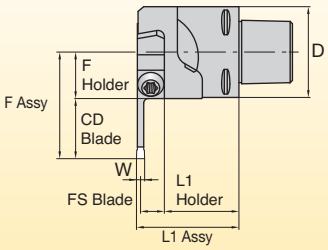
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

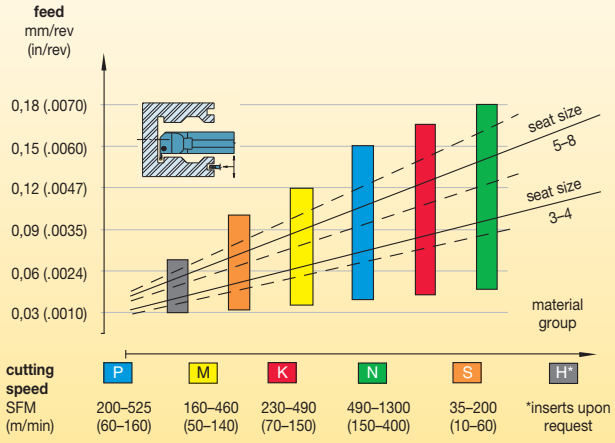
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

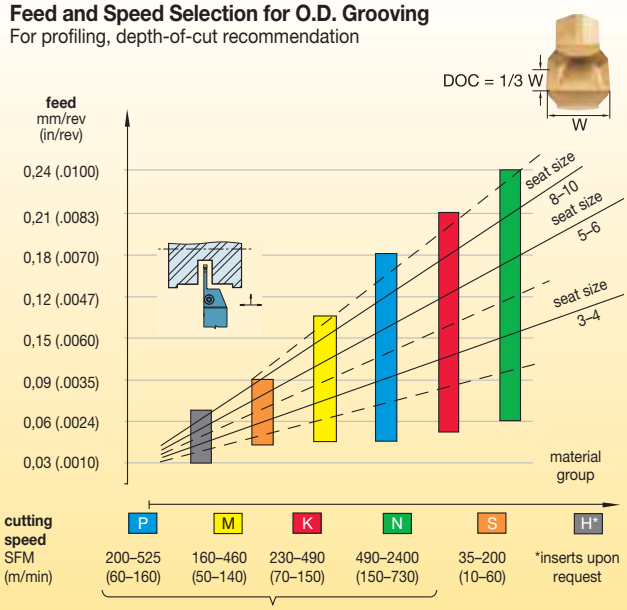
Application Guidelines

Feed and Speed Selection for I.D. and Face Grooving



Feed and Speed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

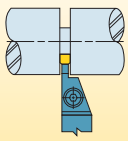


For radial grooving under stable conditions, feed can be increased by up to 50%.

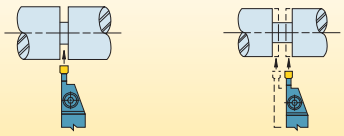
Tool Application Guidelines

- Always use good general machining practices.
- Make the machine and workpiece setup as rigid as possible.
- Integral shank toolholders offer the best rigidity. They should be your first toolholder choice, when possible.
- Use the toolholder with the shortest possible depth of cut for the application ("CD" dimension).
- When changing inserts, make sure the new insert locates securely against the toolholder's positive stop.
- Never tighten the clamping screw without an insert in the pocket.
- Toolholder projection out of the tool block should be as short as possible.
- Inserts should cut as close to center as possible.
- Dwell time in bottom of groove should be less than three revolutions.
- Recommended cutting speeds and feeds are a starting point. Adjust, as necessary, for optimum tool life and chip control.

Deep Grooves

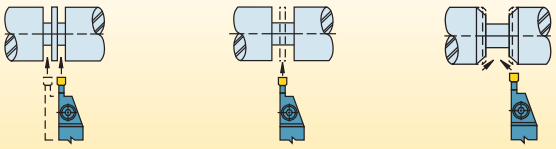


Deep Grooves Slightly Wider than the Tool



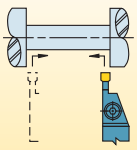
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

Extra Wide Deep Grooves



1. Plunge out both sides of the groove width.
2. Plunge center area to remove web of remaining material.
3. Plunge both sides of groove at the required angle, using approximately one-half the width of the grooving tool for maximum width of cut.

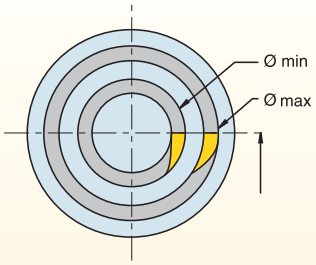
Finish Turning of the Groove/Light Profiling



1. Follow recommendations explained above.
2. To avoid insert chipping and to achieve groove wall perpendicularity, follow the tool path shown here.
3. Use the lightest depth of cut possible while still maintaining good chip breaking, tool life, and surface finish.

Grooving Tool Failure and Solution Guide

Face Grooving Application Guidelines



Tool Selection

- When selecting the toolholder, always start at the largest diameter possible and work toward the smaller diameter. This will allow the strongest tool to be used.

Cutting the First Groove

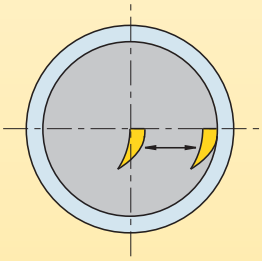
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

Chip Control

- Adjust speed and feed for good chip control and evacuation from the groove. Chip compaction can cause poor surface finish, tool breakage, and reduced tool life.

Tool Setting

- The tool should be set as close to the center as possible to avoid extreme formation of burrs.
- Align the cutting edge square to the workpiece.



Widening a Face Groove

- After the first groove has been cut, the groove width can be widened in either direction using the same tool. The best practice is to work from the O.D. to the I.D.

Practical Solutions to Grooving Problems

problem	remedy
burr	1. Verify tool center height. 2. Use sharp tools (index more often). 3. Use positive rake PVD coated insert. 4. Use correct grade for workpiece material. 5. Use correct geometry (e.g., positive rake for workhardening material). 6. Change tool path.
poor surface finish	1. Increase speed. 2. Use sharp tools (index more often). 3. Dwell time in bottom 1–3 revolutions (max). 4. Use proper chip control geometry. 5. Increase coolant flow. 6. Verify proper setup (overhang, shank size). 7. Use correct geometry (e.g., positive rake for workhardening material).
groove bottom not flat	1. Use sharp tools (index more often). 2. Dwell time in bottom 1–3 revolutions (max). 3. Reduce tool overhang (increase rigidity). 4. Reduce feed rate at groove bottom. 5. Use a wider insert. 6. Verify tool center height.
poor chip control	1. Use sharp tools (index more often). 2. Increase coolant concentration. 3. Adjust feed rate (usually increase first).
chatter	1. Reduce tool and workpiece overhang. 2. Adjust speed (usually increase first). 3. Adjust feed (usually increase first). 4. Verify tool center height.
insert chipping	1. Use correct grade for workpiece material. 2. Increase speed. 3. Reduce feed. 4. Use a stronger grade. 5. Increase tool and setup rigidity.
built-up edge	1. Use positive rake PVD coated insert. 2. Increase speed. 3. Reduce feed. 4. Increase coolant flow/concentration. 5. Use cermets.
side walls not straight	1. Check tool alignment for square. 2. Reduce workpiece and tool overhang. 3. Use sharp inserts (index more often).

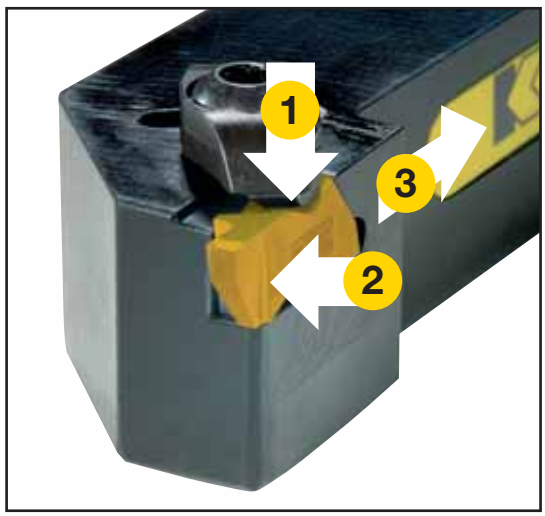
Top Notch™ Grooving Tools and Beyond™ Inserts for Your Shallow Groove and Turn Operations

Primary Application

Top Notch Grooving is the proven solution for high productivity. The Top Notch system provides consistent tool performance, accurate indexing, and superior clamping to provide excellent surface finishing and superior tool life.

Features and Benefits

- The Beyond PVD coated grades are designed to cut a variety of workpiece materials.
- Rigid clamping securely locks insert in place through the toughest cuts.
- Versatile design enables one system to handle O.D. and I.D. grooving, face grooving, back turning, undercutting, and even threading operations.
- Chip control inserts provide excellent chip evacuation in grooving, and offer better chip control in multidirectional turning.



Our rigid clamping design prevents insert movement during high-feed rate applications. This benefit ensures excellent surface finish, improved productivity, and superior tool life and promotes perfect concentricity. The rugged bridge clamp generates locking forces in three directions to provide superior resistance to side thrust and tangential forces.

Step 1 • Select system based on the required groove depth

What you need to know:

- Groove depth, width, and profile.
- Material to be machined.
- Application to be performed (face, O.D., or I.D. grooving).
- Toolholder requirements (e.g., KM™, square shank, right/left).

Top Notch™

Grooving
For grooving depth ≤1,5x grooving width, review system capability chart and proceed to Step 2.

A3™ or A4™

Deep Grooving
For grooving depth ≥1,5x grooving width, see A3 Deep Grooving pages D28–D33 or A4 Grooving and Turning pages D64–D78.

Top Notch Grooving for Internal, External, and Face Grooving Applications

system capabilities		minimum (mm)	maximum (mm)
O.D./I.D. grooving	width	0,79	9,53
	depth	1,27	9,53
face grooving	width	3,18	9,53
	depth	3,81	6,35
internal grooving	diameter	11,2	—
face grooving diameter	standard	23,9	—
	deep	47,6	—
deep O.D./I.D. grooving	width	1,57	6,35
	depth	3,18	12,70
deep face grooving	width	3,18	6,35
	depth	6,35	12,70

Step 2 • Select toolholder based on the application

NOTE: Toolholders are available as conventional square shank versions as well as quick-change versions. The insert size must match the gage insert of your toolholder selection.

O.D. and face grooving applications .....see pages D134–D136
I.D. grooving applications .....see pages D137–D139

Step 3 • Select chipbreaker style and feed rate

Chipbreaker and Feed Rates • mm/rev

workpiece material and application	P	M	K	N	S	H
first choice	NG-K 0,08–0,28	NG-K 0,07–0,20	NG 0,01–0,30	NGP 0,01–0,30	NG-K 0,07–0,20	NG-ST CBN tipped 0,05–0,10
alternate choice	NG 0,10–0,30	NGP 0,10–0,23	NG-K 0,08–0,28	NG-K 0,08–0,30	NGP 0,10–0,20	—

-K chipbreaker inserts	flat-top inserts	positive rake inserts

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • m/min

machining condition	workpiece material P	M	K	N	S	H
high-performance for optimal conditions (clean cuts, good machine condition, higher speed capability)	KC9110 120–370	KCU10/KC5010 80–230	KD9320 120–370	KD1425 240–3050	KCU10/KC5010 20–120	KB5625 80–150
	KT315 100–230	KT315 70–200	KD5010 80–230	—	—	—
general purpose (first choice for general machining)	KC9110 120–300	KCU25/KC5025 50–120	KD9110 120–300	KC5410 150–910	KCU25/KC5025 10–60	KB5625 80–150
unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed, I.D. grooving)	KCU25/KC5025 50–140	KCU25/KC5025 40–90	KD5025 60–300	KCU25/KC5025 60–300	KCU25/KC5025 10–50	KB1630 60–110

Step 5 • Select insert and holder from catalogue page

NOTE: The insert size must match the gage insert size of your toolholder selection.

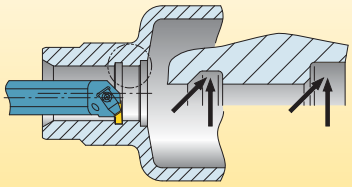
Example for Top Notch • Grooving

Material.....low-alloyed steel
Groove depth 2mm
Groove width 3mm
Operation .....I.D. cut, limited speed capability, plunge groove and chamfer

Recommendation

Insert.....NG2M300RK
Grade KC5025
Insert width 3mm
Insert size 2

Toolholder.....A20QNNTOL2 (metric)
Gage insert N.2R



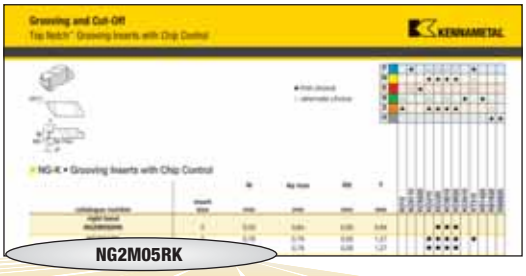
Speed: 120 m/min
Feed: 0,15 mm/rev

Congratulations!

You have successfully maximised your productivity by selecting the best Top Notch insert geometry, grade, and cutting specifications for your application!

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



N	G		2	M	05	R		K	
Type of Insert	Insert Style	Additional Information	Insert Size	Size Identification	Groove Size**	Hand of Insert	Cutting Depth	Chipbreaker Design	Definition of Inserts
N = Top Notch	**B** = Blank (for special forms) **F** = Face grooving **G** = Grooving **P** = Back turning **R** = Full radius **U** = Undercutting (or relieving) **V** = Poly-Vee	**D** = Deep grooving **P** = Positive **C** = Groove and chamfer		**M** = Metric insert groove width **C** = Circlip groove insert width is nominal circlip size □= Blank indicates inch width insert		**L** = Left hand **R** = Right hand	Shown for groove and chamfer inserts in 0,01mm increments	**E** = Hone only **K** = Standard chip control **S** = T Land and Hone **ST** = STD Tip (PCBN)	Groove size "J" or "L" for Poly-Vee inserts "I" indicates internal face grooving insert

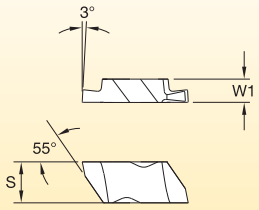
insert number	W1 (mm)
1	2,54
2	3,81
3	4,95
4	6,48
5	9,65
6	9,73

Position pertains to groove width for F-, G-, and U-style inserts; radii for R-style grooving inserts; and circlip size for groove and chamfer inserts. Dimension in 0,01mm.
Example: 3,25mm width groove or radius equals "325" catalogue position number.
Width tolerance: ± 0,025mm unless otherwise specified

*Kennametal proprietary identification system.

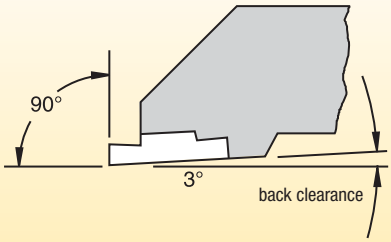
**Omit position for Top Notch NB-style blanks.

Top Notch Threading and Grooving Insert Dimensions



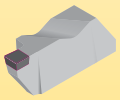
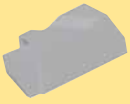
insert size	S		W1	
	mm	inch	mm	inch
1	2,54	.100	2,54	.100
2	5,56	.219	3,81	.150
3	8,74	.344	4,95	.195
4	11,51	.453	6,48	.255
5	17,48	.688	9,65	.380
6	11,51	.453	9,73	.383
8	7,93	.312	11,13	.438

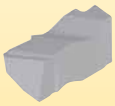
Top Notch Holder Design

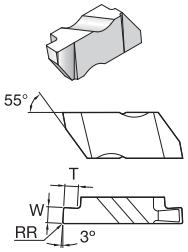


NOTE: Holders are designed to locate insert inclined to 3° to provide back clearance down open side.

Kennametal and Top Notch tooling technology combine to bring you the very best threading and grooving system available in the world today.

insert style	application	rake angle	page(s)
NG	• General-purpose grooving. • O-ring grooving. • Circlip grooving.	neutral	D118
NG-K	• Chip control geometry. • General-purpose grooving. • O-ring grooving. • Circlip grooving. • Light turning.	10° positive	D120
NG-ST 	• Hard turning.	neutral	D125
NGC-K	• Combined groove and chamfered edge break in one positive plunge with chip control. • Designed for DIN 471/472 standard circlip grooves.	10° positive	D131
NGD	• Deep grooving.	neutral	D123
NGD-K 	• Chip control geometry. • Deep grooving. • Light turning.	10° positive	D124
NGP	• General-purpose grooving. • O-ring grooving. • Circlip grooving.	5° positive	D123
NF	• Face grooving. • Additional side clearance.	neutral	D129
NF-K	• Face grooving with chip control. • Additional side clearance.	10° positive	D129
NFD-K	• Deep face grooving with chip control. • Additional side clearance.	10° positive	D129

insert style	application	rake angle	page(s)
NFD-KI	• Internal deep face grooving with chip control. • For use in boring bars for internal face grooves.	10° positive	D130
NP-K NPD-K 	• Turning. • Back turning positive. • Profiling with chip control.	10° positive	D130
NR	• Full radius grooving. • Turning profiling.	neutral	D126
NR-K	• Chip control geometry. • Full radius grooving turning profiling.	10° positive	D127
NRD	• Deep grooving. • Full radius endform.	neutral	D128
NRP	• Full radius grooving. • Light-turning profiling.	5° positive	D127
NU	• Undercutting.	neutral	D128
NV	• Poly Vee grooving.	neutral	D128
NB/NBD	• Blanks. • Blanks for deep grooving. • Available only in uncoated grades.	—	D131



● first choice
○ alternate choice

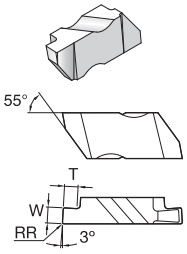
P		●		○	○	○	○		●					
M				●	●	●	●		○					
K		○	●						○					
N	○			○		○		●		●				
S	●			●	●	●	●					○		
H												●	●	

NG • Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG2031R	2	0,79	–	0,09	1,27	●			●	●	●	●					
NG2041R	2	1,04	–	0,09	1,27	●			●	●	●	●					
NG2047R	2	1,19	–	0,09	1,27				●	●	●	●					
NG2058R	2	1,47	–	0,19	1,27					●		●					
NG2062R	2	1,58	–	0,19	2,79	●			●	●	●	●					
NG2094R	2	2,39	–	0,19	2,79	●			●	●	●	●					
NG2125R	2	3,18	–	0,19	2,79				●	●	●	●					
NG3047R	3	1,19	–	0,19	1,91	●	●		●	●	●	●					
NG3062R	3	1,58	–	0,19	2,39	●	●		●	●	●	●			●	●	
NG3072R	3	1,83	–	0,19	2,39				●		●						
NG3078R	3	1,98	–	0,19	2,39				●		●						
NG3088R	3	2,24	–	0,19	2,39				●	●	●	●					
NG3094R	3	2,39	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3097R	3	2,46	–	0,32	3,81				●	●	●	●					
NG3105R	3	2,67	–	0,19	3,81				●	●	●	●					
NG3110R	3	2,79	–	0,32	3,81					●		●					
NG3122R	3	3,10	–	0,19	3,81					●		●					
NG3125R	3	3,18	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3142R	3	3,61	–	0,32	3,81					●	●	●					
NG3156R	3	3,96	–	0,19	3,81				●	●	●	●					
NG3178R	3	4,52	–	0,19	3,81							●					
NG3185R	3	4,70	–	0,57	3,81					●		●					
NG3189R	3	4,80	–	0,57	3,81	●			●	●	●	●			●		
NG4125R	4	3,18	–	0,19	3,81	●			●	●	●	●					
NG4189R	4	4,80	–	0,57	6,35	●	●		●	●	●	●				●	
NG4213R	4	5,41	–	0,19	6,35					●		●					
NG4219R	4	5,56	–	0,57	6,35							●					
NG4250R	4	6,35	–	0,57	6,35	●	●		●	●	●	●					
NG5250R	5	6,35	–	0,57	9,52							●					
NG5312R	5	7,93	–	0,83	9,52					●		●					
NG5375R	5	9,53	–	0,83	9,52							●					
NG6281R	6	7,14	–	0,83	6,35					●		●					
NG6375R	6	9,53	–	0,83	6,35					●		●					

(continued)

(NG • Grooving Inserts continued)

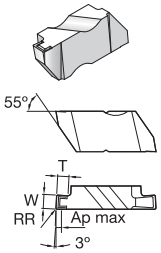


● first choice
○ alternate choice

P			●		○	○	○	○		●						
M					●	●	●	●		○						
K			○	●						○						
N	○				○		○		●		●					
S	●				●	●	●	●				○				
H													●	●		

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
left hand																	
NG2031L	2	0,79	–	0,09	1,27	●			●	●	●	●					
NG2041L	2	1,04	–	0,09	1,27					●	●	●					
NG2047L	2	1,19	–	0,09	1,27				●	●	●	●					
NG2058L	2	1,47	–	0,19	1,27					●	●	●					
NG2062L	2	1,58	–	0,19	2,79	●			●	●	●	●					
NG2094L	2	2,39	–	0,19	2,79	●			●	●	●	●					
NG2125L	2	3,18	–	0,19	2,79				●	●	●	●					
NG3047L	3	1,19	–	0,19	1,91	●			●	●	●	●					
NG3062L	3	1,58	–	0,19	2,39	●			●	●	●	●			●	●	
NG3072L	3	1,83	–	0,19	2,39				●		●						
NG3078L	3	1,98	–	0,19	2,39				●		●						
NG3088L	3	2,24	–	0,19	2,39				●	●	●	●					
NG3094L	3	2,39	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3097L	3	2,46	–	0,32	3,81				●	●	●	●					
NG3105L	3	2,67	–	0,19	3,81				●	●	●	●					
NG3110L	3	2,79	–	0,32	3,81					●		●					
NG3122L	3	3,10	–	0,19	3,81					●		●					
NG3125L	3	3,18	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3142L	3	3,61	–	0,32	3,81				●	●	●	●					
NG3156L	3	3,96	–	0,19	3,81					●	●	●					
NG3178L	3	4,52	–	0,19	3,81					●		●					
NG3185L	3	4,70	–	0,57	3,81							●					
NG3189L	3	4,80	–	0,57	3,81	●	●		●	●	●	●			●		
NG4125L	4	3,18	–	0,19	3,81	●			●	●	●	●					
NG4189L	4	4,80	–	0,57	6,35	●			●	●	●	●				●	
NG4250L	4	6,35	–	0,57	6,35	●			●	●	●	●					
NG5312L	5	7,93	–	0,83	9,52							●					
NG6375L	6	9,53	–	0,83	6,35							●					

NOTE: All KD and KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

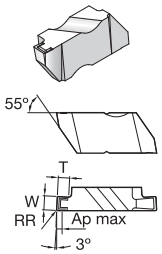
P			●		○	○	○	○		●				
M					●	●	●	●		○				
K			○	●						○				
N		○			○		○		●		●			
S		●			●	●	●	●				○		
H												●	●	

NG-K • Grooving Inserts with Chip Control

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG2M050RK	2	0,50	0,64	0,09	0,64					●	●	●					
NG2031RK	2	0,79	0,76	0,09	1,27				●	●	●	●		●			
NG2M080RK	2	0,80	0,76	0,09	1,27				●	●	●	●					
NG2M100RK	2	1,00	0,76	0,09	1,27				●	●	●	●					
NG2047RK	2	1,19	0,76	0,09	1,27				●	●	●	●		●			
NG2M120RK	2	1,20	0,76	0,09	1,27				●	●	●	●					
NG2M140RK	2	1,40	0,76	0,09	1,27				●	●	●	●					
NG2M150RK	2	1,50	1,09	0,19	2,79					●		●					
NG2062RK	2	1,58	1,09	0,19	2,79				●	●	●	●		●			
NG2M170RK	2	1,70	1,09	0,19	2,79				●	●	●	●					
NG2M175RK	2	1,75	1,09	0,19	2,79					●		●					
NG2M195RK	2	1,95	1,09	0,19	2,79				●	●	●	●					
NG2M200RK	2	2,00	1,09	0,19	2,79				●	●	●	●		●			
NG2M220RK	2	2,20	1,09	0,19	2,79					●		●					
NG2M225RK	2	2,25	1,09	0,19	2,79				●	●	●	●					
NG2094RK	2	2,39	1,09	0,19	2,79				●	●	●	●		●			
NG2M250RK	2	2,50	1,09	0,19	2,79					●		●					
NG2M275RK	2	2,75	1,09	0,19	2,79				●	●	●	●					
NG2M300RK	2	3,00	1,09	0,19	2,79				●	●	●	●					
NG2125RK	2	3,18	1,09	0,19	2,79				●	●	●	●		●			
NG2M325RK	2	3,25	1,09	0,19	2,79					●		●					
NG3M100RK	3	1,00	0,76	0,19	1,91					●		●					
NG3047RK	3	1,19	0,76	0,19	1,91		●		●	●	●	●					
NG3M120RK	3	1,20	0,76	0,19	1,91				●	●	●	●					
NG3M150RK	3	1,50	1,02	0,19	2,39			●		●		●		●			
NG3062RK	3	1,58	1,02	0,19	2,39		●	●	●	●	●	●		●			
NG3M175RK	3	1,75	1,02	0,19	2,39					●		●					
NG3072RK	3	1,83	1,02	0,19	2,39				●	●	●	●					
NG3078RK	3	1,98	1,02	0,19	2,39		●		●	●	●	●					
NG3M200RK	3	2,00	1,02	0,19	2,39		●	●		●		●		●			
NG3M220RK	3	2,20	1,02	0,19	2,39					●		●					
NG3M225RK	3	2,24	1,02	0,19	2,39		●	●	●	●	●	●					
NG3094RK	3	2,39	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M250RK	3	2,50	1,02	0,19	3,81		●	●		●		●		●			
NG3M275RK	3	2,75	1,02	0,19	3,81				●	●	●	●					
NG3M300RK	3	3,00	1,02	0,19	3,81		●	●	●	●	●	●		●			
NG3125RK	3	3,18	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M320RK	3	3,20	1,02	0,19	3,81					●		●					
NG3M325RK	3	3,25	1,02	0,19	3,81					●		●					

(continued)

(NG-K • Grooving Inserts with Chip Control continued)



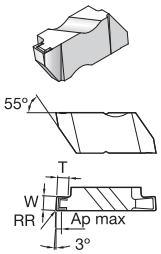
● first choice
○ alternate choice

P			●		○	○	○	○		●						
M					●	●	●	●		○						
K			○	●						○						
N		○			○		○		●		●					
S		●			●	●	●	●				○				
H													●	●		

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG3M350RK	3	3,50	2,92	0,32	3,81					●		●		●			
NG3156RK	3	3,96	2,92	0,19	3,81				●	●	●	●					
NG3M400RK	3	3,99	2,92	0,32	3,81		●	●	●	●	●	●		●			
NG3M425RK	3	4,24	2,92	0,32	3,81				●	●	●	●					
NG3M450RK	3	4,50	2,92	0,32	3,81					●		●					
NG3189RK	3	4,80	2,92	0,57	3,81		●	●	●	●	●	●		●			
NG4M300RK	4	3,00	1,02	0,19	3,81					●		●					
NG4125RK	4	3,18	1,02	0,19	3,81				●	●	●	●					
NG4M350RK	4	3,50	2,92	0,57	6,35		●	●		●		●					
NG4M400RK	4	4,00	2,92	0,57	6,35			●	●	●	●	●					
NG4M450RK	4	4,50	2,92	0,57	6,35					●		●					
NG4189RK	4	4,80	2,92	0,57	6,35		●		●	●	●	●					
NG4M500RK	4	5,00	2,92	0,32	6,35		●	●	●	●	●	●					
NG4M550RK	4	5,50	3,81	0,57	6,35					●		●					
NG4M600RK	4	6,00	3,81	0,57	6,35		●	●		●		●					
NG4250RK	4	6,35	3,81	0,57	6,35				●	●	●	●					
left hand																	
NG2M050LK	2	0,50	0,64	0,09	0,64						●	●					
NG2031LK	2	0,79	0,76	0,09	1,27				●	●	●	●		●			
NG2M080LK	2	0,80	0,76	0,09	1,27				●	●	●	●					
NG2M100LK	2	1,00	0,76	0,09	1,27				●	●	●	●					
NG2047LK	2	1,19	0,76	0,09	1,27				●	●	●	●					
NG2M120LK	2	1,20	0,76	0,09	1,27				●	●	●	●					
NG2M140LK	2	1,40	0,76	0,09	1,27				●	●	●	●					
NG2M150LK	2	1,50	1,09	0,19	2,79					●		●					
NG2062LK	2	1,58	1,09	0,19	2,79				●	●	●	●					
NG2M170LK	2	1,70	1,09	0,19	2,79				●	●	●	●					
NG2M175LK	2	1,75	1,09	0,19	2,79					●		●					
NG2M195LK	2	1,95	1,09	0,19	2,79				●	●	●	●					
NG2M200LK	2	2,00	1,09	0,19	2,79				●	●	●	●					
NG2M220LK	2	2,20	1,09	0,19	2,79					●		●					
NG2M225LK	2	2,25	1,09	0,19	2,79				●	●	●	●					
NG2094LK	2	2,39	1,09	0,19	2,79				●	●	●	●					
NG2M250LK	2	2,50	1,09	0,19	2,79					●		●					
NG2M275LK	2	2,75	1,09	0,19	2,79					●	●	●					
NG2M300LK	2	3,00	1,09	0,19	2,79				●	●	●	●					
NG2125LK	2	3,18	1,09	0,19	2,79				●	●	●	●					
NG2M325LK	2	3,25	1,09	0,19	2,79					●		●					
NG3M100LK	3	1,00	0,76	0,19	1,91					●		●					
NG3047LK	3	1,19	0,76	0,19	1,91				●	●	●	●					
NG3M120LK	3	1,20	0,76	0,19	1,91				●	●	●	●					
NG3M150LK	3	1,50	1,02	0,19	2,39		●	●		●		●					
NG3062LK	3	1,58	1,02	0,19	2,39			●	●	●	●	●		●			
NG3M175LK	3	1,75	1,02	0,19	2,39					●		●					
NG3072LK	3	1,83	1,02	0,19	2,39				●	●	●	●					
NG3078LK	3	1,98	1,02	0,19	2,39				●	●	●	●					

(continued)

(NG-K • Grooving Inserts with Chip Control continued)

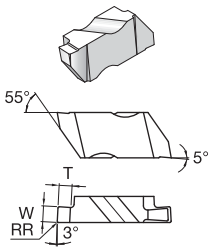


● first choice
○ alternate choice

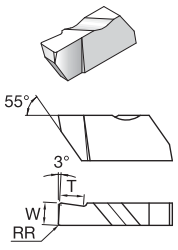
P		●		○	○	○	○		●					
M				●	●	●	●		○					
K		○	●						○					
N	○			○		○		●		●				
S	●			●	●	●	●				○			
H												●	●	

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG3M200LK	3	2,00	1,02	0,19	2,39			●		●		●					
NG3M220LK	3	2,20	1,02	0,19	2,39					●		●					
NG3M225LK	3	2,24	1,02	0,19	2,39		●	●	●	●	●	●					
NG3094LK	3	2,39	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M250LK	3	2,50	1,02	0,19	3,81		●	●		●		●					
NG3M275LK	3	2,75	1,02	0,19	3,81				●	●	●	●					
NG3M300LK	3	3,00	1,02	0,19	3,81		●	●	●	●	●	●					
NG3125LK	3	3,18	1,02	0,19	3,81		●		●	●	●	●					
NG3M320LK	3	3,20	1,02	0,19	3,81					●		●					
NG3M325LK	3	3,25	1,02	0,19	3,81					●		●					
NG3M350LK	3	3,50	2,92	0,32	3,81					●		●					
NG3156LK	3	3,96	2,92	0,19	3,81				●	●	●	●					
NG3M400LK	3	3,99	2,92	0,32	3,81		●	●	●	●	●	●					
NG3M425LK	3	4,25	2,92	0,32	3,81				●	●	●	●					
NG3M450LK	3	4,50	2,92	0,32	3,81					●		●					
NG3189LK	3	4,80	2,92	0,57	3,81		●	●	●	●	●	●					
NG4M300LK	4	3,00	1,02	0,19	3,81					●		●					
NG4125LK	4	3,18	1,02	0,19	3,81				●	●	●	●					
NG4M350LK	4	3,50	2,92	0,57	6,35		●	●		●		●					
NG4M400LK	4	4,00	2,92	0,57	6,35		●	●	●	●	●	●					
NG4M450LK	4	4,50	2,92	0,57	6,35							●					
NG4189LK	4	4,80	2,92	0,57	6,35		●		●	●	●	●					
NG4M500LK	4	5,00	2,92	0,32	6,35		●	●	●	●	●	●					
NG4M550LK	4	5,50	3,81	0,57	6,35					●		●					
NG4M600LK	4	6,00	3,81	0,57	6,35			●		●		●					
NG4250LK	4	6,35	3,81	0,57	6,35				●	●	●	●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.



NGP



NGD

● first choice
○ alternate choice

P			●		○	○	○	○		●				
M					●	●	●	●		○				
K			○	●						○				
N		○			○		○		●		●			
S		●			●	●	●	●				○		
H												●	●	

NGP • Grooving Positive Rake Inserts

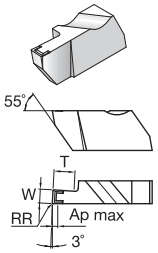
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGP2031R	2	0,79	–	0,09	1,27				●		●		●				
NGP2M150R	2	1,50	–	0,19	2,79	●											
NGP2062R	2	1,58	–	0,19	2,79				●		●		●				
NGP2125R	2	3,18	–	0,19	2,79				●		●		●				
NGP3088R	3	2,24	–	0,19	2,39				●		●		●		●		
NGP3125R	3	3,18	–	0,19	3,81				●		●		●		●		
NGP3156R	3	3,96	–	0,19	3,81				●		●						
NGP3189R	3	4,80	–	0,57	3,81						●						
NGP4189R	4	4,80	–	0,57	6,35				●		●		●				
NGP4250R	4	6,35	–	0,57	6,35				●		●						
left hand																	
NGP2031L	2	0,79	–	0,09	1,27				●		●		●				
NGP2M150L	2	1,50	–	0,19	2,79	●											
NGP2062L	2	1,58	–	0,19	2,79				●		●		●				
NGP2M200L	2	2,00	–	0,19	2,79	●											
NGP2125L	2	3,18	–	0,19	2,79				●		●		●				
NGP3088L	3	2,24	–	0,19	2,39				●		●				●		
NGP3125L	3	3,18	–	0,19	3,81				●		●		●		●		
NGP3156L	3	3,96	–	0,19	3,81						●						
NGP3189L	3	4,80	–	0,57	3,81						●						
NGP4189L	4	4,80	–	0,57	6,35				●		●						
NGP4250L	4	6,35	–	0,57	6,35				●		●						

NOTE: All KD and KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.

NGD • Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NGD3189R	3	4,80	–	0,57	6,35
NGD4250R	4	6,35	–	0,57	12,70
left hand					
NGD3189L	3	4,80	–	0,57	6,35
NGD4250L	4	6,35	–	0,57	12,70

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



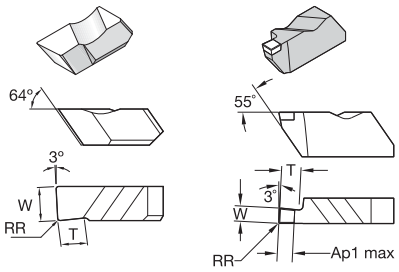
● first choice
○ alternate choice

		K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P			●		○	○	○	○		●			
M					●	●	●	●		○			
K			○	●						○			
N		○			○		○		●		●		
S		●			●	●	●	●				○	
H												●	●

NGD-K • Deep Grooving Inserts with Chip Control

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGD2M150RK	2	1,50	1,09	0,19	4,06						●	●					
NGD2M200RK	2	2,00	1,09	0,19	5,08						●	●					
NGD2M250RK	2	2,50	1,09	0,19	5,08						●	●					
NGD3062RK	3	1,58	1,02	0,19	3,18	●			●	●	●	●					
NGD3M200RK	3	2,00	1,02	0,19	4,06				●		●	●					
NGD3094RK	3	2,39	1,02	0,19	6,35	●			●	●	●	●					
NGD3M250RK	3	2,50	1,02	0,19	6,35						●	●					
NGD3M300RK	3	3,00	1,02	0,19	6,35						●	●					
NGD3125RK	3	3,18	1,02	0,19	6,35	●			●	●	●	●					
NGD3M350RK	3	3,50	2,92	0,32	6,35						●	●					
NGD3M400RK	3	4,00	2,92	0,32	6,35						●	●					
NGD3189RK	3	4,80	2,92	0,57	6,35				●	●	●	●					
NGD4125RK	4	3,18	1,02	0,19	6,35				●	●	●	●					
NGD4M400RK	4	4,00	2,92	0,57	9,53						●	●					
NGD4M450RK	4	4,50	2,92	0,57	12,70						●	●					
NGD4189RK	4	4,80	2,92	0,57	9,53	●			●	●	●	●					
NGD4M500RK	4	5,00	2,92	0,57	12,70						●	●					
NGD4M550RK	4	5,50	3,81	0,57	12,70						●	●					
NGD4250RK	4	6,35	3,81	0,57	12,70	●			●	●	●	●					
left hand																	
NGD2M150LK	2	1,50	1,09	0,19	4,06						●	●					
NGD2M200LK	2	2,00	1,09	0,19	5,08						●	●					
NGD2M250LK	2	2,50	1,09	0,19	5,08						●	●					
NGD3062LK	3	1,58	1,02	0,19	3,18				●	●	●	●					
NGD3M200LK	3	2,00	1,02	0,19	4,06						●	●					
NGD3094LK	3	2,39	1,02	0,19	6,35	●			●	●	●	●					
NGD3M250LK	3	2,50	1,02	0,19	6,35						●	●					
NGD3M300LK	3	3,00	1,02	0,19	6,35						●	●					
NGD3125LK	3	3,18	1,02	0,19	6,35	●			●	●	●	●					
NGD3M350LK	3	3,50	2,92	0,32	6,35						●	●					
NGD3M400LK	3	4,00	2,92	0,32	6,35						●	●					
NGD3189LK	3	4,80	2,92	0,57	6,35				●	●	●	●					
NGD4125LK	4	3,18	1,02	0,19	6,35				●	●	●	●					
NGD4M400LK	4	4,00	2,92	0,57	9,53						●	●					
NGD4M450LK	4	4,50	2,92	0,57	12,70						●	●					
NGD4189LK	4	4,80	2,92	0,57	9,53				●	●	●	●					
NGD4M500LK	4	5,00	2,92	0,57	12,70						●	●					
NGD4M550LK	4	5,50	3,81	0,57	12,70						●	●					
NGD4250LK	4	6,35	3,81	0,57	12,70				●	●	●	●					

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

P			●		○	○	○	○		●				
M					●	●	●	●		○				
K			○	●						○				
N		○			○		○		●		●			
S		●			●	●	●	●					○	
H													●	●

NG-1L

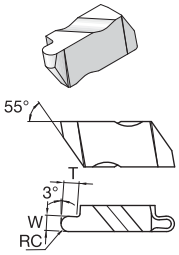
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
left hand																	
NG1031L	1	0,79	—	0,19	1,27					●		●					
NG1047L	1	1,19	—	0,19	1,91					●		●					
NG1062L	1	1,58	—	0,19	1,91					●		●					
NG1094L	1	2,39	—	0,19	1,91					●		●					

NOTE: Inserts have one cutting edge.
Width tolerance is ± .003 on NG-1L inserts.

NG-ST • Tipped Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG3M200RS02020ST	3	2,00	2,00	0,20	2,39											●	●
NG3M300RS02020ST	3	3,00	3,00	0,20	3,81											●	●
NG3125RS0820ST	3	3,18	3,00	0,25	3,81											●	●
NG3M400RS02020ST	3	4,00	3,00	0,20	3,81											●	●
NG3189RS0820ST	3	4,81	3,00	0,25	3,81											●	●
left hand																	
NG3M200LS02020ST	3	2,00	2,00	0,20	2,39											●	●
NG3M300LS02020ST	3	3,00	3,00	0,20	3,81											●	●
NG3125LS0820ST	3	3,18	3,00	0,25	3,81											●	●
NG3M400LS02020ST	3	4,00	3,00	0,20	3,81											●	●
NG3189LS0820ST	3	4,81	3,00	0,25	3,81											●	●

NOTE: All KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.



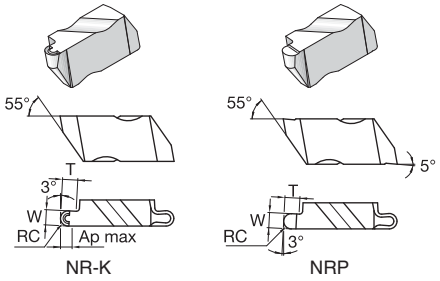
● first choice
○ alternate choice

P		●		○	○	○	○		●				
M				●	●	●	●		○				
K		○	●						○				
N	○			○		○		●		●			
S	●			●	●	●	●				○		
H												●	●

NR • Full Radius Inserts

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NR2M050R	2	1,00	–	0,50	1,27			●	●	●	●	●					
NR2M075R	2	1,50	–	0,75	2,79			●	●		●						
NR2031R	2	1,58	–	0,79	2,79				●	●	●	●					
NR2M100R	2	2,00	–	1,00	2,79			●	●		●	●					
NR2047R	2	2,39	–	1,19	2,79					●		●					
NR2M125R	2	2,50	–	1,25	2,79			●				●					
NR2M150R	2	3,00	–	1,50	2,79			●				●					
NR2062R	2	3,18	–	1,59	2,79				●	●	●	●					
NR2M175R	2	3,50	–	1,75	2,79			●				●					
NR3031R	3	1,58	–	0,79	2,39	●			●	●	●	●					
NR3M100R	3	2,00	–	1,00	2,39			●				●					
NR3047R	3	2,39	–	1,19	3,81	●			●	●	●	●					
NR3M125R	3	2,50	–	1,25	3,81		●	●									
NR3M150R	3	3,00	–	1,50	3,81			●				●					
NR3062R	3	3,18	–	1,59	3,81	●			●	●	●	●					
NR3M175R	3	3,50	–	1,75	3,81			●									
NR3078R	3	3,96	–	1,98	3,81	●											
NR3M200R	3	4,00	–	2,00	3,81			●				●					
NR3M225R	3	4,50	–	2,25	3,81			●				●					
NR3094R	3	4,78	–	2,39	3,81	●			●	●	●	●					
NR4M200R	4	4,00	–	2,00	6,35			●									
NR4M225R	4	4,50	–	2,25	6,35			●									
NR4094R	4	4,78	–	2,39	6,35	●											
NR4M250R	4	5,00	–	2,50	6,35			●									
NR4125R	4	6,35	–	3,18	6,35	●			●	●	●	●					
left hand																	
NR2M050L	2	1,00	–	0,50	1,27			●	●	●	●	●					
NR2M075L	2	1,50	–	0,75	2,79			●									
NR2031L	2	1,58	–	0,79	2,79				●	●	●	●					
NR2M100L	2	2,00	–	1,00	2,79			●				●					
NR2047L	2	2,39	–	1,19	2,79					●		●					
NR2M125L	2	2,50	–	1,25	2,79			●				●					
NR2M150L	2	3,00	–	1,50	2,79			●				●					
NR2062L	2	3,18	–	1,59	2,79				●	●	●	●					
NR2M175L	2	3,50	–	1,75	2,79			●			●						
NR3031L	3	1,58	–	0,79	2,39	●			●	●	●	●					
NR3M100L	3	2,00	–	1,00	2,39			●				●					
NR3047L	3	2,39	–	1,19	3,81	●			●	●	●	●					
NR3M125L	3	2,50	–	1,25	3,81			●									
NR3M150L	3	3,00	–	1,50	3,81			●	●		●	●					
NR3062L	3	3,18	–	1,59	3,81	●			●	●	●	●					
NR3M175L	3	3,50	–	1,75	3,81			●									
NR3M200L	3	4,00	–	2,00	3,81			●				●					
NR3M225L	3	4,50	–	2,25	3,81			●				●					
NR3094L	3	4,78	–	2,39	3,81	●			●	●	●	●					
NR4M200L	4	4,00	–	2,00	6,35			●									
NR4M225L	4	4,50	–	2,25	6,35			●									
NR4M250L	4	5,00	–	2,50	6,35			●									
NR4125L	4	6,35	–	3,18	6,35				●	●	●	●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

P			●		○	○	○	○		●			
M					●	●	●	●		○			
K			○	●						○			
N	○				○		○		●		●		
S	●				●	●	●	●				○	
H												●	●

NR-K • Full Radius Inserts with Chip Control

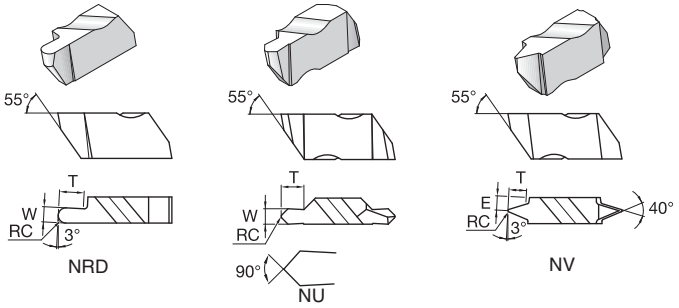
catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NR3031RK	3	1,58	1,98	0,79	2,39				●	●	●	●					
NR3047RK	3	2,39	1,91	1,19	3,81				●	●	●	●					
NR3062RK	3	3,18	2,92	1,59	3,81				●	●	●	●					
NR3078RK	3	3,96	2,54	1,98	3,81				●	●	●	●					
NR4062RK	4	3,18	2,92	1,59	3,81		●		●	●	●	●					
NR4094RK	4	4,78	3,81	2,39	6,35		●		●	●	●	●					
NR4125RK	4	6,35	3,81	3,18	6,35				●	●	●	●					
left hand																	
NR3031LK	3	1,58	1,98	0,79	2,39				●	●	●	●					
NR3047LK	3	2,39	1,91	1,19	3,81				●	●	●	●					
NR3062LK	3	3,18	2,92	1,59	3,81				●	●	●	●					
NR3078LK	3	3,96	2,54	1,98	3,81				●	●	●	●					
NR4062LK	4	3,18	2,92	1,59	3,81		●		●	●	●	●					
NR4094LK	4	4,78	3,81	2,39	6,35				●	●	●	●					
NR4125LK	4	6,35	3,81	3,18	6,35				●	●	●	●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.

NRP • Full Radius Positive Rake Inserts

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NRP3031R	3	1,58	–	0,79	2,39				●		●		●				
NRP3047R	3	2,39	–	1,19	3,81	●			●		●						
NRP3062R	3	3,18	–	1,59	3,81				●		●						
NRP3094R	3	4,78	–	2,39	3,81				●		●						
left hand																	
NRP3031L	3	1,58	–	0,79	2,39				●		●						
NRP3047L	3	2,39	–	1,19	3,81				●		●						
NRP3062L	3	3,18	–	1,59	3,81				●		●						
NRP3094L	3	4,78	–	2,39	3,81				●		●						

NOTE: Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

		K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P			●		○	○	○	○		●			
M					●	●	●	●		○			
K			○	●						○			
N		○			○		○		●		●		
S		●			●	●	●	●				○	
H												●	●

NRD • Full Radius Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm
right hand					
NRD3031R	3	1,58	–	0,79	3,18
NRD3062R	3	3,18	–	1,59	6,35
NRD4062R	4	3,18	–	1,59	6,35
NRD4094R	4	4,78	–	2,39	12,70
NRD4125R	4	6,35	–	3,18	12,70
left hand					
NRD3031L	3	1,58	–	0,79	3,18
NRD3062L	3	3,18	–	1,59	6,35
NRD4062L	4	3,18	–	1,59	6,35
NRD4094L	4	4,78	–	2,39	12,70
NRD4125L	4	6,35	–	3,18	12,70

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.

NU

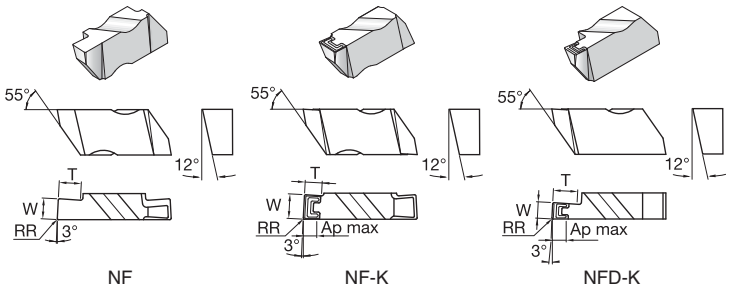
catalogue number	insert size	W mm	Ap max mm	RC mm	T mm.
right hand					
NU3094R	3	2,39	–	0,51	3,18
NU3125R	3	3,18	–	1,19	4,78
NU3156R	3	3,96	–	1,19	4,78
left hand					
NU3094L	3	2,39	–	0,51	3,18
NU3125L	3	3,18	–	1,19	4,78
NU3156L	3	3,96	–	1,19	4,78

NOTE: Tolerance on W ± 0,13mm (± .005").
Right-hand insert shown; left-hand insert is mirror image.
NU inserts compatible with NR-style inserts.

NV • Poly-Vee Grooving Inserts

catalogue number	insert size	E mm	RC mm	T mm
right hand				
NV3RJ	3	3,18	0,32	2,21
NV4RL	4	3,00	0,32	5,11
left hand				
NV3LJ	3	3,18	0,32	2,21
NV4LL	4	3,00	0,32	5,11

NOTE: Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

P		●		○	○	○	○		●				
M				●	●	●	●		○				
K		○	●						○				
N	○			○		○		●		●			
S	●			●	●	●	●				○		
H												●	●

NF • Face Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NF3125R	3	3,18	–	0,19	3,81	●											
NF3188R	3	4,78	–	0,57	3,81					●		●					
left hand																	
NF3125L	3	3,18	–	0,19	3,81	●											
NF3188L	3	4,78	–	0,57	3,81					●		●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.

NF-K • Face Grooving Postive Rake Inserts

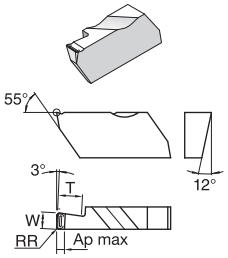
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NF3M200RK	3	2,00	1,02	0,19	1,78							●					
NF3M300RK	3	3,00	1,02	0,19	3,81							●					
NF3125RK	3	3,18	1,02	0,19	3,81					●		●					
NF3156RK	3	3,96	2,92	0,19	3,81					●		●					
left hand																	
NF3M200LK	3	2,00	1,02	0,19	1,78							●					
NF3M300LK	3	3,00	1,02	0,19	3,81							●					
NF3125LK	3	3,18	1,02	0,19	3,81					●		●					
NF3156LK	3	3,96	2,92	0,19	3,81					●		●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.

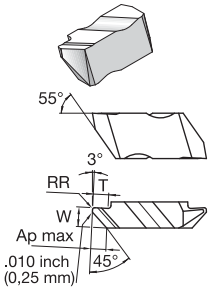
NFD-K • Face Grooving Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NFD3M300RK	3	3,00	1,02	0,19	6,35							●					
NFD3125RK	3	3,18	1,02	0,19	6,35					●		●					
NFD4189RK	4	4,80	2,92	0,57	9,53					●		●					
NFD4250RK	4	6,35	3,81	0,57	12,70					●		●					
left hand																	
NFD3M300LK	3	3,00	1,02	0,19	6,35							●					
NFD3125LK	3	3,18	1,02	0,19	6,35					●		●					
NFD4189LK	4	4,80	2,92	0,57	9,53					●		●					
NFD4250LK	4	6,35	3,81	0,57	12,70					●		●					

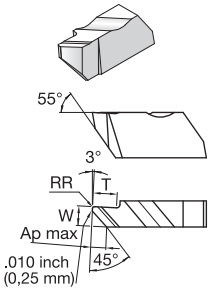
NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



NFD-KI



NP-K



NPD-K

● first choice
○ alternate choice

		K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P			●		○	○	○	○		●			
M					●	●	●	●		○			
K			○	●						○			
N		○			○		○		●		●		
S		●			●	●	●	●				○	
H												●	●

NFD-KI • Face Grooving Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NFD3125RKI	3	3,18	1,02	0,19	6,35
NFD3156RKI	3	3,96	2,92	0,19	6,35
NFD3189RKI	3	4,80	2,92	0,57	6,35
left hand					
NFD3125LKI	3	3,18	1,02	0,19	6,35
NFD3189LKI	3	4,80	2,92	0,57	6,35

NOTE: Inserts have one cutting edge.
NFD-KI inserts are compatible with NS-style boring bars only.
Right-hand insert shown; left-hand insert is mirror image.

NP-K • Profiling Inserts

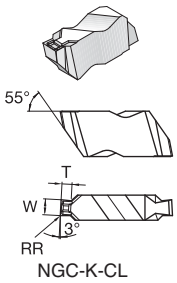
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NP2002RK	2	3,68	–	0,09	2,79
NP2012RK	2	3,68	–	0,34	2,79
NP3002RK	3	4,83	–	0,09	5,08
NP3012RK	3	4,83	–	0,34	5,08

NOTE: Right-hand insert shown; left-hand insert is mirror image.
Tolerance on W ± 0,13mm (± .005").

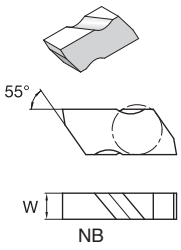
NPD-K • Profiling Deep Postive Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NPD2002RK	2	3,68	–	0,09	5,08
NPD3002RK	3	4,83	–	0,09	6,35
NPD3012RK	3	4,83	–	0,34	6,35

NOTE: Right-hand insert shown; left-hand insert is mirror image.
Tolerance on W ± 0,13mm (± .005").



NGC-K-CL



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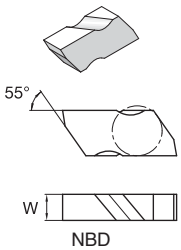


NBD

● first choice
○ alternate choice

P		●		○	○	○	○		●				
M				●	●	●	●		○				
K		○	●						○				
N	○			○		○		●		●			
S	●			●	●	●	●				○		
H												●	●

NGC-K • Groove and Chamfer

catalogue number	insert size	circlip size mm	W mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGC2C110R035K	2	1,10	1,19	0,08	0,35							●					
NGC2C110R040K	2	1,10	1,19	0,08	0,40							●					
NGC2C130R055K	2	1,30	1,39	0,08	0,55					●		●					
NGC2C160R070K	2	1,60	1,69	0,08	0,70							●					
NGC2C160R100K	2	1,60	1,69	0,08	1,00							●					
NGC2C185R100K	2	1,85	1,94	0,08	1,00							●					
NGC2C185R125K	2	1,85	1,94	0,08	1,25							●					
NGC2C215R150K	2	2,15	2,24	0,08	1,50					●		●					
NGC2C265R150K	2	2,65	2,74	0,08	1,50							●					
left hand																	
NGC2C110L040K	2	1,10	1,19	0,08	0,40							●					
NGC2C130L055K	2	1,30	1,39	0,08	0,55					●		●					
NGC2C160L070K	2	1,60	1,69	0,08	0,70							●					
NGC2C185L125K	2	1,85	1,94	0,08	1,25					●		●					
NGC2C215L150K	2	2,15	2,24	0,08	1,50					●		●					
NGC2C265L150K	2	2,65	2,74	0,08	1,50							●					
NGC2C265L175K	2	2,65	2,74	0,08	1,75					●		●					

NOTE: Groove and chamfer inserts for circlip grooves to DIN 471/472 specification.
Right-hand insert shown; left-hand insert is mirror image.

NB • Blanks

catalogue number	insert size	W mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand														
NB2R	2	3,81	●											
NB3R	3	4,95	●											
NB4R	4	6,48	●											
left hand														
NB2L	2	3,81	●											
NB3L	3	4,95	●											
NB4L	4	6,48	●											

NOTE: NB and NBD blanks are designed to allow modification of the W-dimension and end form.
W-dimension is provided to indicate maximum possible width. Available only in uncoated grades.
Right-hand insert shown; left-hand insert is mirror image.

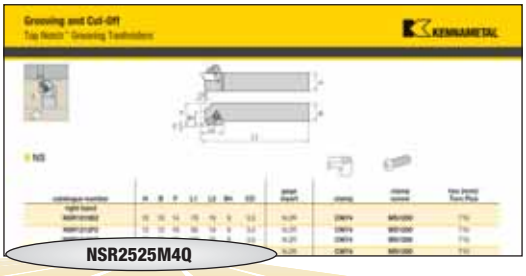
NBD • Deep Grooving Blanks

catalogue number	insert size	W mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand														
NBD2R	2	3,81	●											
NBD3R	3	4,95	●											
left hand														
NBD3L	3	4,95	●											

NOTE: NB and NBD blanks are designed to allow modification of the W-dimension and end form.
W-dimension is provided to indicate maximum possible width. Available only in uncoated grades.
Right-hand insert shown; left-hand insert is mirror image.

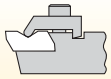
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

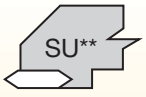


N	S	R		2525	M	4	Q
Insert Holding Method	Insert Mounting Location	Hand of Tool	Drop Head	Shank Size	Tool Length	Insert Size	Qualified Surface and Length

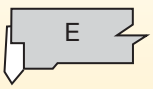
N = Top Notch*



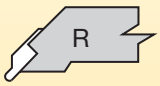
S = Insert Mounting Location



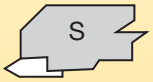
SU = Side mount utility**



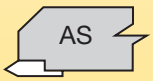
E = End



R = Undercut

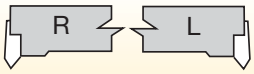


S = Side mount, offset

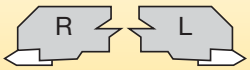


AS = side mount, no offset

R = Hand of Tool

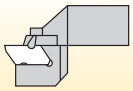


End mount



Side mount

DH = Drop Head



2525 = Shank Size

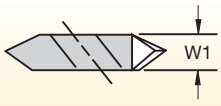
metric:
Shank height and width in mm and holder length according to ISO standard.

inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and larger, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width and the second digit the number of quarters of height, except for a toolholder 1-1/4" x 1-1/2", which is given the number 91.

M = Tool Length

L1	ISO
32	A
40	B
50	C
60	D
70	E
80	F
90	G
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special Length	X

4 = Insert Size



insert size	W1 mm	W1 inch
2	3,81	.150
3	4,95	.195
4	6,98	.255
5	9,65	.380
6	9,73	.383
8	11,13	.438

Q = Qualified Surface and Length

Q = Qualified metric holder

* Kennametal proprietary standard only.

**Side mount utility holder can only use NTU inserts.

How Do Catalogue Numbers Work?

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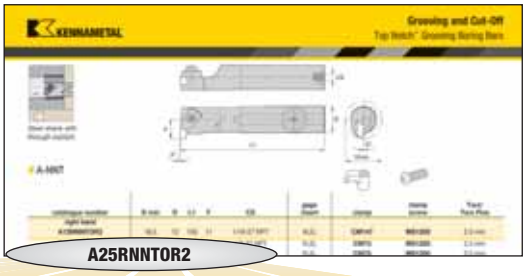
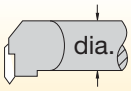
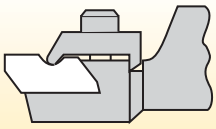


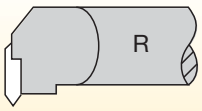
A	25	R	N	N	T	O	R	2
Bar Type	Bar Diameter	Bar Length	Insert Holding Method	Insert Shape	Insert Location	Rake Angle	Hand of Bar	Insert Size



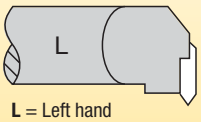
bar diameter in millimetres



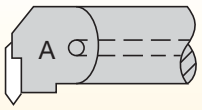
N* = Top Notch



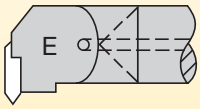
R = Right hand



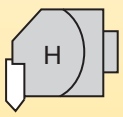
L = Left hand



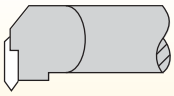
A = Steel with coolant



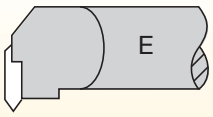
E = Carbide with coolant



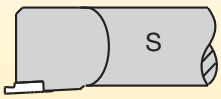
H = Interchangeable head



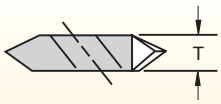
metric bars:
K = 125mm
M = 150mm
Q = 180mm
R = 200mm
S = 250mm
T = 300mm
U = 350mm



E = End mount

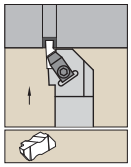


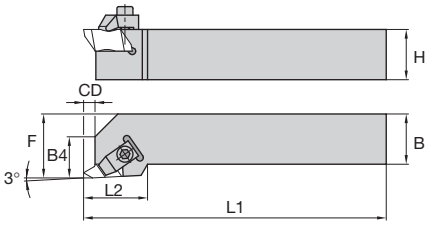
S = Straight mount



insert size	T mm	T in
1	3,54	.100
2	3,81	.150
3	5,35	.195
4	6,40	.255
5	9,65	.380
6	9,73	.383
8	11,13	.438

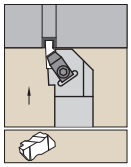
*Kennametal standard only.

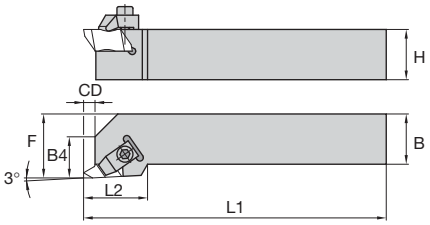




NS

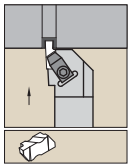
catalogue number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand											
NSR1010E2	10	10	14	70	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1212F2	12	12	16	80	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1616H2	16	16	20	100	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K2	20	20	25	125	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2525M2	25	25	32	150	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K3	20	20	25	125	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M3	25	25	32	150	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3225P3	32	25	32	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3232P3	32	32	40	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M4	25	25	32	150	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3225P4	32	25	32	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P4	32	32	40	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P5	32	32	40	170	51	16	10,5	N.5R	**CM80**	**MS352**	6 mm
left hand											
NSL1010E2	10	10	14	70	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1212F2	12	12	16	80	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1616H2	16	16	20	100	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K2	20	20	25	125	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2525M2	25	25	32	150	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K3	20	20	32	125	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M3	25	25	32	150	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3225P3	32	25	32	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3232P3	32	32	40	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M4	25	25	32	150	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3225P4	32	25	32	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P4	32	32	40	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P5	32	32	40	170	51	16	10,5	N.5L	**CM81**	**MS352**	6 mm

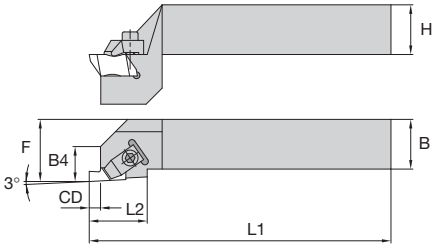




NAS

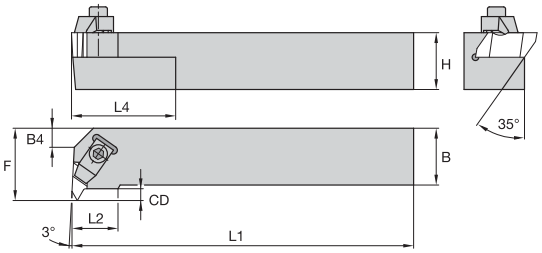
catalogue number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand													
NASR1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2R	**CM182**	**MS1200**	T10
NASR1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2R	**CM182**	**MS1200**	T10
NASR1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3R	**CM184LP**	**MS2111**	25 IP
left hand													
NASL1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2L	**CM183**	**MS1200**	T10
NASL1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2L	**CM183**	**MS1200**	T10
NASL1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3L	**CM185LP**	**MS2111**	25 IP





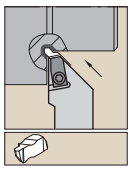
NS-DH

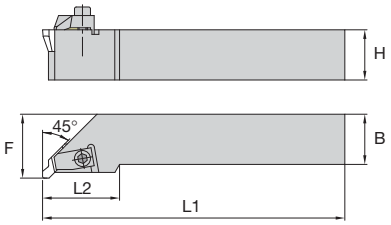
catalogue number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand													
NSRDH2020K2	20	20	25	125	19	9	3,5	—	—	N.2R	**CM74**	**MS1200**	T10
NSRDH2525M2	25	25	32	150	19	9	3,5	—	—	N.2R	**CM74**	**MS1200**	T10
NSRDH2525M3	25	25	32	150	32	13	5,3	—	—	N.3R	**CM72LP**	**MS2111**	25 IP
NSRDH3232P3	32	32	40	170	32	13	5,3	—	—	N.3R	**CM72LP**	**MS2111**	25 IP



NE

catalogue number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand											
NER1616H2	16	16	20	100	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2020K2	20	20	25	125	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2525M2	25	25	32	150	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2525M3	25	25	32	150	22	–	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NER3225P3	32	25	32	170	22	–	3,8	N.3L	**CM73LP**	**MS2111**	25 IP
NER2525M4	25	25	35	150	24	–	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NER3225P4	32	25	35	170	24	–	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NER3232P4	32	32	40	170	24	–	6,4	N.4L	**CM73LP**	**MS2111**	25 IP
left hand											
NEL1616H2	16	16	20	100	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2020K2	20	20	25	125	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2525M2	25	25	32	150	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2525M3	25	25	32	150	22	–	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NEL3225P3	32	25	32	170	22	–	3,8	N.3R	**CM72LP**	**MS2111**	25 IP
NEL2525M4	25	25	35	150	24	–	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3225P4	32	25	35	170	24	–	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3232P4	32	32	40	170	24	–	6,4	N.4R	**CM72LP**	**MS2111**	25 IP

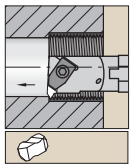




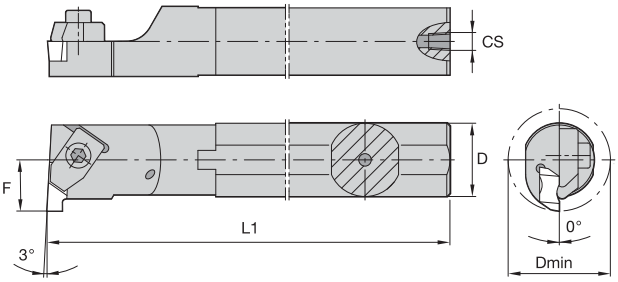
NR

catalogue number	H	B	F	L1	L2	gage insert	clamp	clamp screw	Torx Plus
right hand									
NRR2020K3	20	20	25	125	32	NU3125L	**CM73LP**	**MS2111**	25 IP
NRR2525M3	25	25	32	150	32	NU3125L	**CM73LP**	**MS2111**	25 IP
NRR3225P3	32	25	32	170	32	NU3125L	**CM73LP**	**MS2111**	25 IP
left hand									
NRL2020K3	20	20	25	125	32	NU3125R	**CM72LP**	**MS2111**	25 IP
NRL2525M3	25	25	32	150	32	NU3125R	**CM72LP**	**MS2111**	25 IP
NRL3225P3	32	25	32	170	32	NU3125R	**CM72LP**	**MS2111**	25 IP

NOTE: NR-style toolholders are compatible with “NU” style inserts only.



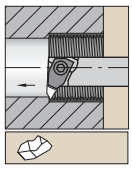
Steel shank with through coolant.



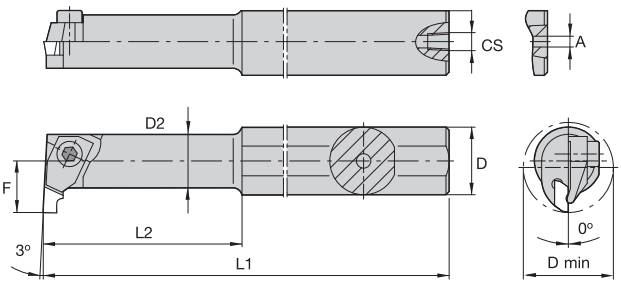
A-NNT

catalogue number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand									
A12MNNTOR2	18,5	12	150	11	1/16-27 NPT	N.2L	**CM147**	**MS1200**	2.5 mm
A16MNNTOR2	22,0	16	150	11	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A20QNNTOR2	26,0	20	180	13	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR2	34,0	25	200	17	1/4-18 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR3	34,0	25	200	17	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A32SNNTOR3	44,0	32	250	22	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR3	54,0	40	300	27	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR4	54,0	40	300	27	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
A50UNNTOR4	70,0	50	350	35	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
left hand									
A12MNNTOL2	18,5	12	150	11	1/16-27 NPT	N.2R	**CM146**	**MS1200**	2.5 mm
A16MNNTOL2	22,0	16	150	11	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A20QNNTOL2	26,0	20	180	13	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL2	34,0	25	200	17	1/4-18 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL3	34,0	25	200	17	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A32SNNTOL3	44,0	32	250	22	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL3	54,0	40	300	27	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL4	54,0	40	300	27	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP
A50UNNTOL4	70,0	50	350	35	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.



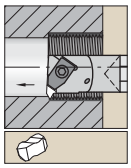
Necked steel shank with through coolant.



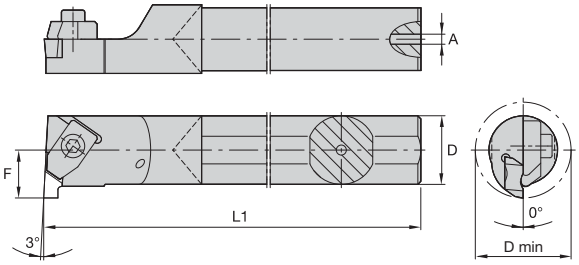
A-NNT -1

catalogue number	D min	D	D2	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (mm)
right hand												
A10KNNTOR1	11,5	10	8,7	125	31,75	7	3,2	–	N.1L	**CM109**	**MS1034**	1.5 mm
A12MNNTOR1	11,5	12	8,7	150	31,30	7	4,0	1/16-27 NPT	N.1L	**CM109**	**MS1034**	1.5 mm

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.



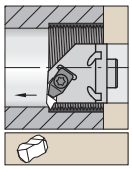
Carbide shank with through coolant.



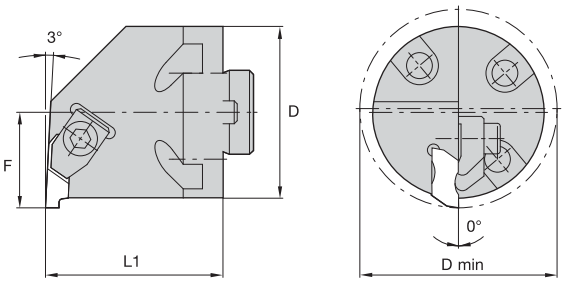
E-NNT

catalogue number	D min	D	L1	F	A	CS	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand										
E16RNNTOR2	22	16	200	11	5,537	–	N.2L	**CM75**	**MS1200**	T10
E20SNNTOR2	26	20	250	13	7,137	–	N.2L	**CM75**	**MS1200**	T10
E25TNNTOR3	34	25	300	17	7,935	–	N.3L	**CM73LP**	**MS2111**	25 IP
left hand										
E16RNNTOL2	22	16	200	11	5,537	–	N.2R	**CM74**	**MS1200**	T10
E20SNNTOL2	26	20	250	13	7,137	–	N.2R	**CM74**	**MS1200**	T10
E25TNNTOL3	34	25	300	17	7,935	–	N.3R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.

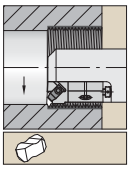


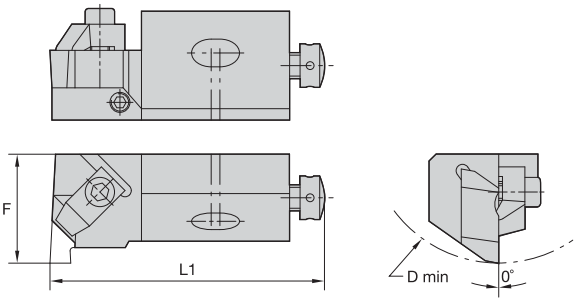
With through coolant.



H-NNT

catalogue number	D	D min	F	L1	gage insert	clamp	clamp screw	Torx Plus
right hand								
H32NNTOR3	32,0	44,0	22	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H40NNTOR3	40,0	54,0	27	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H60NNTOR4	60,0	73,2	43	41,3	N.4L	**CM73LP**	**MS2111**	25 IP
left hand								
H32NNTOL3	32,0	44,0	22	41,3	N.3R	**CM72LP**	**MS2111**	25 IP
H40NNTOL3	40,0	54,0	27	41,3	N.3R	**CM72LP**	**MS2111**	25 IP





NE

catalogue number	D min	F	L1	gage insert	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	washer	hex
right hand													
NER12CA2	50,0	20,0	56	N.2L	**CM75**	**191.406**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**MS1025**	**CSWM 060 050**	4 mm
NER20CA2	70,0	25,0	70	N.2L	**CM75**	**191.407**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**MS1025**	**CSWM 080 050**	5 mm
NER25CA3	100,0	32,0	100	N.3L	**CM73LP**	**—**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm
NER25CA4	100,0	32,0	100	N.4L	**CM73LP**	**—**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm
left hand													
NEL12CA2	50,0	20,0	55	N.2R	**CM74**	**191.406**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**MS1025**	**CSWM 060 050**	4 mm
NEL25CA3	100,0	32,0	100	N.3R	**CM72LP**	**—**	4 mm	**KUAM26**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm

NOTE: Minimum bore diameter (D min) capability varies with groove type.
F dimension measured over the flat point of the Top Notch style grooving insert.

Machining Guidelines for Chip Control • Grooving

- Center height of insert should be positioned at the center of the workpiece, or up to 0,13mm (.005") above.
- Dwell time in the bottom of the groove, more than three revolutions, is not recommended.
- Chip control is feed rate related and should be adjusted to fit the particular situation. Recommended feed range is 0,08–0,3 mm/rev (.003–0.012 IPR).

Machining Guidelines for Chip Control • Turning/Profiling

- Maximum depth of cut for side cutting (turning/profiling) depends upon material being cut and width of the tool. However, some general guidelines are:
  1) 0,79–1,6mm (.031–062") wide insert can cut up to 0,6mm (.025") deep.
  2) 1,7–3,3mm (.067–.128") wide insert can cut up to 1mm (.040") deep.
  3) 3,5–4,8mm (.138–.189") wide insert can cut up to 2mm (.080") deep.
  4) 5–9,5mm (.197–.375") wide insert can cut up to 3mm (.120") deep.

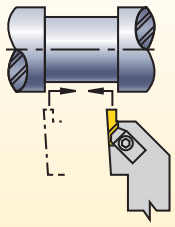
Groove Limits (Maximum Internal Groove Depth vs. Minimum Bore Diameter)

	maximum groove depth	minimum bore diameter
insert	mm	mm
NG-1094L	1,91	20,32
	1,02	11,18
NG-2031R/L	1,27	18,54
NG-2041R/L		
NG-2047R/L		
NG-2058R/L		
	2,79	63,50
NG-2062R/L	2,59	44,45
NG-2094R/L	2,49	38,10
NG-2125R/L	2,03	25,40
	1,40	18,54
NG-3047R/L		
NG-3062R/L	2,39	44,45
NG-3072R/L	2,29	41,28
NG-3078R/L	1,91	34,93
NG-3088R/L		
NG-3094R/L		
NG-3097R/L	3,81	60,33
NG-3105R/L		
NG-3110R/L	3,68	53,98
NG-3122R/L		
NG-3125R/L	3,51	47,63
NG-3142R/L		
NG-3156R/L	3,18	41,28
NG-3178R/L		
NG-3185R/L	2,79	34,93
NG-3189R/L		
NG-4125R/L	3,81	69,85
	6,35	146,05
NG-4189R/L	6,22	127,00
NG-4213R/L	6,10	114,30
NG-4219R/L	5,54	82,55
NG-4250R/L	5,08	63,50

NOTE: The same maximum groove depth and minimum bore diameter values also apply to metric, NG-K (chip control), and NR (full radius) inserts of similar size.

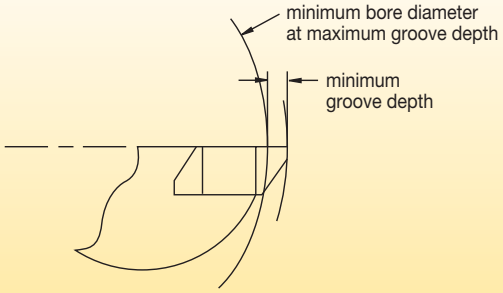
Finish Turning the Groove

1. Plunge both sides of groove width.
2. Plunge center area to remove web of material remaining.
3. To avoid insert chipping and to achieve groove wall perpendicularity, follow the tool path outlined here.
4. Use the lightest depth of cut that still allows good chip breaking, tool life, and surface finish.



	maximum groove depth	minimum bore diameter
insert	mm	mm
	9,53	731,82
NG-5250R/L	9,17	401,62
NG-5281R/L	8,74	274,62
NG-5312R/L	8,31	185,72
NG-5344R/L	7,47	122,22
NG-5375R/L	6,53	90,47
	5,46	71,42
NG-6250R/L	6,35	146,05
NG-6281R/L	6,22	127,00
NG-6312R/L	6,10	114,30
NG-6344R/L	5,54	82,55
NG-6375R/L	5,08	63,50

Internal Groove Depth vs. Bar Interference



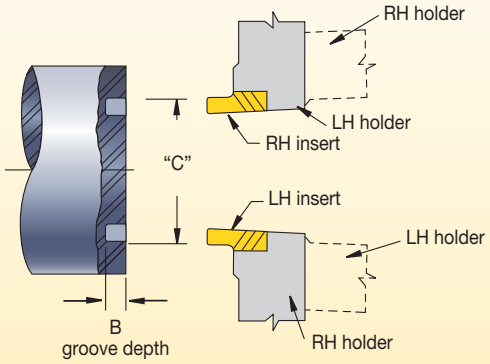
NOTE: Internal grooving depth limits are a function of bar clearance versus bore diameters.

Machining Guidelines for Face Grooving Operations • External

Standard NF/NFD Inserts

insert family	maximum groove depth "B" mm	minimum groove diameter "C" mm
NF-3	1,52	23,9
NF-3	2,39	30,5
NF-3	3,18	36,1
NF-3	3,81	41,3
NFD-3	6,35	47,6
NF-4/6	1,52	23,9
NF-4/6	2,39	30,5
NF-4/6	3,18	36,1
NF-4/6	3,81	41,3
NF-4/6	4,78	47,6
NF-4/6	6,35	57,2
NFD-4	9,53	57,2
NFD-4	12,70	57,2

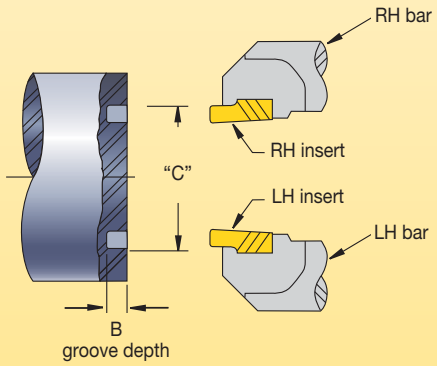
Toolholders



Standard NG/NGD Inserts

insert family	maximum groove depth "B" mm	minimum groove diameter "C" mm
NG-2	1,27	54,0
NG-2	2,79	88,9
NG-3	2,39	101,6
NG-3	3,18	127,0
NG-3	3,81	139,7
NGD-3	6,35	174,6
NG-4	3,81	152,4
NG-4	6,35	209,6
NGD-4	9,53	222,3
NGD-4	12,70	222,3
NG-5	9,53	333,0

Boring bars

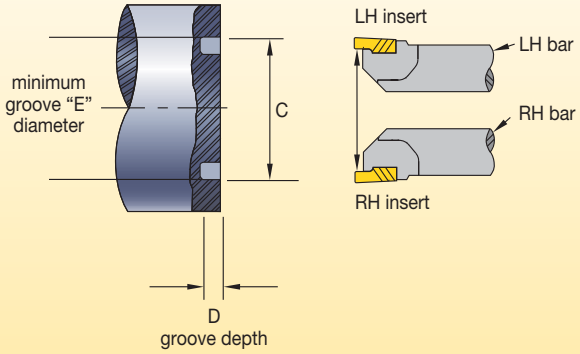


Machining Guidelines for Face Grooving Operations • Internal

insert family	maximum groove depth "D" mm	minimum groove diameter "E" mm
NFD-3-KI	6,35	57,2

NOTE: For internal applications, use only NFD-KI inserts.

Boring bars



KGF and KGT Cut-Off Inserts

Primary Application

KGT and KGF inserts specifically designed to fit SELF-GRIP® toolholders available from Iscar®. For traditional cut-off applications, the original KGT-style inserts are available in widths ranging from 2,25–4,80mm. For increased stability in large diameter cut-off applications, the KGF geometry is available in widths ranging from 1,60–9,50mm.

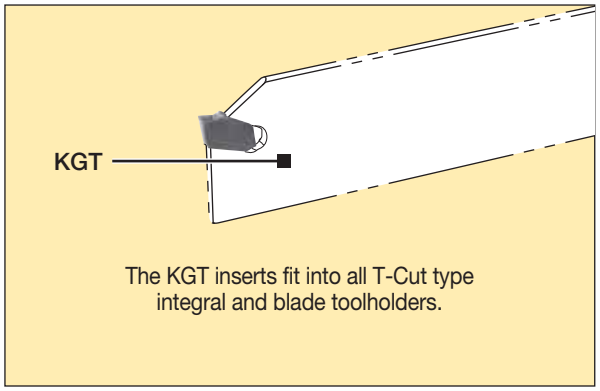
Features and Benefits

KGT Inserts

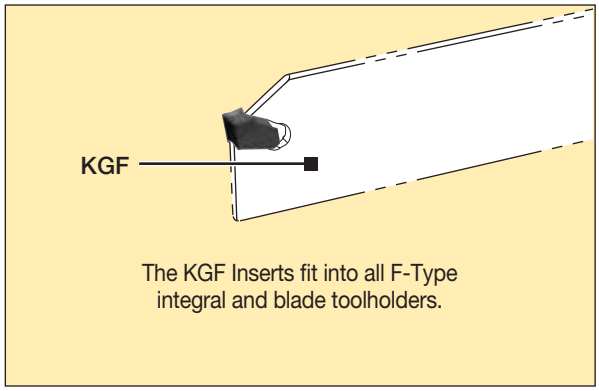
- KGT inserts are T-Type with no stopper. The KGT inserts replace single-end cutting inserts.

KGF Inserts

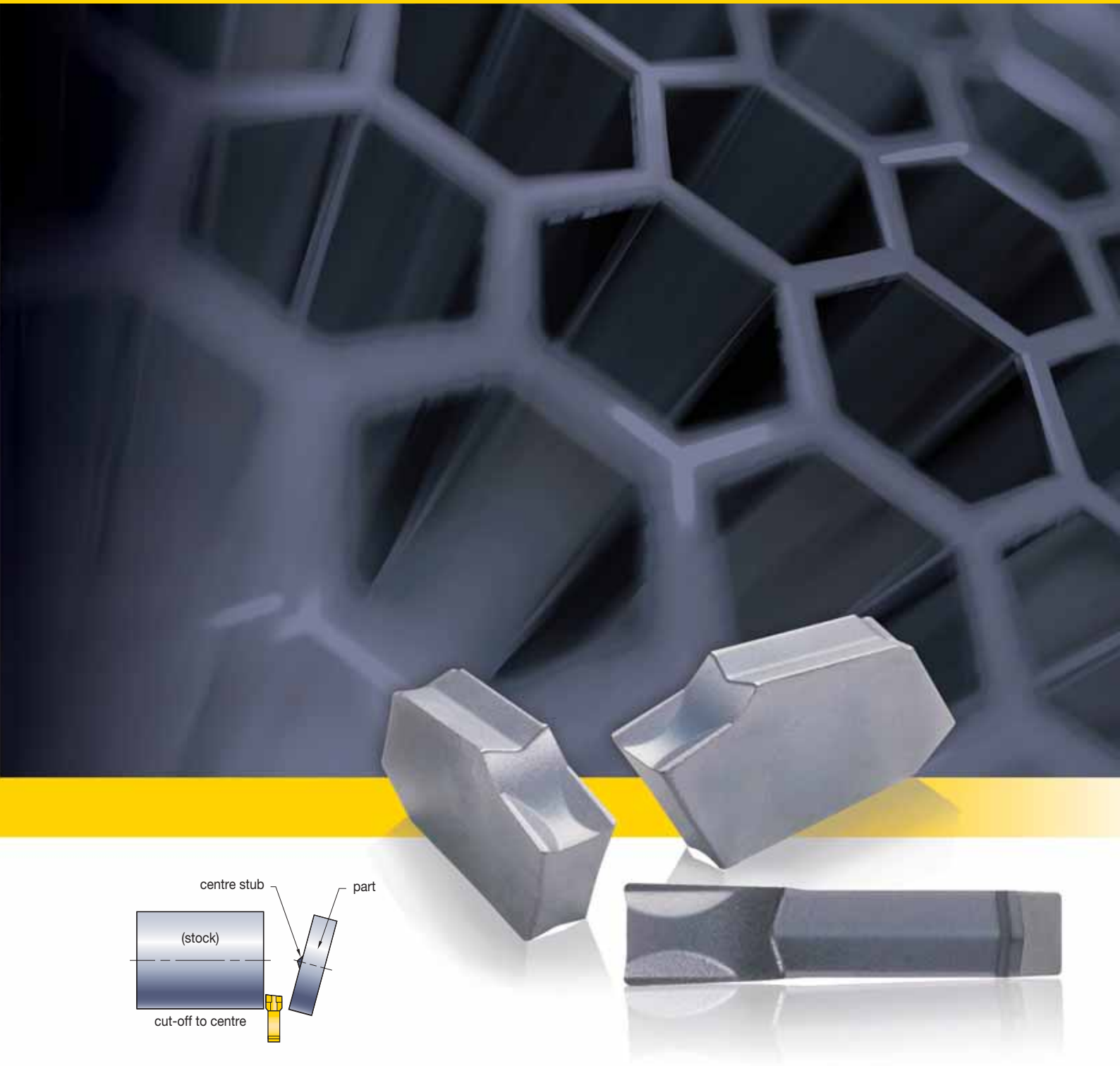
- Single-side insert for cut-off applications. This insert has a hard stop that seats insert securely into the pocket.



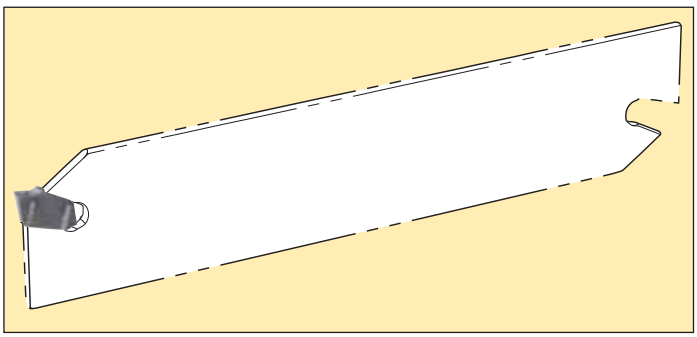
The KGT inserts fit into all T-Cut type integral and blade toolholders.

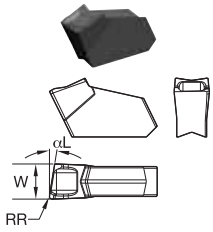


The KGF Inserts fit into all F-Type integral and blade toolholders.

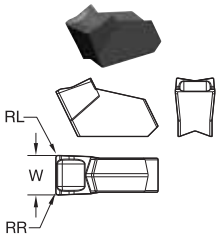


centre stub
part
(stock)
cut-off to centre

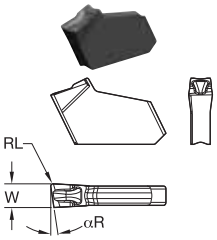




KGF-L



KGF



KGF-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGF-L

catalogue number	W mm	αL	RR mm	KC5025
KGFL38D	3,00	8	0,25	●
KGFL48D	4,09	8	0,28	●

NOTE: RR = RL on neutral inserts

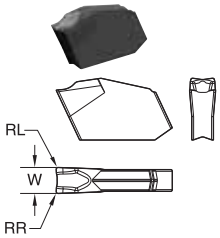
KGF

catalogue number	W mm	RL mm	
KGFN16	1,60	0,16	●
KGFN2J	2,00	0,16	●
KGFN2	2,20	0,16	●
KGFN24	2,40	0,16	●
KGFN3	3,00	0,25	●
KGFN3J	3,00	0,25	●
KGFN3M	3,03	0,20	●
KGFN4J	4,00	0,25	●
KGFN4	4,10	0,28	●
KGFN4B	4,10	0,40	●
KGFN48	4,80	0,28	●
KGFN6	6,39	0,35	●
KGFN9	9,50	0,47	●

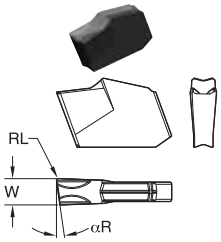
NOTE: RR = RL on neutral inserts

KGF-R

catalogue number	W mm	αR	RL mm	
KGFR168D	1,60	8	0,16	●
KGFR248D	2,39	8	0,16	●
KGFR315D	3,00	15	0,25	●
KGFR38D	3,00	8	0,25	●
KGFR34D	3,00	4	0,25	●



KGT-N



KGT-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGT-N

catalogue number	W mm	RL mm	KC5025
KGTN2	2,25	0,18	●
KGTN24	2,40	0,18	●
KGTN3J	3,05	0,22	●
KGTN3	3,05	0,22	●
KGTN3W	3,05	0,22	●
KGTN4	4,05	0,24	●
KGTN48	4,80	0,26	●
KGTN5	5,05	0,26	●
KGTN6	6,45	0,28	●

NOTE: RR = RL on neutral inserts

KGT-R

catalogue number	W mm	αR	RL mm	
KGTR28D	2,25	8	0,18	●
KGTR24D	2,25	4	0,18	●
KGTR248D	2,40	8	0,18	●
KGTR244D	2,40	4	0,18	●
KGTR38D	3,05	8	0,22	●
KGTR34D	3,05	4	0,22	●
KGTR44D	4,05	4	0,24	●

Threading

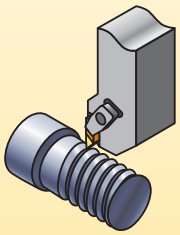
Threading Application Guide E2–E3

Top Notch Threading and Grooving E4–E34

LT Threading E36–E77

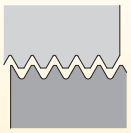
Technical Information E78–E103

Top Notch™ External Threading



Square Shank Toolholder Sizes:
- Metric — 10–32mm

Fine Pitch

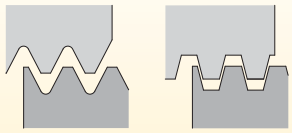


Cresting (Full Profile):
UN maximum TPI of 32
ISO minimum pitch of 1,5mm

Partial Profile — Flat Top (NTF and NTK):
UN maximum TPI of 44
ISO minimum pitch of 0,6mm

Partial Profile — Chip Control (NT-K):
UN maximum TPI of 36
ISO minimum pitch of 0,7mm

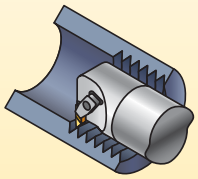
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 7
ISO maximum pitch of 3mm

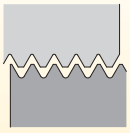
Partial Profile — Flat Top and Chip Control (NT-C and NT-CK):
UN minimum TPI of 4,5
ISO maximum pitch of 5,5mm

Top Notch Internal Threading



Boring Bar Diameters:
- Metric — 10–50mm
- Minimum bore — 11,5mm
- Steel

Fine Pitch

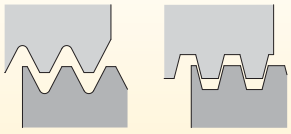


Cresting (Full Profile):
UN maximum TPI of 16
ISO minimum pitch of 1,5mm

Partial Profile — Flat Top (NT-1L, NTF and NTK):
UN maximum TPI of 24
ISO minimum pitch of 1mm

Partial Profile — Chip Control (NT-K):
UN maximum TPI of 20
ISO minimum pitch of 1,25mm

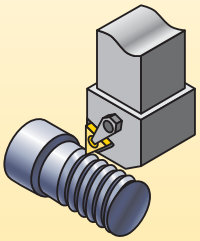
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 3mm

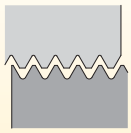
Partial Profile — Flat Top and Chip Control (NT-C and NT-CK):
UN minimum TPI of 4,5
ISO maximum pitch of 5,5mm

LT Laydown External Threading



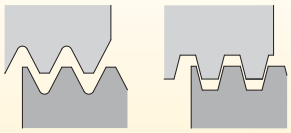
Square Shank Toolholder Sizes:
- Metric — 8–40mm available

Fine Pitch



Cresting (Full Profile) and Partial Profile:
UN maximum TPI of 48
ISO minimum pitch of 0,5mm

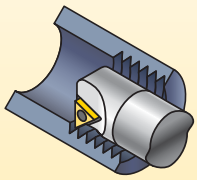
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 5mm

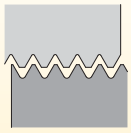
Partial Profile:
UN minimum TPI of 5
ISO maximum pitch of 5mm

LT Laydown Internal Threading



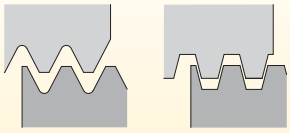
Boring Bar Diameters:
- Metric — 12–50mm
- Minimum bore — 13mm
- Steel and carbide

Fine Pitch



Cresting (Full Profile) and Partial Profile:
UN maximum TPI of 48
ISO minimum pitch of 0,5mm

Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 5mm

Partial Profile:
UN minimum TPI of 5
ISO maximum pitch of 5mm

Top Notch™ Thread Tooling Is the Proven High-Productivity Threading Solution!

Primary Application

Top Notch Threading with Beyond™ Insert technology provides consistent tool performance and superior clamping thread to almost any operation. With the largest selection of grades and geometries in the industry, the Top Notch Threading system is a proven solution.

Features and Benefits

Choosing the Top Notch Threading System

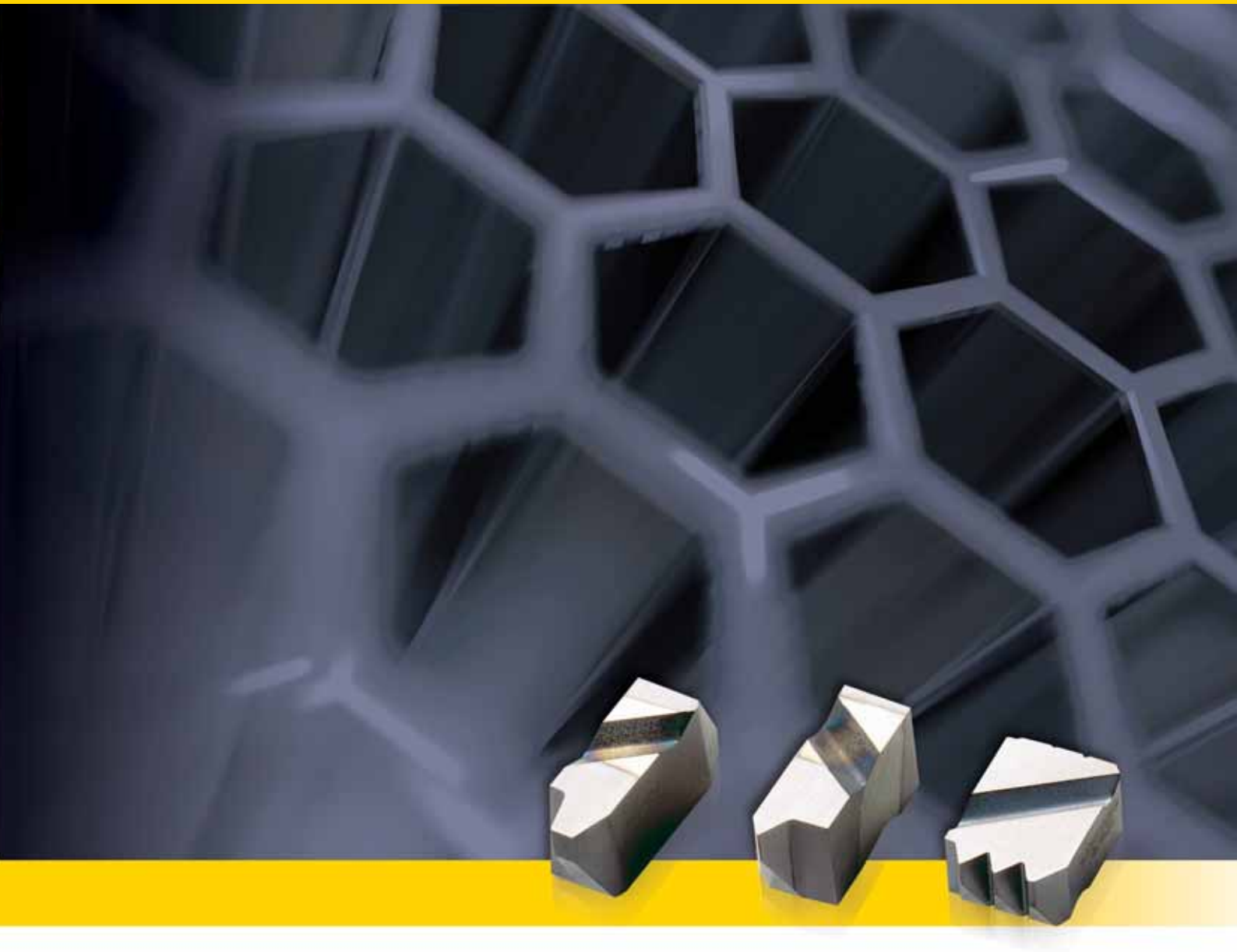
- A superior choice for heavy-duty applications like machining of Acme, Buttress, and API threads. Top Notch is also the best system for coarse pitch and multitooth threading applications.
- Largest selection of insert geometries and grades in the industry.
- A very rigid insert clamping design ensures best tool life, surface finish, and workpiece quality.
- Simplicity of the Top Notch design does not require shim selection for thread helix angles. This helps to avoid mistakes on the shop floor.
- Reduces inventory by using the same Top Notch toolholders and boring bars with either threading or grooving inserts.
- Top Notch chipbreaker inserts eliminate long troublesome coils.
- An excellent choice for special thread forms and toolholder designs.

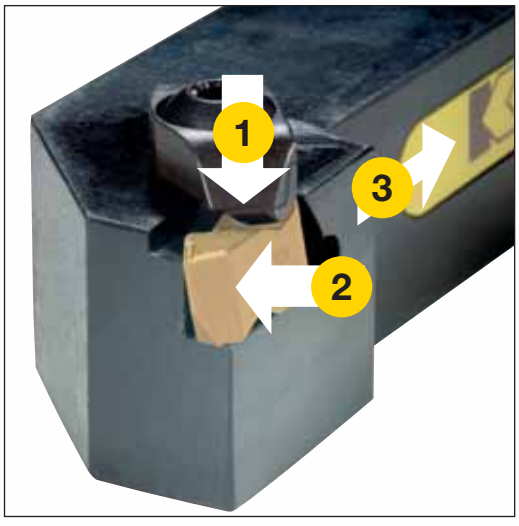
Precision-Ground Thread Form

- Minimises built-up edge.
- Precisely cuts most common materials.
- Reduces cutting forces.
- Ensures accurate high-quality threads.

Superior Chip Control

- Eliminates long, troublesome coils.
- Excellent for internal threading operations.
- Available in partial profile inserts for 60° thread forms.



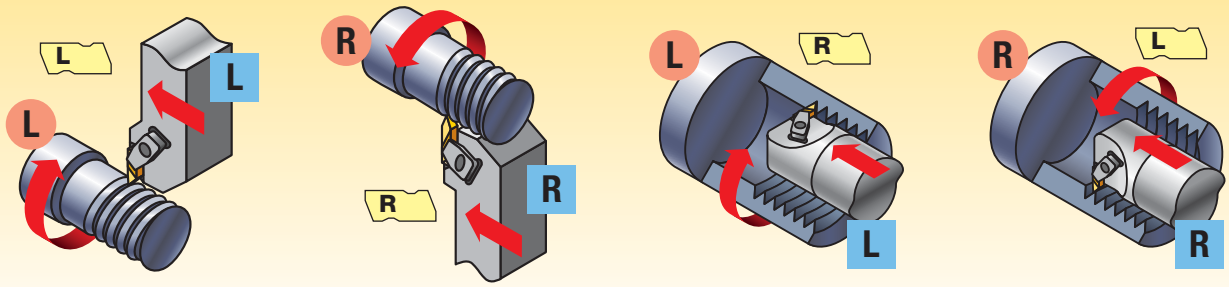

1
2
3

Step 1 • Select threading method and hand of tooling

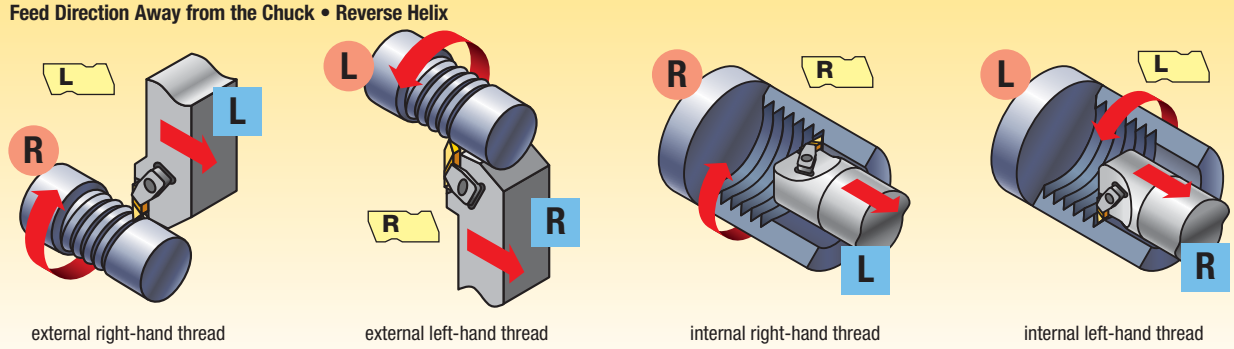
What you need to know:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

Feed Direction Toward the Chuck • Standard Helix



Feed Direction Away from the Chuck • Reverse Helix



NOTE: Top Notch threading bars require opposite hand insert and clamp.
Right-hand bar requires left-hand insert and clamp.
Left-hand bar requires right-hand insert and clamp.

Step 2 • Select insert for application

- See threading insert overview on page E9.
- Select cresting inserts for fully controlled thread form including diameter control. Cresting inserts eliminate the need for deburring.
- Non-cresting partial profile inserts can cut a variety of thread pitches. Chip control is only available with partial profile inserts.
- Note insert size for toolholder selection.

insert size	catalogue number	KCU25/KC5025	KCU10/KC5010
2	NT-2RK	●	●
3	NT-3RK	●	●
4	NT-4RK	●	●

Step 3 • Select grade and speed

Recommendations for Grade and Speed Selection • m/min

workpiece material	P	M	K	N	S
insert style	chip control or neutral	chip control or positive	neutral	positive	positive
optimum cutting conditions	**KCU10/KC5010** 50–230	**KCU10/KC5010** 50–185	**KCU10/KC5010** 70–210	**KC5410** 70–390	**KCU10/KC5010** 20–120
first choice	**KCU25/KC5025** 40–200	**KCU25/KC5025** 40–135	**KCU25/KC5025** 60–145	**KCU25/KC5025** 50–360	**KCU25/KC5025** 10–100

Example
Chip control .....NT-K or NT-CK (partial profile only)
Neutral .....NT, NT-C, NTF, NTC, NJ, NJF, NDC-V, NA, NDC, NTB-A/B
Positive .....NTP, NTK, NJP, NJK

Step 4 • Select holder from catalogue page

What you need to know:

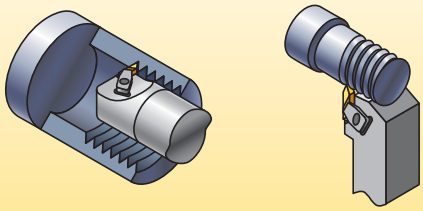
- External/internal operation.
- Minimum bore diameter (for internal operations).
- Hand of tool.
- Insert size (gage insert).

NOTE: The insert size must match the gage insert size of your toolholder selection.

catalogue number	gage insert
NSR-163D	N.3R
NSR-164D	N.4R

NOTE: Top Notch toolholders and boring bars are listed with a gage insert to indicate the size and hand required. They are compatible with both grooving and threading inserts of the same size.

Select the Appropriate Holder for the Insert Size and Hand:

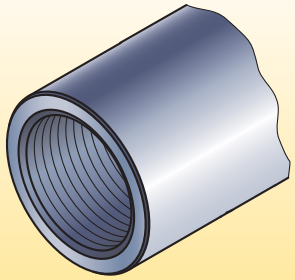


NOTE: Optimise your threading operation by using the proper infeed angle and the recommended infeed values.

Step 5 • Select insert and holder from catalogue page

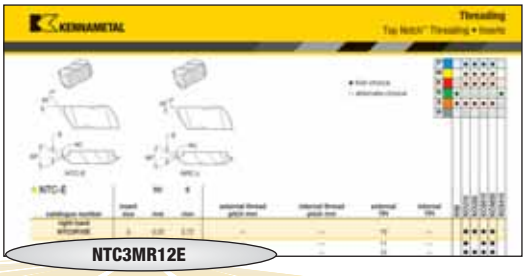
Top Notch Threading Example
Application .....8 TPI Acme internal right-hand thread
Material .....alloy steel
Workpiece diameter 114,3mm
good cutting conditions
feed toward the chuck

Recommendation
Insert NA3L8
Grade KC5010
Insert size 3
Boring bar A50UNNT0R4
Gage insert N.3L
Speed .....150 m/min
Infeed passes .....12 passes



How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



N — Type of Insert

N = Top Notch*

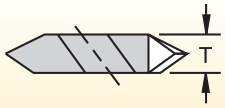
T — Insert Style

A = Acme
D = API or NPT
J = UNJ thread
T = 60° V thread
W = 55° V Whitworth

C — Additional Information

B = Buttress
F = Fine pitch
S = Stub Acme
C = Cresting
P = Positive rake
K = Fine pitch, positive
U = Utility**

3 — Insert Size



insert size	T (mm)
1	2,54
2	3,81
3	4,95
4	6,48
5	9,65
6	9,73
8	11,13

See full dimension chart below

M — Industry Thread Identification

Position indicates API or drilling industry form designation (e.g.,10RD, 8RD, .038)

or

Controlled root radius threading inserts indicate the root radius in .001" increments (NJ, NJF, NJP, NJK)

or

M indicates metric ISO thread

R — Hand of Insert

R = Right hand
L = Left hand

12 — Definition of Insert

- Threads per inch or pitch (for metric)
- "A" or "B" type Buttress insert
- Taper per foot — API threads

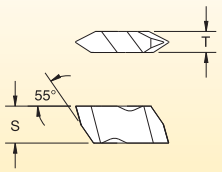
E — Additional Information

I = Internal thread
E = External thread (used only if internal and external thread forms are different)

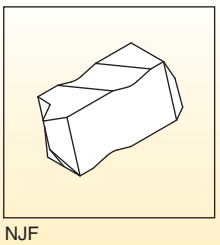
M = Multiple tooth
K = Standard chip control
C = Coarse pitch
D = Dryseal

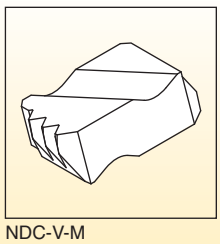
*Kennametal proprietary standard only.
**Utility threading insert can only be used in NSUR/L utility holders.

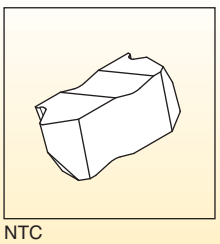
Top Notch Threading and Grooving Insert Dimensions

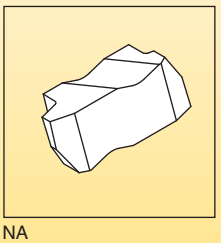


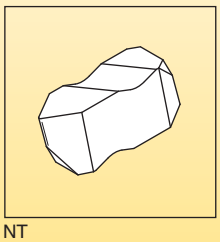
insert size	S mm	T mm
1	2,54	2,54
2	5,56	3,81
3	8,74	4,95
4	11,51	6,48
5	17,48	9,65
6	11,51	9,73
8	7,93	11,13

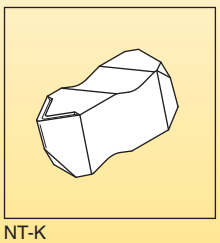

NJF


NDC-V-M

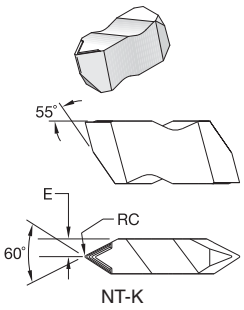

NTC


NA

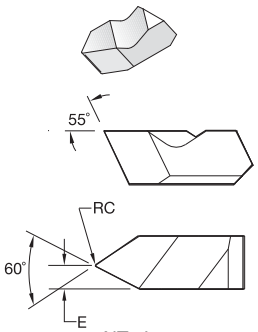

NT


NT-K

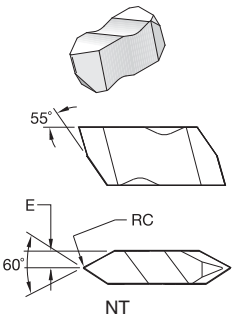
style			thread profile	standard	tolerance class	cresting	application	page(s)
chip control — K	neutral	positive						
NT-K	NT	NTP	Partial Profile 60º	—	—	N	General use for 60º thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	E10–E11
NT-CK			Partial Profile 60º — coarse pitch	—	—	N	Coarse pitch 60º thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	E11
	NTF	NTK	Partial Profile 60º — fine pitch	—	—	N	Fine pitch 60º thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches — able to thread close to shoulders	E11–E12
	NTU		Partial Profile 60º — four-edged insert	—	—	N	Four-edged insert for 60º partial profile threading — requires NSU-style toolholder for size 4U insert	E12
	NTC-M		Metric ISO	ISO R262, DIN 13	6g/6H	Y	Widely used metric 60º V-form for all industries	E12
	NTC		American UN	ANSI B1.1:03	2A/2B	Y	Widely used inch-based 60º V-form for all industries	E12–E13
	NJ	NJP	UNJ	MIL-S-8879C	3A/3B	N	Controlled root radius on external threads for military and aerospace industries	E14
	NJF	NJK	UNJ — fine pitch	MIL-S-8879C	3A/3B	N	Controlled root radius on external threads for military and aerospace industries — able to thread close to shoulders	E15
	NDC-V		NPT	ANSI B2.1:83	Standard NPT	Y	National Pipe Thread standard forms for pipe fittings	E16
	NDC-V-M		NPT — multitooth	ANSI B2.1:83	Standard NPT	Y	High productivity multitooth threading inserts for NPT threads	E16
	NWC		Whitworth, BSW, BSP	BS 84:1956, ISO 228/1:1982, DIN 259	Medium Class A	Y	Widely used 55º form for gas and water connections	E17
	ND		API Rotary Shoulder Connections — partial profile	API SPEC. 7:1990	Standard API	N	60º V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms	E17
	NDC		API Rotary Shoulder Connections — cresting	API SPEC. 7:1990	Standard API	Y	60º V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms — complete cresting form including taper	E18
	NDC-RD		API Round	API STD. 5B:1979	Standard API RD	Y	60º V-form with large radius for casing, tubing, and line pipe in the oil and gas industry including 8 and 10 round forms	E18
	NDC-RD-M		API Round — multitooth	API STD. 5B:1979	Standard API RD	Y	High productivity multitooth threading inserts for API round threads	E18
	NA		Acme	ANSI B1.5:1988	3G	N	29º truncated thread form for motion applications in a wide variety of industries	E19
	NAS		Stub Acme	ANSI B1.8:1988	2G	N	Shallow depth 29º truncated thread form for motion applications in a wide variety of industries	E20
	NTB-A		American Buttress 7º pressure flank leading (Push)	ANSI B1.9:1973	Class 2	N	Sawtooth form for axial load bearing applications in a variety of industries — use the "A" style when the 7º pressure flank is the leading edge	E20
	NTB-B		American Buttress 45º clearance flank leading (Pull)	ANSI B1.9:1973	Class 2	N	Sawtooth form for axial load bearing applications in a variety of industries — use the "B" style when the 45º clearance flank is the leading edge	E21



NT-K



NT-1L



NT

● first choice
○ alternate choice

P			●	●	●	●						
M				●	●	●	●					
K		○	●	●	●	●						
N		●	○	○	○	○	●					
S		●	●	●	●	●	○					
H			○		○							

NT-K

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NT2RK	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20		●	●	●	●	
NT3RK	3	0,17	2,49	1,25-4,00	2,00-5,00	6-20	5-12		●	●	●	●	
NT4RK	4	0,17	3,25	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	
left hand													
NT2LK	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20		●	●	●	●	
NT3LK	3	0,17	2,49	1,25-4,00	2,00-5,00	6-20	5-12		●	●	●	●	
NT4LK	4	0,17	3,25	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	

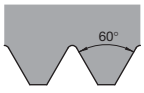
NT-1L

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
left hand													
NT1L	1	0,08	1,09	–	1,00-2,00	–	12-24	●	●	●	●	●	

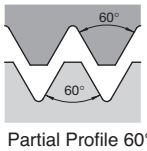
NT

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NT2R	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NT3R	3	0,17	2,49	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	
NT4R	4	0,17	3,25	1,25-6,25	2,00-6,25	4-20	4-12	●	●	●	●	●	
left hand													
NT2L	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NT3L	3	0,17	2,49	1,25-4,0	2,0-5,0	6-20	5-12	●	●	●	●	●	
NT4L	4	0,17	3,25	1,25-6,25	2,0-6,25	4-20	4-12	●	●	●	●	●	

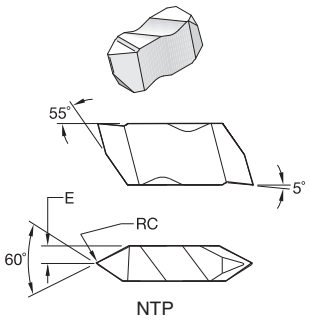
Thread Forms



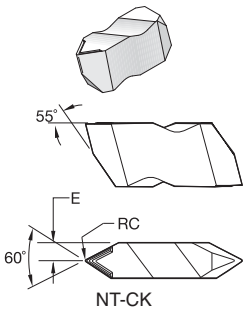
Partial Profile 60°
Internal



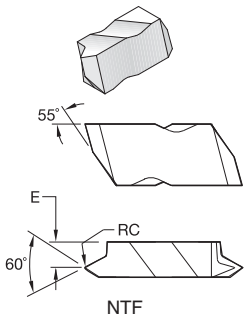
Partial Profile 60°



NTP



NT-CK



NTF

● first choice
○ alternate choice

P			●	●	●	●		
M			●	●	●	●		
K		○	●	●	●	●		
N		●	○	○	○	○	●	
S		●	●	●	●	●	○	
H			○		○			

NTP

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTP2R	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	●
NTP3R	3	0,17	2,49	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	●
NTP4R	4	0,17	3,25	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	
left hand													
NTP2L	2	0,10	1,91	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NTP3L	3	0,17	2,49	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	
NTP4L	4	0,17	3,25	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	

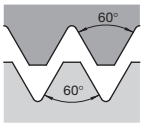
NT-CK

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI						
right hand													
NT3RCK	3	0,34	2,46	2,5-4,0	4,0	6-11	6		●	●	●	●	
NT4RCK	4	0,34	3,23	2,5-5,5	4,0-5,5	4.5-11	4.5-6		●	●	●	●	
left hand													
NT3LCK	3	0,34	2,46	2,5-4,0	4,0	6-11	6		●	●	●	●	
NT4LCK	4	0,34	3,23	2,5-5,5	4,0-5,5	4.5-11	4.5-6			●	●	●	

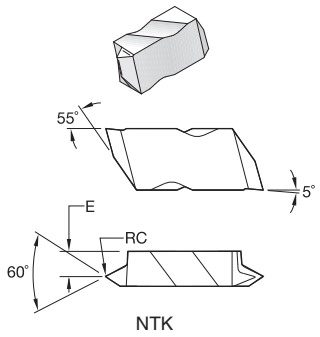
NTF

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI						
right hand													
NTF2R	2	0,08	2,79	0,60-1,75	1,0-2,0	14-44	12-24	●	●	●	●	●	
NTF3R	3	0,08	3,58	0,60-2,5	1,0-2,5	10-44	9-24	●	●	●	●	●	
NTF4R	4	0,08	5,11	0,60-2,5	1,0-2,5	10-44	9-24	●				●	
left hand													
NTF2L	2	0,08	2,79	0,60-1,75	1,0-2,0	14-44	12-24	●	●	●	●	●	
NTF3L	3	0,08	3,58	0,60-2,5	1,0-2,5	10-44	9-24	●	●	●	●	●	
NTF4L	4	0,08	5,11	0,60-2,5	1,0-2,5	10-44	9-24					●	

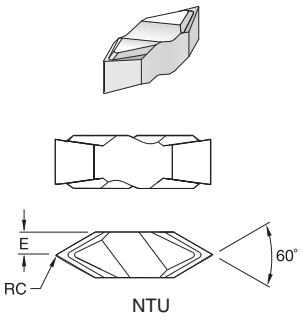
Thread Forms



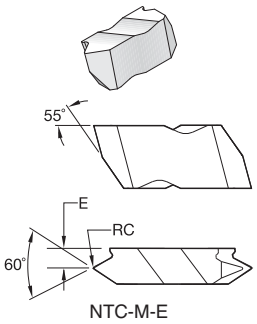
Partial Profile 60°



NTK



NTU



NTC-M-E

● first choice
○ alternate choice

P	●	●	●	●			
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

NTK

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTK2R	2	0,08	2,79	0,60-1,75	1,00-2,00	14-44	12-24	●	●	●	●	●	
NTK3R	3	0,08	3,58	0,60-2,50	1,00-2,50	10-44	9-24	●	●	●	●	●	
left hand													
NTK2L	2	0,08	2,79	0,60-1,75	1,00-2,00	14-44	12-24	●	●	●	●	●	
NTK3L	3	0,08	3,58	0,60-2,50	1,00-2,50	10-44	9-24	●	●	●	●	●	

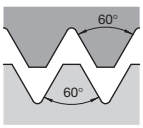
NTU

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTU4R	4U	0,11	3,18	1,25-6,25	–	4-20	–			●		●	

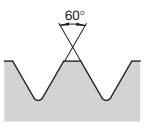
NTC-M-E

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTC3MR150E	3	0,20	3,68	1,50	–	–	–		●		●	●	
NTC3MR200E	3	0,27	3,68	2,00	–	–	–		●		●		

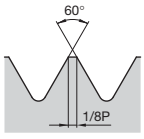
Thread Forms



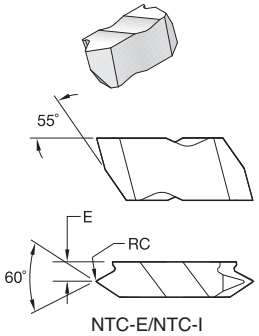
Partial Profile 60°



Partial Profile 60° External



ISO Metric-External



NTC-E/NTC-I

● first choice
○ alternate choice

P				●	●	●	●						
M				●	●	●	●						
K		○		●	●	●	●						
N		●		○	○	○	○	●					
S		●		●	●	●	●	○					
H				○		○							

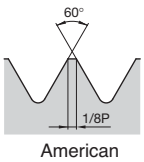
NTC-E

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTC3R10E	3	0,32	2,72	–	–	10	–		●	●	●	●	
NTC3R11E	3	0,28	2,72	–	–	11	–		●		●	●	
NTC3R12E	3	0,25	3,76	–	–	12	–		●	●	●	●	
NTC3R13E	3	0,24	3,76	–	–	13	–		●	●	●	●	
NTC3R14E	3	0,22	3,76	–	–	14	–		●	●	●	●	
NTC3R16E	3	0,19	3,76	–	–	16	–		●	●	●	●	
NTC3R18E	3	0,18	3,76	–	–	18	–		●	●	●	●	
NTC3R20E	3	0,16	3,76	–	–	20	–		●	●	●	●	
NTC3R24E	3	0,13	3,76	–	–	24	–		●	●	●	●	
NTC3R28E	3	0,12	3,76	–	–	28	–					●	
NTC3R32E	3	0,10	3,76	–	–	32	–		●		●	●	
NTC3R7E	3	0,47	2,72	–	–	7	–					●	
NTC3R8E	3	0,41	2,72	–	–	8	–		●	●	●	●	
NTC3R9E	3	0,36	2,72	–	–	9	–		●		●	●	
left hand													
NTC3L10E	3	0,32	2,72	–	–	10	–		●		●		
NTC3L12E	3	0,25	3,76	–	–	12	–		●		●	●	
NTC3L16E	3	0,19	3,76	–	–	16	–		●		●	●	
NTC3L8E	3	0,41	2,72	–	–	8	–				●		

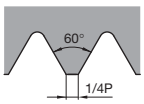
NTC-I

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI
right hand							
NTC3R12I	3	0,10	3,76	–	–	–	12
NTC3R8I	3	0,18	2,72	–	–	–	8
left hand							
NTC3L10I	3	0,13	2,72	–	–	–	10
NTC3L12I	3	0,10	3,76	–	–	–	12
NTC3L14I	3	0,09	3,76	–	–	–	14
NTC3L16I	3	0,08	3,76	–	–	–	16
NTC3L8I	3	0,18	2,72	–	–	–	8

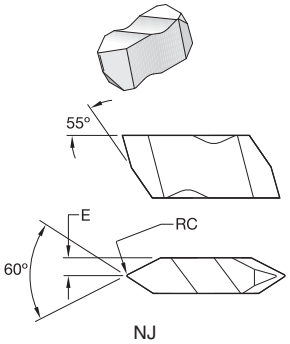
Thread Forms



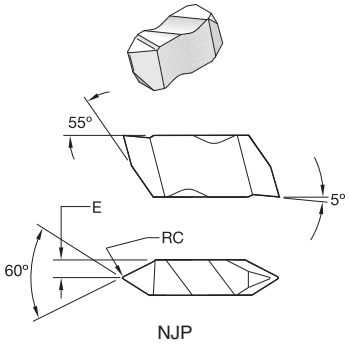
American
UN-External



American
UN-Internal



NJ



NJP

● first choice
○ alternate choice

P			●	●	●	●						
M			●	●	●	●						
K		○	●	●	●	●						
N		●	○	○	○	○	●					
S		●	●	●	●	●	○					
H			○		○							

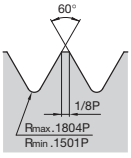
NJ

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NJ3010R16	3	0,25	2,49	–	–	16	–	●		●		●	
NJ3014R12	3	0,33	2,49	–	–	12	–		●	●	●	●	
NJ3020R8	3	0,49	2,49	–	–	8	–		●	●	●	●	
left hand													
NJ3010L16	3	0,25	2,49	–	–	16	–					●	
NJ3014L12	3	0,33	2,49	–	–	12	–		●	●	●	●	
NJ3020L8	3	0,49	2,49	–	–	8	–					●	

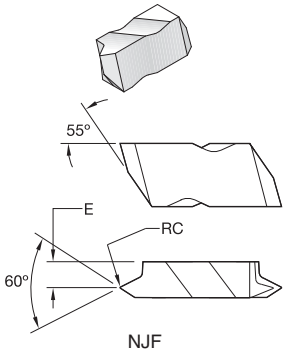
NJP

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NJP3010R16	3	0,25	2,49	–	–	16	–		●	●	●	●	
NJP3014R12	3	0,33	2,49	–	–	12	–	●	●	●	●	●	
NJP3020R8	3	0,49	2,49	–	–	8	–		●	●	●	●	
left hand													
NJP3010L16	3	0,25	2,49	–	–	16	–					●	
NJP3014L12	3	0,33	2,49	–	–	12	–		●	●	●	●	
NJP3020L8	3	0,49	2,49	–	–	8	–			●		●	

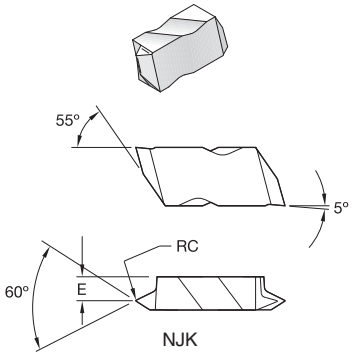
Thread Forms



UNJ External



NJF



NJK

● first choice
○ alternate choice

P		●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

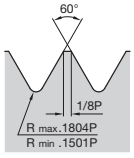
NJF

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NJF3005R32	3	0,13	3,58	–	–	32	–		●		●		
NJF3006R28	3	0,15	3,58	–	–	28	–	●	●		●	●	
NJF3007R24	3	0,17	3,58	–	–	24	–		●	●	●	●	
NJF3008R20	3	0,20	3,58	–	–	20	–		●	●	●	●	
NJF3009R18	3	0,22	3,58	–	–	18	–	●	●	●	●	●	
NJF3010R16	3	0,25	3,58	–	–	16	–	●	●	●	●	●	
NJF3012R14	3	0,28	3,58	–	–	14	–		●	●	●	●	
left hand													
NJF3007L24	3	0,17	3,58	–	–	24	–				●		
NJF3008L20	3	0,20	3,58	–	–	20	–				●		
NJF3009L18	3	0,22	3,58	–	–	18	–				●		

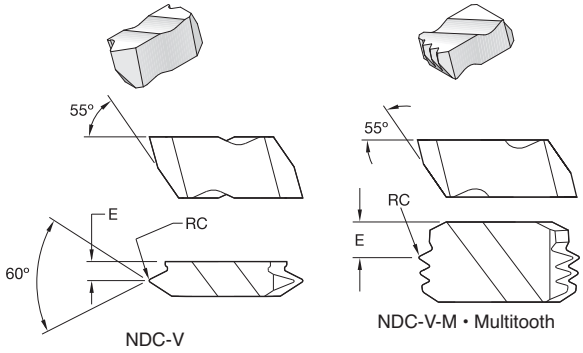
NJK

catalogue number	insert size	RC mm	E mm	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NJK3005R32	3	0,13	3,58	–	–	32	–		●	●	●	●	
NJK3006R28	3	0,15	3,58	–	–	28	–		●	●	●	●	
NJK3007R24	3	0,17	3,58	–	–	24	–		●	●	●	●	
NJK3008R20	3	0,20	3,58	–	–	20	–		●	●	●	●	
NJK3009R18	3	0,22	3,58	–	–	18	–		●	●	●	●	
NJK3010R16	3	0,25	3,58	–	–	16	–	●	●	●	●	●	
NJK3012R14	3	0,28	3,58	–	–	14	–		●		●	●	
left hand													
NJK3005L32	3	0,13	3,58	–	–	32	–					●	
NJK3006L28	3	0,15	3,58	–	–	28	–					●	
NJK3008L20	3	0,20	3,58	–	–	20	–			●		●	
NJK3012L14	3	0,28	3,58	–	–	14	–					●	

Thread Forms



UNJ External



NDC-V NDC-V-M • Multitooth

● first choice
○ alternate choice

P			●	●	●	●	
M			●	●	●	●	
K		○	●	●	●	●	
N		●	○	○	○	○	●
S		●	●	●	●	●	○
H			○		○		

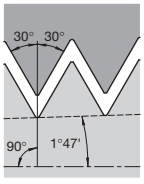
NDC-V

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NDC3115VR75	3	0,10	3,66	11.5		●		●		
NDC314VR75	3	0,08	3,66	14		●		●		
NDC327VR75	3	0,05	3,66	27		●		●		
NDC38VR75	3	0,13	2,54	8		●		●		
left hand										
NDC3115VL75	3	0,10	3,66	11.5		●		●		
NDC38VL75	3	0,13	2,54	8		●		●		

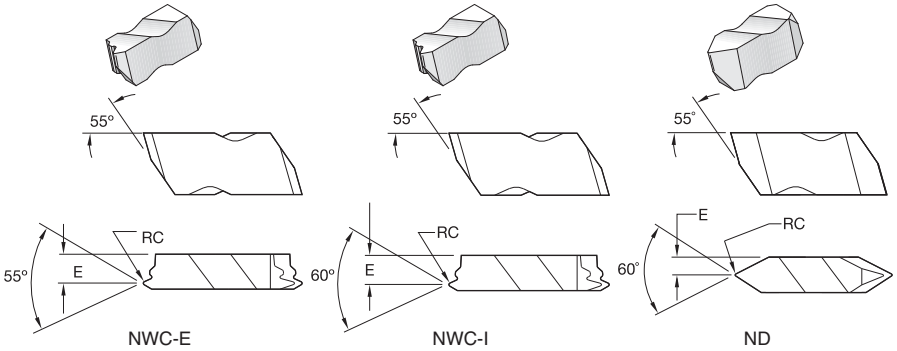
NDC-V-M • Multitooth

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NDC8115VR75M	8	0,10	2,59	11.5		●		●		
NDC88VR75M	8	0,13	2,41	8		●		●		
left hand										
NDC8115VL75M	8	0,10	2,59	11.5				●		
NDC88VL75M	8	0,13	2,41	8		●		●		

Thread Forms



NPT



● first choice
○ alternate choice

P			●	●	●	●	
M			●	●	●	●	
K		○	●	●	●	●	
N		●	○	○	○	○	●
S		●	●	●	●	●	○
H			○		○		

NWC-E

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NWC3R11E	3	0,30	3,43	11		●	●	●	●	
NWC3R14E	3	0,24	3,43	14			●	●	●	

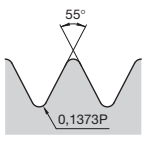
NWC-I

catalogue number	insert size	RC mm	E mm	TPI						
left hand										
NWC3L11I	3	0,30	3,43	11			●		●	

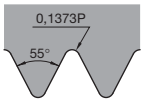
ND • Partial Profile

catalogue number	insert size	RC mm	E mm	TPI						
right hand										
ND3038R	3	0,90	2,08	4			●		●	
ND3040R	3	0,45	2,08	5					●	
ND4050R	4	0,57	3,25	4			●		●	
left hand										
ND3038L	3	0,90	2,08	4			●	●	●	
ND3040L	3	0,45	2,08	5					●	
ND4040L	4	0,45	3,25	5					●	
ND4050L	4	0,57	3,25	4					●	

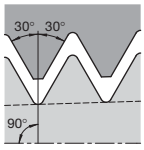
Thread Forms



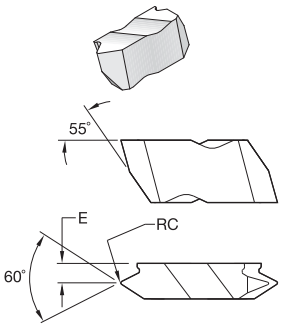
Whitworth BSW, BSP-External



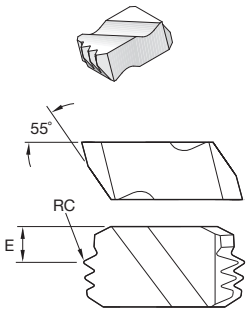
Whitworth BSW, BSP-Internal



API Rotary Shoulder Connections



NDC/NDC-RD



NDC-RD-M • Multitooth

● first choice
○ alternate choice

P		●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

NDC • Cresting

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NDC3040R3	3	0,45	3,73	5			●		●	
NDC4038R2	4	0,90	4,65	4		●	●	●	●	
NDC4040R3	4	0,45	3,73	5					●	
NDC4050R2	4	0,57	4,65	4		●	●	●	●	
NDC4050R3	4	0,57	4,65	4			●	●	●	
left hand										
NDC3040L3	3	0,45	3,73	5		●		●		
NDC4038L2	4	0,90	4,65	4		●	●	●	●	
NDC4040L3	4	0,45	3,73	5					●	
NDC4050L2	4	0,57	4,65	4			●		●	
NDC4050L3	4	0,57	4,65	4		●		●		

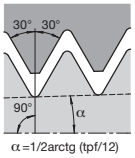
NDC-RD

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NDC310RDR75	3	0,36	3,18	10		●	●	●	●	
NDC38RDR75	3	0,43	3,18	8		●	●	●	●	
left hand										
NDC310RDL75	3	0,36	3,18	10			●	●	●	
NDC38RDL75	3	0,43	3,18	8		●	●	●	●	

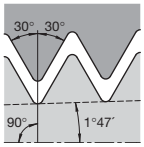
NDC-RD-M • Multitooth

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NDC68RDR75M	6	0,41	2,62	8		●		●		
left hand										
NDC68RDL75M	6	0,41	2,62	8		●		●		

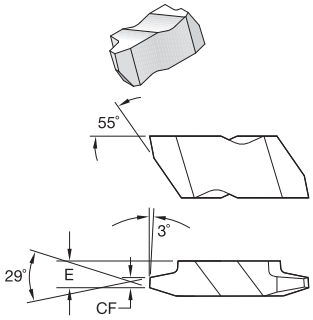
Thread Forms



α=1/2arctg (tpf/12)
API Rotary Shoulder Connections



API Round



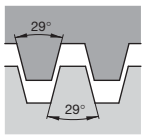
● first choice
○ alternate choice

P	●	●	●	●	●	
M	●	●	●	●	●	
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

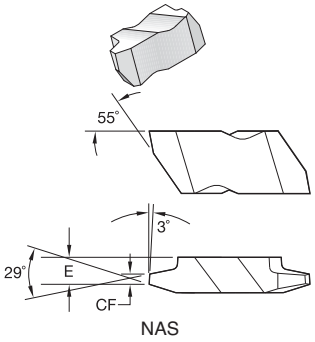
NA

catalogue number	insert size	CF mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NA3R10	3	0,81	3,79	10			●	●	●	
NA3R12	3	0,72	3,79	12				●	●	
NA3R16	3	0,52	3,79	16				●		
NA3R4	3	2,22	3,38	4			●	●	●	
NA3R5	3	1,75	3,79	5			●	●	●	
NA3R6	3	1,44	3,79	6			●	●	●	
NA3R8	3	1,04	3,79	8			●	●	●	
NA4R4	4	2,22	5,13	4		●	●	●	●	
NA4R5	4	1,75	5,13	5			●		●	
NA4R6	4	1,44	5,13	6			●		●	
NA4R8	4	1,04	5,13	8					●	
NA6R2	6	4,58	7,19	2		●	●	●	●	
NA6R25	6	3,64	7,19	2.5			●		●	
NA6R3	6	3,01	7,19	3			●		●	
left hand										
NA3L10	3	0,81	3,79	10			●		●	
NA3L12	3	0,72	3,79	12				●	●	
NA3L14	3	0,61	3,79	14					●	
NA3L4	3	2,22	3,38	4	●	●	●	●	●	
NA3L5	3	1,75	3,79	5			●	●	●	
NA3L6	3	1,44	3,79	6			●	●	●	
NA3L8	3	1,04	3,79	8			●	●	●	
NA4L4	4	2,22	5,13	4		●	●	●	●	
NA4L5	4	1,75	5,13	5			●		●	
NA4L6	4	1,44	5,13	6			●		●	
NA4L8	4	1,04	5,13	8			●		●	
NA6L2	6	4,58	7,19	2		●	●	●	●	
NA6L25	6	3,64	7,19	2.5			●		●	
NA6L3	6	3,01	7,19	3			●		●	

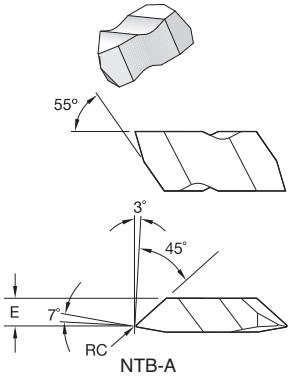
Thread Forms



Acme



NAS



NTB-A

● first choice
○ alternate choice

P			●	●	●	●						
M			●	●	●	●						
K		○	●	●	●	●						
N		●	○	○	○	○	●					
S		●	●	●	●	●	○					
H			○		○							

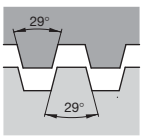
NAS

catalogue number	insert size	RC mm	CF mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand											
NAS3R10	3	–	0,940	3,79	10		●	●	●	●	
NAS3R12	3	–	0,828	3,79	12			●		●	
NAS3R14	3	–	0,701	3,79	14					●	
NAS3R16	3	–	0,605	3,79	16					●	
NAS3R4	3	–	2,550	3,79	–			●		●	
NAS3R5	3	–	2,014	3,79	5		●	●	●	●	
NAS3R6	3	–	1,656	3,79	6		●	●	●	●	
NAS3R8	3	–	1,209	3,79	8		●	●	●	●	
left hand											
NAS3L10	3	–	0,940	3,79	10		●	●	●	●	
NAS3L12	3	–	0,828	3,79	12			●		●	
NAS3L16	3	–	0,605	3,79	16					●	
NAS3L4	3	–	2,550	3,79	–			●		●	
NAS3L5	3	–	2,014	3,79	5		●		●	●	
NAS3L6	3	–	1,656	3,79	6		●	●	●	●	
NAS3L8	3	–	1,209	3,79	8		●	●	●	●	

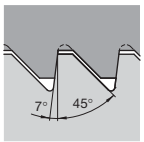
NTB-A

catalogue number	insert size	RC mm	E mm	TPI						
right hand										
NTB2RA	2	0,08	3,20	16-20	●	●		●		
NTB3RA	3	0,17	4,17	8-16		●	●	●	●	
NTB4RA	4	0,25	5,23	4-6		●		●		
left hand										
NTB2LA	2	0,08	3,20	16-20					●	
NTB3LA	3	0,17	4,17	8-16	●	●	●	●	●	
NTB4LA	4	0,25	5,23	4-6				●	●	

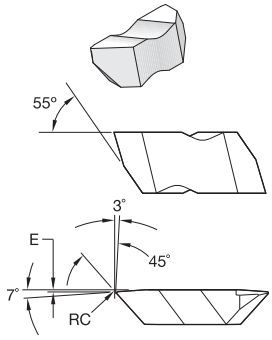
Thread Forms



Stub Acme



American Buttress-Push



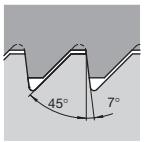
● first choice
○ alternate choice

P		●	●	●	●	
M		●	●	●	●	
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

NTB-B

catalogue number	insert size	RC mm	E mm	TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand										
NTB2RB	2	0,08	0,25	16-20		●		●	●	
NTB3RB	3	0,17	0,31	8-16	●	●	●	●	●	
NTB4RB	4	0,25	0,41	4-6		●	●	●	●	
left hand										
NTB2LB	2	0,08	0,25	16-20		●		●		
NTB3LB	3	0,17	0,31	8-16	●	●	●	●	●	
NTB4LB	4	0,25	0,41	4-6		●	●	●	●	

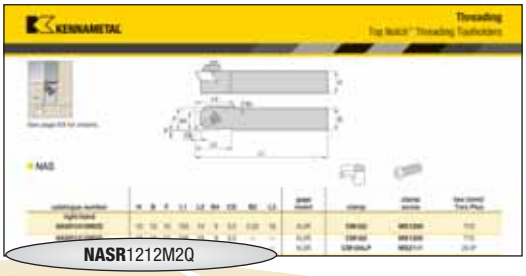
Thread Forms



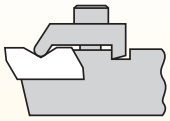
American
Buttress-Pull

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

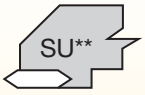


N
Insert Holding Location

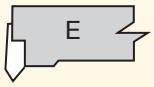


N = Top Notch*

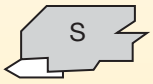
AS
Insert Mounting Location



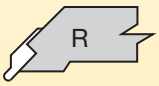
SU = Side mount utility



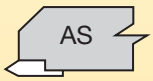
E = End



S = Side mount, offset

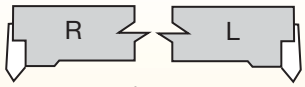


R = Undercut

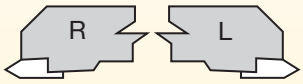


AS = Side mount, no offset

R
Hand of Tool

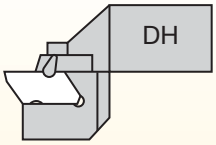


end mount



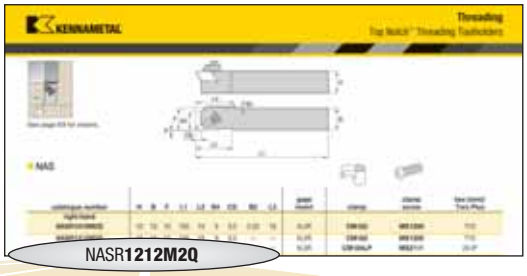
side mount

Drop Head



*Kennametal proprietary standard only.
**Side mount utility holder can only use NTU inserts.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



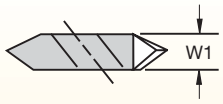
1212
Shank Size

metric:
Shank height and width in mm and holder length according to ISO standard.

M
Tool Length

L1	ISO
32	A
40	B
50	C
60	D
70	E
80	F
90	G
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
special length	X

2
Insert Size

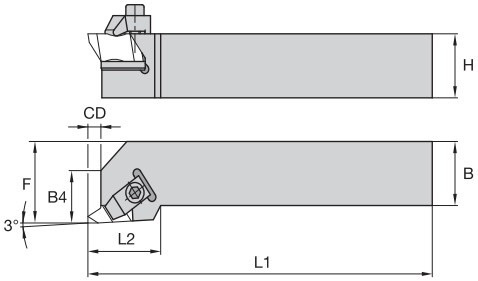


insert size	W1 (mm)
2	3,81
3	4,95
4	6,98
5	9,65
6	9,73
8	11,13

Q
Qualified Surface and Length

A = Qualified back and end, 4" long
B = Qualified back and end, 4.5" long
C = Qualified back and end, 5" long
D = Qualified back and end, 6" long
E = Qualified back and end, 7" long
V = Qualified back and end, 3.5" long
Q = Qualified metric holder

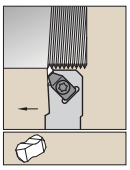
See page E9 for inserts.



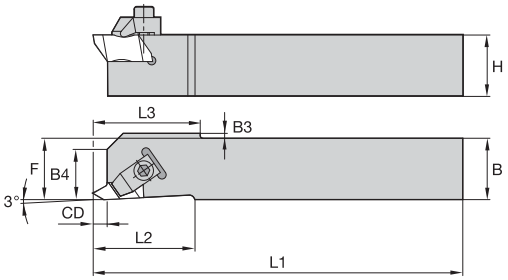
NS

catalogue number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand											
NSR1010E2	10	10	14	70	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1212F2	12	12	16	80	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1616H2	16	16	20	100	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K2	20	20	25	125	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2525M2	25	25	32	150	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K3	20	20	25	125	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M3	25	25	32	150	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3225P3	32	25	32	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3232P3	32	32	40	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M4	25	25	32	150	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3225P4	32	25	32	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P4	32	32	40	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P5	32	32	40	170	51	16	10,5	N.5R	**CM80**	**MS352**	6 mm
left hand											
NSL1010E2	10	10	14	70	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1212F2	12	12	16	80	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1616H2	16	16	20	100	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K2	20	20	25	125	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2525M2	25	25	32	150	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K3	20	20	32	125	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M3	25	25	32	150	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3225P3	32	25	32	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3232P3	32	32	40	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M4	25	25	32	150	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3225P4	32	25	32	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P4	32	32	40	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P5	32	32	40	170	51	16	10,5	N.5L	**CM81**	**MS352**	6 mm

NOTE: F dimension measured over sharp point of Top Notch-style threading and grooving insert.



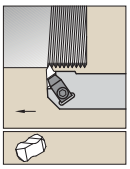
See page E9 for inserts.



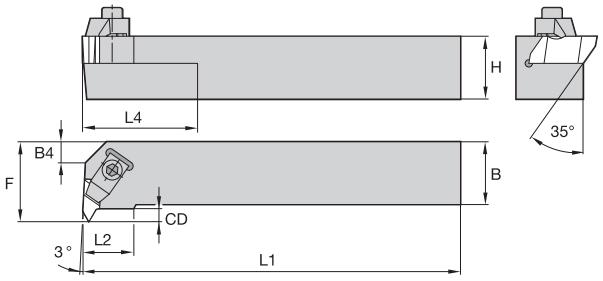
NAS

catalogue number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand													
NASR1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2R	**CM182**	**MS1200**	T10
NASR1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2R	**CM182**	**MS1200**	T10
NASR1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3R	**CM184LP**	**MS2111**	25 IP
left hand													
NASL1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2L	**CM183**	**MS1200**	T10
NASL1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2L	**CM183**	**MS1200**	T10
NASL1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3L	**CM185LP**	**MS2111**	25 IP

NOTE: F dimension measured over sharp point of N-style threading insert.



See page E9 for inserts.



NE

catalogue number	H	B	F	L1	L2	B4	L4	CD	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand												
NER1616H2	16	16	20	100	15	—	—	4	N.2L	**CM75**	**MS1200**	T10
NER2020K2	20	20	25	125	15	—	—	4	N.2L	**CM75**	**MS1200**	T10
NER2525M2	25	25	32	150	15	—	25	4	N.2L	**CM75**	**MS1200**	T10
NER2525M3	25	25	32	150	22	—	51	5	N.3L	**CM73LP**	**MS2111**	25 IP
NER3225P3	32	25	32	170	22	—	51	4	N.3L	**CM73LP**	**MS2111**	25 IP
NER2525M4	25	25	35	150	24	—	51	7	N.4L	**CM73LP**	**MS2111**	25 IP
NER3225P4	32	25	35	170	24	—	51	7	N.4L	**CM73LP**	**MS2111**	25 IP
NER3232P4	32	32	40	170	24	—	51	6	N.4L	**CM73LP**	**MS2111**	25 IP
left hand												
NEL1616H2	16	16	20	100	15	—	—	4	N.2R	**CM74**	**MS1200**	T10
NEL2020K2	20	20	25	125	15	—	—	4	N.2R	**CM74**	**MS1200**	T10
NEL2525M2	25	25	32	150	15	—	25	4	N.2R	**CM74**	**MS1200**	T10
NEL2525M3	25	25	32	150	22	—	51	5	N.3R	**CM72LP**	**MS2111**	25 IP
NEL3225P3	32	25	32	170	22	—	51	4	N.3R	**CM72LP**	**MS2111**	25 IP
NEL2525M4	25	25	35	150	24	—	51	7	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3225P4	32	25	35	170	24	—	51	7	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3232P4	32	32	40	170	24	—	51	6	N.4R	**CM72LP**	**MS2111**	25 IP

NOTE: F dimension measured over sharp point of Top Notch-style threading insert.

How Do Catalogue Numbers Work?

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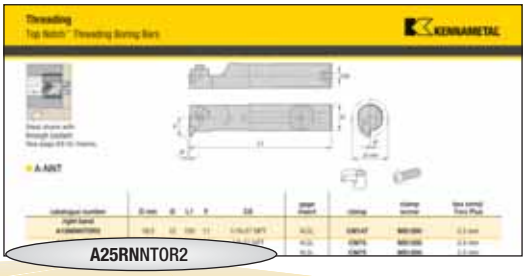
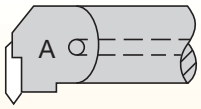
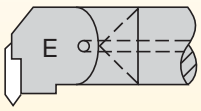


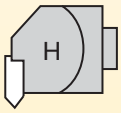
A
Bar Type



A = Steel with coolant

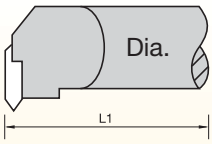


E = Carbide with coolant



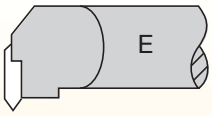
H = Interchangeable head

25
Bar Diameter



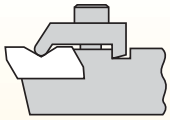
Bar diameter in millimetres

R
Bar Length



metric bars:
M = 150mm
Q = 180mm
R = 200mm
S = 250mm
T = 300mm
U = 350mm

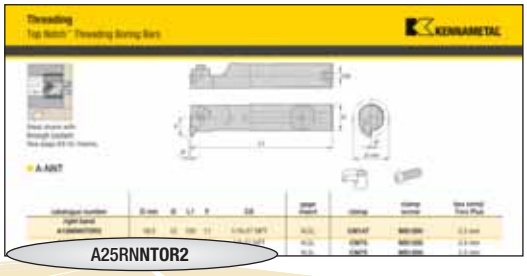
N
Insert Holding Method



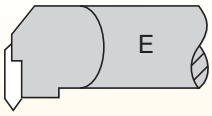
N* = Top Notch

*Kennametal standard only.

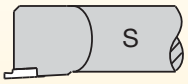
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



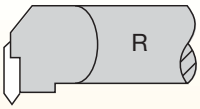
N	T	O	R	2
Insert Shape	Insert Location	Rake Angle	Hand of Bar	Insert Size



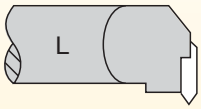
E = End mount



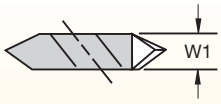
S = Straight mount



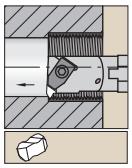
R = Right hand



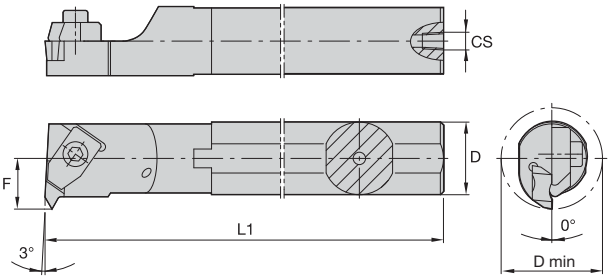
L = Left hand



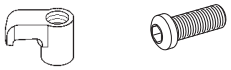
insert size	W1
1	3,54
2	3,81
3	5,35
4	6,40
5	9,65
6	9,73
8	11,13



Steel shank with
through coolant.
See page E9 for inserts.

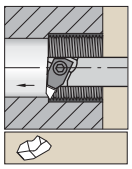


A-NNT

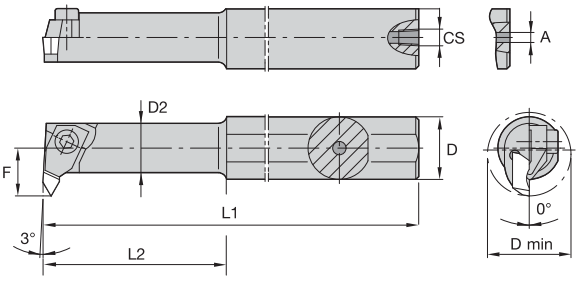


catalogue number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand									
A12MNNTOR2	18,5	12	150	11	1/16-27 NPT	N.2L	**CM147**	**MS1200**	2.5 mm
A16MNNTOR2	22,0	16	150	11	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A20QNNTOR2	26,0	20	180	13	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR2	34,0	25	200	17	1/4-18 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR3	34,0	25	200	17	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A32SNNTOR3	44,0	32	250	22	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR3	54,0	40	300	27	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR4	54,0	40	300	27	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
A50UNNTOR4	70,0	50	350	35	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
left hand									
A12MNNTOL2	18,5	12	150	11	1/16-27 NPT	N.2R	**CM146**	**MS1200**	2.5 mm
A16MNNTOL2	22,0	16	150	11	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A20QNNTOL2	26,0	20	180	13	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL2	34,0	25	200	17	1/4-18 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL3	34,0	25	200	17	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A32SNNTOL3	44,0	32	250	22	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL3	54,0	40	300	27	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL4	54,0	40	300	27	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP
A50UNNTOL4	70,0	50	350	35	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E93 for details.
F dimension measured over sharp point of NG-style grooving insert.



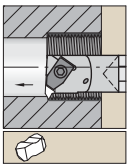
Necked steel shank with
through coolant.
See page E9 for inserts.



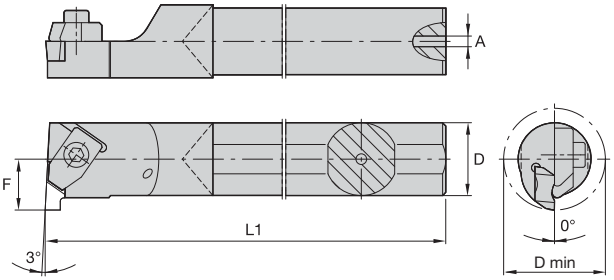
A-NNT -1

catalogue number	D min	D	D2	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (mm)
right hand												
A10KNNTOR1	11,5	10	8,7	125	31,75	7	3,2	–	N.1L	**CM109**	**MS1034**	1.5 mm
A12MNNTOR1	11,5	12	8,7	150	31,30	7	4,0	1/16-27 NPT	N.1L	**CM109**	**MS1034**	1.5 mm

NOTE: F dimension measured over sharp point of Top Notch-style threading insert.



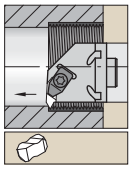
Carbide shank with
through coolant.
See page E9 for inserts.



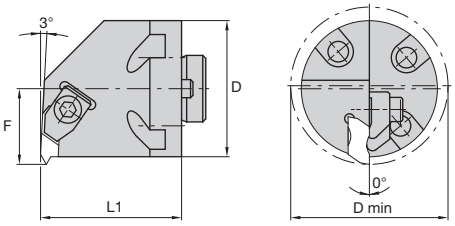
E-NNT

catalogue number	D min	D	L1	F	A	CS	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand										
E16RNNTOR2	22	16	200	11	5,5	–	N.2L	**CM75**	**MS1200**	T10
E20SNNTOR2	26	20	250	13	7,1	–	N.2L	**CM75**	**MS1200**	T10
E25TNNTOR3	34	25	300	17	7,9	–	N.3L	**CM73LP**	**MS2111**	25 IP
left hand										
E16RNNTOL2	22	16	200	11	5,5	–	N.2R	**CM74**	**MS1200**	T10
E20SNNTOL2	26	20	250	13	7,1	–	N.2R	**CM74**	**MS1200**	T10
E25TNNTOL3	34	25	300	17	7,9	–	N.3R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E93 for details.
F dimension measured over sharp point of Top Notch-style threading insert.



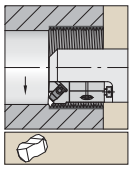
With through coolant.
See page E9 for inserts.



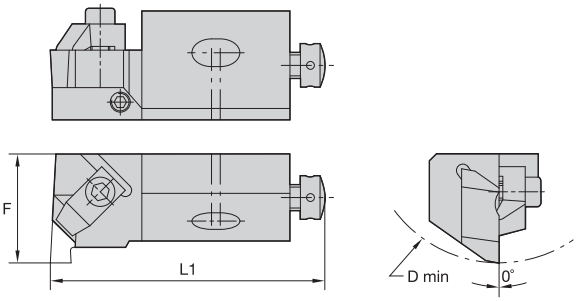
H-NNT

catalogue number	D	D min	F	L1	gage insert	clamp	clamp screw	Torx Plus
right hand								
H32NNTOR3	32,0	44	22	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H40NNTOR3	40,0	54	27	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H60NNTOR4	60,0	73	43	41,3	N.4L	**CM73LP**	**MS2111**	25 IP
left hand								
H32NNTOL3	32,0	44	22	41,3	N.3R	**CM72LP**	**MS2111**	25 IP
H40NNTOL3	40,0	54	27	41,3	N.3R	**CM72LP**	**MS2111**	25 IP

NOTE: For boring adaptors, see pages C108–C109.
Minimum bore capability varies with depth of thread. See page E93 for details.



See page E9 for inserts.



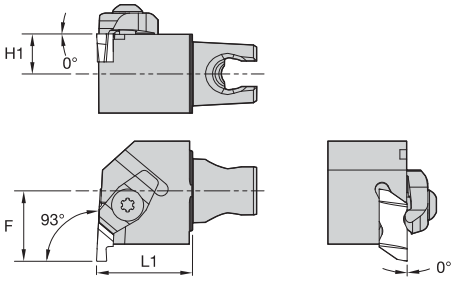
NE-CA

catalogue number	D min	F	L1	gage insert
right hand				
NER12CA2	50	20	55,7	N.2L
NER20CA2	70	25	70,0	N.2L
NER25CA3	100	32	100,0	N.3L
NER25CA4	100	32	100,0	N.4L
left hand				
NEL12CA2	50	20	55,0	N.2R
NEL25CA3	100	32	100,0	N.3R

Spare Parts

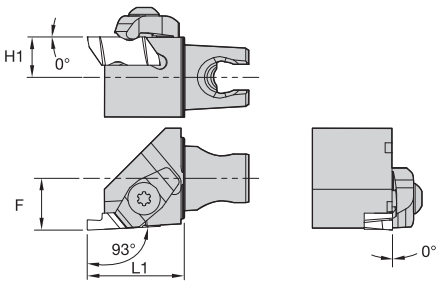
D min	clamp	clamp screw	hex (mm)	radial adjusting screw	hex (mm)	axial screw	hold down screw	hex (mm)	washer
50	**CM75**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
70	**CM75**	**MS1025**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	5 mm	**CSWM 080 050**
100	**CM73LP**	**MS412**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	6 mm	**CSWM 100 080**
100	**CM73LP**	**MS412**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	6 mm	**CSWM 100 080**
50	**CM74**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
100	**CM72LP**	**MS412**	4 mm	**KUAM26**	4 mm	**KUAM33**	**MS364**	6 mm	**CSWM 100 080**

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E93 for details.
F dimension measured over sharp point of Top Notch-style threading insert.



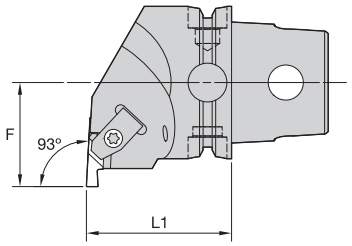
NE 93°

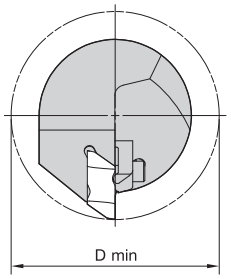
order number	catalogue number	L1 mm	F mm	H1 mm	gage insert	clamp	clamp screw
	right hand						
3483036	**KM20NER225**	25	17	9,5	NG2L	**CM75**	**MS1200**
3483034	**KM20NER325**	25	17	9,5	NG3L	**CM73LP**	**–**
2399462	**KM25NER230**	30	22	12,5	NG2L	**CM75**	**MS1200**
2399494	**KM25NER330**	30	22	12,5	NG3L	**CM73LP**	**–**
2399496	**KM25NER430**	30	24	12,5	NG4L	**CM73LP**	**–**
	left hand						
3483035	**KM20NEL225**	25	17	9,5	NG2R	**CM74**	**MS1200**
3483033	**KM20NEL325**	25	17	9,5	NG3R	**CM72LP**	**–**
2399493	**KM25NEL230**	30	22	12,5	NG2R	**CM74**	**MS1200**
2399495	**KM25NEL330**	30	22	12,5	NG3R	**CM72LP**	**–**
2399497	**KM25NEL430**	30	24	12,5	NG4R	**CM72LP**	**–**



NS 93°

order number	catalogue number	L1 mm	F mm	H1 mm	gage insert	clamp	clamp screw
	right hand						
3483030	**KM20NSR230**	30	12,50	9,5	NG2R	**CM74**	**MS1200**
3483028	**KM20NSR330**	30	12,50	9,5	NG3R	**CM72LP**	**MS524**
2399498	**KM25NSR230**	30	16,00	12,5	NG2R	**CM74**	**MS1200**
2399500	**KM25NSR330**	30	16,00	12,5	NG3R	**CM72LP**	**MS2111**
2399502	**KM25NSR430**	30	16,00	12,5	NG4R	**CM212LP**	**MS2111**
	left hand						
3483029	**KM20NSL230**	30	12,50	9,5	NG2L	**CM75**	**MS1200**
3483027	**KM20NSL330**	30	12,50	9,5	NG3L	**CM73LP**	**MS524**
2399499	**KM25NSL230**	30	16,00	12,5	NG2L	**CM75**	**MS1200**
2399501	**KM25NSL330**	30	16,00	12,5	NG3L	**CM73LP**	**MS2111**
2399503	**KM25NSL430**	30	16,00	12,5	NG4L	**CM213LP**	**MS2111**

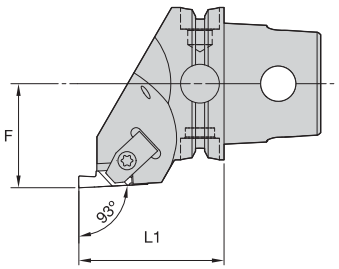


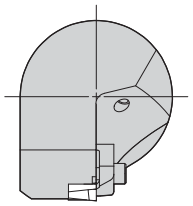


KM QUICK CHANGE

■ NE 93°

order number	catalogue number	L1 mm	F mm	D min mm	gage insert	clamp	clamp screw	kg
	right hand							
3902285	**KM40TSNER2**	40	27	54	NG2L	**CM75**	**MS1488**	0,31
3902286	**KM40TSNER3**	40	27	54	NG3L	**CM73**	**MS1489**	0,30
3902287	**KM40TSNER4**	40	27	54	NG4L	**CM73**	**MS1489**	0,30
	left hand							
3902132	**KM40TSNEL2**	40	27	54	NG2R	**CM74**	**MS1488**	0,31
3902283	**KM40TSNEL3**	40	27	54	NG3R	**CM72**	**MS1489**	0,31
3902284	**KM40TSNEL4**	40	27	54	NG4R	**CM72**	**MS1489**	0,30

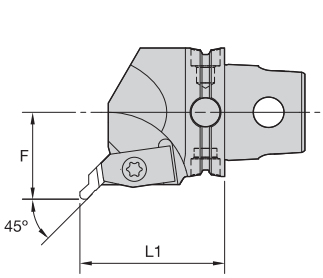


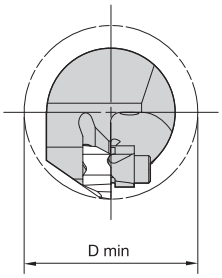


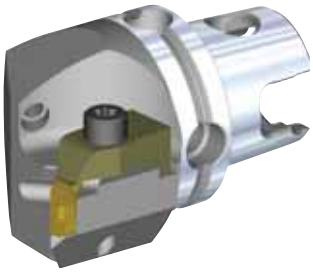
KM QUICK CHANGE

■ NS 93°

order number	catalogue number	L1 mm	F mm	gage insert	clamp	clamp screw	kg
	right hand						
3902293	**KM40TSNSR2**	40	27	NG2R	**CM74**	**MS1488**	0,32
3902294	**KM40TSNSR3**	47	27	NG3R	**CM72**	**MS1489**	0,32
3902295	**KM40TSNSR4**	47	27	NG4R	**CM72**	**MS1489**	0,31
	left hand						
3902290	**KM40TSNSL2**	40	27	NG2L	**CM75**	**MS1488**	0,32
3902291	**KM40TSNSL3**	47	27	NG3L	**CM73**	**MS1489**	0,33
3902292	**KM40TSNSL4**	47	27	NG4L	**CM73**	**MS1489**	0,31







KM QUICK CHANGE

■ NR 45°

order number	catalogue number	L1 mm	F mm	D min mm	gage insert	clamp	clamp screw	kg
	right hand							
3902289	**KM40TSNRR3045M**	45	27	54	NU3L	**CM73**	**MS1489**	0,34
	left hand							
3902288	**KM40TSNRL3045M**	45	27	54	NU3R	**CM72**	**MS1489**	0,33

The LT — Laydown Threading System

Triangle threading inserts and tools that provide the highest accuracy and quality level for daily production needs.

- LT is the system of choice for fine-pitch threads, high-helix/multistart threads, and single-point threading in small-diameter bores.
- Variable shim angles enable proper cutting geometry for high-helix angle and reverse helix angle threading.This maximises tool life and improves thread quality.
- Increase productivity by outperforming conventional PVD grades with up to a 30% advantage in cutting speeds.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

LT • Laydown Triangle Threading

Primary Application

LT Laydown triangle threading is the system of choice for fine-pitch threads, high-helix/multistart threads, and single-point threading in small-diameter bores. With a wide selection of CB-style chip control inserts, you will receive superior chip management for excellent surface finishes and minimal operator intervention. The low-profile design enables unrestricted chip flow — ideal for I.D. threads, and variable shim angles enable proper cutting geometry for high-helix angle and reverse helix angle threading, maximising tool life and improving thread quality.

Features and Benefits

Precision-Ground Thread Form on LT and LT-CB

- Minimises built-up edge.
- Precisely cuts most common materials.
- Reduces cutting forces.
- Ensures accurate, high-quality threads.

Superior Chip Control

- Eliminates long, troublesome coils.
- Excellent for internal threading operations.
- Available in both partial and full profile inserts for all common thread forms.

KC5010™ and KC5025™ Premium PVD TiAlN-Coated Grades

- Increase tool life at existing machining conditions.
- Increase productivity by outperforming conventional PVD grades with up to a 30% advantage in cutting speeds.

Kenna Universal™ Inserts

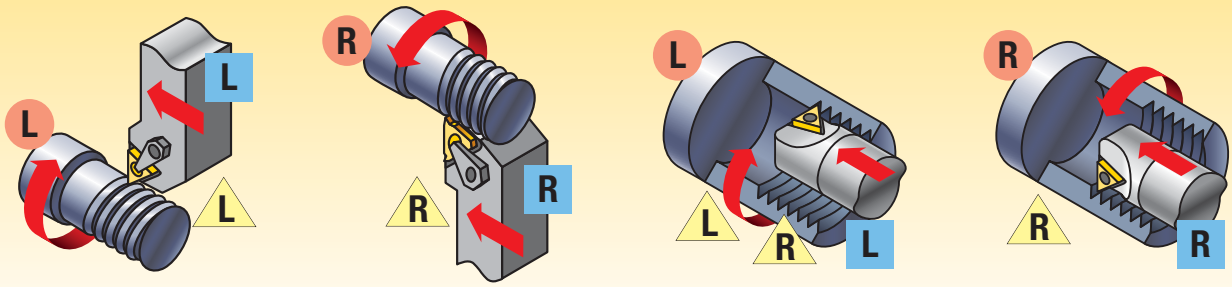
- Precision moulded LT-K thread form provides outstanding utility and value.
- Excellent chip control combined with the new KU25T™ grade enables trouble-free threading on a variety of workpiece materials.

Step 1 • Select threading method and hand of tooling

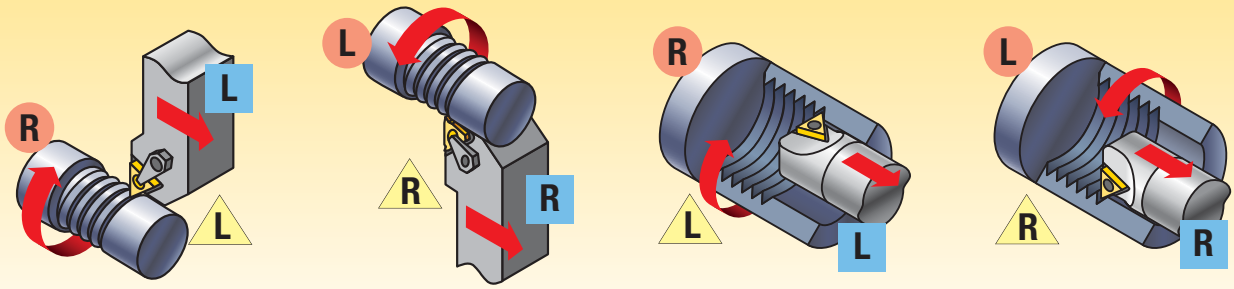
Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

Feed Direction Toward the Chuck • Standard Helix



Feed Direction Away from the Chuck • Reverse Helix

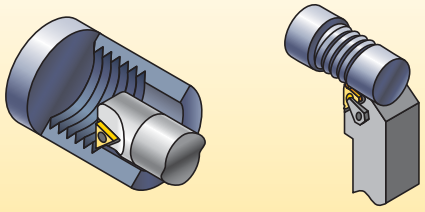


Step 2 • Select threading method and hand of tooling

Required Information:

- External/internal operation.
- Minimum bore diameter (for internal operations).
- Hand of tool.
- Insert size (gage insert).

Select the Appropriate Holder for the Insert Size and Hand:

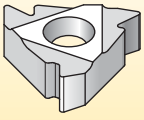


The insert size must match the gage insert size of your toolholder selection:

catalogue number	gage insert	minimum bore diameter	shim
S1212LSER3	LT16NR	.90"	SM-YI3
A2020LSER16	LT16NR	16mm	SM-YI3

Step 3 • Choose insert for application

- Select cresting inserts for fully controlled thread form including diameter.
- Cresting inserts eliminate the need for deburring and are optimised for the best tool life at that pitch.
- Non-cresting partial profile inserts offer the flexibility to cut a variety of thread pitches with one insert.
- Note insert size for toolholder selection.

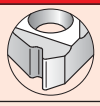
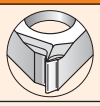
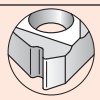


insert size	catalogue number	TN6025
11	LT11NRA60	●
16	LT6NRAG60	●

NOTE: See Threading Insert Overview on page E41.

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

	workpiece material	P	M	K	N	S
Kenna Perfect™	insert style	CB chipbreaker		Flat Top 	CB Chipbreaker	
	optimum cutting conditions	**KC5010** 160–750	**KC5010** 160–600	**KC5010** 230–700	**KC5010** 230–1300	**KC5010** 65–400
	first choice	**KC5025** 130–650	**KC5025** 130–450	**KC5025** 200–475	**KC5025** 160–1150	**KC5025** 35–330
Kenna Universal™	insert style	-K chipbreaker				
	selection	**KU25T** 80–450	**KU25T** 80–350	**KU25T** 100–360	**KU25T** 100–1000	**KU25T** 35–280

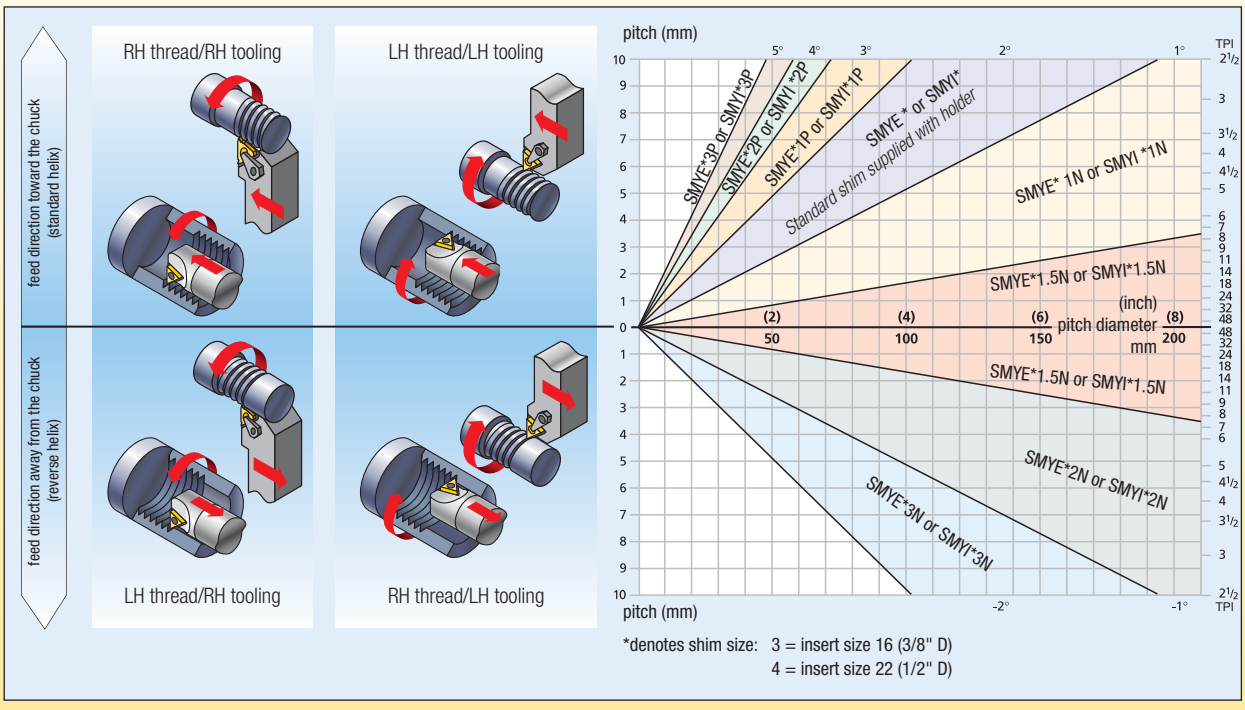
NOTE: CB-style chip control inserts are not available with some thread forms.
In those cases, flat top inserts can be substituted.

Step 5 • Select appropriate shim

Required Information:

- Thread form (TPI or pitch).
- Pitch diameter.
- Helix method (hand of tool, feed direction, hand of thread).

Select the proper shim: SMYE... for external RH or internal LH
SMYI... for internal RH or external LH

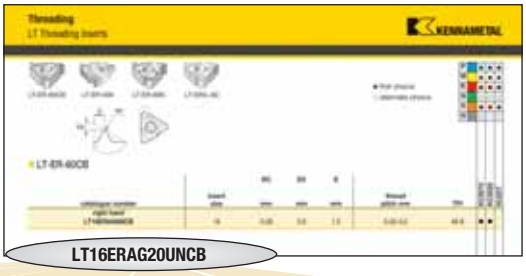


*denotes shim size: 3 = insert size 16 (3/8" D)
4 = insert size 22 (1/2" D)

NOTE: If recommended shim is different from shim supplied with toolholder, order shim separately.
Optimise your threading operation by using the proper infeed angle and the recommended infeed values.
See the Technical Section on page E81–E83.
Also see detailed shim selection information on pages E101–E103.

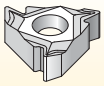
How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



LT16ERAG20UNCB

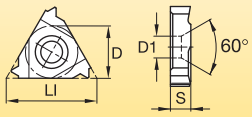
LT — Type of Insert



LT = Laydown triangle threading

16 — Cutting Edge Length (Size)

insert size	LI (mm)	D (mm)	S (mm)	D1 (mm)
11	11,0	6,35	3,20	3,25
16	16,5	9,52	3,63	3,94
22	22,0	12,70	4,78	4,88



ER — Hand of Insert

ER = External right hand
EL = External left hand
NR = Internal right hand
NL = Internal left hand

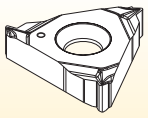
AG20 — Thread Pitch

partial profile		
designation	**thread pitch (mm)**	**TPI**
A	0,50–1,5	48–16
AG	0,50–3,0	48–8
G	1,75–3,0	14–8
N	3,50–5,0	7–5
full profile		
actual TPI or pitch in mm is designated	0,5–4,0	48–8

UN — Thread Profile

ISO = ISO metric 60°
UN = American UN 60°
60 = Partial profile non-cresting 60°
55 = Partial profile non-cresting 55°
W = Whitworth 55°
BSPT = British Standard Pipe Thread 55°
NPT = American National Pipe Thread 60°
ACME = American Acme
STACME = American Stub Acme
TR = Trapez DIN 103
RD = Round DIN 405
UNJ = Controlled root radius 60°
NPTF = Dryseal 60°
API = American Petroleum Institute Threads
BUT = API Buttress Casing
APIRD = API Round

CB — Chip Control

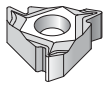


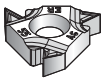
□ = Flat top
CB = Chipbreaker
K = Kenna Universal™ chipbreaker

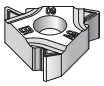
The Kennametal LT Advantage

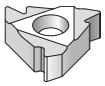
Every box of 10 inserts includes a free Torx wrench and spare locking screw, except LT-K inserts.

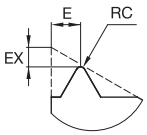
style			thread profile	standard	tolerance class	cresting	application	page(s)
CB	K	flat top						
LT-60CB	LT-60K	LT-60	Partial Profile 60°	—	—	N	General use for 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	E42
LT-ISOCB	LT-ISOK	LT-ISO	Metric ISO	ISO R262, DIN 13	6g / 6H	Y	Widely used metric 60° V-form for all industries	E44–E47
LT-UNCB		LT-UN	American UN	ANSI B1.1:74	2A / 2B	Y	Widely used inch-based 60° V-form for all industries	E48–E49
	LT-UNK	LT-UNJ	UNJ	MIL-S-8879C	3A / 3B	Y	Controlled root radius on external threads for military and aerospace industries, 60° thread form	E50, E52
LT-NPTCB		LT-NPT	NPT	USAS B2.1:1968	Standard NPT	Y	National Pipe thread standard 60° thread form for pipe fittings	E53
LT- NPTFCB		LT-NPTF	NPTF	ANSI B1.20.3-1976	Class 2	Y	Dryseal-type NPT 60° thread form for pipe fittings	E54
	LT-55K	LT-55	Partial Profile 55°	—	—	N	General use for 55° thread forms such as Whitworth, BSW, and BSP where non-cresting inserts are desired to cut a variety of pitches	E55
		LT-BSPT	BSPT	BS 21:1985	Standard BSPT	Y	55° form for pipe fittings	E59
LT-WCB	LT-WK	LT-W	NPT	Whitworth, BSW, BSF, BSP	Medium Class A	Y	Widely used 55° form for gas and water connections	E57–E58
		LT-API	NPT — multitooth	API STD. 5B:1979	Standard API	Y	60° V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms	E59
		LT-APIRD	API Round	API SPEC. 7:1990	Standard API RD	Y	60° V-form with large radius for casing, tubing, and line pipe in the oil and gas industry including 8 and 10 round forms	E60–E61
		LT-BUT	API Buttress Casing	API SPEC. 7:1990	Standard API	Y	45° buttress-style form used for pipe casing connections in the oil and gas industry	E60
		LT-ACME	Acme	ANSI B1.5:1988	3G	N	29° truncated thread form for motion applications in a wide variety of industries	E62
		LT-STACME	Stub Acme	ANSI B1.8:1988	2G	N	Shallow depth 29° truncated thread form for motion applications in a wide variety of industries	E62
		LT-RD	Round	DIN 405	7h / 7H	Y	Round thread form for tube fittings in the chemical and food industries	E64
		LT-TR	Trapez	DIN 103	7e / 7H	N	30° truncated metric thread form for motion applications	E63


LT-ER-60CB


LT-ER-55K


LT-ER-60K


LT-ER/L-60



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER-60CB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ERAG60CB	16	0,08	0,9	1,5	0,50-3,0	48-8	●	●	

LT-ER-55K

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ERAG55K	16	0,07	1,2	1,7	0,50-3,0	48-8			●

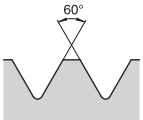
LT-ER-60K

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ERAG60K	16	0,08	1,2	1,7	0,50-3,0	48-8			●
LT16ERG60K	16	0,18	1,2	1,7	1,75-3,0	14-8			●

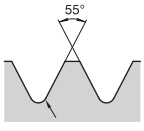
LT-ER/L-60

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ERA60	16	0,05	0,8	0,9	0,50-1,5	48-16	●	●	
LT16ERAG60	16	0,08	1,2	1,7	0,50-3,0	48-8	●	●	
LT16ERG60	16	0,28	1,2	1,7	1,75-3,0	14-8	●	●	
LT22ERN60	22	0,53	1,7	2,5	3,5-5,0	7-5		●	
left hand									
LT16ELA60	16	0,05	0,8	0,9	0,50-1,5	48-16		●	
LT16ELAG60	16	0,08	1,2	1,7	0,50-3,0	48-8		●	
LT16ELG60	16	0,28	1,2	1,7	1,75-3,0	14-8		●	
LT22ELN60	22	0,53	1,7	2,5	3,5-5,0	7-5		●	

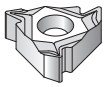
Thread Forms

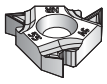


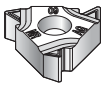
Partial Profile
60° External

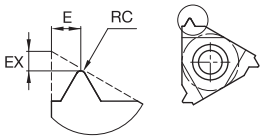


Partial Profile
55° External


LT-NR-60CB


LT-NR-55K


LT-NR-60K



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR-60CB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NRA60CB	11	0,05	0,6	0,8	0,50-1,5	48-16		●	
LT16NRAG60CB	16	0,05	0,9	1,5	0,50-3,0	48-8		●	
LT16NRG60CB	16	0,16	1,0	1,5	1,75-3,0	14-8		●	

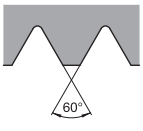
LT-NR-55K

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NRAG55K	16	0,07	1,2	1,7	0,50-3,0	48-8			●

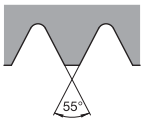
LT-NR-60K

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NRA60K	11	0,03	0,8	0,9	0,50-1,5	48-16			●
LT16NRAG60K	16	0,04	1,2	1,7	0,50-3,0	48-8			●
LT16NRG60K	16	0,08	1,2	1,7	1,75-3,0	14-8			●

Thread Forms

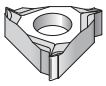


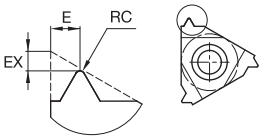
Partial Profile
60° Internal



Partial Profile
55° Internal

LT-NR/L-60


LT-ER-ISOCB



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

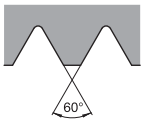
LT-NR/L-60

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NRA60	11	0,05	0,8	0,9	0,50-1,5	48-16	●	●	
LT16NRA60	16	0,05	0,8	0,9	0,50-1,5	48-16	●	●	
LT16NRAG60	16	0,05	1,2	1,7	0,50-3,0	48-8	●	●	
LT16NRG60	16	0,15	1,2	1,7	1,75-3,0	14-8	●	●	
LT22NRN60	22	0,31	1,7	2,5	3,5-5,0	7-5		●	
left hand									
LT11NLA60	11	0,05	0,8	0,9	0,50-1,5	48-16		●	
LT16NLA60	16	0,05	0,8	0,9	0,50-1,5	48-16		●	
LT16NLAG60	16	0,05	1,2	1,7	0,50-3,0	48-8		●	
LT16NLG60	16	0,15	1,2	1,7	1,75-3,0	14-8		●	
LT22NLN60	22	0,31	1,7	2,5	3,5-5,0	7-5		●	

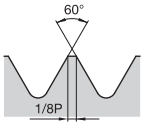
LT-ER-ISOCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16ER05ISOCB	16	–	1,2	0,5	0,50	–	●	●	
LT16ER075ISOCB	16	–	1,2	0,6	0,75	–	●	●	
LT16ER10ISOCB	16	–	0,7	0,8	1,0	–	●	●	
LT16ER125ISOCB	16	–	0,7	0,8	1,25	–	●	●	
LT16ER15ISOCB	16	–	0,7	0,8	1,5	–	●	●	
LT16ER175ISOCB	16	–	1,2	1,5	1,75	–	●	●	
LT16ER20ISOCB	16	–	1,2	1,5	2,0	–	●	●	
LT16ER25ISOCB	16	–	1,2	1,5	2,5	–		●	
LT16ER30ISOCB	16	–	1,3	1,5	3,0	–	●	●	

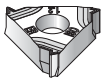
Thread Forms

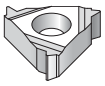


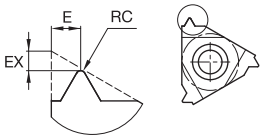
Partial Profile
60° Internal



ISO Metric-External


LT-ER-ISOK


LT-ER/L-ISO



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

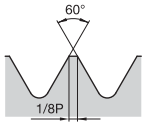
LT-ER-ISOK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER10ISOK	16	0,14	0,7	0,7	1,0	–			●
LT16ER125ISOK	16	0,16	1,1	0,8	1,25	–			●
LT16ER15ISOK	16	0,20	0,8	1,0	1,5	–			●
LT16ER175ISOK	16	0,22	1,2	1,5	1,75	–			●
LT16ER20ISOK	16	0,27	1,0	1,3	2,0	–			●
LT16ER25ISOK	16	0,32	1,2	1,5	2,5	–			●
LT16ER30ISOK	16	0,38	1,3	1,5	3,0	–			●

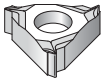
LT-ER/L-ISO

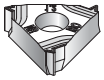
catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER05ISO	16	–	0,6	0,4	0,50	–		●	
LT16ER075ISO	16	–	0,6	0,6	0,75	–		●	
LT16ER10ISO	16	–	0,7	0,7	1,0	–	●	●	
LT16ER125ISO	16	–	0,8	0,9	1,25	–	●	●	
LT16ER15ISO	16	–	0,8	1,0	1,5	–	●	●	
LT16ER175ISO	16	–	0,9	1,2	1,75	–	●	●	
LT16ER20ISO	16	–	1,0	1,3	2,0	–	●	●	
LT16ER25ISO	16	–	1,1	1,5	2,5	–	●	●	
LT16ER30ISO	16	–	1,2	1,6	3,0	–	●	●	
LT22ER35ISO	22	–	1,6	2,3	3,5	–		●	
LT22ER40ISO	22	–	1,6	2,3	4,0	–		●	
LT22ER45ISO	22	–	1,7	2,4	4,5	–		●	
LT22ER50ISO	22	–	1,7	2,5	5,0	–		●	
left hand									
LT16EL05ISO	16	–	0,6	0,4	0,50	–		●	
LT16EL075ISO	16	–	0,6	0,6	0,75	–		●	
LT16EL10ISO	16	–	0,7	0,7	1,0	–		●	
LT16EL125ISO	16	–	0,8	0,9	1,25	–		●	
LT16EL15ISO	16	–	0,8	1,0	1,5	–	●	●	
LT16EL175ISO	16	–	0,9	1,2	1,75	–		●	
LT16EL20ISO	16	–	1,0	1,3	2,0	–		●	
LT16EL25ISO	16	–	1,1	1,5	2,5	–		●	
LT16EL30ISO	16	–	1,2	1,6	3,0	–		●	
LT22EL35ISO	22	–	1,6	2,3	3,5	–		●	

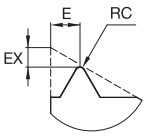
Thread Forms



ISO Metric-External


LT-NR-ISOCB


LT-NR-ISOK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

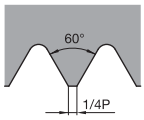
LT-NR-ISOCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR075ISOCB	11	–	1,194	0,500	0,75	–		●	
LT11NR10ISOCB	11	–	0,711	0,787	1,0	–		●	
LT16NR10ISOCB	16	–	0,711	0,787	1,0	–		●	
LT11NR125ISOCB	11	–	0,711	0,787	1,25	–		●	
LT11NR15ISOCB	11	–	0,711	0,787	1,5	–		●	
LT16NR15ISOCB	16	–	0,711	0,787	1,5	–		●	
LT16NR20ISOCB	16	–	1,100	1,499	2,0	–		●	
LT16NR25ISOCB	16	–	1,100	1,499	2,5	–		●	

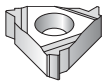
LT-NR-ISOK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR10ISOK	11	0,06	0,7	0,8	1,0	–			●
LT16NR10ISOK	16	0,05	0,7	0,7	1,0	–			●
LT16NR15ISOK	16	0,08	0,8	1,0	1,5	–			●
LT16NR175ISOK	16	0,10	1,2	1,5	1,75	–			●
LT16NR20ISOK	16	0,10	1,0	1,3	2,0	–			●
LT16NR25ISOK	16	0,14	1,2	1,5	2,5	–			●
LT16NR30ISOK	16	0,17	1,3	1,5	3,0	–			●

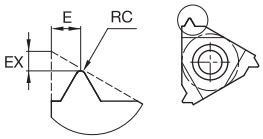
Thread Forms



ISO Metric-Internal



LT-NR-ISO



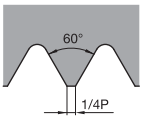
● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

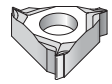
LT-NR/L-ISO

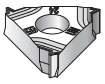
catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR05ISO	11	–	0,6	0,4	0,50	–		●	
LT16NR05ISO	16	–	0,6	0,4	0,50	–		●	
LT11NR075ISO	11	–	0,6	0,6	0,75	–		●	
LT16NR075ISO	16	–	0,6	0,6	0,75	–		●	
LT11NR10ISO	11	–	0,6	0,7	1,0	–		●	
LT16NR10ISO	16	–	0,6	0,7	1,0	–	●	●	
LT11NR125ISO	11	–	0,8	0,9	1,25	–		●	
LT16NR125ISO	16	–	0,8	0,9	1,25	–		●	
LT11NR15ISO	11	–	0,8	1,0	1,5	–	●	●	
LT16NR15ISO	16	–	0,8	1,0	1,5	–	●	●	
LT11NR175ISO	11	–	0,9	1,1	1,75	–		●	
LT16NR175ISO	16	–	0,9	1,2	1,75	–		●	
LT11NR20ISO	11	–	0,9	1,1	2,0	–		●	
LT16NR20ISO	16	–	1,0	1,3	2,0	–	●	●	
LT16NR25ISO	16	–	1,1	1,5	2,5	–		●	
LT16NR30ISO	16	–	1,1	1,5	3,0	–	●	●	
LT22NR35ISO	22	–	1,6	2,3	3,5	–		●	
LT22NR40ISO	22	–	1,6	2,3	4,0	–		●	
LT22NR45ISO	22	–	1,6	2,4	4,5	–		●	
LT22NR50ISO	22	–	1,6	2,3	5,0	–		●	
left hand									
LT11NL10ISO	11	–	0,6	0,7	1,0	–		●	
LT16NL10ISO	16	–	0,6	0,7	1,0	–		●	
LT11NL15ISO	11	–	0,8	1,0	1,5	–		●	
LT16NL15ISO	16	–	0,8	1,0	1,5	–		●	
LT16NL20ISO	16	–	1,0	1,3	2,0	–		●	
LT16NL25ISO	16	–	1,1	1,5	2,5	–		●	
LT16NL30ISO	16	–	1,1	1,5	3,0	–		●	
LT22NL40ISO	22	–	1,6	2,3	4,0	–		●	

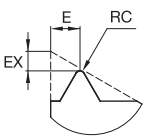
Thread Forms



ISO Metric-Internal


LT-ER-UNCB


LT-ER-UNK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

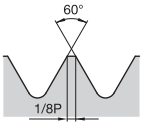
LT-ER-UNCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER32UNCB	16	–	1,2	0,5	–	32	●	●	
LT16ER28UNCB	16	–	0,7	0,8	–	28	●	●	
LT16ER24UNCB	16	–	0,7	0,8	–	24	●	●	
LT16ER20UNCB	16	–	0,7	0,8	–	20	●	●	
LT16ER18UNCB	16	–	0,7	0,8	–	18	●	●	
LT16ER16UNCB	16	–	0,8	0,8	–	16	●	●	
LT16ER14UNCB	16	–	1,2	1,5	–	14	●	●	
LT16ER12UNCB	16	–	1,2	1,5	–	12	●	●	
LT16ER10UNCB	16	–	1,2	1,5	–	10		●	
LT16ER8UNCB	16	–	1,3	1,5	–	8	●	●	

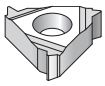
LT-ER-UNK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16ER24UNK	16	0,14	0,7	0,8	–	24			●
LT16ER20UNK	16	0,16	0,7	0,8	–	20			●
LT16ER18UNK	16	0,18	0,7	0,8	–	18			●
LT16ER16UNK	16	0,19	0,9	1,1	–	16			●
LT16ER14UNK	16	0,23	1,2	1,5	–	14			●
LT16ER12UNK	16	0,25	1,1	1,4	–	12			●
LT16ER8UNK	16	0,40	1,3	1,5	–	8			●

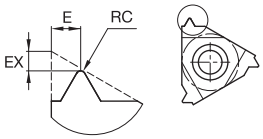
Thread Forms



American
UN-External



LT-E-UN



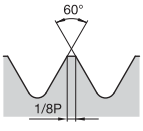
● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

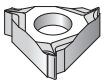
LT-ER/L-UN

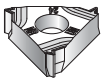
catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER48UN	16	–	0,6	0,6	–	48		●	
LT16ER40UN	16	–	0,6	0,6	–	40		●	
LT16ER36UN	16	–	0,6	0,6	–	36		●	
LT16ER32UN	16	–	0,6	0,6	–	32	●	●	
LT16ER28UN	16	–	0,6	0,7	–	28	●	●	
LT16ER24UN	16	–	0,7	0,8	–	24	●	●	
LT16ER20UN	16	–	0,8	0,9	–	20	●	●	
LT16ER18UN	16	–	0,8	1,0	–	18	●	●	
LT16ER16UN	16	–	0,9	1,1	–	16	●	●	
LT16ER14UN	16	–	1,0	1,2	–	14	●	●	
LT16ER12UN	16	–	1,1	1,4	–	12	●	●	
LT16ER10UN	16	–	1,1	1,5	–	10		●	
LT16ER8UN	16	–	1,2	1,6	–	8		●	
left hand									
LT16EL28UN	16	–	0,6	0,7	–	28		●	
LT16EL24UN	16	–	0,7	0,8	–	24		●	
LT16EL20UN	16	–	0,8	0,9	–	20		●	
LT16EL18UN	16	–	0,8	1,0	–	18		●	
LT16EL16UN	16	–	0,9	1,1	–	16		●	
LT16EL14UN	16	–	1,0	1,2	–	14		●	
LT16EL12UN	16	–	1,1	1,4	–	12		●	
LT16EL11UN	16	–	1,1	1,4	–	11		●	
LT16EL8UN	16	–	1,2	1,6	–	8		●	

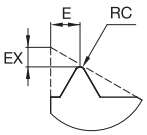
Thread Forms



American
UN-External


LT-NR-UNCB


LT-NR-UNK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

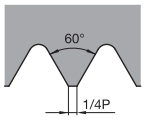
LT-NR-UNCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR32UNCB	11	–	1,2	0,5	–	32		●	
LT11NR24UNCB	11	–	0,7	0,8	–	24		●	
LT16NR20UNCB	16	–	0,7	0,6	–	20		●	
LT11NR20UNCB	11	–	0,6	0,8	–	20		●	
LT16NR18UNCB	16	–	0,6	0,8	–	18		●	
LT11NR18UNCB	11	–	0,6	0,8	–	18		●	
LT11NR16UNCB	11	–	0,7	0,8	–	16		●	
LT16NR16UNCB	16	–	0,7	0,8	–	16		●	
LT16NR14UNCB	16	–	1,1	1,5	–	14		●	
LT16NR12UNCB	16	–	1,1	1,5	–	12		●	
LT16NR10UNCB	16	–	1,1	1,5	–	10		●	
LT16NR8UNCB	16	–	1,1	1,5	–	8		●	

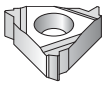
LT-NR-UNK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR16UNK	16	0,08	0,9	1,1	–	16			●
LT16NR12UNK	16	0,10	1,1	1,4	–	12			●
LT16NR8UNK	16	0,17	1,3	1,5	–	8			●

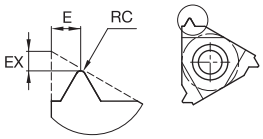
Thread Forms



American
UN-Internal



LT-NR/L-UN



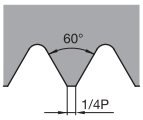
● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

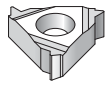
LT-NR/L-UN

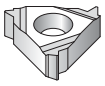
catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR40UN	11	–	0,6	0,6	–	40		●	
LT11NR32UN	11	–	0,6	0,6	–	32		●	
LT11NR28UN	11	–	0,6	0,7	–	28		●	
LT11NR24UN	11	–	0,7	0,8	–	24		●	
LT11NR20UN	11	–	0,8	0,9	–	20		●	
LT11NR18UN	11	–	0,8	1,0	–	18		●	
LT11NR16UN	11	–	0,9	1,1	–	16	●	●	
LT16NR28UN	16	–	0,6	0,7	–	28		●	
LT16NR32UN	16	–	0,6	0,6	–	32		●	
LT16NR24UN	16	–	0,7	0,8	–	24		●	
LT16NR20UN	16	–	0,8	0,9	–	20		●	
LT16NR18UN	16	–	0,8	1,0	–	18		●	
LT16NR16UN	16	–	0,9	1,1	–	16		●	
LT16NR14UN	16	–	0,9	1,2	–	14		●	
LT16NR12UN	16	–	1,1	1,4	–	12	●	●	
LT16NR10UN	16	–	1,1	1,5	–	10		●	
LT16NR8UN	16	–	1,1	1,5	–	8		●	
left hand									
LT11NL32UN	11	–	0,6	0,6	–	32		●	
LT16NL16UN	16	–	0,9	1,1	–	16		●	
LT16NL12UN	16	–	1,1	1,4	–	12		●	
LT16NL10UN	16	–	1,1	1,5	–	10		●	
LT16NL8UN	16	–	1,1	1,5	–	8		●	

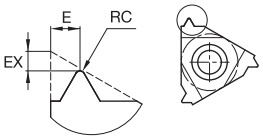
Thread Forms



American
UN-Internal


LT-ER/L-UNJ


LT-NR/L-UNJ



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

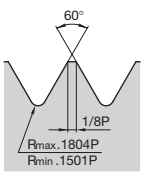
LT-ER/L-UNJ

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER32UNJ	16	–	0,6	0,7	–	32		●	
LT16ER28UNJ	16	–	0,7	0,7	–	28		●	
LT16ER24UNJ	16	–	0,7	0,8	–	24		●	
LT16ER20UNJ	16	–	0,8	0,9	–	20	●	●	
LT16ER18UNJ	16	–	0,8	1,0	–	18	●	●	
LT16ER16UNJ	16	–	0,9	1,1	–	16	●	●	
LT16ER14UNJ	16	–	1,0	1,2	–	14	●	●	
LT16ER12UNJ	16	–	1,1	1,3	–	12	●	●	
left hand									
LT16EL16UNJ	16	–	0,9	1,1	–	16		●	

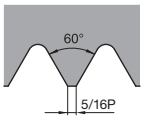
LT-NR/L-UNJ

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT11NR18UNJ	11	–	0,8	1,0	–	18		●	
LT11NR16UNJ	11	–	0,9	1,1	–	16		●	
LT16NR16UNJ	16	–	0,9	1,1	–	16		●	
LT11NR14UNJ	11	–	1,0	1,2	–	14		●	
LT16NR12UNJ	16	–	1,1	1,3	–	12		●	

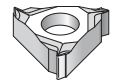
Thread Forms

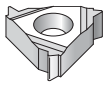


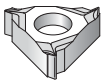
UNJ-External

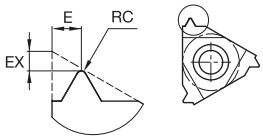


UNJ-Internal


LT-ER-NPTCB


LT-ER/L-NPT


LT-NR-NPTCB



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER-NPTCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER14NPTCB	16	–	1,1	1,5	–	14	●	●	

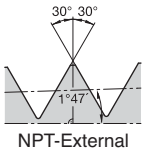
LT-ER/L-NPT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16ER27NPT	16	–	0,7	0,8	–	27		●	
LT16ER18NPT	16	–	0,8	1,0	–	18	●	●	
LT16ER14NPT	16	–	0,9	1,2	–	14	●	●	
LT16ER115NPT	16	–	1,1	1,5	–	11.5	●	●	
LT16ER8NPT	16	–	1,3	1,8	–	8		●	

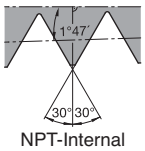
LT-NR-NPTCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16NR14NPTCB	16	–	1,35	1,20	–	14		●	
LT16NR115NPTCB	16	–	1,10	1,50	–	11.5		●	

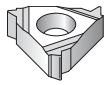
Thread Forms

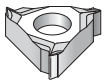


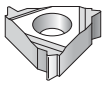
NPT-External

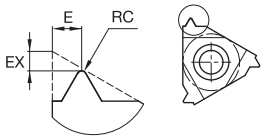


NPT-Internal


LT-NR/L-NPT


LT-ER-NPTFCB


LT-ER/L-NPTF



● first choice
○ alternate choice

	KC5010	KC5025	KU25T
P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-NPT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR18NPT	11	–	0,8	1,0	–	18		●	
LT11NR14NPT	11	–	0,8	1,0	–	14	●	●	
LT16NR14NPT	16	–	0,9	1,2	–	14		●	
LT16NR115NPT	16	–	1,1	1,5	–	11.5	●	●	
LT16NR8NPT	16	–	1,3	1,8	–	8		●	

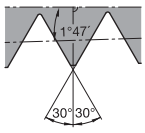
LT-ER-NPTFCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
LT16ER115NPTFCB	16	–	1,1	1,5	–	11.5		●	

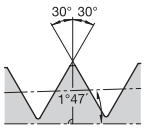
LT-ER/L-NPTF

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16ER14NPTF	16	–	0,9	1,2	–	14		●	
LT16ER115NPTF	16	–	1,1	1,5	–	11.5		●	

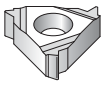
Thread Forms



NPT-Internal

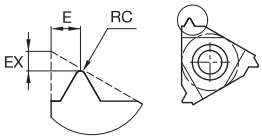


NPTF-External


LT-NR/L-NPTF

LT-ER/L-55

LT-NR/L-55



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-NPTF

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR14NPTF	11	–	0,8	1,0	–	14		●	
LT16NR14NPTF	16	–	0,9	1,2	–	14		●	
LT16NR115NPTF	16	–	1,1	1,5	–	11.5		●	

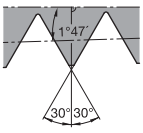
LT-ER/L-55

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ERA55	16	0,05	0,8	0,9	0,50-1,50	48-16		●	
LT16ERAG55	16	0,08	1,2	1,7	0,50-3,00	48-8	●	●	
LT16ERG55	16	0,20	1,2	1,7	1,75-3,00	14-8		●	
LT22ERN55	22	0,43	1,7	2,5	3,50-5,00	7-5		●	
left hand									
LT16ELAG55	16	0,08	1,2	1,7	0,50-3,00	48-8		●	

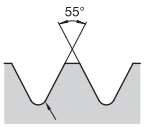
LT-NR/L-55

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NRA55	11	0,05	0,8	0,9	0,50-1,50	48-16		●	
LT16NRA55	16	0,05	0,8	0,9	0,50-1,50	48-16		●	
LT16NRAG55	16	0,07	1,2	1,7	0,50-3,00	48-8		●	
LT16NRG55	16	0,21	1,2	1,7	1,75-3,00	14-8		●	
LT22NRN55	22	0,43	1,7	2,5	3,50-5,00	7-5		●	

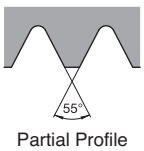
Thread Forms



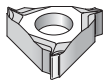
NPTF-Internal

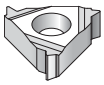


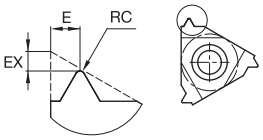
Partial Profile
55° External



Partial Profile
55° Internal


LT-ER-WCB


LT-ER/L-W



● first choice
○ alternate choice

	KC5010	KC5025	KU25T
P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

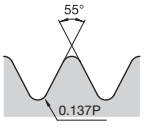
LT-ER-WCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER14WCB	16	–	1,3	1,5	–	14	●	●	
LT16ER11WCB	16	–	1,3	1,5	–	11		●	

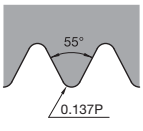
LT-ER/L-W

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER28W	16	–	0,6	0,7	–	28		●	
LT16ER24W	16	–	0,7	0,8	–	24		●	
LT16ER20W	16	–	0,8	0,9	–	20		●	
LT16ER19W	16	–	0,8	1,0	–	19	●	●	
LT16ER18W	16	–	0,8	1,0	–	18		●	
LT16ER16W	16	–	0,9	1,1	–	16		●	
LT16ER14W	16	–	1,0	1,2	–	14	●	●	
LT16ER12W	16	–	1,1	1,4	–	12		●	
LT16ER11W	16	–	1,1	1,5	–	11	●	●	
LT16ER10W	16	–	1,1	1,5	–	10		●	
LT16ER9W	16	–	1,2	1,7	–	9		●	
LT16ER8W	16	–	1,2	1,5	–	8		●	
LT22ER6W	22	–	1,6	2,3	–	6		●	
LT22ER7W	22	–	1,6	2,3	–	7		●	
left hand									
LT16EL14W	16	–	1,0	1,2	–	14		●	
LT16EL11W	16	–	1,1	1,5	–	11		●	

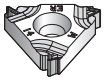
Thread Forms



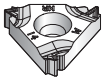
Whitworth BSW, BSF, BSP-External

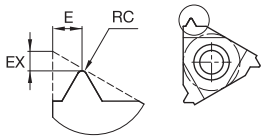


Whitworth BSW, BSF, BSP-Internal


LT-E-WK

LT-NR-WCB


LT-N-WK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER/L-WK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER11WK	16	0,29	1,1	1,5	–	11			●

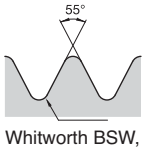
LT-NR-WCB

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR14WCB	16	–	1,3	1,5	–	14		●	
LT16NR11WCB	16	–	1,3	1,5	–	11		●	

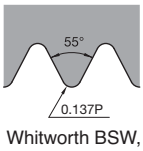
LT-NR/L-WK

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR11WK	16	0,28	1,1	1,5	–	11			●

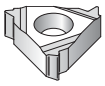
Thread Forms

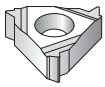


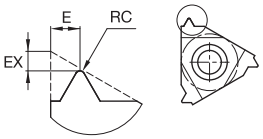
Whitworth BSW, BSF, BSP-External



Whitworth BSW, BSF, BSP-Internal


LT-NR/L-W


LT-ER/L-BSPT



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

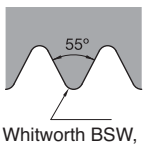
LT-NR/L-W

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR20W	16	–	0,8	0,9	–	20		●	
LT11NR19W	11	–	0,8	1,0	–	19		●	
LT16NR19W	16	–	0,8	1,0	–	19		●	
LT16NR16W	16	–	0,9	1,1	–	16		●	
LT11NR14W	11	–	0,9	1,1	–	14		●	
LT16NR14W	16	–	1,0	1,2	–	14		●	
LT16NR12W	16	–	1,1	1,4	–	12		●	
LT16NR11W	16	–	1,1	1,5	–	11	●	●	
LT16NR10W	16	–	1,1	1,5	–	10		●	
LT16NR8W	16	–	1,2	1,5	–	8		●	
LT22NR6W	22	–	1,6	2,3	–	6		●	
LT22NR7W	22	–	1,6	2,3	–	7		●	
left hand									
LT16NL11W	16	–	1,1	1,5	–	11		●	

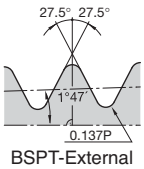
LT-ER/L-BSPT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16ER14BSPT	16	–	1,0	1,2	–	14		●	
LT16ER11BSPT	16	–	1,1	1,5	–	11		●	

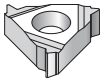
Thread Forms

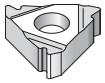


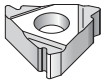
Whitworth BSW, BSF, BSP-Internal

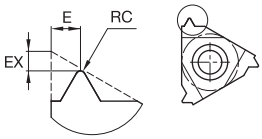


BSPT-External


LT-NR/L-BSPT


LT-ER/L-API


LT-NR/L-API



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-BSPT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT11NR14BSPT	11	–	0,9	1,0	–	14		●	
LT16NR14BSPT	16	–	1,0	1,2	–	14		●	
LT16NR11BSPT	16	–	1,1	1,5	–	11		●	

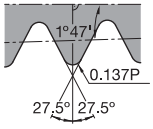
LT-ER/L-API

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT27ER5API403	28	0,51	2,0	2,8	–	5		●	
LT22ER5API403	22	–	1,8	2,6	–	5	●		
LT27ER4API383	28	0,97	2,0	2,8	–	4		●	
LT27ER4API382	28	0,97	2,0	2,8	–	4		●	
LT22ER4API382	22	–	2,1	2,8	–	4		●	
LT27ER4API503	28	0,64	2,0	2,8	–	4		●	
LT27ER4API502	28	0,64	2,0	2,8	–	4		●	
LT22ER4API503	22	–	2,0	2,9	–	4	●		
LT22ER4API502	22	–	2,0	2,9	–	4	●	●	

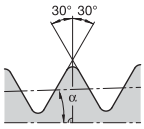
LT-NR/L-API

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT27NR5API403	28	0,52	2,0	2,8	–	5		●	
LT27NR4API383	28	0,99	2,0	2,8	–	4		●	
LT27NR4API382	28	0,99	2,0	2,8	–	4		●	
LT22NR5API403	22	–	1,8	2,6	–	5		●	
LT22NR4API382	22	–	2,1	2,8	–	4		●	
LT27NR4API503	28	0,65	2,0	2,8	–	4		●	
LT27NR4API502	28	0,65	2,0	3,8	–	4		●	
LT22NR4API502	22	–	2,1	3,1	–	4		●	

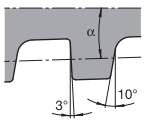
Thread Forms



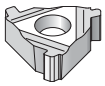
BSPT-Internal

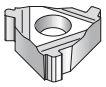


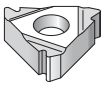
API Rotary Shoulder Connections-External
α = 1/2 arctan (TPF/12)

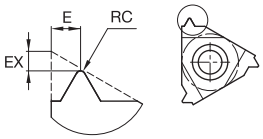


API Rotary Shoulder Connections-Internal
α = 1/2 arctan (TPF/12)


LT-ER/L-BUT


LT-NR/L-BUT


LT-ER/L-APIRD



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER/L-BUT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT22ER5BUT75	22	–	3,10	1,9	–	5		●	

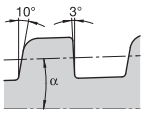
LT-NR/L-BUT

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT22NR5BUT1	22	–	2,8	1,9	–	5		●	
LT22NR5BUT75	22	–	2,8	1,9	–	5		●	

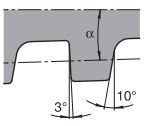
LT-ER/L-APIRD

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER10APIRD	16	–	1,2	1,4	–	10		●	
LT16ER8APIRD	16	–	1,3	1,5	–	8		●	
left hand									
LT16EL8APIRD	16	–	1,3	1,5	–	8		●	

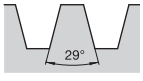
Thread Forms



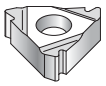
API Buttress Casing-External
α = 1/2 arctan (TPF/12)

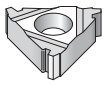


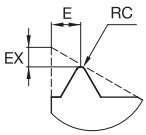
API Buttress Casing-Internal
α = 1/2 arctan (TPF/12)



API Round-External


LT-NR/L-APIRD


LT-ER/L-ACME



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

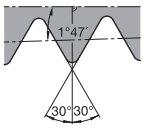
LT-NR/L-APIRD

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR10APIRD	16	–	1,2	1,4	–	10		●	
LT16NR8APIRD	16	–	1,3	1,5	–	8		●	

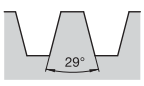
LT-ER/L-ACME

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER16ACME	16	–	1,0	1,1	–	16		●	
LT16ER12ACME	16	–	1,1	1,2	–	12		●	
LT16ER10ACME	16	–	1,3	1,4	–	10		●	
LT16ER8ACME	16	–	1,4	1,5	–	8		●	
LT22ER6ACME	22	–	1,8	2,1	–	6		●	
LT22ER5ACME	22	–	2,0	2,3	–	5		●	
LT27ER4ACME	–	–	–	–	–	–		●	

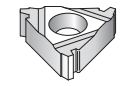
Thread Forms

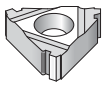


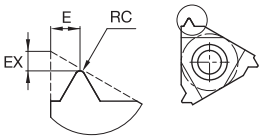
API Round-Internal



Acme External


LT-NR/L-ACME


LT-ER/L-STACME



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

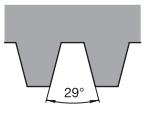
LT-NR/L-ACME

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR12ACME	16	–	1,2	1,3	–	12		●	
LT16NR10ACME	16	–	1,2	1,3	–	10		●	
LT16NR8ACME	16	–	1,4	1,5	–	8		●	
LT22NR6ACME	22	–	1,8	2,1	–	6		●	
LT22NR5ACME	22	–	2,0	2,3	–	5		●	
left hand									
LT16NL10ACME	16	–	1,2	1,3	–	10		●	
LT16NL8ACME	16	–	1,4	1,5	–	8		●	

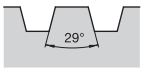
LT-ER/L-STACME

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER16STACME	16	–	1,0	1,0	–	16		●	
LT16ER12STACME	16	–	1,2	1,2	–	12		●	
LT16ER10STACME	16	–	1,2	1,3	–	10		●	
LT16ER8STACME	16	–	1,4	1,5	–	8		●	
LT16ER6STACME	16	–	1,7	1,8	–	6		●	
LT22ER5STACME	22	–	2,1	2,3	–	5		●	
LT27ER4STACME	–	–	–	–	–	–		●	
LT27EL4STACME	–	–	–	–	–	–		●	

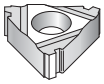
Thread Forms

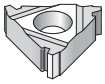


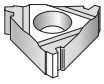
Acme Internal

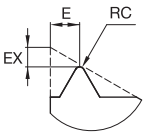


Stub Acme-External


LT-NR/L-STACME


LT-ER/L-TR


LT-NR/L-TR



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-STACME

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR16STACME	16	–	1,0	1,0	–	16		●	
LT16NR14STACME	16	–	1,1	1,1	–	14		●	
LT16NR12STACME	16	–	1,1	1,2	–	12		●	
LT16NR10STACME	16	–	1,2	1,3	–	10		●	
LT16NR8STACME	16	–	1,4	1,5	–	8		●	
LT16NR6STACME	16	–	1,7	1,8	–	6		●	
LT22NR6STACME	22	–	1,8	1,8	–	6		●	
LT27NL4STACME	–	–	–	–	–	–		●	
LT27NR4STACME	–	–	–	–	–	–		●	

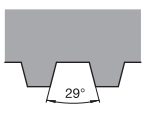
LT-ER/L-TR

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER2TR	16	–	1,1	1,3	2,0	–		●	
LT16ER3TR	16	–	1,3	1,5	3,0	–		●	
LT22ER4TR	22	–	1,7	1,9	4,0	–		●	
LT22ER5TR	22	–	2,1	2,5	5,0	–		●	

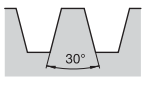
LT-NR/L-TR

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16NR2TR	16	–	1,1	1,3	2,0	–		●	
LT16NR3TR	16	–	1,3	1,5	3,0	–		●	
LT22NR4TR	22	–	1,7	1,9	4,0	–		●	
LT22NR5TR	22	–	2,1	2,5	5,0	–		●	

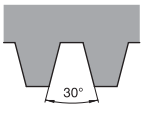
Thread Forms



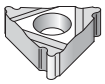
Stub Acme-Internal

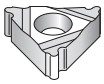


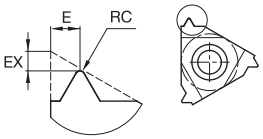
Trapez-External



Trapez-Internal


LT-ER/L-RD


LT-NR/L-RD



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

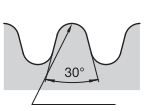
LT-ER/L-RD

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI	KC5010	KC5025	KU25T
right hand									
LT16ER8RD	16	0,76	1,4	1,3	–	8		●	
LT22ER6RD	22	1,01	1,5	1,7	–	6		●	

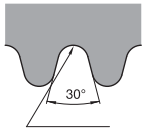
LT-NR/L-RD

catalogue number	insert size	RC mm	EX mm	E mm	thread pitch mm	TPI			
right hand									
LT16NR8RD	16	0,70	1,4	1,4	–	8		●	
LT22NR6RD	22	0,93	1,5	1,7	–	6		●	

Thread Forms



Round External



Round-Internal

Looking for a product that's not shown in this catalogue?

Check the Kennametal website!

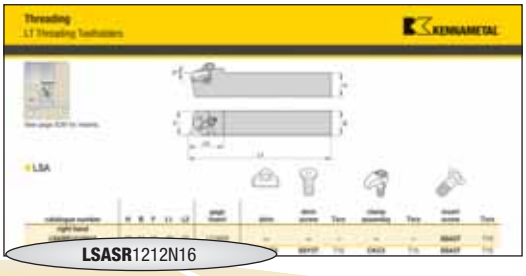
Online product catalogue available 24/7

Visit **http://www.kennametal.com/turning/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

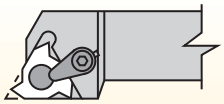
KENNAMETAL

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



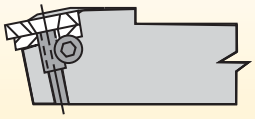
L
Insert Style

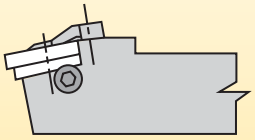


L = Laydown triangle

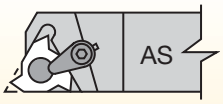
S
Insert Holding Method

S = Insert screw or clamp only

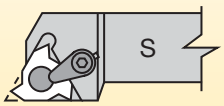




AS
Tool Style



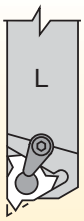
AS = Straight shank



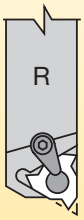
S = Offset shank

R
Hand of Tool

L = Left hand



R = Right hand



NOTE: Toolholders with primary shank sizes larger than 1/2" or 12mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**

LT Threading Shim Catalogue Numbering System

SM
Shim

Y
Shim for LT Standard Inserts

E
Insert Threading

E = External
I = Internal

3
Insert Size

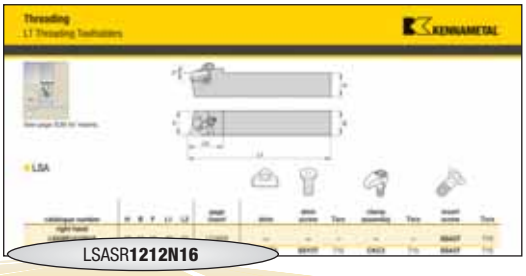
D value in 1/8"

2P
Shim Angle

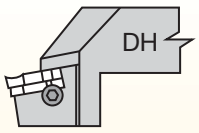
2P = 2° positive
1P = 1° positive
__ = 0° neutral
1N = 1° negative
2N = 2° negative
3N = 3° negative

NOTE: For shims and shim kits, see pages E101–E103.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

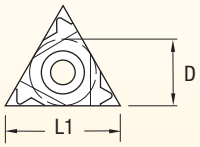


	1212N	**16**	
Drop Head	Shank Size	Insert Size	Qualified Surface and Length



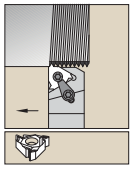
metric:
Shank height and width in mm and holder length according to ISO standard.

Size equals number of 1/8" increments of IC.

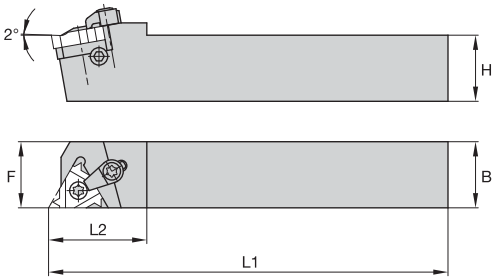


insert size (inch)	insert size (mm)	D (inch)	L1 (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

- **C** = Qualified back and end, 5" long
- **D** = Qualified back and end, 6" long
- **E** = Qualified back and end, 7" long
- **T** = Qualified back and end, 3.250" long
- **Q** = Qualified metric holder

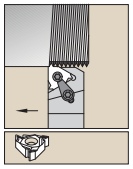


See page E41 for inserts.

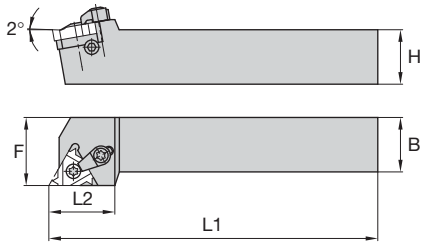


LSA

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSASR1212N16	12	12	16	85	22	LT16ER	–	–	–	–	–	**SSA3T**	T10
LSASR1616H16	16	16	16	100	25	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR2020K16	20	20	20	125	30	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR2525M16	25	25	25	150	30	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR3232P16	32	32	32	170	30	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR2525M22	25	25	25	150	36	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LSASR3232P22	32	32	32	170	36	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand													
LSASL1212N16	12	12	16	85	22	LT16EL	–	–	–	–	–	**SSA3T**	T10
LSASL1616H16	16	16	16	100	25	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL2020K16	20	20	20	125	30	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL2525M16	25	25	25	150	30	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL2525M22	25	25	25	150	36	LT22EL	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

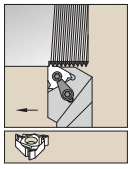


See page E41 for inserts.

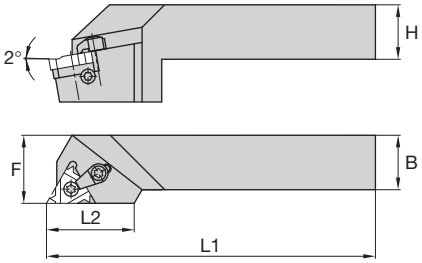


LSS

catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSSR2020K16Q	20	20	25	125	25	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR2525M16Q	25	25	32	150	25	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR3232P16Q	32	32	40	170	32	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR2525M22Q	25	25	32	150	30	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LSSR3232P22Q	32	32	40	170	30	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand													
LSSL2020K16Q	20	20	25	125	25	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSL2525M16Q	25	25	32	150	25	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSL3232P16Q	32	32	40	170	32	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSL2525M22Q	25	25	32	150	30	LT22EL	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20



See page E41 for inserts.

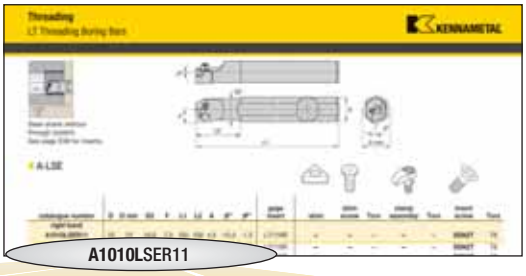


LSS-DH

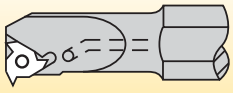
catalogue number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSSRDH2020K16Q	20	20	25	125	38	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSRDH2525M16	25	25	32	150	38	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSRDH2525M22Q	25	25	32	150	38	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LSSRDH3232P22	32	32	40	170	38	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand													
LSSLDH2525M16	25	25	32	150	38	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSLDH2525M22Q	25	25	32	150	38	LT22EL	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

How Do Catalogue Numbers Work?

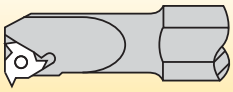
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



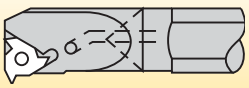
A — Bar Type



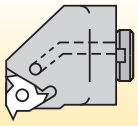
A = Steel with coolant



S = Steel without coolant

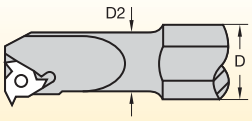


E = Carbide with coolant



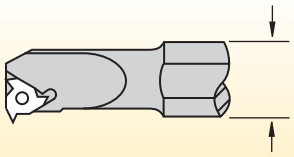
H = Interchangeable head with coolant

10 — Primary Necked Shank Bar Diameter



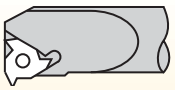
A two-digit number that indicates the primary bar diameter in 1/16" increments. Metric diameter in mm.

10 — Secondary (Mounting) Bar Diameter



A two-digit number that indicates the secondary bar diameter in 1/16" increments. Metric diameter in mm.

L — Insert Style



L = Laydown triangle

NOTE: Boring bars with primary bar diameters larger than 5/8" or 16mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**

LT Threading Shim Catalogue Numbering System

SM — Shim

Y — Shim for LT Standard Inserts

E — Insert Threading

E = External
I = Internal

3 — Insert Size

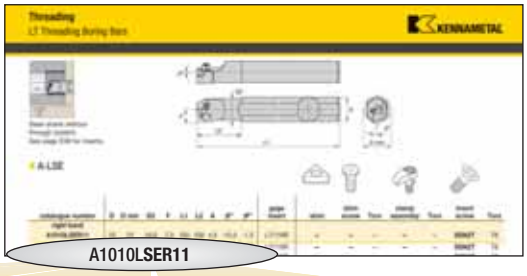
D value in 1/8"

2P — Shim Angle

2P = 2° positive
1P = 1° positive
__ = 0° neutral
1N = 1° negative
2N = 2° negative
3N = 3° negative

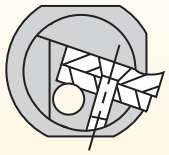
NOTE: For shims and shim kits, see pages E101–E103.

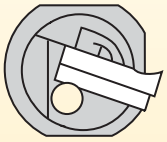
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



S
Insert Holding Method

S = Insert screw or clamp



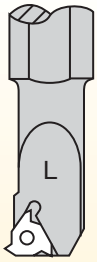


E
Bar Style

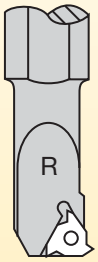
E = End cutting edge mount

R
Hand of Bar

L = Left hand

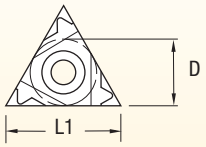


R = Right hand



11
Insert Size

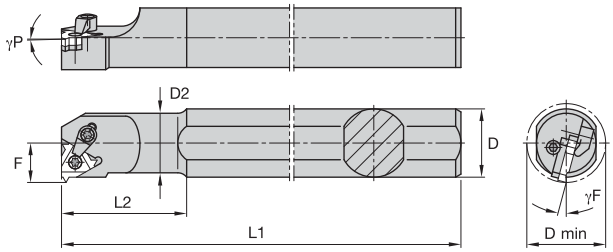
Size equals number of 1/8" increments of IC.



insert size (inch)	insert size (mm)	D (inch)	L1 (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

NOTE: Boring bars with primary bar diameters larger than 5/8" or 16mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**

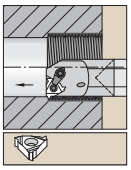
Steel shank without
through coolant.
See page E41 for inserts.



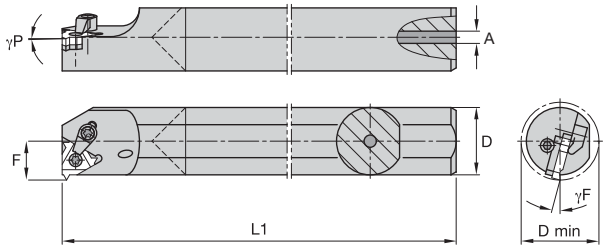
A-LSE

catalogue number	D	D min	D2	F	L1	L2	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand																
A1010LSER11	10	13	10,0	7,3	100	100	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1020LSER11	20	13	10,0	7,3	180	25	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1320LSER11	20	16	13,0	8,9	180	32	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1616LSER16	16	20	16,0	11,3	150	32	-15.0	-1.5	LT16NR	**–**	**–**	–	**–**	–	**SSA3T**	T10
A1320LSER16	20	17	12,7	10,3	180	32	-15.0	-1.5	LT16NR	**–**	**–**	–	**–**	–	**SSA3T**	T10
A1620LSER16	20	20	16,0	11,5	180	40	-15.0	-1.5	LT16NR	**–**	**–**	–	**–**	–	**SSA3T**	T10
A2020LSER16	20	24	20,0	13,4	180	40	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2525LSER16	25	29	24,6	16,1	200	45	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2532LSER16	32	29	25,0	16,3	250	60	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2020LSER22	20	27	20,0	15,6	180	50	-15.0	-1.5	LT22NR	**–**	**–**	–	**CKC4**	T20	**SSA4T**	T20
A2525LSER22	25	32	24,6	17,2	200	45	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
A2532LSER22	32	32	25,0	17,4	250	60	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
A3232LSER22	32	39	32,0	21,5	250	60	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
A4040LSER22	40	47	40,0	25,8	300	60	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand																
A1010LSEL11	10	13	10,0	7,3	100	100	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1020LSEL11	20	13	10,0	7,3	180	25	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1320LSEL11	20	16	13,0	8,9	180	32	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
A1616LSEL16	16	20	16,0	11,3	150	32	-15.0	-1.5	LT16NL	**–**	**–**	–	**–**	–	**SSA3T**	T10
A1620LSEL16	20	20	16,0	11,5	180	40	-15.0	-1.5	LT16NL	**–**	**–**	–	**–**	–	**SSA3T**	T10
A2020LSEL16	20	24	20,0	13,4	180	40	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2525LSEL16	25	29	24,6	16,1	200	45	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2532LSEL16	32	29	25,0	16,3	250	60	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
A2020LSEL22	20	27	20,0	15,6	180	50	-15.0	-1.5	LT22NL	**–**	**–**	–	**CKC4**	T20	**SSA4T**	T20
A2525LSEL22	25	32	24,6	17,2	200	45	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
A3232LSEL22	32	39	32,0	21,5	250	60	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
A4040LSEL22	40	47	40,0	25,8	300	60	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

NOTE: Items listed without a shim are designed for a 1,5° inclination angle.
Be advised that certain boring bars are shipped without the clamp assembly.



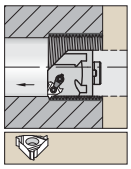
Carbide shank with
through coolant.
See page E41 for inserts.



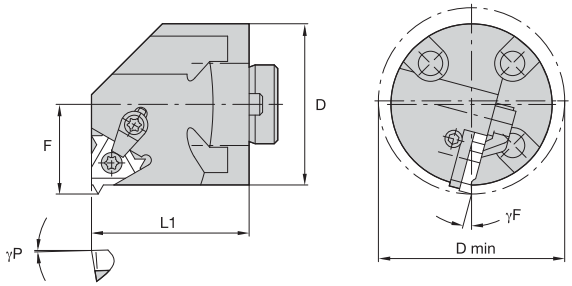
E-LSE

catalogue number	D	D min	F	L1	A	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand															
E16RLSER16	16	20	11,5	200	5,5	-15.0	-1.5	LT16NR	–	–	–	–	–	**SN3TPKG**	T10
E20SLSER16	20	24	13,4	250	7,1	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
E25TLSER16	25	29	15,8	300	7,9	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10

NOTE: All carbide bars need a KWH grade designation.



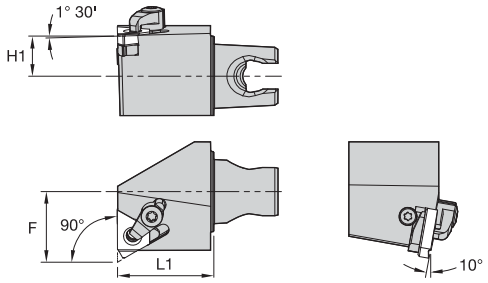
With through coolant.
See page E41 for inserts.



H-LSE

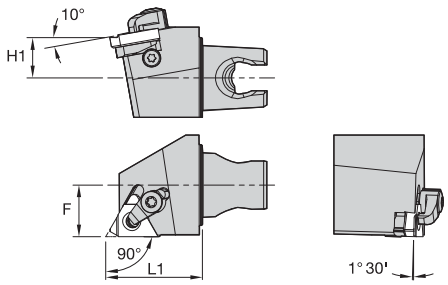
catalogue number	D	D min	L1	F	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand														
H16LSER3	25	30,5	41,3	16,4	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H20LSER3	32	36,8	41,3	19,3	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSER3	38	44,7	41,3	22,5	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H32LSER3	51	61,0	41,3	32,4	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H50LSER16	50	54,0	41,3	27,2	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSER4	38	45,3	41,3	24,7	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSER4	51	61,0	41,3	32,4	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H40LSER22	40	47,0	41,3	24,1	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H50LSER22	50	56,0	41,3	28,7	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSER5	51	61,0	41,3	32,5	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H40LSER27	40	50,0	41,3	29,0	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H40LSER5	64	77,0	41,3	38,9	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H50LSER27	50	58,0	41,3	31,4	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
left hand														
H16LSEL3	25	30,5	41,3	16,4	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H20LSEL3	32	36,8	41,3	19,3	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSEL3	38	44,7	41,3	22,5	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSEL4	38	45,3	41,3	24,7	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSEL4	51	61,0	41,3	32,4	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H50LSEL22	50	56,0	41,3	28,7	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSEL5	51	61,0	41,3	32,5	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H40LSEL27	40	50,0	41,3	29,0	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H40LSEL5	64	77,0	41,3	38,9	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25
H50LSEL27	50	58,0	41,3	31,4	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	T25	**SSA5T**	T25

NOTE: For boring adaptors, see pages C108–C109.



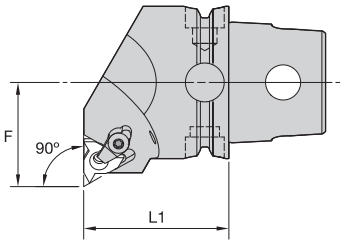
LSE • End Mount

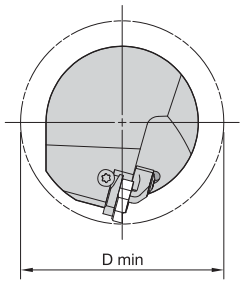
order number	catalogue number	L1 mm	F mm	H1 mm	gage insert	insert screw	shim	shim screw	clamp assembly
	right hand								
3482966	**KM20LSER1625**	25	17	9,5	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
2399506	**KM25LSER1630**	30	22	12,5	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
	left hand								
3482965	**KM20LSEL1625**	25	17	9,5	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
2399507	**KM25LSEL1630**	30	22	12,5	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**



LSS • Side Mount

order number	catalogue number	L1 mm	F mm	H1 mm	gage insert	insert screw	shim	shim screw	clamp assembly
	right hand								
3482968	**KM20LSSR1625**	25	12,50	9,5	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
2399504	**KM25LSSR1630**	30	16,00	12,5	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
3176219	**KM25LSSR2230**	30	16,00	12,5	LT22ER	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**
	left hand								
3482967	**KM20LSSL1625**	25	12,50	9,5	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
2399505	**KM25LSSL1630**	30	16,00	12,5	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
3176220	**KM25LSSL2230**	30	16,00	12,5	LT22EL	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**



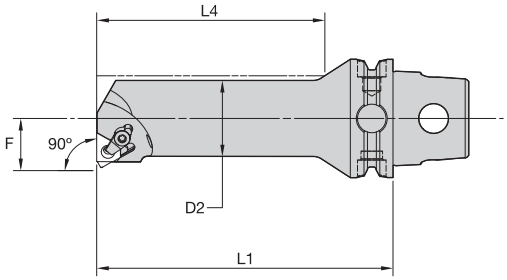


KM QUICK CHANGE

■ LSE-N 90° • Internal Only

order number	catalogue number	L1 mm	F mm	D min mm	gage insert	insert screw	shim	shim screw	clamp assembly	kg
	right hand									
3950832	**KM40TSLSER16N**	40	27	54	LT16NR	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**	0,35
3950854	**KM40TSLSER22N**	40	27	54	LT22NR	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**	0,35
3959399	**KM40TSLSER27N**	45	27	54	LT27NR	**SSA5T**	**SMYI5**	**SSY5T**	**CKC5**	0,39
	left hand									
3950831	**KM40TSLSEL16N**	40	27	54	LT16NL	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**	0,35
3950853	**KM40TSLSEL22N**	40	27	54	LT22NL	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**	0,35
3959398	**KM40TSLSEL27N**	45	27	54	LT27NL	**SSA5T**	**SMYE5**	**SSY5T**	**CKC5**	0,39

NOTE: Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.



KM QUICK CHANGE

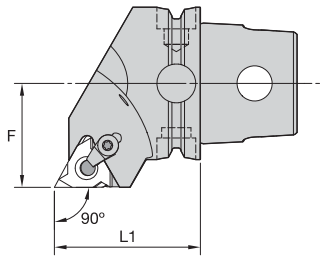
LSE 90°

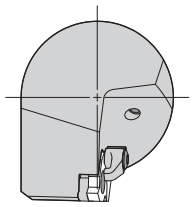
order number	catalogue number	D2 mm	D min mm	F mm	L4 mm	L1 mm	gage insert	kg
	right hand							
3955464	**KM40TSS10DLSER11**	10	13	7	35	60	LT11NR	0,22
3955466	**KM40TSS12ELSER11**	12	16	9	42	70	LT11NR	0,25
3955468	**KM40TSS16FLSER16**	16	20	11	56	80	LT16NR	0,28
3955470	**KM40TSS20GLSER16**	20	25	13	70	90	LT16NR	0,34
3955472	**KM40TSS25HLSER16**	25	32	17	75	100	LT16NR	0,50
3955474	**KM40TSS32JLSER16**	32	40	22	96	110	LT16NR	0,72
3955476	**KM40TSS32JLSER22**	32	40	22	96	110	LT22NR	0,71
	left hand							
3955463	**KM40TSS10DLSEL11**	10	13	7	35	60	LT11NL	0,22
3955465	**KM40TSS12ELSEL11**	12	16	9	42	70	LT11NL	0,25
3955467	**KM40TSS16FLSEL16**	16	20	11	56	80	LT16NL	0,28
3955469	**KM40TSS20GLSEL16**	20	25	13	70	90	LT16NL	0,34
3955471	**KM40TSS25HLSEL16**	25	32	17	75	100	LT16NL	0,50
3955473	**KM40TSS32JLSEL16**	32	40	22	96	110	LT16NL	0,72
3955475	**KM40TSS32JLSEL22**	32	40	22	96	110	LT22NL	0,71

Spare Parts

catalogue number	insert screw	shim	shim screw	clamp assembly
right hand				
KM40TSS10DLSER11	**SSN2T**	**–**	**–**	**–**
KM40TSS12ELSER11	**SSN2T**	**–**	**–**	**–**
KM40TSS16FLSER16	**SN3TPKG**	**–**	**–**	**–**
KM40TSS20GLSER16	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
KM40TSS25HLSER16	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
KM40TSS32JLSER16	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**
KM40TSS32JLSER22	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**
left hand				
KM40TSS10DLSEL11	**SSN2T**	**–**	**–**	**–**
KM40TSS12ELSEL11	**SSN2T**	**–**	**–**	**–**
KM40TSS16FLSEL16	**SN3TPKG**	**–**	**–**	**–**
KM40TSS20GLSEL16	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
KM40TSS25HLSEL16	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
KM40TSS32JLSEL16	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**
KM40TSS32JLSEL22	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**

NOTE: Items listed without a shim are designed for a 1,5° inclination angle.
Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.





KM QUICK CHANGE

■ LSS 90°

order number	catalogue number	L1 mm	F mm	gage insert	insert screw	shim	shim screw	clamp assembly	kg
	right hand								
3950857	**KM40TSLSSR16**	40	27	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**	0,31
3950858	**KM40TSLSSR22**	40	27	LT22ER	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**	0,30
3959401	**KM40TSLSSR27**	45	27	LT27ER	**SSA5T**	**SMYE5**	**SSY5T**	**CKC5**	0,37
	left hand								
3950855	**KM40TSLSSL16**	40	27	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**	0,32
3950856	**KM40TSLSSL22**	40	27	LT22EL	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**	0,31
3959400	**KM40TSLSSL27**	45	27	LT27EL	**SSA5T**	**SMYI5**	**SSY5T**	**CKC5**	0,37

NOTE: Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.

Suggested Grade and Speeds for Threading Various Workpiece Materials

workpiece group	workpiece material	recommendations surface speed – m/min				
		uncoated	PVD coated			
		K68	KC5010	KC5025	KC5410	KU25T
free-machining carbon steel	10L18, 10L45, 1213, 12L13, 12L14, 1140, 1141, 11L44, 1151, 10L50	—	91–198	45–198	—	91–137
plain carbon steel	10063, 1008, 1010, 1015, 1018, 1020, 1025, 1026, 1108, 1117	—	76–198	45–175	—	76–122
alloy steels/tool steels 150–325 HB (up to 35 HRC)	1042, 1045, 1070, 1080, 1085, 1090, 1095, 1541, 1561, 1572, 5140, 8620, W1, O1, S1, P20, H13, D2, A6, H13, L6	—	76–198	38–167	—	73–122
alloy steels/tool steels 330–450 HB (36–47 HRC)		—	61–160	—	—	61–106
martensitic/ferritic stainless/precipitation hardening	416, 420F, 440F, 405, 409, 429, 430, 434, 436, 442, PH	—	45–160	30–122	—	24–61
austenitic stainless steel	201, 202, 301, 302, 303, 304, 304, 305, 321, 347, 348, 310, 314, 316, 316L, 330	61–106	61–198	46–137	—	24–106
grey cast iron 135–270 HB	class 20, 30, 35, 45	61–91	61–237	46–122	—	30–110
grey cast iron 275–450 HB	class 50, 55, 60	45–76	45–175	15–76	—	30–110
alloy/ductile iron	A536, J434C, 60-40-18, 80-55-06, 100-70-03	45–76	45–198	30–160	—	30–110
free-machining aluminium alloys	2024-T4, 2014-T6, 6061-T6 2011-T3, 3003-H18, A2, Alcan, Alcoa 510, Duralumin	122–244	122–365	—	152–457	30–305
high-silicon aluminium alloys	A380, A390, A380-1, A390-1, A380-2	—	—	—	—	—
copper/zinc/brass		76–183	76–304	46–236	—	30–244
non-metallics	Graphite, Nylon, Plastics, Rubbers, Phenolics, Carbon	122–457	122–396	46–305	—	30–304
high-temperature alloys 125–269 HB (up to 27 HRC)	Nickel 200, Monel, R405, Monel K500, INCONEL 600, INCONEL 625/901x750/718, Waspaloy, Hastelloy C	24–37	24–122	13–76	—	11–85
high-temperature alloys 260–450 HB (26–47 HRC)	Rene 95, Waspaloy A286, Incoloy 800, Haynes 188, Stellite F, Haynes 25	24–30	30–76	6–61	—	11–61
titanium alloys	Ti-6Al-4V, TI-5Al-2.5Sn	34–55	34–99	—	—	11–76

NOTE: When workpiece hardness levels are at the top of a range, starting m/min should be at the lower end. Regularly inspect insert clamps for worn flats.

Edge preparation:
Uncoated — sharp
PVD coated — light hone except positive top rake, top rake-sharp

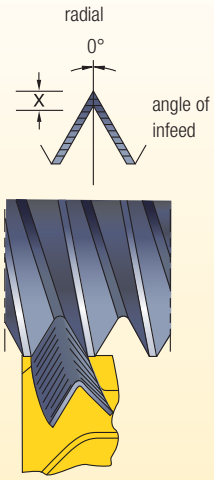
Tool Detective

problem	cause	possible solution
thread with torn finish	• Burrs. • Torn finish. • Steps.	• Use positive rake or full profile insert. • Increase coolant concentration. • Alter infeed. • Increases m/min. • Check machine “Z” travel axis. • Check insert form. • Check for correct shim in LT system.
chatter	• Poor rigidity. • Incorrect speed. • Insert movement. • Improper infeed. • Off centerline. • Wrong edge prep.	• Minimise tool overhang. • Check for workpiece deflection. • Adjust m/min. • Check insert and clamp. • Use modified feed angle. • Verify that tool cutting position is at workpiece centerline. • Adjust hone level by ordering special insert.
built-up edge	• Speed too low. • Insufficient coolant. • Chip load. • Wrong edge prep.	• Increase m/min. • Increase coolant concentration and/or flow. • Adjust infeed angle. • Increase depth of cut per pass. • Adjust hone level by ordering special insert.
deformation	• Wrong grade. • Speed too high. • Improper infeed angle. • Insufficient coolant.	• Use a more wear-resistant grade (e.g., KC5010™). • Reduce m/min. • Alter infeed method/angle. • Increase coolant flow.
chipping	• Improper infeed. • Chip load. • Wrong grade. • Incorrect speed. • Poor rigidity. • Wrong edge prep.	• Alter infeed to modified flank. • Adjust chip load. • Increase or decrease number of passes. • Eliminate spring passes. • Use tougher grade (e.g., KC5025™). • Increase m/min if chipping on trailing edge. • Decrease m/min if chipping on leading edge. • Minimise tool overhang. • Check for insert movement/check clamp. • Check for possible part deflection. • Adjust hone size by ordering special insert.
broken nose	• Heavy chip load. • Small nose radius. • Wrong grade. • Improper infeed. • Wrong edge prep.	• Decrease chip load. • Use large nose radius if allowable. • Use tougher grade (e.g., KC5025). • Alter infeed to modified flank. • Adjust hone size by ordering special insert.
flank wear	• Wrong grade. • Insufficient coolant. • Off centerline.	• Use a more wear-resistant grade (e.g., KC5025). • Increase coolant flow. • Check the centerline height of the tool. (The smaller the diameter, the more critical the need for centerline accuracy.)

Troubleshooting Matrix

problem	possible solutions																
	increase m/min	reduce m/min	increase chip load	decrease chip load where failure occurs	use tougher carbide grade	use harder carbide grade	apply coolant	use coated carbide	use topping insert	change infeed angle	check for insert movement and reseat	reduce tool overhang	reselect shim	apply chipbreaker style	reduce DOC	adjust center height	begin cutting threads 12mm before workpiece
chatter	●			●							●	●				●	
burr on crest	●								●								
short tool life		●	●	●		●		●									
chipped leading edge			●	●	●												
chipped trailing edge					●					●							
broken nose (first pass)	●														●	●	
broken nose (after first pass)				●	●					●			●				
built-up on cutting edge	●		●				●	●									
premature topping													●				
splitting threads																	●
poor chip evacuation														●			

Radial



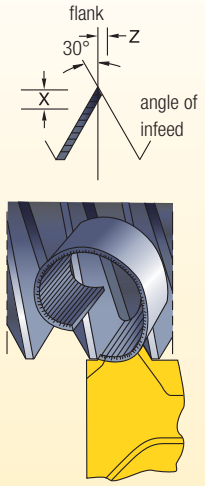
Advantage —

- Cutting on both sides of the thread form places all of the cutting edge in the cut and protects edge from chipping.
- Even wear on the insert.

Disadvantage —

- Tool develops a channel chip that may be difficult to handle.
- Tip chipping occurs when cutting high-tensile materials.
- Burr condition is increased.
- Entire cutting edge is engaged at finish of thread, causing increased tendency to chatter.

Flank



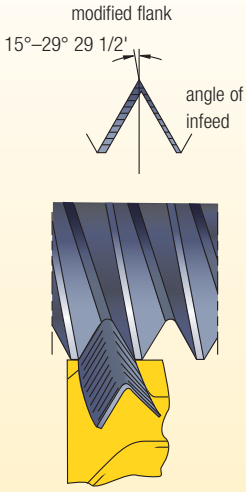
Advantage —

- Cutting with the leading edge of the threading tool gives the chip a definite flow out of the thread form area. This reduces the burr problem on the trailing edge of the tool. To avoid bad surface finish, chipping, or excessive flank wear due to rubbing of the trailing edge, the infeed angle should be 3° to 5° smaller than the angle of the thread. This is a type of modified flank.

Disadvantage —

- Trailing edge of threading insert may drag or rub and tends to chip.
- Torn or poor surface finish threads result when cutting soft, gummy materials like low-carbon steels, aluminium, and stainless steels.

Modified flank



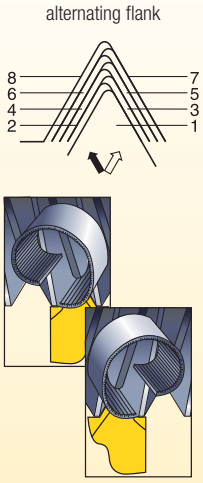
Advantage —

- Tool cuts both sides of thread form, so it is protected from chipping similar to 0° infeed. Channel-type chip develops, but uneven chip thickness helps remove the chip similar to flank infeed.
- This is the preferred method, especially when used with a chip control insert.
- Combined radial and/or alternating flank infeed.
- Results in good tool life, with wear evenly distributed over both flanks.

Disadvantage —

- Similar disadvantages as with 0° infeed, although reduced somewhat in magnitude as cutting forces are better equalised and chip flow is much less of a problem.

Alternating flank



Advantage —

- Increased tool life because both edges are used equally.

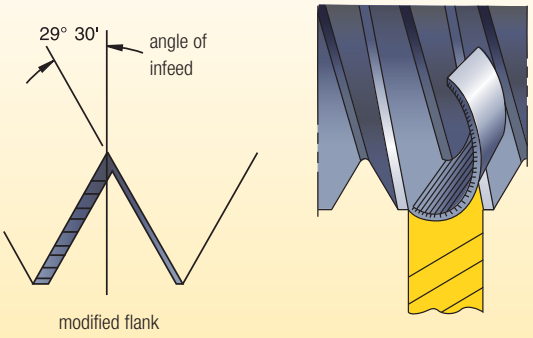
NOTE: Some machine tools may require special programming techniques to achieve this method of infeed.

Disadvantage —

- Difficult to cut on conventional machinery.

Machining Guidelines When Using Chop Control Inserts

Kennametal insert technology brings chip control to your threading operations with the Top Notch™ platform. The proprietary Kennametal recessed chip groove, when used according to our recommendations, breaks the chip in most applications. Our positive rake design lowers cutting pressures, which in turn lowers damaging heat generation thus providing better tool life. Long, stringy chips no longer mar the workpiece surface finish. The danger to operators when removing long chips from the workpiece and chuck is eliminated. All of these benefits combine to improve the productivity of your threading operations.



Machine Programming

Modern CNC controls allow the programmer to easily adjust infeed angle, the number of passes, and depth of cut for each pass. The chip control threading insert performs best at an infeed angle of 29° 30', although 15° to 30° is acceptable. Also, it is important to maintain a minimum of 0,127mm (.005") depth of cut on every pass. In most applications, use of CNC canned cycles produce only marginally successful results. Custom written programs are better and are recommended.

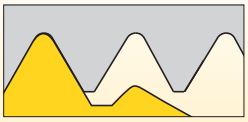
The Last Pass

Some CNC controls require the last pass to be at a 0° infeed angle because the chip will not break on the last pass. On most carbon and alloy steels, the last pass can remain at 0,127mm (.005") depth of cut and produce an acceptable finish. For some materials, a 0,025mm (.001") to 0,076mm (.003") (spring) pass may be used to improve surface finish, however, chip breaking action may be compromised.

Infeed Angle

In order to effectively and consistently break the chip, it is important to use an infeed angle between 28° and 29° 30'. Do not apply chip control inserts at infeed angles less than 15°.

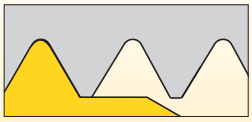
Partial Profile



Tooth profile with universal profile shape:

- 55° or 60° without cutting edges for the tooth tapers.
- Reduced inventory.
- For various pitches in a limited range.
- Preferably one time production.
- Outside/core diameters must be accurately pre-turned.

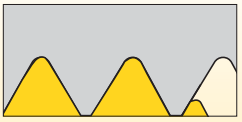
Full Profile



Tooth profile with full profile shape including tooth height:

- For burr-free, precise threads in the specified pitch.
- General application.
- Machining allowance for outside/core diameter around 0.004–0.006".

Multitooth Profile



Multitooth full profile generally with 2–3 teeth:

- Highly productive threading with fewer passes and longer tool life.
- Requires a rigid setup and long thread runout.
- Minimum clearance width approximately 1.25 x E as per indexable insert dimensions table.

Formulas

metric formula		
to find	**given**	**formula**
m/min	D (mm) RPM	$m/min = \frac{\pi \times D}{1000} \times RPM$
RPM	D (mm) m/min	$RPM = \frac{m/min \times 1000}{D \times \pi}$

Legend

IPM = inch per minute
SFM = surface feet per minute
m/min = metres per minute
RPM = revolutions per minute
D = part diameter
π = 3.1416

Maximum Cutting Speeds

Maximum cutting speed is often limited by the maximum travel speed (IPM or mm/min) of the tool allowed by the machine. Check your maximum speed with the following formulas:

metric formula: maximum cutting speed (m/min) = part diameter (mm) x 3.14 x (1/pitch) x $\frac{\text{max mm/min}}{1000\text{mm}}$

Recommendation for Threading Infeed Passes

TPI	48–32	28–24	20–16	14–12	11.5–9	8–6	5–4	3–2
metric pitch (mm)	0,50–0,75	0,80–1,0	1,25–1,5	1,75–2,0	2,5–3,0	3,5–4,0	4,5–6,0	8,0

thread type	recommended number of passes							
Common V-thread forms ISO, UN, UNJ, NPT, Whitworth, BSPT, API Rotary Shoulder	4–5	5–6	6–8	8–10	9–12	12–15	14–16	15–25
Acme, Trapez, Round, API Round	—	—	5–6	7–8	10–11	12–13	13–15	18–20
Stub Acme, API Buttress	—	—	5	5–6	7–8	8–10	10–12	14–16
American Buttress	—	—	7–8	9–10	11–12	13–15	17–19	22–24

NOTE: Maintain minimum 0,05mm (.002") infeed on last passes to avoid work hardening and excessive abrasion of the threading tool.

Constant Volume Infeed Values for Threading Operations

In most applications, use of CNC canned cycles produces only marginally successful results. This is the case as these programs do not satisfy the 0,05mm (.002") minimum depth of cut specification recommended.

Example:

Infeed per pass formula: accumulated depth = initial DOC x √ # pass

For example, an 8-pitch external thread has a depth of 2mm (.0789").
25% of 2mm (.0789") = approximately 0,50mm (.0197")
(This is the infeed/DOC for the first pass.)

0,500mm (.0197") x √ 2 = 0,708mm (.0278")
0,708mm (.0278") - 0,500mm (.0197") = 0,207mm (.0082")
(This is the infeed/DOC for the second pass.)

0,500mm (.0197") x √ 3 = 0,867mm (.0341")
0,867mm (.0341") - 0,708mm (.0278") = 0,159mm (.0063")
(This is the infeed/DOC for the third pass.)

0,500mm (.0197") x √ 4 = 1,001mm (.0394")
1,001mm (.0394") - 0,867mm (.0341") = 0,134mm (.0053")
(This is the infeed/DOC for the fourth pass.)

Using Radial Infeed

Bending stress on the cutting edge caused by V-shaped chips from long-chipping steel workpiece materials.

High cutting forces with small cutting thicknesses require sharp edges with high strength.

Its application is recommended for tough and hard, wear-resistant carbides with good resistance to thermal and mechanical shocks.

Using Flank Infeed

Lower bending stress and stabilised cutting edges produce more favourable chip shapes and larger cutting thicknesses.

Carbides with high hardness, good wear resistance, and temperature stability are advantageous.

When turning short threads with short engagement times, there is a good resistance to thermal and mechanical shocks.

Guidelines for Infeeds: How to Determine the Number and the Size of Passes

The number of passes “s” per thread is decisive for successful threading and crest turning. The following tables give standard values for the application condition when machining steel. The proper number of passes must be determined empirically.

If insert breakage occurs, the number of passes must be increased.
With increased wear, we recommend decreasing the number of passes.
The chip thickness should not be less than 0,05mm (.0019").
The allowance at the diameter should not exceed 0,2mm (.0078").

Metric ISO, External Thread Cutting

thread pitch P (mm)	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00
depth h1	0,307	0,460	0,613	0,767	0,920	1,074	1,227	1,534	1,840	2,147	2,454	2,760	3,067
number of passes	4	4	5	6	6	8	8	10	12	14	15	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,117/-	0,176/-	-0,195/-	0,206/-	0,248/-	0,216/-	0,247/-	0,238/-	0,223/-	0,204/-	0,205/-	0,231/-	0,226/-
2	0,078/0,045	0,118/0,068	0,140/0,081	0,160/0,092	0,192/0,111	0,194/0,112	0,222/0,128	0,248/0,143	0,272/0,157	0,294/0,170	0,324/0,187	0,362/0,211	0,391/0,227
3	0,060/0,035	0,090/0,052	0,108/0,062	0,123/0,071	0,147/0,085	0,149/0,986	0,170/0,098	0,190/0,110	0,209/0,120	0,225/0,130	0,249/0,144	0,280/0,162	0,301/0,174
4	0,052/0,029	0,076/0,044	0,090/0,052	0,104/0,060	0,124/0,072	0,126/0,073	0,144/0,083	0,161/0,093	0,176/0,102	0,190/0,110	0,210/0,121	0,236/0,136	0,254/0,147
5			0,080/0,046	0,091/0,053	0,110/0,063	0,111/0,064	0,126/0,073	0,141/0,082	0,155/0,089	0,167/0,097	0,185/0,107	0,236/0,136	0,224/0,129
6				0,083/0,048	0,099/0,057	0,100/0,058	0,114/0,066	0,128/0,074	0,140/0,081	0,151/0,087	0,167/0,096	0,188/0,108	0,202/0,117
7						0,092/0,053	0,105/0,061	0,118/0,068	0,129/0,074	0,139/0,080	0,154/0,089	0,173/0,100	0,186/0,107
8						0,087/0,049	0,098/0,057	0,109/0,063	0,120/0,069	0,129/0,075	0,143/0,083	0,161/0,093	0,173/0,100
9								0,103/0,059	0,113/0,065	0,122/0,070	0,134/0,078	0,151/0,087	0,163/0,094
10								0,098/0,056	0,106/0,061	0,115/0,066	0,127/0,073	0,143/0,082	0,154/0,089
11									0,101/0,058	0,109/0,063	0,121/0,070	0,136/0,078	0,146/0,084
12									0,097/0,056	0,105/0,060	0,115/0,067	0,130/0,075	0,140/0,081
13										0,100/0,058	0,111/0,064	0,125/0,072	0,134/0,077
14										0,097/0,056	0,107/0,061	0,120/0,069	0,129/0,074
15											0,102/0,059	0,116/0,067	0,124/0,072
16													0,120/0,069

Metric ISO, Internal Thread Cutting

thread pitch P (mm)	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00
depth h1	0,271	0,406	0,541	0,677	0,812	0,947	1,083	1,353	1,624	1,894	2,165	2,436	2,706
number of passes	4	4	5	6	6	8	8	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,108/-	0,162/-	0,182/-	0,196/-	0,235/-	0,212/-	0,243/-	0,243/-	0,263/-	0,277/-	0,261/-	0,269/-	0,277/-
2	0,067/0,039	0,102/0,058	0,120/0,069	0,137/0,079	0,165/0,095	0,166/0,096	0,190/0,110	0,213/0,123	0,243/0,140	0,272/0,157	0,288/0,166	0,313/0,180	0,336/0,194
3	0,052/0,030	0,077/0,045	0,092/0,053	0,105/0,061	0,126/0,073	0,128/0,074	0,146/0,084	0,163/0,094	0,187/0,108	0,209/0,120	0,221/0,127	0,240/0,138	0,258/0,149
4	0,044/0,025	0,065/0,038	0,078/0,045	0,089/0,051	0,107/0,062	0,108/0,062	0,123/0,071	0,138/0,079	0,157/0,091	0,176/0,102	0,186/0,107	0,202/0,117	0,218/0,126
5			0,069/0,040	0,078/0,045	0,94/0,054	0,095/0,055	0,108/0,063	0,121/0,070	0,139/0,080	0,155/0,089	0,164/0,095	0,178/0,103	0,192/0,111
6				0,072/0,041	0,085/0,049	0,086/0,050	0,098/0,057	0,110/0,063	0,125/0,072	0,140/0,081	0,148/0,086	0,161/0,093	0,173/0,100
7						0,079/0,046	0,090/0,052	0,101/0,058	0,115/0,067	0,129/0,074	0,136/0,079	0,148/0,086	0,159/0,092
8						0,073/0,042	0,084/0,048	0,094/0,054	0,107/0,062	0,120/0,069	0,127/0,073	0,138/0,080	0,148/0,086
9								0,088/0,051	0,101/0,058	0,113/0,065	0,119/0,069	0,129/0,075	0,139/0,080
10								0,082/0,048	0,095/0,055	0,106/0,061	0,113/0,065	0,122/0,071	0,132/0,076
11									0,092/0,052	0,101/0,058	0,107/0,062	0,116/0,067	0,125/0,072
12										0,097/0,056	0,102/0,059	0,111/0,064	0,120/0,069
13											0,098/0,057	0,107/0,062	0,115/0,066
14											0,095/0,055	0,103/0,059	0,111/0,064
15												0,099/0,057	0,107/0,062
16													0,107/0,062

UN Thread, External Thread Cutting

thread pitch TPI	24	20	18	16	14	12	11	10	9	8	7	6	5
depth h1	0,649	0,779	0,866	0,974	1,113	1,299	1,416	1,558	1,731	1,948	2,226	2,597	3,116
number of passes	5	6	6	7	9	9	10	11	12	13	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,206/-	0,210/-	0,233/-	0,226/-	0,196/-	0,229/-	0,220/-	0,214/-	0,210/-	0,211/-	0,213/-	0,218/-	0,229/-
2	0,148/0,086	0,163/0,094	0,181/0,104	0,188/0,109	0,189/0,110	0,222/0,128	0,228/0,132	0,240/0,139	0,256/0,148	0,276/0,160	0,304/0,176	0,343/0,198	0,399/0,230
3	0,114/0,066	0,125/0,072	0,139/0,080	0,145/0,083	0,146/0,084	0,170/0,098	0,176/0,102	0,184/0,106	0,196/0,113	0,212/0,122	0,234/0,135	0,263/0,152	0,306/0,177
4	0,096/0,055	0,105/0,061	0,117/0,068	0,122/0,070	0,123/0,071	0,143/0,083	0,148/0,086	0,155/0,090	0,165/0,095	0,179/0,103	0,197/0,114	0,222/0,128	0,258/0,149
5	0,085/0,049	0,093/0,054	0,103/0,059	0,107/0,062	0,108/0,062	0,126/0,073	0,131/0,075	0,137/0,079	0,146/0,084	0,158/0,091	0,173/0,100	0,195/0,113	0,227/0,131
6		0,084/0,048	0,093/0,054	0,097/0,056	0,098/0,056	0,114/0,066	0,118/0,068	0,124/0,072	0,132/0,076	0,142/0,082	0,157/0,091	0,177/0,102	0,205/0,119
7				0,089/0,052	0,090/0,052	0,105/0,061	0,109/0,063	0,114/0,066	0,121/0,070	0,142/0,082	0,144/0,083	0,163/0,094	0,189/0,109
8					0,084/0,048	0,098/0,056	0,101/0,058	0,106/0,061	0,113/0,065	0,122/0,070	0,134/0,078	0,151/0,087	0,176/0,101
9					0,079/0,045	0,092/0,053	0,095/0,055	0,100/0,057	0,106/0,061	0,114/0,066	0,126/0,073	0,142/0,082	0,165/0,095
10							0,090/0,052	0,094/0,054	0,100/0,058	0,108/0,063	0,119/0,069	0,134/0,078	0,156/0,090
11								0,090/0,052	0,095/0,055	0,103/0,059	0,113/0,065	0,128/0,074	0,149/0,086
12									0,091/0,053	0,098/0,057	0,108/0,063	0,122/0,071	0,142/0,082
13										0,094/0,054	0,104/0,060	0,117/0,068	0,136/0,079
14											0,100/0,058	0,113/0,065	0,131/0,076
15												0,109/0,063	0,126/0,073
16													0,122/0,071

UN Thread, Internal Thread Cutting

thread pitch TPI	24	20	18	16	14	12	11	10	9	8	7	6	5
depth h1	0,573	0,687	0,764	0,860	0,982	1,146	1,250	1,375	1,528	1,719	1,964	2,291	2,750
number of passes	5	6	6	7	8	9	9	10	11	12	13	14	15
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	20,193/-	0,200/-	0,222/-	0,219/-	0,220/-	0,228/-	0,250/-	0,247/-	0,246/-	0,252/-	0,262/-	0,278/-	0,302/-
2	0,127/0,073	0,239/0,081	0,155/0,089	0,161/0,093	0,173/0,100	0,190/0,110	0,207/0,120	0,216/0,125	0,229/0,132	0,247/0,142	0,271/0,156	0,304/0,176	0,353/0,204
3	0,098/0,056	0,107/0,062	0,119/0,069	0,124/0,072	0,132/0,076	0,146/0,084	0,159/0,092	0,166/0,096	0,176/0,101	0,247/0,142	0,208/0,120	0,234/0,135	0,271/0,156
4	0,082/0,048	0,090/0,052	0,100/0,058	0,104/0,060	0,112/0,064	0,123/0,071	0,134/0,077	0,140/0,081	0,148/0,086	0,160/0,092	0,175/0,101	0,197/0,114	0,228/0,132
5	0,073/0,042	0,072/0,041	0,088/0,051	0,092/0,053	0,098/0,057	0,108/0,062	0,118/0,068	0,123/0,071	0,130/0,075	0,141/0,081	0,154/0,089	0,173/0,100	0,201/0,116
6			0,080/0,046	0,083/0,048	0,089/0,051	0,098/0,056	0,107/0,062	0,111/0,064	0,118/0,068	0,127/0,073	0,140/0,081	0,157/0,091	0,182/0,105
7				0,077/0,044	0,082/0,047	0,090/0,052	0,098/0,057	0,102/0,059	0,108/0,063	0,117/0,067	0,128/0,074	0,144/0,083	0,167/0,097
8					0,076/0,044	0,084/0,048	0,091/0,053	0,095/0,055	0,101/0,058	0,109/0,063	0,119/0,069	0,134/0,078	0,156/0,090
9						0,079/0,045	0,086/0,050	0,090/0,052	0,095/0,055	0,102/0,059	0,112/0,065	0,126/0,073	0,146/0,084
10								0,085/0,049	0,090/0,052	0,097/0,056	0,106/0,061	0,119/0,069	0,138/0,080
11									0,085/0,049	0,092/0,053	0,101/0,058	0,113/0,065	0,131/0,076
12										0,088/0,051	0,096/0,056	0,108/0,063	0,126/0,073
13											0,092/0,053	0,104/0,060	0,121/0,070
14												0,100/0,058	0,116/0,067
15													0,112/0,065

NPT Thread, External, and Internal Machining

pitch, Gg/Z	27.0	18.0	14.0	11.5	8.0
depth	0,0750	1,129	1,451	1,767	2,540
number of passes	6	8	10	12	14
	values for flank infeed (X/Z)				
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,19/–	0,22/–	0,240/–	0,24/–	0,255/–
2	0,15/0,087	0,181/0,104	0,200/0,115	0,208/0,120	0,250/0,144
3	0,13/0,075	0,152/0,088	0,170/0,098	0,182/0,105	0,245/0,141
4	0,11/0,063	0,141/0,081	0,150/0,086	0,168/0,097	0,230/0,133
5	0,09/0,052	0,131/0,075	0,140/0,081	0,155/0,089	0,210/0,121
6	0,08/0,046	0,121/0,070	0,130/0,075	0,145/0,084	0,195/0,112
7		0,101/0,058	0,120/0,069	0,138/0,079	0,180/0,104
8		0,082/0,047	0,110/0,063	0,124/0,072	0,175/0,101
9			0,100/0,058	0,117/0,067	0,170/0,098
10			0.091/0,052	0,105/0,060	0,155/0,089
11				0,095/0,055	0,140/0,080
12				0,090/0,052	0,125/0,072
13					0,110/0,063
14					0,100/0,058

BSPT Thread, External, and Internal Machining

pitch, Gg/Z	28	19	14	11
depth	0,581	0,856	1,162	BSPT thread
number of passes	5	6	6	10
	values for flank infeed (X/Z)			
order of passes	X/Z	X/Z	X/Z	X/Z
1	0,179/–	0,223/–	0,222/–	0,214/–
2	0,134/0,070	0,181/0,094	0,213/0,111	0,242/0/0,126
3	0,103/0,054	0,139/0,072	0,163/0,085	0,186/0,097
4	0,087/0,045	0,1171/0,061	0,138/0,072	0,157/0,082
5	0,078/0,040	0,103/0,054	0,121/0,063	0,138/0,072
6		0,093/0,049	0,110/0,057	0,125/0,065
7			0,101/0,052	0,115/0,060
8			0,094/0,049	0,107/0,056
9				0,100/0,052
10				0,095/0,049

Trapezoid Thread to DIN 103, External, and Internal Machining

pitch	24	20	18	16	14
depth	0,573	0,687	0,764	0,860	0,982
number of passes	6	8	10	12	14
	values for flank infeed (X/Z)				
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,240/–	0,250/–	0,260/–	0,265/–	0,285/–
2	0,190/0,051	0,230/0,062	0,245/0,066	0,270/0,072	0,295/0,079
3	0,137/0,037	0,175/0,047	0,220/0,059	0,250/0,067	0,295/0,079
4	0,124/0,033	0,149/0,040	0,200/0,054	0,230/0,062	0,255/0,068
5	0,110/0,029	0,126/0,034	0,175/0,047	0,210/0,056	0,235/0,063
6	0,099/0,027	0,114/0,031	0,160/0,043	0,190/0,051	0,215/0,058
7		0,106/0,028	0,145/0,039	0,175/0,047	0,200/0,054
8		0,100/0,028	0,103/0,035	0,160/0,043	0,185/0,050
9			0,115/0,031	0,145/0,039	0,170/0,046
10			0,100/0,027	0,130/0,035	0,155/0,042
11				0,120/0,032	0,140/0,038
12				0,105/0,028	0,125/0,033
13					0,115/0,031
14					0,100/0,027

Round Thread to DIN 405, External, and Internal Machining

pitch, Gg/Z	10	8	6
depth	1,31	1,63	2,17
number of passes	8	10	12
	values for flank infeed (X/Z)		
order of passes	X/Z	X/Z	X/Z
1	0,210/–	0,220/–	0,206/–
2	0,205/0,055	0,210/0,058	0,250/0,067
3	0,195/0,052	0,200/0,055	0,024/0,064
4	0,180/0,048	0,190/0,051	0,230/0,062
5	0,160/0,042	0,175/0,047	0,215/0,059
6	0,140/0,037	0,160/0,043	0,195/0,54
7	0,115/0,031	0,145/0,039	0,180/0,048
8	0,090/0,024	0,1360/0,035	0,160/0,043
9		0,110/0,029	0,140/0,038
10		0,140/0,038	0,120/0,032
11			0,100/0,027
12			0,080/0,024

Whitworth, External, and Internal Thread Cutting

pitch TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth h1	0,581	0,813	0,813	0,856	1,017	1,355	1,479	1,626	1,807	2,033	2,324	2,711	2,750
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0,179/–	0,211/–	0,223/–	0,196/–	0,223/–	0,226/–	0,246/–	0,236/–	0,230/–	0,255/–	0,195/–	0,197/–	0,204/–
2	0,134/0,070	0,172/0,089	0,181/0,094	0,186/0,097	0,213/0,111	0,234/0,122	0,255/0133	0,266/0,139	0,282/0,147	0,304/0,158	0,322/0,167	0,361/0,189	0,421/0,219
3	0,104/0,054	0,132/0,069	0,139/0,072	0,142/0,074	0,163/0,085	0,180/0,093	0,197/0,102	0,206/0,106	0,216/0,113	0,233/0,121	0,247/0,128	0,278/0,145	0,323/0,168
4	0,087/0,045	0,111/0,058	0,117/0,061	0,120/0,063	0,138/0,072	0,15/0,079	0,165/0,086	0,172/0,090	0,182/0,095	0,197/0,102	0,208/0,108	0,234/0,122	0,272/0,142
5	0,077/0,040	0,098/0,051	0,103/0,054	0,160/0,055	0,121/0,063	0,133/0,069	0,1450,076	0,152/0,079	0,161/0,084	0,173/0,090	0,183/0,095	0,207/0,108	0,240/0,125
6		0,098/0,051	0,093/0,049	0,096/0,050	0,110/0,057	0,121/0,063	0,131/0,068	0,137/0,071	0,145/0,076	0,157/0,082	0,166/0,086	0,187/0,097	0,217/0,113
7				0,088/0,046	0,101/0,052	0,111/0,058	0,121/0,063	0,126/0,066	0,134/0,070	0,144/0,075	0,152/0,079	0,172/0,089	0,200/0,104
8				0,082/0,043	0,093/0,049	0,103/0,054	0,113/0,059	0,117/0,061	0,124/0,065	0,134/0,070	0,142/0,074	0,160/0,083	0,186/0,097
9						0,97/0,050	0,106/0,055	0,110/0,057	0,117/0,061	0,126/0,066	0,133/0,069	0,150/0,078	0,174/0,091
10								0,104/0,054	0,111/0,058	0,119/0,062	0,126/0,066	0,135/0,074	0,165/0,086
11									0,105/0,055	0,113/0,059	0,120/0,062	0,135/0,070	0,157/0,082
12										0,108/0,056	0,114/0,060	0,129/0,067	0,150/0,078
13											0,110/0,057	0,124/0,064	0,144/0,075
14											0,106/0,055	0,119/0,062	0,138/0,072
15												,115/0,060	0,133/0,069
16													0,129/0,067

Multitooth Threads, Internal

	ISO metric						ISO UN					Whitworth	NPT		
type	3M	2M	3M	2M	3M	2M	2M	3M	2M	3M	2M	2M	2M	3M	2M
pitch (mm)	1,0	1,5	1,5	2,0	2,0	3,0	—	—	—	—	—	—	—	—	—
TPI	—	—	—	—	—	—	16	16	12	12	8	11	11.5	11.5	8
total depth	0,609	0,838	0,838	11,684	11,684	1,778	0,939	0,939	12,446	12,446	18,796	15,748	17,526	17,526	2,540
1	0,330	0,381	0,508	0,508	0,711	0,558	0,431	0,558	0,558	0,762	0,584	0,736	0,584	0,812	0,889
2	0,279	0,254	0,330	0,381	0,457	0,482	0,304	0,381	0,406	0,482	0,508	0,482	0,508	0,558	0,635
3	—	0,203	—	0,279	—	0,431	0,203	—	0,279	—	0,431	0,355	0,355	0,381	0,558
4	—	—	—	—	—	0,304	—	—	—	—	0,355	—	0,304	—	0,457

Recommendations for Steel Workpieces (<300 BHN)

catalogue number	insert size	TPI profile	total depth — on radius		
			1st pass	2nd pass	3rd pass
NTC-8R/L8EM	8	8 UN	1,21	16,25	2,00
NTC-8R/L8IM	8	8 UN	1,19	15,36	1,88
NTC-8R/L10EM	8	10 UN	0,92	1,27	1,60
NTC-8R/L10IM	8	10 UN	0,90	12,06	1,52
NTC-8R/L12EM	8	12 UN	0,76	10,41	1,32
NTC-8R/L12IM	8	12 UN	0,76	0,93	1,20
NTC-8R/L14EM	8	14 UN	0,68	0,95	1,12
NTC-8R/L14IM	8	14 UN	0,60	0,78	1,04
NTC-8R/L16EM	8	16 UN	0,58	0,81	0,96
NTC-8R/L16IM	8	16 UN	0,50	0,68	0,93
NTC-8R/L18EM	8	18 UN	0,48	0,66	0,86
NTC-8R/L18IM	8	18 UN	0,48	0,60	0,83
NDC-68RDR/L-75M	8	8 round	1,47	1,65	1,85
NDC-61RDR/L-75M	8	10 round	1,11	1,29	1,45
NDC-88RDRD/L-75M	8	8 round	1,29	1,75	1,85
NDC-88VR/L-75M	8	8 NPT	1,01	1,72	2,45
NDC-8115VR/L-75M	8	11.5 NPT	0,96	1,37	1,70
NDN-814VR/L-75M	8	14 NPT	0,96	1,22	1,36

Recommendations for Steel Workpieces (<300 BHN)

catalogue number	insert size	TPI profile	total depth — on radius		
			1st pass	2nd pass	3rd pass
NTC-8R/L8EM	8	8 UN	1,21	1,63	2,00
NTC-8R/L8IM	8	8 UN	1,19	1,55	1,88
NTC-8R/L10EM	8	10 UN	0,92	1,27	1,60
NTC-8R/L10IM	8	10 UN	0,90	1,22	1,52
NTC-8R/L12EM	8	12 UN	0,76	1,04	1,32
NTC-8R/L12IM	8	12 UN	0,76	0,93	1,20
NTC-8R/L14EM	8	14 UN	0,68	0,95	1,12
NTC-8R/L14IM	8	14 UN	0,60	0,78	1,04
NTC-8R/L16EM	8	16 UN	0,58	0,81	0,96
NTC-8R/L16IM	8	16 UN	0,50	0,68	0,93
NTC-8R/L18EM	8	18 UN	0,48	0,66	0,86
NTC-8R/L18IM	8	18 UN	0,48	0,60	0,83
NDC-68RDR/L-75M	8	8 round	1,47	1,65	1,85
NDC-61RDR/L-75M	8	10 round	1,11	1,29	1,45
NDC-88RDRD/L-75M	8	8 round	1,29	1,75	1,85
NDC-88VR/L-75M	8	8 NPT	1,01	1,72	2,45
NDC-8115VR/L-75M	8	11.5 NPT	0,96	1,37	1,70
NDN-814VR/L-75M	8	14 NPT	0,96	1,22	1,36

ACME, External

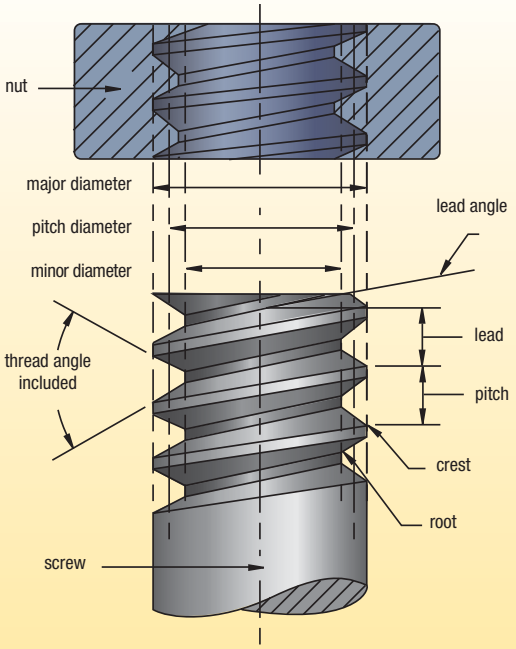
pitch, TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth	0.023	0.032	0.032	0.034	0.04	0.053	0.058	0.064	0.071	0.08	0.091	0.107	0.128
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0.9906	1.0414	1.27	1.6002	1.8796	2.413	2.8448	3.5052	4.572	6.731	0.2032/-	0.2032/-	0.2032/-
2	0.2286	0.2032	0.2286	0.254	0.254	0.2794	0.3048	0.3302	0.4826	0.7112	0.3302/ 0.1778	0.3556/ 0.1778	0.4318/ 0.2286
3	0.2286	0.2032	0.2286	0.2286	0.254	0.2794	0.2794	0.3048	0.4572	0.6604	0.254/ 0.127	0.2794/ 0.1524	0.3302/ 0.1778
4	0.1778	0.1778	0.1778	0.2286	0.2286	0.254	0.254	0.2794	0.4064	0.5842	0.2032/ 0.1016	0.2286/ 0.127	0.2794/ 0.1524
5	0.1524	0.1524	0.1778	0.1778	0.1778	0.2286	0.254	0.2794	0.381	0.5588	0.1778/ 0.1016	0.2032/ 0.1016	0.2286/ 0.127
6	0.127	0.127	0.127	0.1524	0.1524	0.2032	0.2286	0.254	0.3302	0.4826	0.1778/ 0.0762	0.1778/ 0.1016	0.2286/ 0.1016
7	0.0762	0.1016	0.127	0.127	0.127	0.1778	0.2032	0.254	0.2794	0.4318	0.1524/ 0.0762	0.1778/ 0.1016	0.2032/ 0.1016
8	0.0762	0.1016	0.127	0.127	0.1524	0.1778	0.2286	0.2794	0.381	0.1524/ 0.0762	0.1524/ 0.0762	0.1778/ 0.1016	
9	0.1016	0.1016	0.127	0.1524	0.1778	0.2032	0.2286	0.3302	0.127/ 0.0762	0.1524/ 0.0762	0.1778/ 0.1016		
10	0.1016	0.127	0.1524	0.1778	0.2032	0.2286	0.3302	0.127/ 0.0762	0.127/ 0.0762	0.1524/ 0.0762			
11	0.1016	0.1016	0.1524	0.1524	0.1778	0.2286	0.2794	0.127/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762			
12	0.1016	0.1524	0.1524	0.1778	0.2032	0.2794	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762				
13	0.1016	0.127	0.1524	0.1524	0.1778	0.254	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762				
14	0.1016	0.127	0.1524	0.1778	0.2286	0.1016/ 0.0508	0.127/ 0.0508	0.127/ 0.0762					
15	0.1016	0.1524	0.1778	0.2286	0.127/ 0.0508	0.127/ 0.0762							
16	0.1016	0.1524	0.1524	0.2032	0.127/ 0.0762								
17	0.1016	0.127	0.1778	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762							
18	0.1016	0.127	0.1778	0.1016/ 0.0508	0.127/ 0.0508	0.127/ 0.0762							
19	0.127	0.1524	0.127/ 0.0508	0.127/ 0.0762									
20	0.1524	0.127/ 0.0762											

ACME, Internal

pitch, TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth	0.023	0.032	0.032	0.034	0.04	0.053	0.058	0.064	0.071	0.08	0.091	0.107	0.128
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	0.9906	1.0414	1.27	1.6002	1.8796	2.413	2.8448	3.5052	4.572	6.731	0.2032/-	0.2032/-	0.2032/-
2	0.2286	0.2032	0.2286	0.254	0.254	0.2794	0.3048	0.3302	0.4826	0.7112	0.3302/ 0.1778	0.3556/ 0.1778	0.4318/ 0.2286
3	0.2286	0.2032	0.2286	0.2286	0.254	0.2794	0.2794	0.3048	0.4572	0.6604	0.254/ 0.127	0.2794/ 0.1524	0.3302/ 0.1778
4	0.1778	0.1778	0.1778	0.2286	0.2286	0.254	0.254	0.2794	0.4064	0.5842	0.2032/ 0.1016	0.2286/ 0.127	0.2794/ 0.1524
5	0.1524	0.1524	0.1778	0.1778	0.1778	0.2286	0.254	0.2794	0.381	0.5588	0.1778/ 0.1016	0.2032/ 0.1016	0.2286/ 0.127
6	0.127	0.127	0.127	0.1524	0.1524	0.2032	0.2286	0.254	0.3302	0.4826	0.1778/ 0.0762	0.1778/ 0.1016	0.2286/ 0.1016
7	0.0762	0.1016	0.127	0.127	0.127	0.1778	0.2032	0.254	0.2794	0.4318	0.1524/ 0.0762	0.1778/ 0.1016	0.2032/ 0.1016
8	0.0762	0.1016	0.127	0.127	0.1524	0.1778	0.2286	0.2794	0.381	0.1524/ 0.0762	0.1524/ 0.0762	0.1778/ 0.1016	
9	0.1016	0.1016	0.127	0.1524	0.1778	0.2032	0.2286	0.3302	0.127/ 0.0762	0.1524/ 0.0762	0.1778/ 0.1016		
10	0.1016	0.127	0.1524	0.1778	0.2032	0.2286	0.3302	0.127/ 0.0762	0.127/ 0.0762	0.1524/ 0.0762			
11	0.1016	0.1016	0.1524	0.1524	0.1778	0.2286	0.2794	0.127/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762			
12	0.1016	0.1524	0.1524	0.1778	0.2032	0.2794	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762				
13	0.1016	0.127	0.1524	0.1524	0.1778	0.254	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762				
14	0.1016	0.127	0.1524	0.1778	0.2286	0.1016/ 0.0508	0.127/ 0.0508	0.127/ 0.0762					
15	0.1016	0.1524	0.1778	0.2286	0.127/ 0.0508	0.127/ 0.0762							
16	0.1016	0.1524	0.1524	0.2032	0.127/ 0.0762								
17	0.1016	0.127	0.1778	0.1016/ 0.0508	0.127/ 0.0762	0.1524/ 0.0762							
18	0.1016	0.127	0.1778	0.1016/ 0.0508	0.127/ 0.0508	0.127/ 0.0762							
19	0.127	0.1524	0.127/ 0.0508	0.127/ 0.0762									
20	0.1524	0.127/ 0.0762											

Screw Thread Definitions

1. **Major diameter —** The largest diameter of a straight screw thread. This applies to both internal and external threads.
2. **Pitch diameter —** On a straight thread, it is the diameter which passes through the thread profiles at such points which make the thread width of the groove equal to one-half of the basic pitch. On a "perfect thread," this occurs at the point where the widths of the thread and groove are equal.
3. **Thread angle (included) —** The included angle between the individual flanks of the thread form.
4. **Minor diameter —** The smallest diameter of a straight screw thread. This applies to both internal and external threads.
5. **Lead angle —** On a straight thread, the lead angle is the angle created by the helix of the thread at the pitch diameter with a plane perpendicular to the axis.
6. **Lead —** The distance a screw thread advances axially in one revolution. On a single start, the pitch and lead are identical. The lead is equal to the pitch times the number of starts.
7. **Pitch —** The distance from a point on a screw thread to a corresponding point on the next thread measured parallel to the thread axis.
8. **Crest —** The outer most surface of the thread form which joins the flanks.
9. **Root —** The inner most surface of the thread form which joins the flanks.

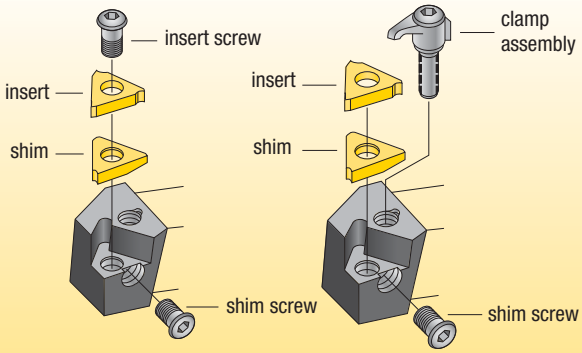


NOTE: Threads per inch (TPI) not shown:
The number of threads per inch measured axially.
The terms pitch and TPI are often used interchangeably.
TPI = 1/pitch

LT Threading Toolholders

In all cases, the proper shim selection is important.

Kennametal toolholders are supplied with a shim for a 1,5° lead angle. Change the shim if your thread is more than 1° different. For more details on proper shim selections, see pages E101–E103.



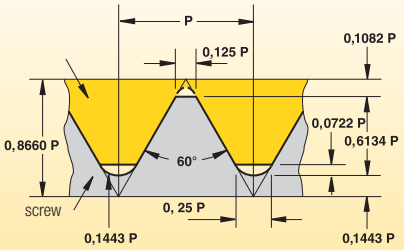
LT Threading Shim Catalogue Numbering System

1-1/4	8	UNX	2	A	LH	(21)
Thread Size	Number of threads per inch	Thread form, series, and tolerance formulation symbol	Thread Class **1** = Allowance and tolerance **2** = Allowance and tolerance **3** = Tolerance only **4** = Interference fit	**A** = External thread **B** = Internal thread	**LH** = Left-hand thread (threads are right hand unless specified)	Thread Gaging System **21** = **22** = Per ANSI B1.3 **23** =

NOTE: For shims and shim kits, see pages E101–E103.

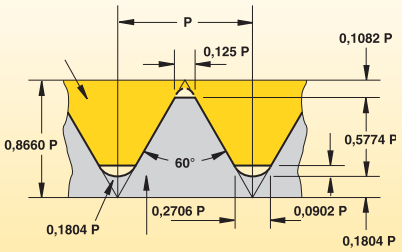
Common Thread Forms

ISO M (Metric) and UN (Unified National)



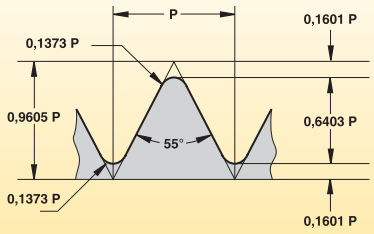
Use: All branches of mechanical industry.

UNJ (controlled root radius)



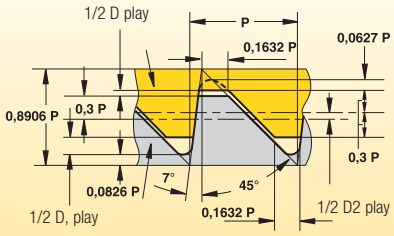
Use: Aircraft and space industry.

Whitworth (BSW)



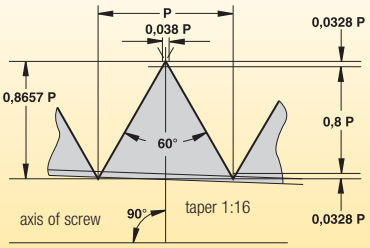
Use: Fittings and pipe couplings for gas, water, and sewer lines (replaced by ISO).

American Buttress



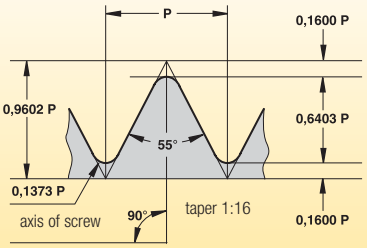
Use: Fittings and pipe couplings.

NPT (American National Pipe Thread)



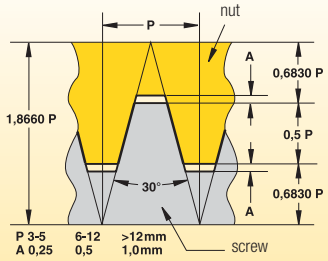
Use: Fittings and pipe couplings.

BSPT (British Standard Pipe Thread)



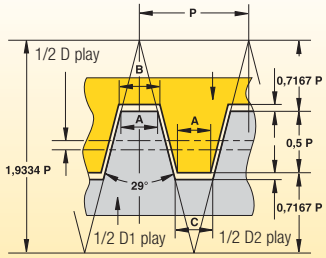
Use: Pipe thread for steam, gas, and water lines.

TR DIN 103



Use: Mechanical industry for motion transmission screws.

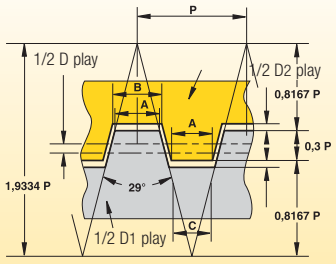
Acme



A = 0,0307 P
B = 0,3707 P—x D play
C = 0,3707 P—(D1 play—D2 play)

Use: Acme-General is used in mechanical industry for motion transmission screws.

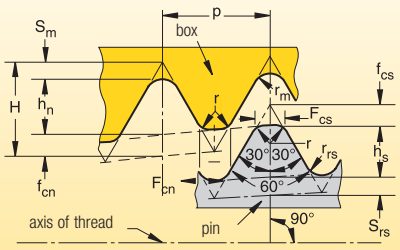
Acme, truncated (Stub)



A = 0,4224 P
B = 0,4224 P—x D play
C = 0,4224 P—(D1 play—D2 play)

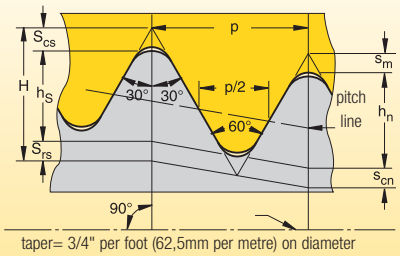
Use: Where normal Acme is too deep.

API Rotary Shoulder Connection



NOTE: Taper shown exaggerated.

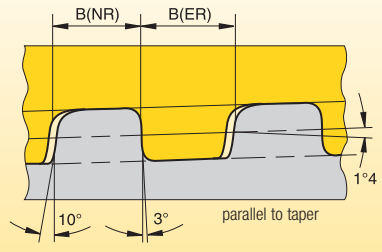
API Casing and Tubing Round Thread Form



taper= 3/4" per foot (62,5mm per metre) on diameter

NOTE: Taper shown exaggerated.

API Buttress



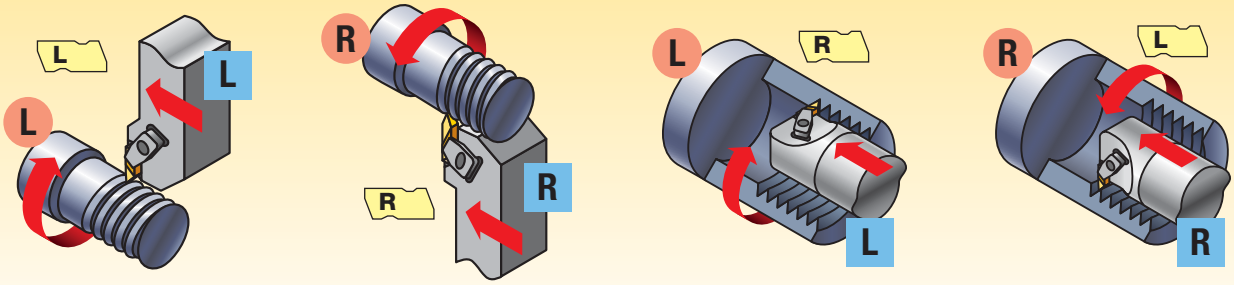
Threading Method and Hand of Tooling

Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

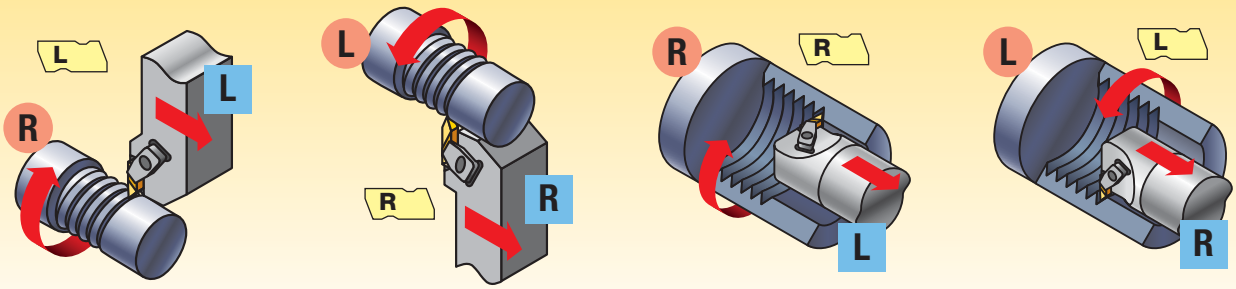
hand of thread | hand of toolholder | hand of insert

Feed Direction Toward the Chuck • Standard Helix



external left-hand thread | external right-hand thread | internal left-hand thread | internal right-hand thread

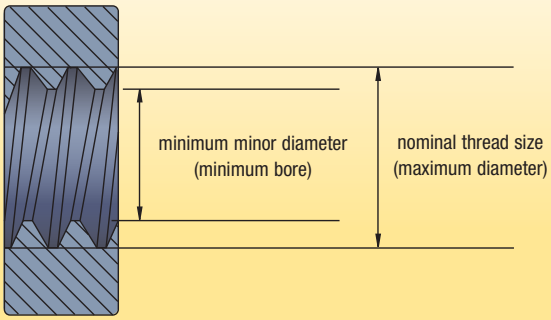
Feed Direction Away from the Chuck • Reverse Helix



external right-hand thread | external left-hand thread | internal right-hand thread | internal left-hand thread

NOTE: Top Notch threading bars require opposite hand insert and clamp.
Right-hand bar requires left-hand insert and clamp.
Left-hand bar requires right-hand insert and clamp.

The following charts list the largest thread pitch that can be applied on internal applications using Top Notch threading inserts for 60° V-threading and Acme threading.



Inch-Sized 60° V-Threading Limits

internal threading limitations
NT-1, NT-2 V-threading inserts

TPI	nominal thread size		minimum minor diameter (inch)	
	NT-1	NT-2	NT-1	NT-2
6	1-7/8	—	1.695	—
7	1-3/4	—	1.595	—
8	1-5/8	—	1.490	—
9	1-9/16	—	1.442	—
10	1-1/2	15/16	1.392	.830
11	1-7/16	15/16	1.339	.830
11-1/2	1-3/8	15/16	1.281	.830
12	1-3/8	9/16	1.285	.472
13	1-5/16	9/16	1.229	.472
14	1-1/4	9/16	1.173	.472
16	1-1/4	9/16	1.182	.472
18	1-1/8	9/16	1.065	.472
20	1-1/8	1/2	1.071	.440
24*	1-1/16	1/2	1.017	.440

*Twenty-four threads per inch and finer can be cut with an NT-2 insert provided the minor diameter is 25mm or larger (11,18mm or larger with NT-1).

internal threading limitations
NT-3, NT-4 V-threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
4**	3	2.729
4-1/2**	2-7/8	2.634
5	2-3/4	2.534
6	2-1/2	2.320
7	2-1/4	2.095
8	2	1.865
9	1-15/16	1.817
10	1-7/8	1.767
11	1-13/16	1.714
11-1/2	1-3/4	1.656
12	1-3/4	1.660
13	1-5/8	1.542
14	1-9/16	1.485
16*	1-7/16	1.370

*Sixteen threads per inch and finer can be cut provided minor diameter is 34,8mm or larger.
**NT-4 insert only.

Metric-sized 60° V-Threading Limits

internal threading limitations
NT-1, NT-2 60° V-threading inserts

TPI	nominal thread size		minimum thread diameter (mm)	
	NT-1	NT-2	NT-1	NT-2
4,00	M48 x 4.00	—	43,67	—
3,00	M42 x 3.00	—	38,75	—
2,50	M39 x 2.50	M24 x 2,50	36,29	21,29
2,00	M33 x 2.00	M15 x 2,00	30,84	12,84
1,75	M32 x 1.75	M15 x 1,75	30,11	13,11
1,50	M32 x 1.50	M15 x 1,50	30,38	13,38
1,25	M29 x 1.29	M14 x 1,25	27,65	12,65
1,00*	M27 x 1.00	M14 x 1,00	25,92	12,92
0,75	M22 x 0.75	M12 x 0,75	21,19	11,19

*Thread pitch of 1mm and less can be cut with an NT-2 insert provided the core thread diameter is 25mm or larger (11mm or larger with NT-1).

internal threading limitations
NT-3, NT-4 60° V-threading inserts

TP	nominal thread size	minimum thread diameter (mm)
6,00**	M76 x 6.00	69,50
5,50**	M73 x 5.50	67,05
5,00	M70 x 5.00	64,59
4,00	M64 x 4.00	59,67
3,00	M52 x 3.00	48,75
2,50	M48 x 2.50	45,29
2,00	M42 x 2.00	39,84
1,75	M40 x 1.75	38,11
1,50*	M38 x 1.50	36,38

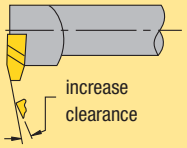
*Thread pitch of 1,5mm and less can be cut provided core thread diameter is 35mm or larger.
**NT-4-insert only.

Acme Threading Limits

internal threading limitations
NA and NAS-2, -3, -4, and -6 Acme threading inserts

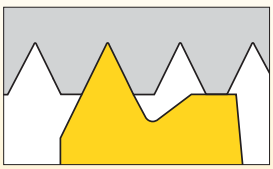
TPI	nominal thread size	minimum thread diameter	
		NT-1	NT-2
2**	5	4.500	114,3
2-1/2**	4-1/2	4.100	104,1
3**	4	3.665	93,1
4	3-1/2	3.250	82,6
5	3	2.800	71,1
6	2-1/2	2.333	59,3
8	2-1/4	2.125	54,0
10	2	1.900	48,3
12	1-3/4	1.667	42,4
14	1-5/8	1.554	39,5
16*	1-1/2	1.438	36,5

*Sixteen threads per inch and finer can be cut provided minor diameter is 36,5mm (1.438") or larger.
**NA-6 insert only.



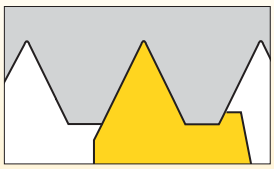
Additional secondary clearance can be ground on leading edge of insert to provide sufficient helical clearance for machining coarser threads and multistart threads. Modified standard inserts may be furnished for machining threads outside of the limits shown.

60° V-Thread Crest Turning Application Data



feed direction

NTC crest turning insert for 12 threads per inch and finer (P ≤2mm)



feed direction

NTC crest turning insert for 11 threads per inch and coarser (P ≥3mm)

"J" thread note for catalogue

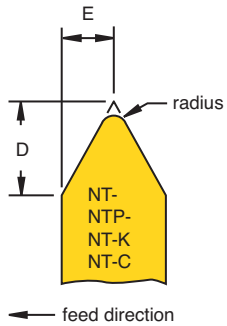
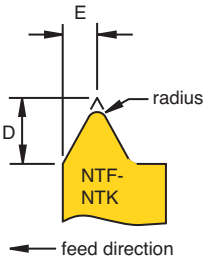
The controlled root radius thread form (SAE8879C) is defined for the external thread only. To machine the corresponding internal thread, choose any insert that will cut a unified class 2B thread, then bore the minor diameter to size. Refer to SAE8879C and MIL-S-8879C and SAEAS8879D for the correct "J" thread minor diameter values.

Controlled Root Radius Specifications for UNJ Threads

insert catalogue number	nose radius on insert	thread radius per MIL-S-8879A
NJ-3020R/L8 NJP-3020R/L8	0,477/0,502	0,477/0,574
NJ-3014R/L12 NJP-3014R/L12	0,317/0,342	0,317/0,381
NJ-3010R/L16 NJP-3010R/L16	0,238/0,264	0,238/0,287
NJF-3012R/L14 NJK-3012R/L14	0,271/0,297	0,271/0,327
NJF-3010R/L16 NJK-3010R/L16	0,238/0,264	0,238/0,287
NJF-3009R/L18 NJK-3009R/L18	0,210/0,236	0,210/0,254
NJF-3008R/L20 NJK-3008R/L20	0,190/0,215	0,190/0,228
NJF-3007R/L24 NJK-3007R/L24	0,160/0,185	0,160/0,190
NJF-3006R/L28 NJK-3006R/L28	0,137/0,162	0,137/0,162
NJF-3005R/L32 NJK-3005R/L32	0,119/0,142	0,119/0,142

NOTE: NTC inserts automatically control root to crest dimensions. Therefore, in setting up threading operations with NTC inserts, check the O.D. or I.D. at the thread crest for correct dimensions.

60° V-Thread Application Data

insert description	insert	D** (mm)	E** (mm)	recommended TP*		recommended TPI*	
				external	internal	external	internal
	NT-1	1,90	1,11	—	1,00–2,00	—	24–12
	NT-2	28,70	1,90	0,70–3,00	1,25–3,50	36–8	20–7
	NT-2-K	28,70	1,90	0,70–3,00	1,25–3,50	36–8	20–7
	NTF-2	15,75	1,01	0,60–1,75	1,00–2,00	44–14	24–12
	NTK-2	15,75	1,01	0,60–1,75	1,00–2,00	44–14	24–12
	NTP-2	28,70	1,90	0,70–3,0	1,25–3,50	36–8	20–7
	NT-3	37,59	2,46	1,25–4,00	2,00–5,00	20–6	12–5
	NT-3-K	37,59	2,46	1,25–4,00	2,00–5,00	20–6	12–5
	NT-3-C	37,59	2,46	2,50–4,00	4,00 (only)	11–6	6 (only)
	NT-3-CK	37,59	2,46	2,50–4,00	4,00 (only)	11–6	6 (only)
	NTF-3	21,08	1,37	0,60–2,50	1,00–2,50	44–10	24–9
	NTK-3	21,08	1,37	0,60–2,50	1,00–2,50	44–10	24–9
	NTP-3	37,59	2,46	1,25–4,00	2,00–5,00	20–6	12–5
	NT-4	49,78	3,22	1,25–6,25	2,00–6,25	20–4	12–4
	NT-4-K	49,78	3,22	1,25–6,25	2,00–6,25	20–4	12–4
	NT-4-C	49,78	3,22	2,50–5,50	4,00–5,50	11–4 1/2	6–4 1/2
	NT-4-CK	49,78	3,22	2,50–5,50	4,00–5,50	11–4 1/2	6–4 1/2
	NTF-4	21,08	1,37	0,60–2,50	1,00–2,50	44–10	24–9
	NTK-4	21,08	1,37	0,60–2,50	1,00–2,50	44–10	24–9
	NTP-4	49,78	3,22	1,25–6,25	2,00–6,25	20–4	12–4

*Based on maximum insert radius size and class 2A and 2B thread specifications.
**For metric D and E dimensions, multiply by 25,4.

API Thread Forms • Insert Applications Chart for API Rotary Shouldered Connections

thread form	Kennametal insert		tool joint application	minimum box size*
	cresting	non-cresting		
V-.038R 2" TPF 4 TPI	NDC-4038R/L2 4-E/IR4API382	ND-3038R/L	2-3/8 API internal flush 2-7/8 API internal flush 3-1/2 API internal flush 4 API internal flush 4-1/2 API internal flush 5-1/2 API internal flush 6-5/8 API internal flush 4 API full hole API #23, API #26, API #31, API #35, API #38, API #40, API #44, API #46, API #50	API #31 2-7/8 IF
V-.038R 3" TPF 4 TPI	NDC-4038R/L3 4-E/IR4API383	ND-3038R/L	API #56 API #61 API #70 API #77	API #56
V-.050 2" TPF 4 TPI	NDC-4050R/L2 4-E/IRAPI502	ND-4050R/L	5-1/2 API full hole 6-5/8 API regular 6-5/8 API full hole	5-1/2 API full hole
V-.050 3" TPF 4 TPI	NDC-4050R/L3 4-E/IR4API503	ND-4050R/L	5-1/2 API regular 7-5/8 API regular 8-5/8 API regular	5-1/2 API regular
V-.040 3" TPF 5 TPI	NDC-3040R/L3 NDC-4040R/L3 4-E/IR5API403	ND-3040R/L ND-4040R/L	2-3/8 API regular 2-7/8 API regular 3-1/2 API regular 4-1/2 API regular	3-1/2 API regular

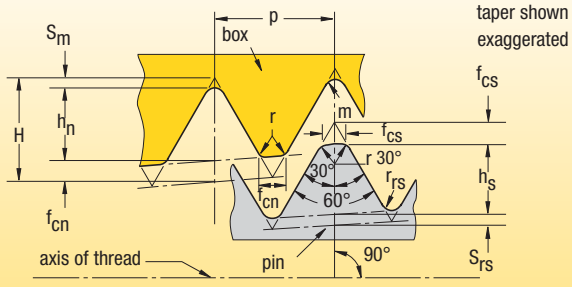
*Minimum box size that can be threaded with a standard Top Notch insert due to minimum bore equipment.

API Thread Forms • Product Thread Dimensions • Rotary Shouldered Connections (Inch)

thread form	taper inch per ft	thread height, not truncated H	thread height, truncated $h_n=h_s$	root truncation $S_m=S_{rs}$ $f_m=f_{rs}$	crest truncation $f_{cn}=f_{cs}$	width of flat		root radius $r_m=r_{rs}$	radius at thread corners r	pitch p
						crest $f_{cn}=f_{cs}$	crest $f_m=f_{rs}$			
V-.038R	2	.216005	.121844	.038000	.056161	.065	—	.038	.015	.250
V-.038R	3	.215379	.121381	.038000	.055998	.065	—	.038	.015	
V-.040	3	.172303	.117842	.020000	.034461	.040	—	.020	.015	.250
V-.050	3	.215379	.147303	.025000	.043076	.050	—	.025	.015	
V-.050	2	.216005	.147804	.025000	.043201	.050	—	.025	.015	.250

NOTE: All dimensions in inches.

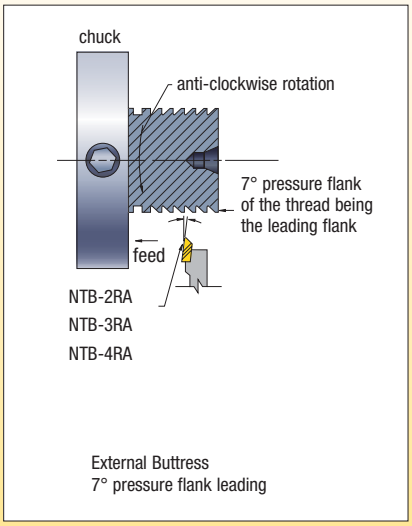
V-.040 and V-.050 Product Thread Form

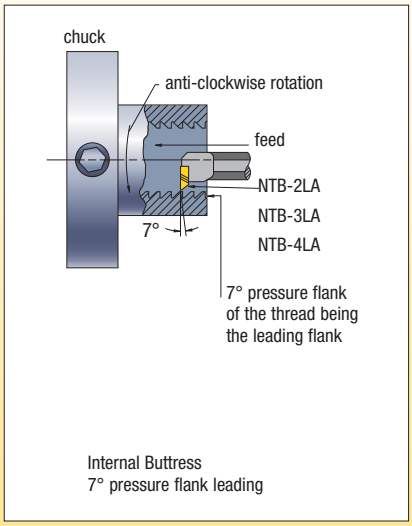


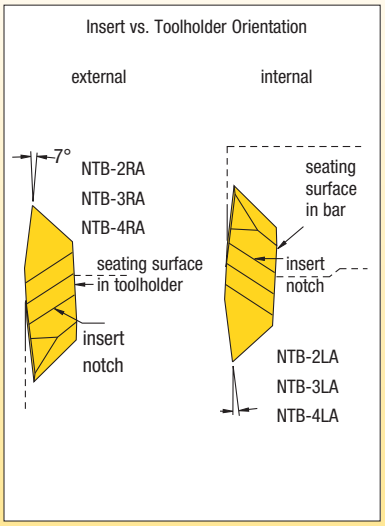
Casing and Tubing Round Thread (Height Dimensions)

thread element		10 TPI p=.1000	8 TPI p=.1250
H	=.866p	.08660	.10825
$H_s = h_n$	=.626p-.007	.05560	.07125
$S_{rs} = S_m$	=.120p+.002	.01400	.01700
$S_{cs} = S_{cn}$	=.120p+.005	.01700	.02000

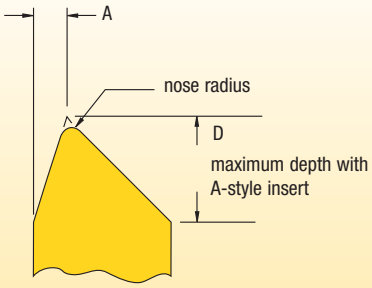
American Buttress (7° Pressure Flank Leading) NTB-A Inserts • Push Type



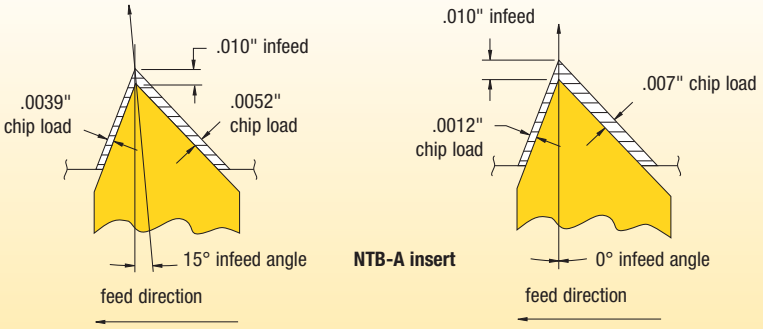




Reference Dimensions



Infeed Angle vs. Chip Load: 7° Pressure Flank Leading



insert	D (inch)	A (inch)	nose radius (inch)	pitch based on maximum radius
NTB-2A	.133	.024	.002–.004	16–20 TPI
NTB-3A	.171	.031	.005–.008	8–16 TPI
NTB-4A	.218	.049	.008–.012	4–6 TPI

NOTE: For balanced chip load, 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
8	1-3/4	1.600
10	1-5/8	1.505
12	1-1/2	1.400
16	1-1/4	1.175
20	1-1/16	1.002

internal threading limitations
NTB-3 and NTB-4A Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
4*	2-1/2	2.200
5	2-1/4	2.010
6	2	1.800
8	1-3/4	1.600
10	1-5/8	1.505
12**	1-1/2	1.400

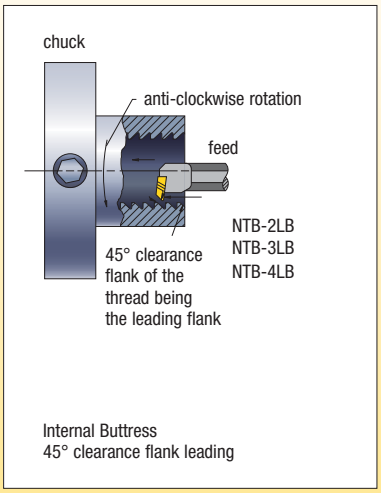
*NTB-4A insert only.
**Can cut 16 or 20 threads per inch provided minor diameter is 1.375" or larger.

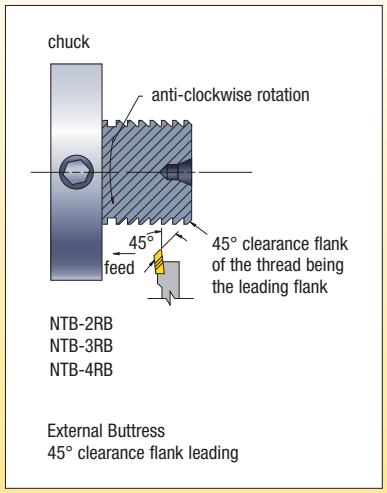
Threads per Inch vs. Maximum Root Radius Chart (Inch)

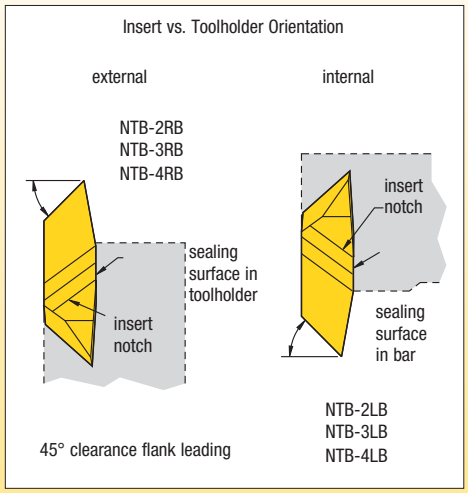
TPI	20	16	12	10	8	6	5	4	3	2-1/2	2	1-1/2	1-1/4	1
maximum root radius	.0036	.0045	.0059	.0071	.0089	0.119	.0143	.0179	.0238	.0286	0.375	.0476	.0572	.0714

NOTE: Special Buttress forms are available upon request.

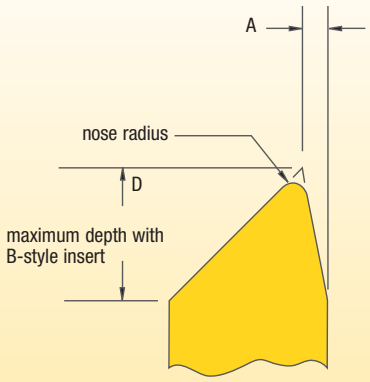
American Buttress (45° Clearance Flank Leading): NTB-B Inserts • PULL-type



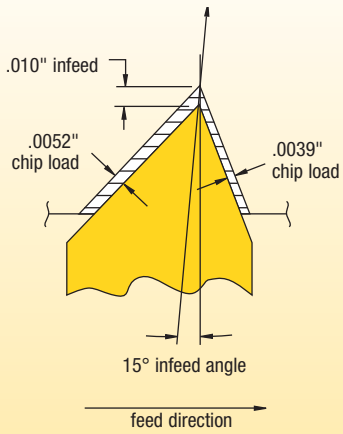


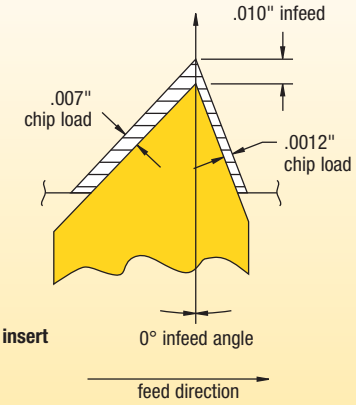


Reference Dimensions



Infeed Angle vs. Chip Load: 45° Clearance Flank Leading





NTB-B insert

insert	D (inch)	A (inch)	nose radius (inch)	pitch based on maximum radius
NTB-2B	.133	.024	.002–.004	16–20 TPI
NTB-3B	.171	.031	.005–.008	8–16 TPI
NTB-4B	.218	.049	.008–.012	4–6 TPI

NOTE: For balanced chip load, a reverse 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2B Buttress threading inserts

TPI	nominal thread size	minimum minor diameter (inch)
8	1-3/4	1.600
10	1-5/8	1.505
12	1-1/2	1.400
16	1-1/4	1.175
20	1-1/16	1.002

internal threading limitations
NTB-3 and NTB-4B Buttress threading inserts

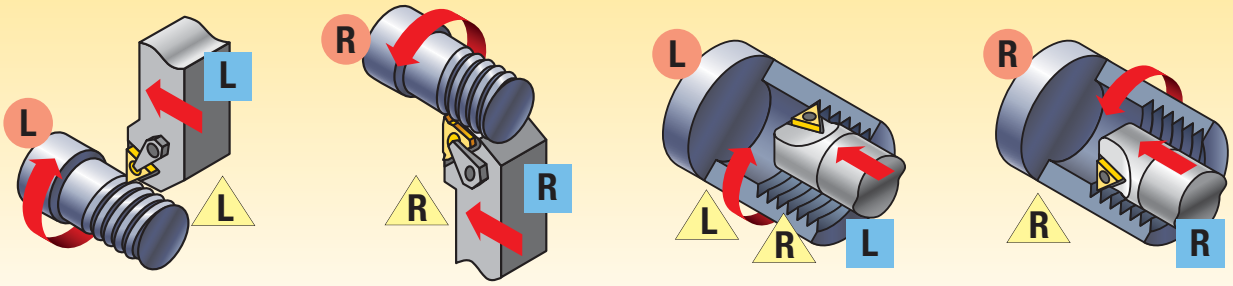
TPI	nominal thread size	minimum minor diameter (inch)
4*	2-7/8	2.575
5	2-3/4	2.510
6	2-3/8	2.175
8	2-1/8	1.975
10	1-7/8	1.755
12	1-5/8	1.525
16	1-1/2	1.407
20	1-7/16	1.378

*NTB-4B insert only.

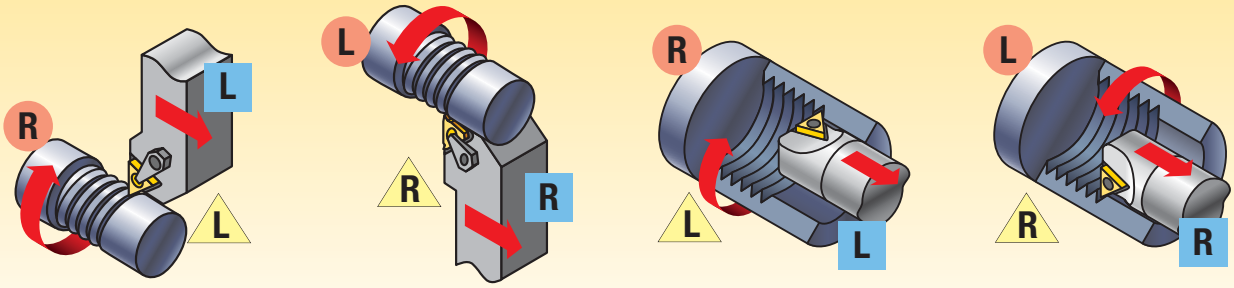
Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

Feed Direction Toward the Chuck • Standard Helix



Feed Direction Away from the Chuck • Reverse Helix



NOTE: Right-hand toolholders and bars use right-hand inserts.
Left-hand toolholders and bars use left-hand inserts.

External Threading Operation Example

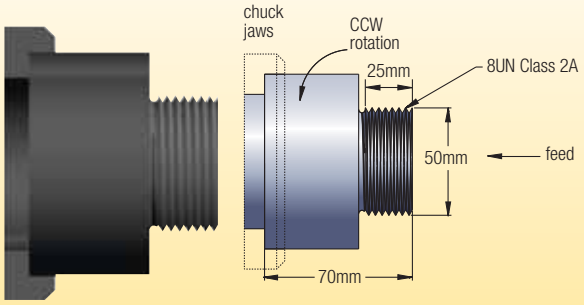
Required Information

From Part Drawing:

material: 316SS, 200 HB
thread form: 8UN Class 2A
operation: external threading
pitch diameter: 50mm x 25mm deep

From Machine Setup Data:

tooling: 20mm x 20mm
spindle rotation: anti-clockwise
feed: toward chuck

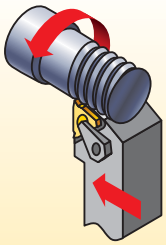


Steps for a Successful Threading Operation

Step 1 • Determine Threading Method

Need to Know:

- Operation (external).
- Spindle rotation (CCW).
  Anti-clockwise rotation.
- Feed direction (toward chuck).
- Right-hand toolholder.
- Right-hand insert (ER).
- Standard helix method.



Step 2 • Select Insert

Need to Know:

- Thread form (8 UN Class 2A).
- Hand of insert (right hand — ER).

Choose the High-Performance Solution

catalogue number	insert size	KC5010
3ER8UN	3"	●

High-Performance Selection

NOTE: Use insert with largest IC available.

insert: LT-16ER-8UNCB
grade: KC5010
speed: 150 m/min

Step 3 • Select the Grade and Speed

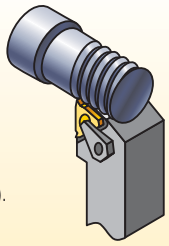
Need to Know:

- Workpiece material (316SS-200HB).
- Operation (external).

Options: Grade and Speed Selection Guidelines

threading operation	stainless steel	
external	general purpose	style
	KC5025	CB
	50–360 m/min	
	high-performance	style
	KC5010	CB
	70–390 m/min	

Step 4 • Select Toolholder



Need to Know:

- External or internal operation (external).
- Pitch diameter to determine minimum bore diameter (N/A).
- Type of tooling — toolholder, boring bar (toolholder).
- Hand of tool (right hand).
- Insert size (16).

Options:

catalogue number	gage insert	shim
LSASR-123	LT-16ER	SM–YE3
LSSR-123	LT-16ER	SM–YE3

First choice: LSASR-123 holder

Step 5 • Select Shim

Need to Know:

- Thread form — TPI or pitch (1mm).
- Pitch diameter (50mm).
- Helix method (standard).
  See LT shim selection chart.

Select SM-YE3 shim

NOTE: The SM-YE3 shim is supplied with the selected toolholder.

NOTE: Optimise your operation by using a constant infeed or the constant volume method with a minimum infeed of .005 and an infeed angle of 29-1/2°.

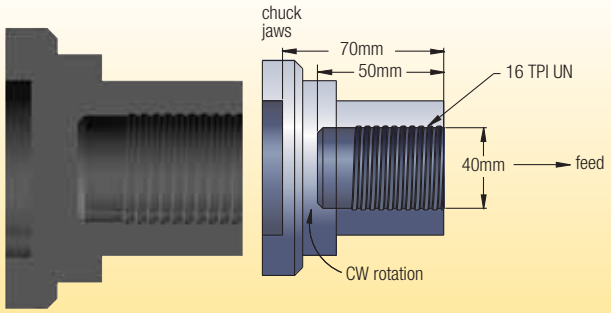
Required Information

From Part Drawing:

material: 4140 steel
thread form: 16 TPI UN
operation: internal threading
pitch diameter: 40mm x 50mm deep

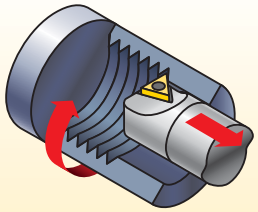
From Machine Setup Data:

tooling: 20mm boring bar
spindle rotation: clockwise
feed: away from chuck



Steps for a Successful Threading Operation

Step 1 • Determine Threading Method



Need to Know:

- Operation (internal).
- Spindle rotation (CW).
  Clockwise rotation.
- Feed direction (away from chuck).
- Left-hand toolholder.
- Left-hand insert (NL).
- Reverse helix method.

Step 2 • Select Insert

Need to Know:

- Thread form (16UN Class 2A).
- Hand of insert (left hand — NL).

Choose the High-Performance Solution

catalogue number	insert size	KC5025
LT-11NL-16UN	1/4"	●
LT-16NL-16UN	3/8"	●

High-Performance Selection

NOTE: Use insert with largest possible IC to go into the bore.

insert: LT-16NL-16UN
grade: KC5025
speed: 130 m/min

Step 3 • Select the Grade and Speed

Need to Know:

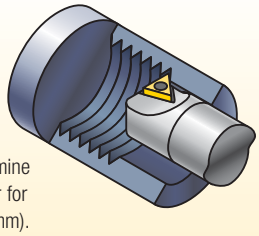
- Workpiece material (4010 steel).
- Operation (internal).

Options: Grade and Speed Selection Guidelines

threading operation	steel
internal	general purpose and high performance
	KC5025
	40–200 m/min

Optimise your operation by using a constant infeed or the constant volume method with a minimum infeed of .005 and an infeed angle of 29-1/2°.

Step 4 • Select Toolholder



Need to Know:

- External or internal operation (internal).
- Pitch diameter to determine minimum bore diameter for internal operations (40mm).
- Type of tooling — toolholder, boring bar (boring bar).
- Hand of tool (left hand).
- Insert size (16).

Options:

catalogue number	insert size	minimum bore diameter	shim
S1212-LSEL3	3"	.90	SM-YE3
S0812-LSEL2	2"	.65	—

First choice: S1212-LSEL3 bar

Step 5 • Select Shim

Need to Know:

- Thread form — TPI or pitch (16 TPI).
- Pitch diameter (40mm).
- Helix method (reverse).
  See LT shim selection chart.

Select SM-YE3-2N shim

NOTE: Shim supplied with selected boring bar is not correct; order correct shim.

LT Threading Shim Selection Guidelines

The following questions must be answered before a successful threading operation can begin:

A — Select your method of thread cutting:
- Machining toward the chuck (standard helix).
- Machining away from the chuck (reverse helix).

B — Select lead angle and choose shim.

C — Select insert and toolholder size.

D — Select insert grade.

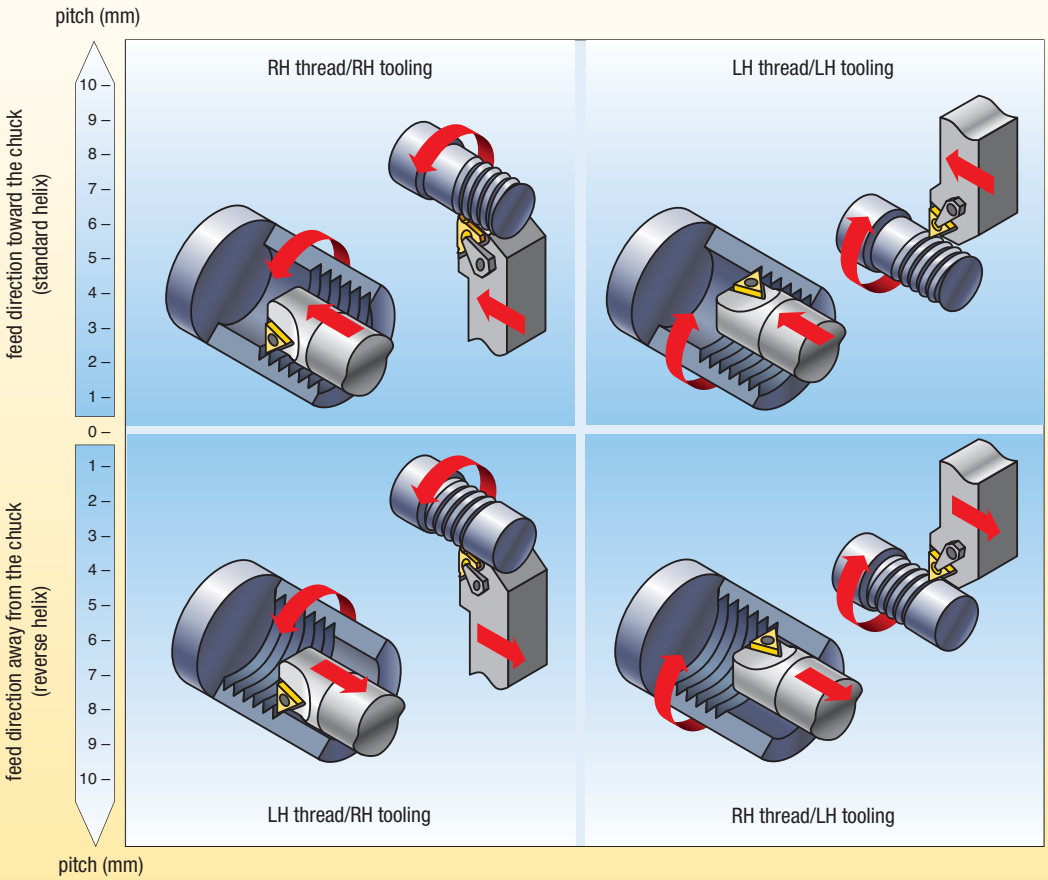
E — Select speed.

F — Select number of thread passes.

G — Select infeed method.

NOTE: When considering method of thread cutting, the part's shape and stability and the flow of chips are determining factors in your decision.

LT Selection Chart



NOTE: For multistart threads, use the lead value instead of the pitch.

Diagram of Thread Lead Angles

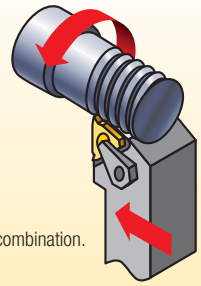
To calculate the lead angle of a given thread, use this formula:

$$\beta = \text{Arctan} \frac{P \bullet S}{\pi D_e}$$

ß = thread lead angle
De = effective pitch diameter of thread wear
P = 1/TPI
TPI = threads per inch
S = number of starts
single-start, lead = pitch
multistart, lead = pitch (x) number of starts

All toolholders are designed with an inclination angle = 1.5°. When turning standard threads with a lead angle of 1–2°, this guarantees adequate clearance at the flanks of the insert's thread tooth. The thread lead angle and the required inclination angle of the insert are given by ß.

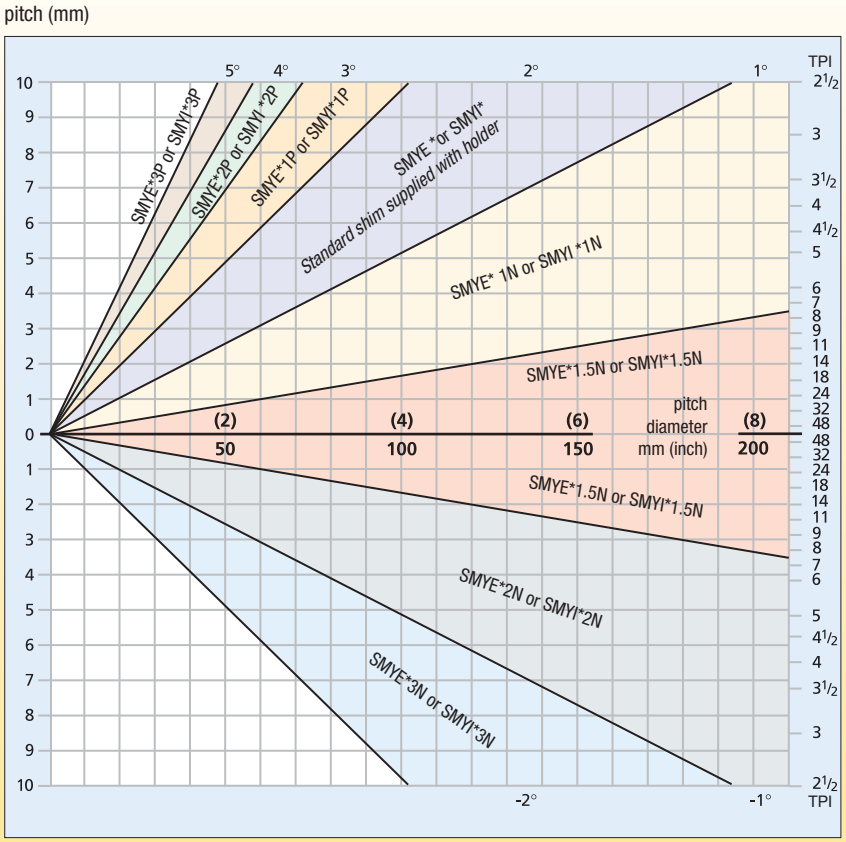
Cutting edge height is constant at every shim and insert combination. All toolholders are supplied with 1-1/2° lead angle.



NOTE: Arctan equals Tan-1 (see chart below for approximate lead angles).

Threading

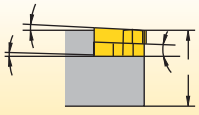
LT Selection Chart



*denotes shim size: 3 = insert size 16 (3/8" D)
4 = insert size 22 (1/2" D)

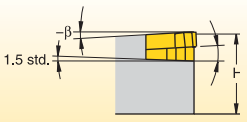
Standard Helix Method:

Used when RH thread is cut with RH tool or LH thread with LH tool.



Reverse Helix Method:

Used when RH thread is cut with LH tool or when LH thread is cut with RH tool. Dimension "H" is constant at every shim and insert combination. All toolholders are supplied with 1.5º lead angle.



LT Threading Shim Selection Table • Metric

	toolholder		shim ordering code (mm)							
insert size	external	internal				standard				
LT-16 (3/8")	RH	LH	SM–YE3–3P	SM–YE3–2P	SM–YE3–1P	SM–YE3	SM–YE3–1N	SM–YE3–1.5N	SM–YE3–2N	SM–YE3–3N
LT-16 (3/8")	LH	RH	SM–YI3–3P	SM–YI3–2P	SM–YI3–1P	SM–YI3	SM–YI3–1N	SM–YI3–1.5N	SM–YI3–2N	SM–YI3–3N
LT-22 (1/2")	RH	LH	SM–YE4–3P	SM–YE4–2P	SM–YE4–1P	SM–YE4	SM–YE4–1N	SM–YE4–1.5N	SM–YE4–2N	SM–YE4–3N
LT-22 (1/2")	LH	RH	SM–YI4–3P	SM–YI4–2P	SM–YI4–1P	SM–YI4	SM–YI4–1N	SM–YI4–1.5N	SM–YI4–2N	SM–YI4–3N
TPI		pitch (mm)	pitch diameter (mm)							
72		–	–	–	–	3,1–8	8–21,4	> 21,4	21,4–8	8–3,1
–		0,35	–	–	–	3–8	8–21,3	> 21,3	21,3–8	3–8
64		–	–	–	–	3,4–9	9–24,1	> 24,1	24,1–9	9–3,4
–		0,40	–	–	–	3,5–9,1	9,1–24,3	> 24,3	24,3–9,1	9,1–3,5
56		0,45	–	–	–	3,9–10,3	10,3–27,6	> 27,6	27,6–10,3	10,3–3,9
–		0,50	–	–	2,8–4,3	4,3–11,4	11,4–30,4	> 30,4	30,4–11,4	11,4–4,3
48		–	–	–	3–4,6	4,6–12,1	12,1–32,2	> 32,2	32,2–12,1	12,1–4,6
44		–	–	–	3,3–5	5–13,2	13,2–35,1	> 35,1	35,1–13,2	13,2–5
–		0,60	–	2,6–3,4	3,4–5,2	5,2–13,7	13,7–36,5	> 36,5	36,5–13,7	13,7–5,2
40		–	–	2,8–3,6	3,6–5,5	5,5–14,5	14,5–38,6	> 38,6	38,6–14,5	14,5–5,5
–		0,70	–	3–4	4–6,1	6,1–16	16–42,6	> 42,6	42,6–16	16–6,1
36		–	–	3,1–4	4–6,1	6,1–16,1	16,1–42,9	> 42,9	42,9–16,1	16,1–6,1
–		0,75	2,8–3,2	3,3–4,3	4,3–6,5	6,5–17,1	17,1–45,6	> 45,6	45,6–17,1	17,1–6,5
32		–	3–3,4	3,4–4,5	4,5–6,9	6,9–18,1	18,1–48,3	> 48,3	48,3–18,1	18,1–6,9
–		0,80	3–3,5	3,5–4,6	4,6–6,9	6,9–18,2	18,2–48,6	> 48,6	48,6–18,2	18,2–6,9
28		–	3,4–3,9	3,9–5,2	5,2–7,9	7,9–20,7	20,7–55,1	> 55,1	55,1–20,7	20,7–7,9
27		–	3,6–4,1	4,1–5,4	5,4–8,2	8,2–21,4	21,4–57,2	> 57,2	57,2–21,4	21,4–8,2
–		1,00	3,8–4,3	4,3–5,7	5,7–8,7	8,7–22,8	22,8–60,8	> 60,8	60,8–22,8	22,8–8,7
24		–	4–4,6	4,6–6	6–9,2	9,2–24,1	24,1–64,3	> 64,3	64,3–24,1	24,1–9,2
–		1,25	4,7–5,4	5,4–7,1	7,1–10,8	10,9–28,5	28,5–76	> 76	76–28,5	28,5–10,8
20		–	4,8–5,5	5,5–7,2	7,2–11	11–28,9	29–77,2	> 77,2	77,2–28,9	29–11
18		–	5,3–6,1	6,1–8	8–12,2	12,2–32,2	32,2–85,8	> 5,8	85,8–32,2	32,2- 12,2
–		1,50	5,7–6,5	6,5–8,5	8,5–13	13–34,2	34.2–91.2	> 91,2	91,2–34,2	34,2–13
16		–	6–6,9	6,9–9	9–13,8	13,8–36,2	36,2–96,5	> 96,5	96,5–36,2	36,2–13,8
–		1,75	6,6–7,6	7,6–10	10–15,2	15,2–39,9	39,9–106,4	> 96,5	106,4–39,9	39,9–15,2
14		–	6,9–7,9	7,9–10,3	10,3–15,7	15,7–41,4	41,4–110,3	> 110,3	110,3–41,4	41,4–15,7
13		–	7,4–8,5	8,5–11,1	11,1–17	17–44,5	44,5–118,8	> 118,8	118,8–44,5	44,5–17
–		2,00	7,6–8,7	8,7–11,4	11,4–17,4	17,4–45,6	45,6–121,6	> 121,6	121,6–45,6	45,6–17,4
12		–	8–9,2	9,2–12	12,1–18,4	18,4–48,2	48,3–128,7	> 128,7	128,7–48,2	48,3–18,4
11.5		–	8,4–9,6	9,6–12,6	12,6–19,2	19,2–50,3	50,3–134,3	> 134,3	134,3–50,3	50,3–19,2
11		–	8,8–10	10–13,1	13,1–20	20–52,6	52,6–140,4	> 140,4	140,4–52,6	52,6–20
–		2,50	9,5–10,8	10,8–14,2	14,2–21,7	21,7–57	57–152	> 152	152–57	57–21,7
10		–	9,6–11	11–14,5	14,5–22	22–57,9	57,9–154,4	> 154,4	154,4–57,9	57,9–22
9		–	10,7–12,2	12,2–16,1	16,1–24,5	24,5–64,3	64,3–171,6	> 171,6	171,6–64,3	64,3–24,5
–		3,00	11,4–13	13–17,1	17,1–26	26–68,4	68,4–182,4	> 182,4	182,4–68,4	68,4–26
8		–	12–13,8	13,8–18,1	18,1–27,6	27,6–72,4	72,4–193	> 193	193–72,4	72,4–27,6
–		3,50	13,3–15,2	15,2–19,9	19,9–30,4	30,4–79,8	79,8–212,8	> 212,8	212,8–79,8	79,8–30,4
7		–	13,8–15,7	15,7–20,7	20,7–31,5	31,5–82,7	82,7–220,6	> 220,6	220,6–82,7	82,7–31,5
–		4,00	15,2–17,3	17,3–22,8	22,8–34,7	34,7–91,2	91,2–243,2	> 243,2	243,2–91,2	91,2–34,7
6		–	16–18,3	18,3–24,1	24,1–36,7	36,7–96,5	96,5–257,4	> 257,4	257,4–96,5	96,5–36,7
–		5,00	19–21,7	21,7–28,5	28,5–43,4	43,4–114	114–304	> 304	304–114	114–43,4
5		–	19,3–22	22–28,9	28,9–44,1	44,1–115,8	115,8–308,8	> 308,8	308,8–115,8	115,8–44,1
4.5		–	21,4–24,5	24,5–32,1	32,1–49	49–128,7	128,7–343,1	> 343,1	343,1–128,7	128,7–49
–		6,00	22,7–26	26–34,2	34,2–52,1	52,1–136,8	136,8–364,8	> 364,8	364,8–136,8	136,8–52,1
4		–	24,1–27,5	27,5–36,2	36,2–55,1	55,1–144,8	144,8–386	> 386	386—144,8	144,8—55,1
inclination angle			4.5	3.5	2.5	1.5	0.5	0.0	-0.5	-1.5
feed direction			standard helix (feed toward the chuck)						reverse helix (feed away from the chuck)	

1. Select TPI or pitch from the left-hand columns.
2. Follow row to specified pitch diameter and the correct feed direction.
3. Follow the column to the top for the required shim based on the toolholder and insert size.

Application Specific

Beyond BLAST F2–F11

Fix-Perfect F12–F37

Top Notch Profiling F38–F56

K-Lock F58–F61

Kendex Mini F62–F65

Wheel Reprofiling/Wheelset Truing F66–F83

Axle and Wheel Reconditioning F84–F90

Beyond RU and UP Geometries F91

Wheel and Axle Tooling F92–F93

New Railroad Wheel Manufacturing Tooling F94–F105

Kennametal Select F106–F130

Beyond BLAST™ • The First Through-Insert Coolant Delivery System from Kennametal

We didn't just improve metalcutting technology. We reinvented it.

Introducing Beyond BLAST, a revolutionary insert platform that delivers many of the benefits of high-pressure systems at conventional coolant pressures. Advanced coolant-application technology makes cutting more efficient and effective — while extending tool life. This tool is specifically designed for working with titanium and other high-temp alloys.

Features and Benefits

Higher Productivity, Extended Tool Life

- Increased tool life up to 300%, depending on the insert geometry and cutting conditions.
- Significant productivity and tool life increase in titanium machining.
- Higher metal removal rates and reduced cycle time.
- Chipbreaker design in combination with Precision Coolant Technology (PCT) provides excellent chip control and workpiece finish.

Versatility

- Ideal for applications where productivity or tool life is limited due to excess generated heat.
- Offered as a standard item with engineered solution capabilities.
- Provides increased performance with high-pressure or low-pressure coolant delivery systems.

More than just the right tool — the ultimate solution. That's **Beyond BLAST.™**

That's **Different Thinking.**

A Simple Observation, a Revolutionary Concept

We took an entirely different approach to machining high-temperature alloys. We determined that the most effective way to deliver coolant would be to channel it through the insert — ensuring that it hits exactly where it does the most good. That means more efficient coolant delivery at a fraction of the cost of high-pressure coolant systems.

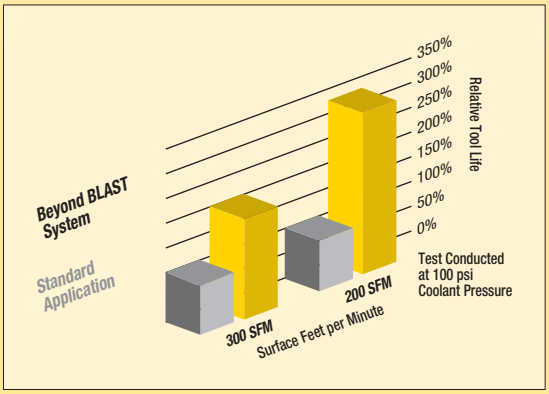
By precisely controlling coolant application, Beyond BLAST™ allows you to lower your energy consumption, saving you even more money and reducing your impact on the environment.

*To learn more, **scan here**.*
For instructions on how to scan, please see page xxix.

Beyond BLAST System

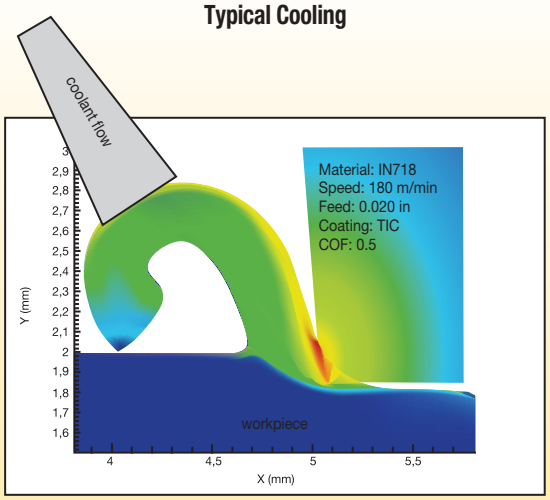
- Beyond BLAST delivers coolant directly and precisely to the cutting edge.
- Effective thermal management, higher speeds and reduced cycle times can be achieved.
- Delivers many of the benefits of high-pressure systems at low pressure.
- Provides increased performance with high-pressure or low-pressure coolant delivery systems.

Beyond BLAST for turning increases tool life by up to 300% compared with conventional coolant delivery systems.



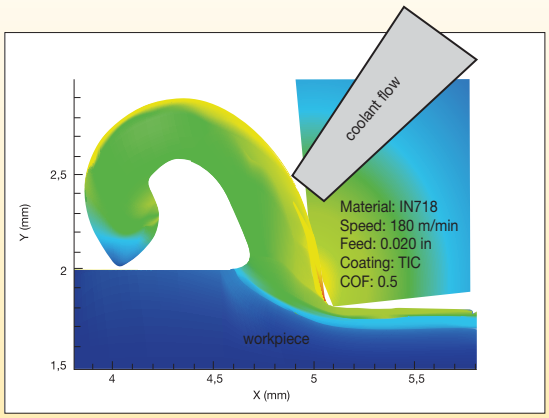
Coolant Application

Typical Cooling



Typical cooling applications often miss the point of highest heat, generated where the tool shears the material. Hitting chips after they have formed proves typical cooling applications can even work at cross-purposes by forcing chips back into the cut, accelerating tool wear. Part of the problem is that the coolant-delivering nozzle is located relatively far from the workpiece.

Through Insert Cooling



Beyond BLAST with Precision Coolant Technology (PCT)

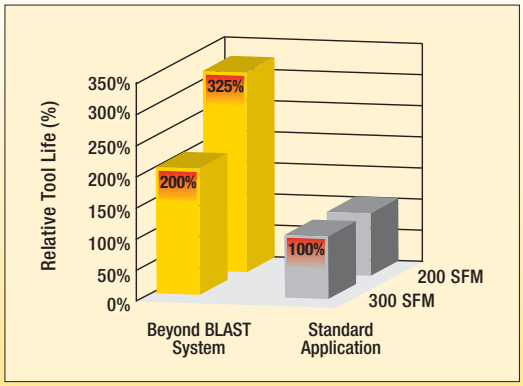
With Beyond BLAST, coolant is delivered through the insert, at the interface of the tool and the workpiece material, offering the best of both worlds.

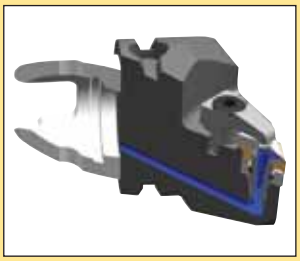
Beyond BLAST with Precision Coolant Technology (PCT) features through-insert cooling. It delivers coolant much closer to the tool/chip interface. Coolant pressure remains adjustable. Since the coolant is delivered through the insert, coolant delivery is more reliable and controlled, significantly reducing temperatures at the point of the cut.

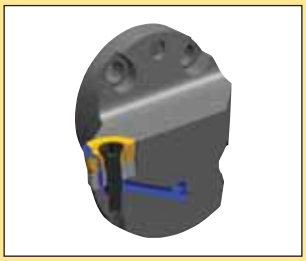
Application Data

The illustrations below show Beyond BLAST turning inserts and the coolant delivery path through the turning holder and insert.

In tests involving titanium turning, Beyond BLAST inserts at 100 psi showed 75% improvement in tool life over the same inserts with flood coolant at 100 psi. In a different test to evaluate the influence of coolant pressure, tool life for Beyond BLAST at 100 psi was nearly that of identical insert geometries at 1.000 psi, delivering cutting conditions and longer tool life on par with expensive, custom high-pressure coolant delivery systems at significantly lower cost.







	Test 1 62 m/min (200 SFM)	Test 2 93 m/min (300 SFM)
Cutting Conditions and Parameters • CNMG432MBB • KCU10™		
Workpiece	Ti6Al4V (Titanium)	Ti6Al4V (Titanium)
Hardness	42–46 Rc hardness	42–46 Rc hardness
Cutting fluid (100 psi)	Water-based synthetic	Water-based synthetic
Cutting speed (vc)	62 m/min (200 SFM)	93 m/min (300 SFM)
Feed rate (f)	0,2 mm/rev (.008 IPR)	0,2 mm/rev (.008 IPR)
Depth of cut	1,27mm (.05")	1,27mm (.05")
Tool life Beyond BLAST versus Standard	3,2x	2x
Result:	**Over 3x tool life**	**Double the tool life**

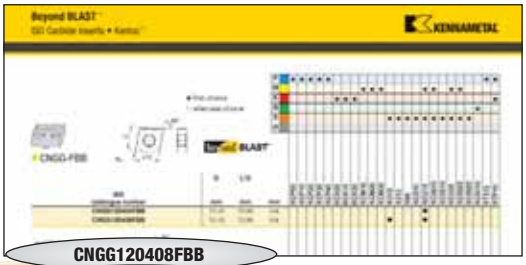
Product Portfolio

- KM50TS holders.
- Inch and metric square shanks.
- C- and R-shaped inserts.
- Geometries: FBB, MBB, RBB, ELF.
- Grades: KU10, KCU10.

C-Style

R-Style

Beyond BLAST Identification System



CNGG120408FBB
RCGX190600ELF

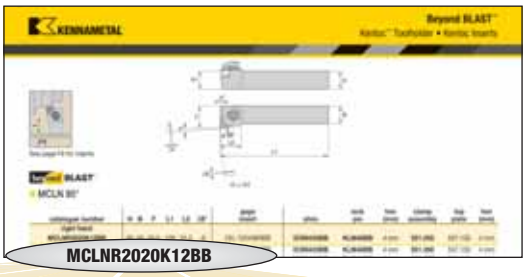
Inserts • C-Style

C	N	G	G	12	04	08	F	BB
Insert Shape	Clearance Angle	Tolerance Class	Insert Features	Size	Thickness	Corner Radius "Rε"	Chip Control	Beyond BLAST

Inserts • R-Style

R	C	G	X	19	06	00	EL	F
Insert Shape	Clearance Angle	Tolerance Class	Geometry and Clamping Type	Size	Thickness	Corner Configuration	Cutting Edge Form	

Application Specific



MCLNR2020K12BB

Toolholders • ISO

M	C	L	N	R	2020	K	12	BB
Insert Holding Method	Insert Shape	Tool Style	Clearance Angle	Hand of Tool	Shank Dimensions	Tool Length	Insert Size	Beyond BLAST

Step 1 • Select the insert geometry

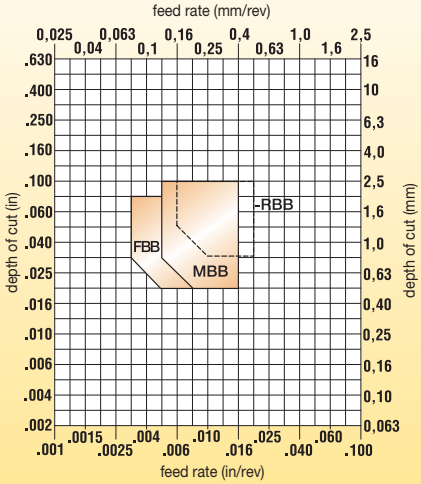
beyond

Negative Inserts

-RBB
Roughing

-MBB
Medium Machining

-FBB
Finishing



NOTE: Maximum depth of cut is 2,5mm (.100").

Step 2 • Select the grade

cutting condition		Negative Insert Geometry -RBB	-MBB	-FBB
heavily interrupted cut		KCU10	KCU10	KCU10
lightly interrupted cut		KCU10	KCU10	KCU10
varying depth of cut, casting, or forging skin		KU10/KCU10	KU10/KCU10	KU10/KCU10
smooth cut, pre-turned surface		KU10/KCU10	KU10/KCU10	KU10/KCU10

Step 3 • Select the cutting speed

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S3	KU10		◁▷								40	125
	KCU10			◁▷							70	225

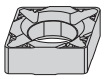
Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

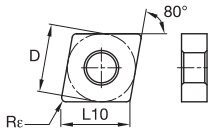
material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S4	KU10		◁▷								45	150
	KCU10			◁▷							70	225

beyond BLAST™

● first choice
○ alternate choice

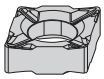
CNGG-FBB

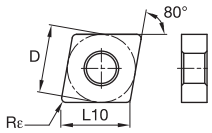




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGG120404FBB	12,70	12,90	0,4																●								
CNGG120408FBB	12,70	12,90	0,8												●				●								

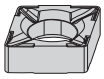
CNMG-MBB

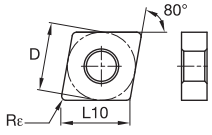




ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404MBB	12,70	12,90	0,4																●								
CNMG120408MBB	12,70	12,90	0,8												●				●								

CNMG-RBB





ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408RBB	12,70	12,90	0,8												●				●								

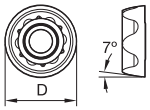
P		●	●	●	●	●						●	●	●												●	●
M																			●	●		●	●				
K								●	●	●																	●
N																									●		
S															●	●	●	●	●	●	●	●	●	●			
H																											

Application Specific

beyond BLAST™

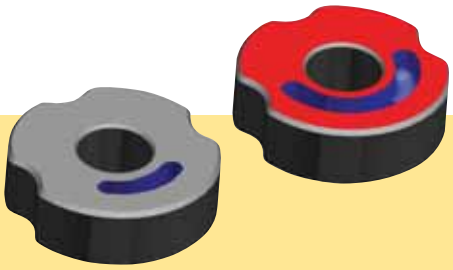
● first choice
○ alternate choice

■ RCGX-LF



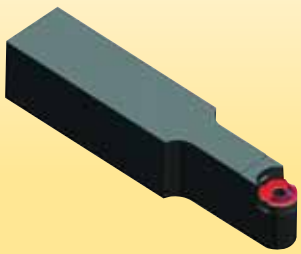
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P				●	●	●	●	●																		●	●
M												●	●	●					●	●		●	●				
K									●	●	●																●
N																									●		
S																●	●	●	●	●	●	●	●	●			
H																											
RCGX190600ELF	19,05	—	—												●				●								

Application Specific

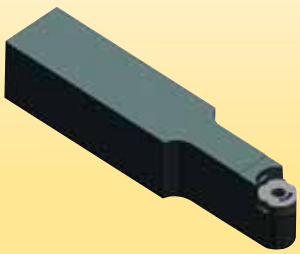


The shim for Beyond BLAST can be flipped depending on the operation being performed.

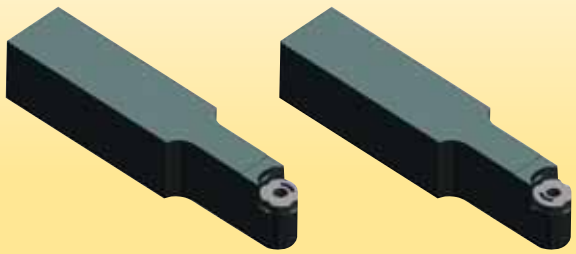
Use the wider coolant channel to cover larger areas in profiling operations.

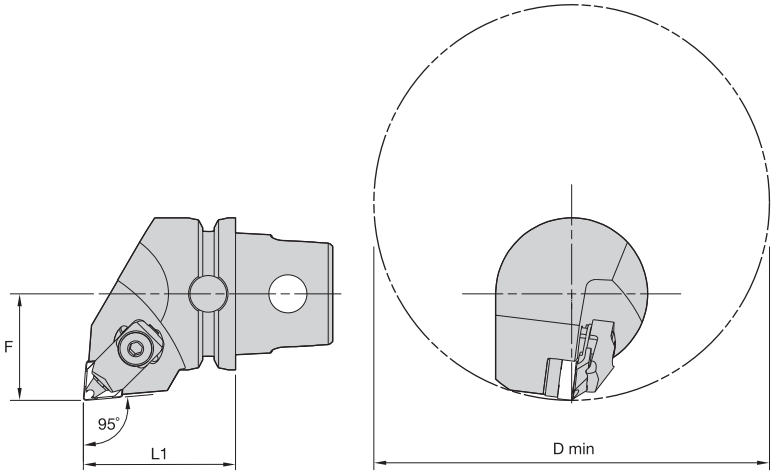


Coolant comes out from the top of the shim in turning operations.



Place the shim to direct coolant to the side for facing operations.

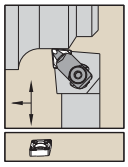




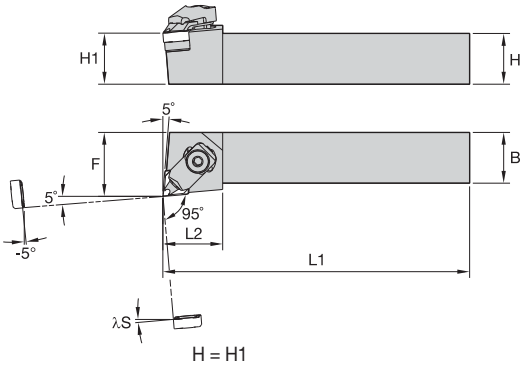
KM QUICK CHANGE beyond BLAST™

■ MCLN 95°

order number	catalogue number	L1 mm	L1 in	F mm	F in	D min mm	D min in	gage insert	shim	lock pin	clamp assembly	top plate	kg	lbs
	right hand													
4098740	**KM50TSMCLNR12BB**	50	1.969	35	1.378	130	5.118	CN..120408RBB/CN..432RBB	**ICSN433BB**	**KLM48BB**	**551.350**	**557.150**	0,33	1.45
	left hand													
4098741	**KM50TSMCLNL12BB**	50	1.969	35	1.378	130	5.118	CN..120408RBB/CN..432RBB	**ICSN433BB**	**KLM48BB**	**551.350**	**557.150**	0,33	1.45



See page F8 for inserts.



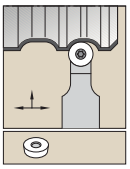
H = H1

beyond BLAST

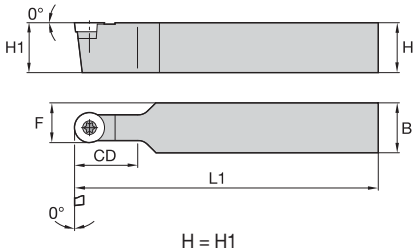
MCLN 95°

catalogue number	H	B	F	L1	L2	λS°	gage insert	shim	lock pin	hex (mm)	clamp assembly	top plate	hex (mm)
right hand													
MCLNR2020K12BB	20	20	25,5	128	31,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNR2525M12BB	25	25	32,5	153	32,0	-5	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNR3232P12BB	32	32	40,5	173	37,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
left hand													
MCLNL2020K12BB	20	20	25,5	128	31,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNL2525M12BB	25	25	32,5	153	32,0	-5	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNL3232P12BB	32	32	40,5	173	37,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm

Screw-On Toolholder • Screw-On Inserts



See page F9 for inserts.



H = H1

beyond BLAST

SRDC

catalogue number	H	B	F	L1	CD	gage insert	shim	insert screw	wrench size insert screw
left hand									
SRDCN3232P19BB	32	32	25,5	173	50,8	RCGX190600ELF	**SM907**	**MS2246**	T25

The Fix-Perfect™ Precision Ground Insert Program Goes Above and Beyond™!

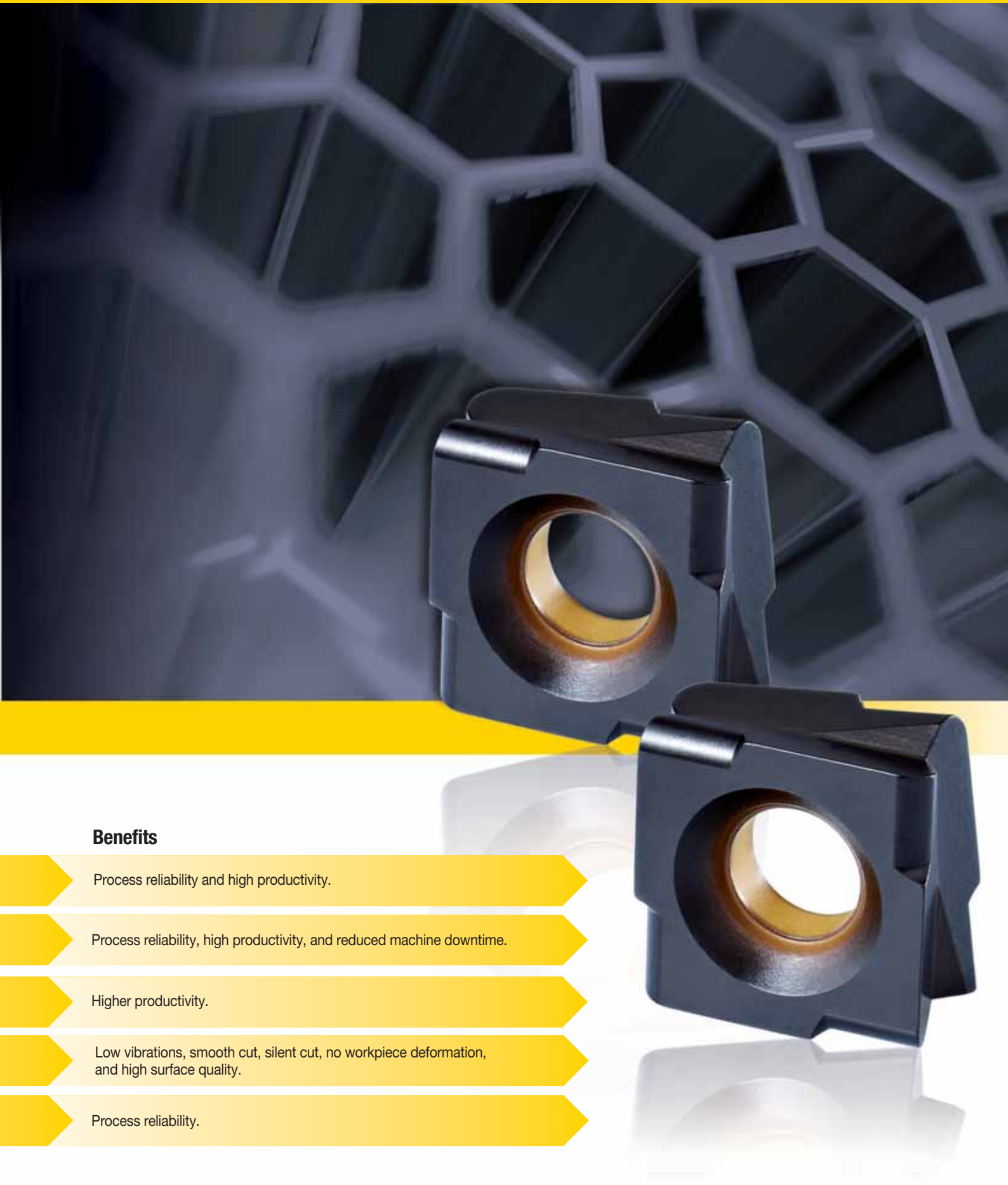
Primary Application

The breakthrough performance characteristics of these precision ground inserts enable outstanding indexing accuracy and excellent chip flow when machining steel, cast iron, and stainless steel workpiece materials.

Fix-Perfect Beyond Inserts are the ideal solution to machining operations in a multitude of industries, including fluid power, energy, automotive, heavy equipment, and general engineering applications.

Features and Benefits

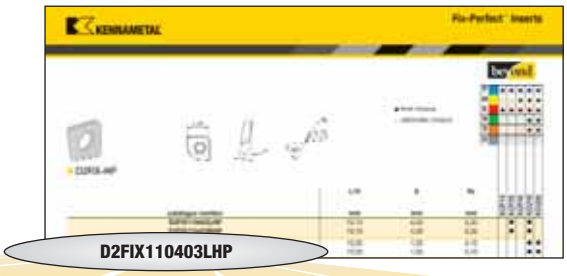
Features	Functions
Tangential design.	Stable system.
Rigid clamping system.	Very stable clamping system and quick and easy cutting edge switch.
Up to eight cutting edges (protected by pocket seat).	Use up to eight edges per insert.
Positive geometry.	Very low cutting forces and excellent chip control.
Precision ground insert.	Better indexing accuracy.



Benefits

- Process reliability and high productivity.
- Process reliability, high productivity, and reduced machine downtime.
- Higher productivity.
- Low vibrations, smooth cut, silent cut, no workpiece deformation, and high surface quality.
- Process reliability.

Beyond™ Identification System

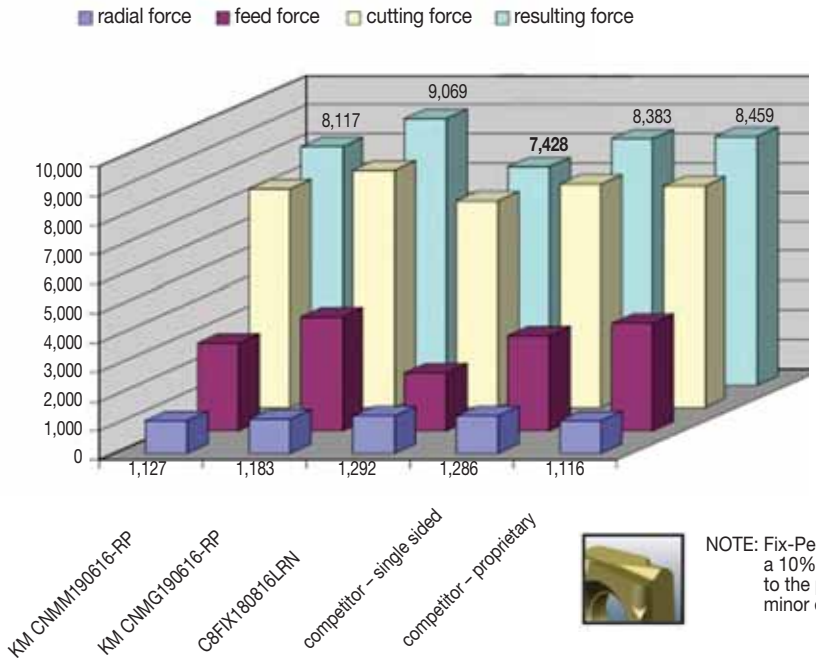


D	2	FIX	11	04	03	L	HP
Insert Shape (corner angle)	Number of Cutting Edges	Proprietary System	Cutting Edge Length	Thickness	Corner Radius	Hand of Insert	Chip Control

Application Specific

New Beyond Fix-Perfect Naming System

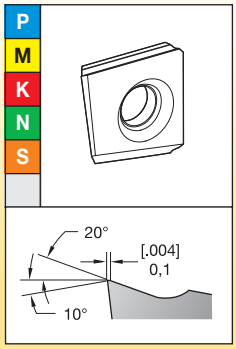
old catalogue number	description	new catalogue number
1.21101R151	insert with 2 positive cutting edges, corner radius e = 56°	D2FIX110403RMS

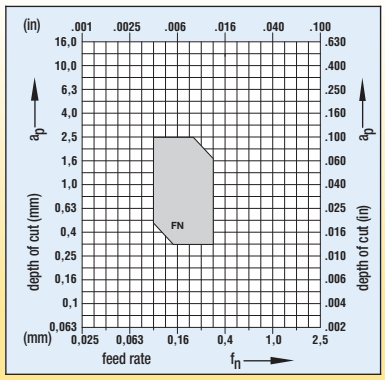


NOTE: Fix-Perfect achieves at least a 10% lower cutting force due to the positive rake and sloped minor edge.

Finishing

D2FIX-FN

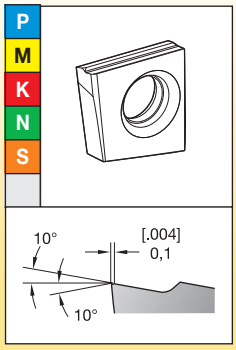


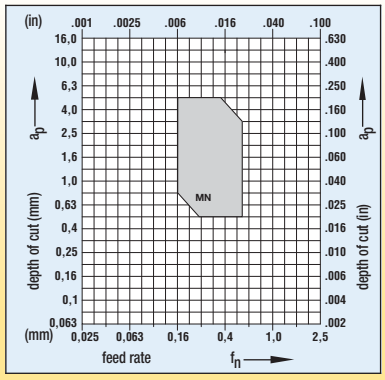


P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

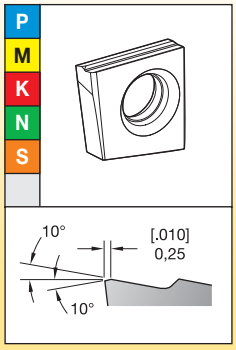
Medium Machining

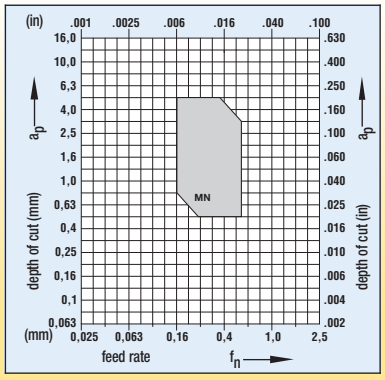
C2FIX15-MN



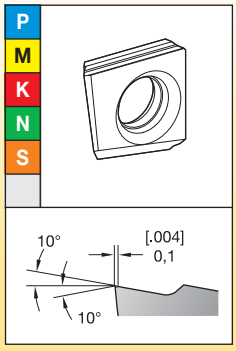


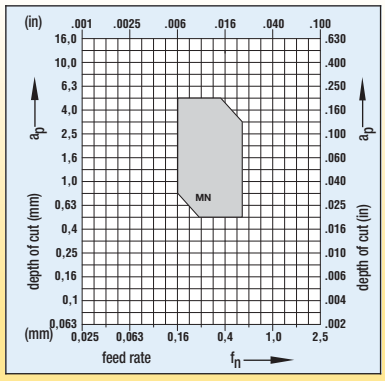
C2FIX18-MN



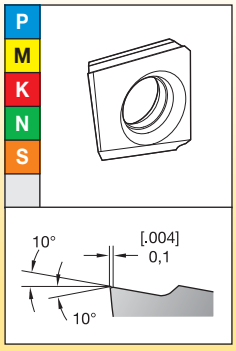


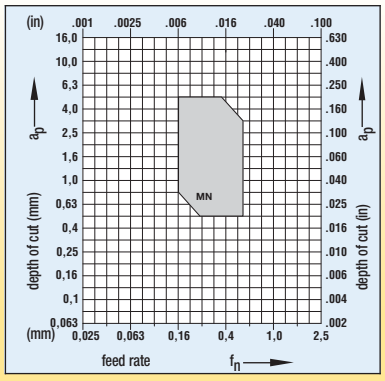
D2FIX-MN



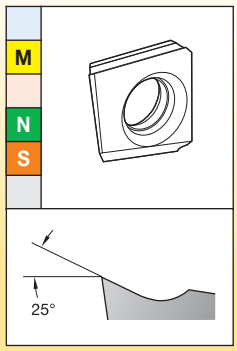


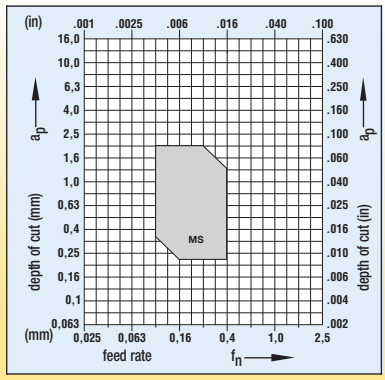
K2FIX-MN



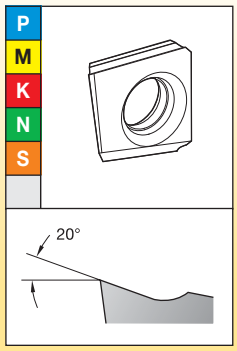


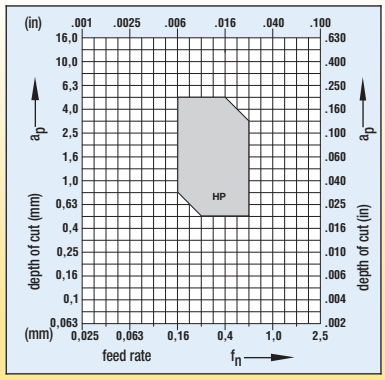
D2FIX-MS





D2FIX-HP





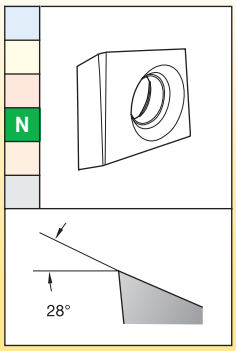
(continued)

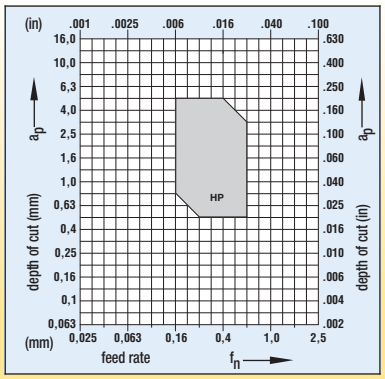
(continued)

Medium Machining

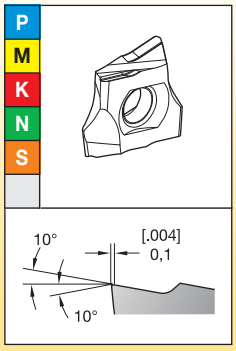
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

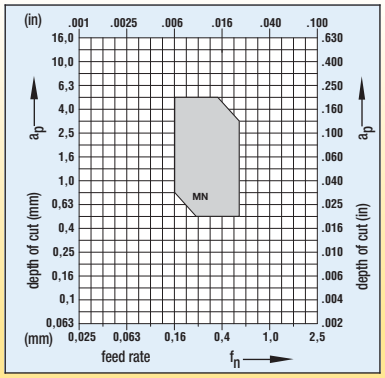
E2FIX-HP



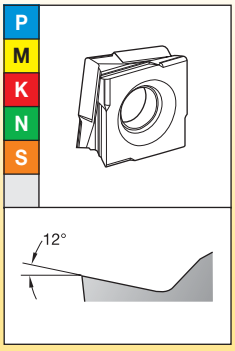


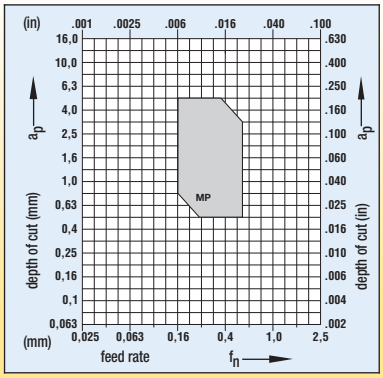
D4FIX-MN





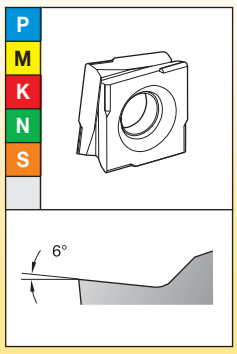
C8FIX-MP

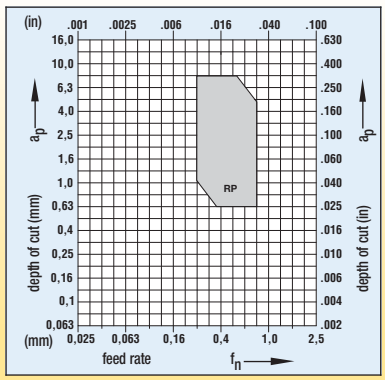




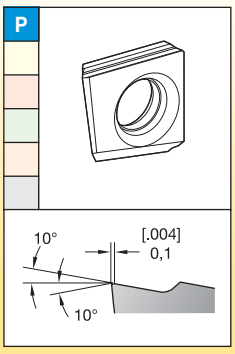
Roughing

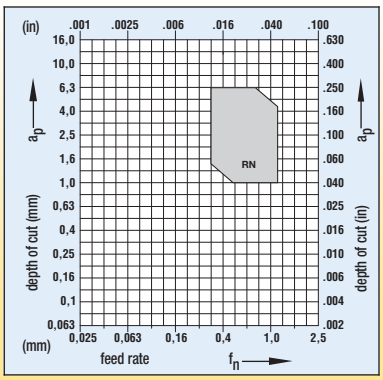
C8FIX-RP



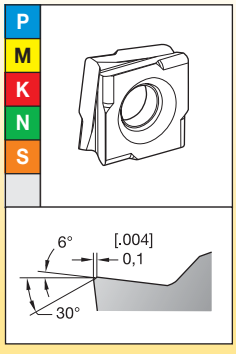


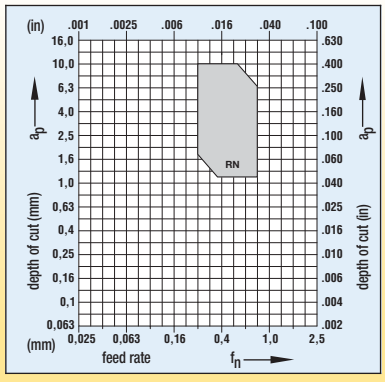
D2FIX-RN



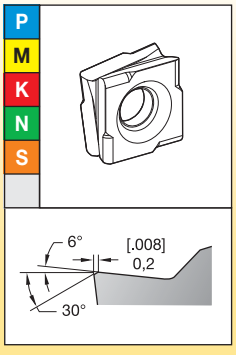


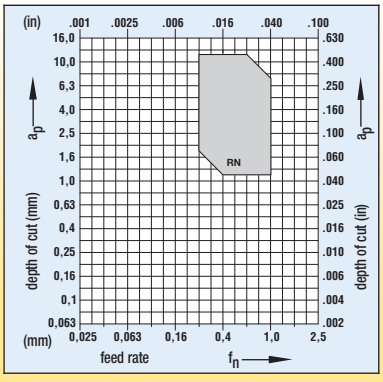
C8FIX15-RN





C8FIX18-RN





Select the Insert Geometry

8-Edged Inserts

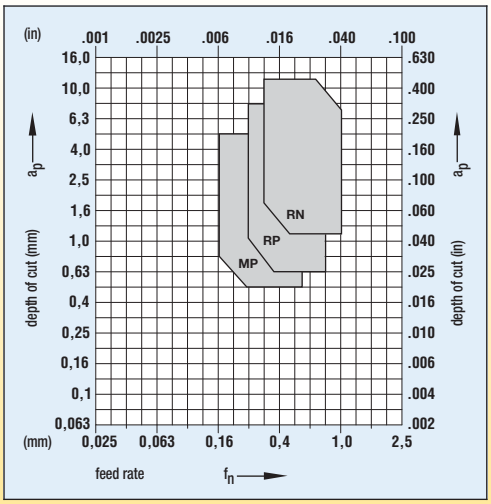
Roughing
Interrupted cut and/or heavy scale
USE: -RP OR -RN

-RP

-RN

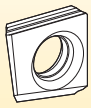
Medium Turning
Slightly interrupted cut and/or slight scale
USE: -MP

-MP



2- and 4-Edged Inserts

Roughing
Interrupted cut and/or heavy scale
USE: -RN

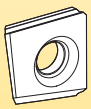


-RN

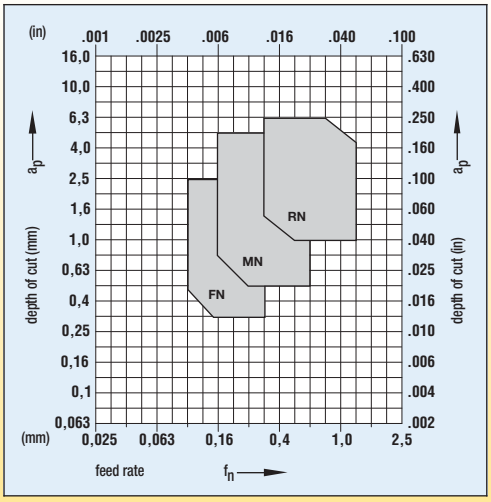
Medium Turning
Slightly interrupted cut and/or slight scale
USE: -MN

-MN

Finishing
Non-interrupted cut, no scale
USE: -FN

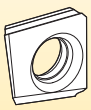


-FN

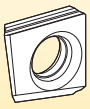


2-Edged Inserts, High Positive

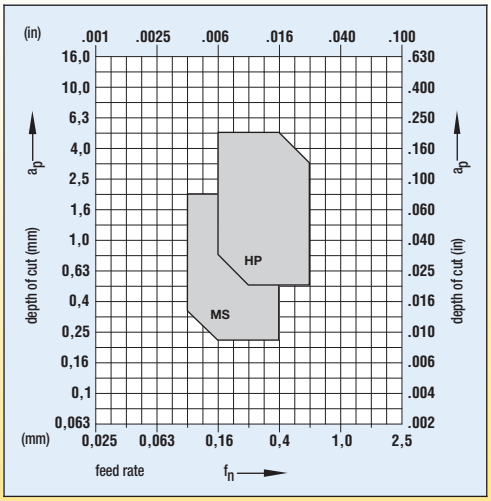
Medium Turning
Slightly interrupted cut and/or slight scale
USE: -HP OR -MS



-HP



-MS



Select the Grade

	P	M	K	N	S	H
heavy interrupted	KCP40/KCU25	KCU25	KCP25/KCU25	KCU25	KCU25	—
lightly interrupted	KCP25/KCU25	KCU25	KCP25/KCU25	KCU25	KCU25	—
varying depths of cut	KCP10/KCU10	KCU10	KCP10/KCU10	KCU10	KCU10	KCU10
smooth	KCP10/KCU10	KCU10	KCP10/KCU10	KCU10	KCU10	KCU10

Select the Cutting Speed

Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	90 (300)	120 (400)	150 (500)	185 (617)	215 (717)	245 (800)	275 (900)	300 (1000)	m/min	SFM
P	KCP40				◁▷						150	500
	KCU10						◁▷				200	650
	KCP25						◁▷				200	650
	KCP10							◁▷			250	800

Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	45 (150)	70 (233)	90 (300)	115 (383)	140 (467)	165 (550)	185 (617)	210 (700)	230 (767)	m/min	SFM
M	KCP40					◁▷					140	450
	KCU25						◁▷				165	500
	KCU10							◁▷			185	600

Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	m/min	SFM
K	KCU25			◁▷							165	500
	KCU10				◁▷						180	600
	KCP25					◁▷					230	750
	KCP10						◁▷				260	850

Non-Ferrous — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	150 (500)	225 (750)	300 (1000)	380 (1267)	460 (1533)	535 (1783)	610 (2033)	685 (2283)	760 (2533)	m/min	SFM
N	KCU10					◁▷					460	1500

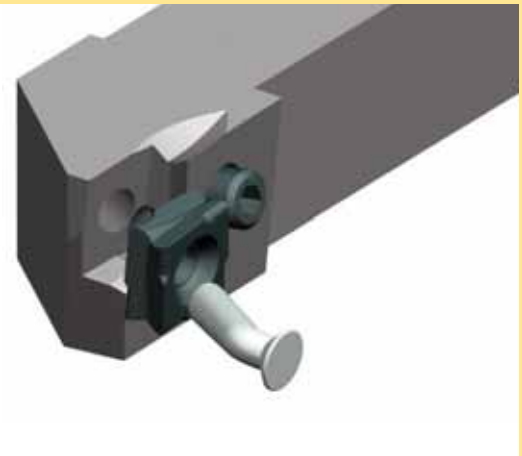
High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	35 (117)	45 (150)	55 (183)	65 (217)	75 (250)	85 (283)	95 (317)	120 (400)	140 (467)	m/min	SFM
S	KCU25		◁▷								45	150
	KCU10				◁▷						60	200

Hardened Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	5 (17)	15 (50)	25 (83)	35 (117)	45 (150)	55 (183)	65 (217)	75 (250)	85 (283)	m/min	SFM
H	KCU10			◁▷							30	100

Fix-Perfect Tool System



With 2, 4, or 8 edges, this tool system is the ideal supplement to ISO tools.

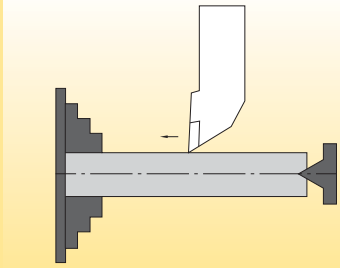
The examples on the following page show the range of possible applications.

Use of the Fix-Perfect system results in:

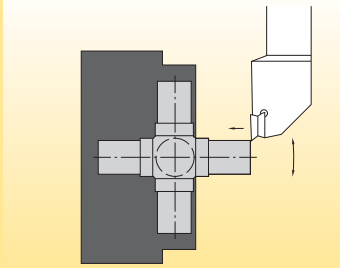
- Lower cutting forces.
- Smooth, open chips.
- Larger feed rates and depths of cut.

(continued)

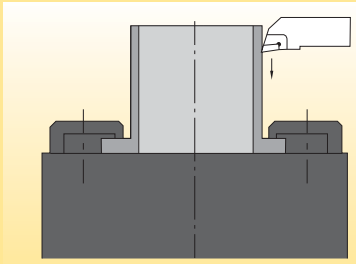
(continued)



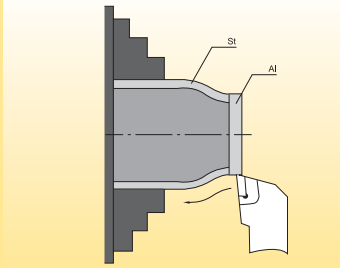
Turning slender shafts (clamping on one side also possible) with a workpiece length outside the chuck >8 x D with high geometric accuracy and surface finish.



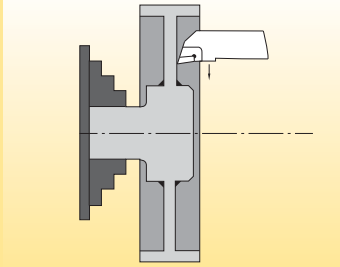
Machining of unstably chucked workpieces (e.g., in a swivel chuck).



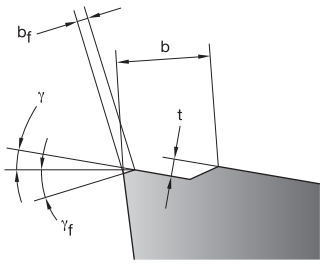
External machining of thin-walled workpieces.

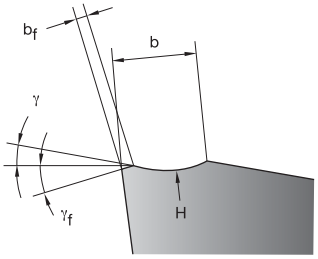


Turning material combinations of varying machinability, for example, aluminium combined with stainless and acid-proof steels.



Smoothing of welding seams with interrupted cuts.





old catalogue number	new catalogue number	b		t			b_f		
		mm	inch	mm	inch	γ°	mm	inch	γ_f°
NEW	**C2FIX110404LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110404RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21103L171	**C2FIX110405LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21103R171	**C2FIX110405RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110408LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110408RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150504LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150504RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503L171	**C2FIX150505LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503R171	**C2FIX150505RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150508LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150508RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503L172	**C2FIX150510LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21503R172	**C2FIX150510RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
NEW	**C2FIX150512LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
NEW	**C2FIX150512RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803L171	**C2FIX180610LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803R171	**C2FIX180610RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803L172	**C2FIX180615LMN**	4,0	0.157	0,6	0.024	10	0,3	0.012	10
1.21803R172	**C2FIX180615RMN**	4,0	0.157	0,6	0.024	10	0,3	0.012	10
1.21501L152	**D2FIX150505LFN**	3,2	0.126	H	H	20	0,1	0.004	10
1.21501R152	**D2FIX150505RFN**	3,2	0.126	H	H	20	0,1	0.004	10
1.21101L173	**D2FIX110403LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101R173	**D2FIX110403RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX110404LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX110404RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101L171	**D2FIX110405LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101R171	**D2FIX110405RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501R175	**D2FIX150503RMN**	2,2*	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150504LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150504RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501L171	**D2FIX150505LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501R171	**D2FIX150505RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150508LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150508RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501L173	**D2FIX150510LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21501R173	**D2FIX150510RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21801L171	**D2FIX180610LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21801R171	**D2FIX180610RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21501L172	**D2FIX150505LRN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501R172	**D2FIX150505RRN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501L154	**D2FIX150503LMS**	3,0	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21501R154	**D2FIX150503RMS**	3,0	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21501L155	**D2FIX150505LMS**	3,0*	0.118	H	H	25**	Sharp	Sharp	Sharp

(continued)

H – Hollow-ground.

* – Deviation from old catalogue number.

** – At mounting angle (clearance) 7°. Also 12° mounting angle possible (dependent on toolholder), then γ = 20°.

(continued)

old catalogue number	new catalogue number	b		t			b_f		
		mm	inch	mm	inch	γ°	mm	inch	γ_f°
1.21501R155	**D2FIX150505RMS**	3,0*	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21101L151	**D2FIX110403LHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
1.21101R151	**D2FIX110403RHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX110404LHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX110404RHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
1.21501L151	**D2FIX150503LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
1.21501R151	**D2FIX150503RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150504LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150504RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150508LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150508RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
1.21500L145	**E2FIX100505LHP**	—	—	—	—	28	Sharp	Sharp	Sharp
1.21500R145	**E2FIX100505RHP**	—	—	—	—	28	Sharp	Sharp	Sharp
1.21500L171	**K2FIX150505LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21500R171	**K2FIX150505RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002L173	**D4FIX140603LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002R173	**D4FIX140603RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140604LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140604RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002L171	**D4FIX140605LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002R171	**D4FIX140605RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140608LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140608RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.81202L171	**C8FIX120503LMP**	1,6	0.063	0,3	0.012	12	—	—	—
1.81202R171	**C8FIX120503RMP**	1,6	0.063	0,3	0.012	12	—	—	—
1.81502L171	**C8FIX150603LMP**	2,0	0.079	0,3	0.012	12	—	—	—
1.81502R171	**C8FIX150603RMP**	2,0	0.079	0,3	0.012	12	—	—	—
1.81802L171	**C8FIX180805LMP**	2,3	0.091	0,4	0.016	12	—	—	—
1.81802R171	**C8FIX180805RMP**	2,3	0.091	0,4	0.016	12	—	—	—
1.81201L121	**C8FIX120503LRP**	—	—	—	—	6	—	—	—
1.81201R121	**C8FIX120503RRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120504LRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120504RRP**	—	—	—	—	6	—	—	—
1.81201L122	**C8FIX120505LRP**	—	—	—	—	6	—	—	—
1.81201R122	**C8FIX120505RRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120508LRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120508RRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120512LRP**	—	—	—	—	6	—	—	—
NEW	**C8FIX120512RRP**	—	—	—	—	6	—	—	—
1.81501L121	**C8FIX150605LRN**	—	—	—	—	6	0,1	0.004	30
1.81501R121	**C8FIX150605RRN**	—	—	—	—	6	0,1	0.004	30
1.81501L122	**C8FIX150608LRN**	—	—	—	—	6	0,1	0.004	30
1.81501R122	**C8FIX150608RRN**	—	—	—	—	6	0,1	0.004	30
NEW	**C8FIX150612LRN**	—	—	—	—	6	0,1	0.004	30
NEW	**C8FIX150612RRN**	—	—	—	—	6	0,1	0.004	30
1.81801L121	**C8FIX180808LRN**	—	—	—	—	6	0,2	0.008	30
1.81801R121	**C8FIX180808RRN**	—	—	—	—	6	0,2	0.008	30
1.81801L122	**C8FIX180812LRN**	—	—	—	—	6	0,2	0.008	30
1.81801R122	**C8FIX180812RRN**	—	—	—	—	6	0,2	0.008	30

H – Hollow-ground.

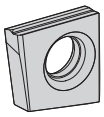
* – Deviation from old catalogue number.

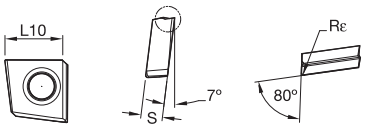
** – At mounting angle (clearance) 7°. Also 12° mounting angle possible (dependent on toolholder), then γ = 20°.

beyond

● first choice
○ alternate choice

		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						





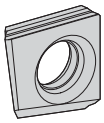
C2FIX-MN

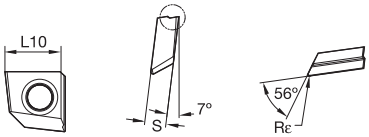
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
C2FIX110404LMN	10,70	4,00	0,40	●	●	●	●	●
C2FIX110404RMN	10,70	4,00	0,40	●	●	●	●	●
C2FIX110405LMN	10,70	4,00	0,50		●	●	●	
C2FIX110405RMN	10,70	4,00	0,50		●	●		
C2FIX110408LMN	10,70	4,00	0,80	●	●	●	●	●
C2FIX110408RMN	10,70	4,00	0,80	●	●	●	●	●
C2FIX150504LMN	14,70	5,00	0,40	●	●	●	●	●
C2FIX150504RMN	14,70	5,00	0,40	●	●	●	●	●
C2FIX150505LMN	14,70	5,00	0,50		●	●	●	
C2FIX150505RMN	14,70	5,00	0,50		●	●		
C2FIX150508LMN	14,60	5,00	0,80	●	●	●	●	●
C2FIX150508RMN	14,60	5,00	0,80	●	●	●	●	●
C2FIX150510LMN	14,50	5,00	1,00		●	●		
C2FIX150510RMN	14,50	5,00	1,00		●	●		
C2FIX150512LMN	14,50	5,00	1,20	●	●	●	●	●
C2FIX150512RMN	14,50	5,00	1,20	●	●	●	●	●
C2FIX180610LMN	17,50	6,00	1,00		●	●	●	
C2FIX180610RMN	17,50	6,00	1,00		●	●	●	
C2FIX180615LMN	17,50	6,00	1,50		●	●		
C2FIX180615RMN	17,50	6,00	1,50		●	●		

beyond

● first choice
○ alternate choice

P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						





■ D2FIX-MN

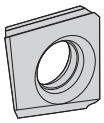
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX110403LMN	10,70	4,00	0,30	●	●			
D2FIX110403RMN	10,70	4,00	0,30	●	●			
D2FIX110404LMN	10,60	4,00	0,40	●	●	●	●	●
D2FIX110404RMN	10,60	4,00	0,40	●	●	●	●	●
D2FIX110405LMN	10,50	4,00	0,50	●	●	●		
D2FIX110405RMN	10,50	4,00	0,50	●	●	●		
D2FIX150503RMN	14,70	5,00	0,30	●	●			
D2FIX150504LMN	14,60	5,00	0,40	●	●	●	●	●
D2FIX150504RMN	14,60	5,00	0,40	●	●	●	●	●
D2FIX150505LMN	14,50	5,00	0,50	●	●	●		
D2FIX150505RMN	14,50	5,00	0,50	●	●	●		
D2FIX150508LMN	14,20	5,00	0,80	●	●	●	●	●
D2FIX150508RMN	14,20	5,00	0,80	●	●	●	●	●
D2FIX150510LMN	14,00	5,00	1,00		●			
D2FIX150510RMN	14,00	5,00	1,00	●	●	●		
D2FIX180610LMN	17,00	6,00	1,00		●			
D2FIX180610RMN	17,00	6,00	1,00		●			

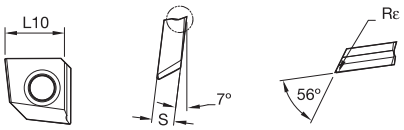
beyond

● first choice
○ alternate choice

		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						

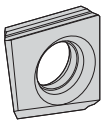
D2FIX-HP

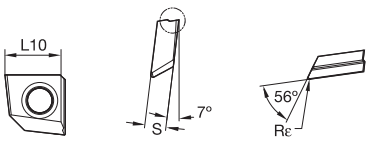




catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX110403LHP	10,10	4,00	0,30		●		●	
D2FIX110403RHP	10,10	4,00	0,30		●		●	
D2FIX110404LHP	10,00	4,00	0,40				●	●
D2FIX110404RHP	10,00	4,00	0,40				●	●
D2FIX150503LHP	14,10	5,00	0,30		●		●	
D2FIX150503RHP	14,10	5,00	0,30		●		●	
D2FIX150504LHP	14,00	5,00	0,40				●	●
D2FIX150504RHP	14,00	5,00	0,40				●	●
D2FIX150508LHP	13,60	5,00	0,80				●	●
D2FIX150508RHP	13,60	5,00	0,80				●	●

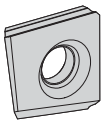
D2FIX-MS

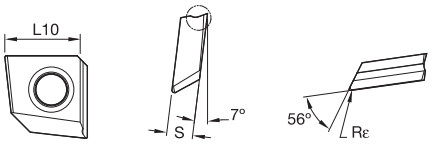




catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX150505RMS	13,90	5,00	0,50				●	
D2FIX150505LMS	13,90	5,00	0,50				●	
D2FIX150503RMS	14,10	5,00	0,30				●	
D2FIX150503LMS	14,10	5,00	0,30				●	

D2FIX-FN



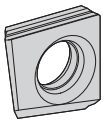


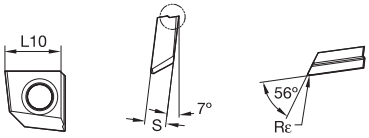
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX150505RFN	13,90	5,00	0,50		●		●	
D2FIX150505LFN	13,90	5,00	0,50		●		●	

beyond

● first choice
○ alternate choice

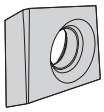
		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						

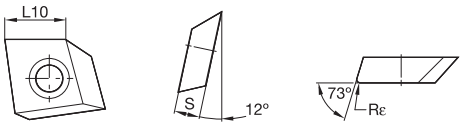




D2FIX-RN

catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX150505LRN	14,50	5,00	0,50	●	●	●		
D2FIX150505RRN	14,50	5,00	0,50	●		●		





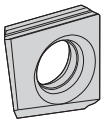
E2FIX-HP

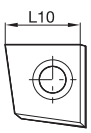
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
E2FIX100505RHP	10,50	5,00	0,50				●	
E2FIX100505LHP	10,50	5,00	0,50				●	

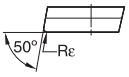
beyond

● first choice
○ alternate choice

		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						

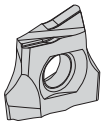


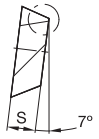


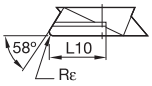


K2FIX-MN

catalogue number	L10 mm	S mm	Rε mm
K2FIX150505RMN	14,50	5,00	0,50
K2FIX150505LMN	14,50	5,00	0,50







D4FIX-MN

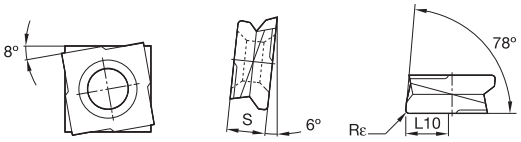
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
D4FIX140603LMN	7,20	5,90	0,30		●			
D4FIX140603RMN	7,20	5,90	0,30	●	●			
D4FIX140604LMN	7,10	5,90	0,40	●	●	●	●	●
D4FIX140604RMN	7,10	5,90	0,40	●	●	●	●	●
D4FIX140605LMN	7,00	5,90	0,50		●			
D4FIX140605RMN	7,00	5,90	0,50	●	●			
D4FIX140608LMN	6,70	5,90	0,80	●	●	●	●	●
D4FIX140608RMN	6,70	5,90	0,80	●	●	●	●	●

beyond

● first choice
○ alternate choice

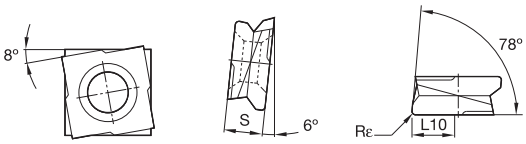
		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						

C8FIX-RN



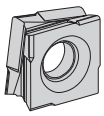
catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
C8FIX150605LRN	9,10	6,60	0,50	●	●	●	●	●
C8FIX150605RRN	9,10	6,60	0,50	●	●	●	●	●
C8FIX150608LRN	8,90	6,60	0,80	●	●	●	●	●
C8FIX150608RRN	8,90	6,60	0,80	●	●	●	●	●
C8FIX150612LRN	8,60	6,60	1,20	●	●	●	●	●
C8FIX150612RRN	8,60	6,60	1,20	●	●	●	●	●
C8FIX180808LRN	10,90	7,90	0,80	●	●	●	●	●
C8FIX180808RRN	10,90	7,90	0,80	●	●	●	●	●
C8FIX180812LRN	10,60	7,90	1,20	●	●	●	●	●
C8FIX180812RRN	10,60	7,90	1,20	●	●	●	●	●

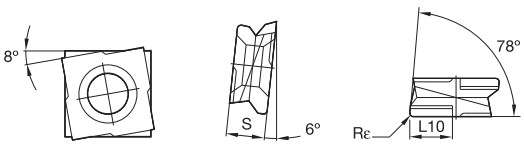
C8FIX-RP



catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
C8FIX120503LRP	7,30	5,50	0,30		●	●	●	●
C8FIX120503RRP	7,30	5,50	0,30	●	●	●	●	●
C8FIX120504LRP	7,20	5,50	0,40	●	●	●	●	●
C8FIX120504RRP	7,20	5,50	0,40	●	●	●	●	●
C8FIX120505LRP	7,10	5,50	0,50	●	●	●	●	●
C8FIX120505RRP	7,10	5,50	0,50	●	●	●	●	●
C8FIX120508LRP	6,90	5,50	0,80	●	●	●	●	●
C8FIX120508RRP	6,90	5,50	0,80	●	●	●	●	●

C8FIX-MP





catalogue number	L10 mm	S mm	Rε mm	KCP10	KCP25	KCP40	KCU10	KCU25
C8FIX120503LMP	7,30	5,50	0,30	●	●	●	●	●
C8FIX120503RMP	7,30	5,50	0,30	●	●	●	●	●
C8FIX150603LMP	9,30	6,60	0,30	●	●	●	●	●
C8FIX150603RMP	9,30	6,60	0,30	●	●	●	●	●
C8FIX180805LMP	11,10	7,90	0,50	●	●	●	●	●
C8FIX180805RMP	11,10	7,90	0,80	●	●	●	●	●

Carbide Recycling

Help preserve and protect our planet!

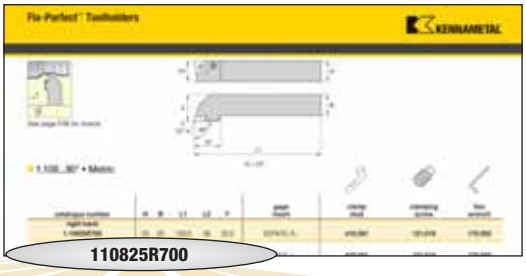
It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**



Application Specific

1	1	08	25	R	7	0	0
Turning Program	Number of Cutters	Version	Shaft Dimensions	Direction of Working	Insert Size and Type	Insert Shape	Clamping Screw Support

1 = Fix-Perfect

1 = Inserts with 2 cutting edges

3 = Inserts with 4 cutting edges

7 = Inserts with 8 cutting edges

R = Right
L = Left

0 = Activated from main cutting edge

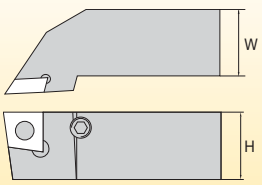
1 = Minor cutting edge

2 = Above

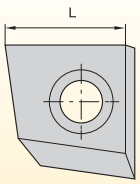
5 = Main cutting edge with sharp-edged full cartridge

6 = Minor cutting edge with sharp-edged full cartridge

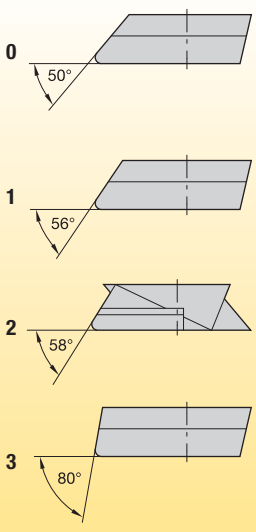
08 = 90° or 93° setting, for machining aluminium
16 = 92° setting angle
20 = 92° setting angle
22 = 92° setting angle
30 = 75° setting angle
71 = 75° setting angle
72 = 45° setting angle
77 = 90° setting angle
80 = 90° or 93° setting angle



Toolholder
10 = 10 x 10mm
11 = 40 x 40mm
16 = 16 x 16mm
20 = 20 x 20mm
21 = 50 x 50mm
35 = 25 x 25mm
32 = 32 x 25mm
32 x 32mm
40 = 40 x 32mm

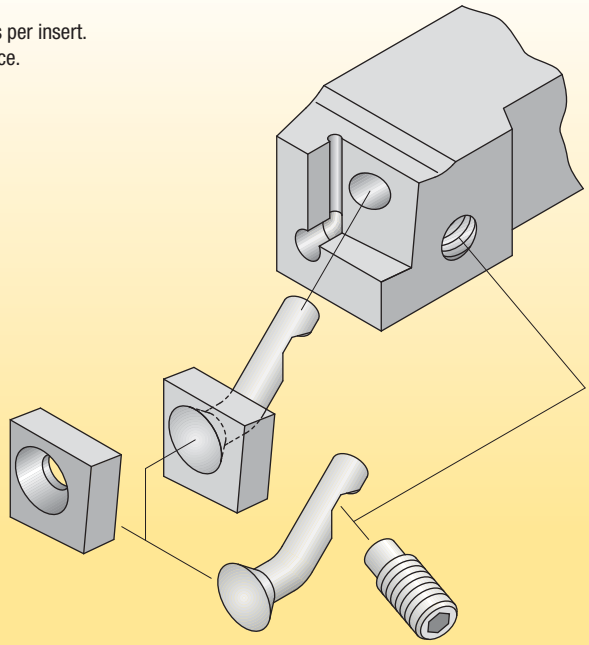


	L	cutting edges
0	8mm 20mm 25mm	4 4 4
1	10,5mm 12mm	2 8
3	14,5mm 15mm	2 8
4	17,5mm 18mm	2 8
5	23,5mm 21mm	2 8
7	10,5mm	2 Alu

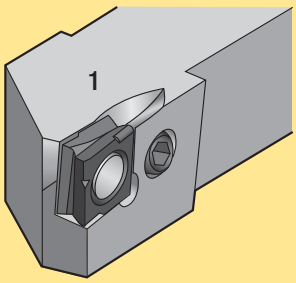


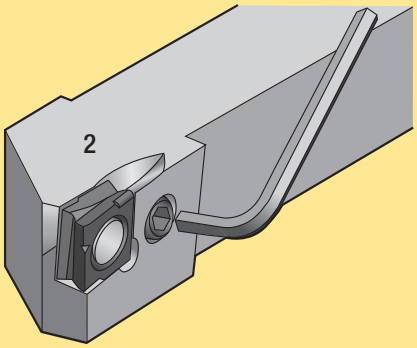
Features of the Fix-Perfect lathe tool system:

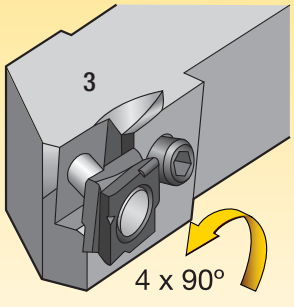
- Cost-effective use of inserts with up to eight positive cutting edges per insert.
- Indexable insert ground on all sides, thus requiring less cutting force.
- High stability due to upright insert for roughing and profiling tasks.
- Guaranteed rigid clamping of inserts.
- Optimum chip evacuation guaranteed.
- Cutting edges protected by insert seat.

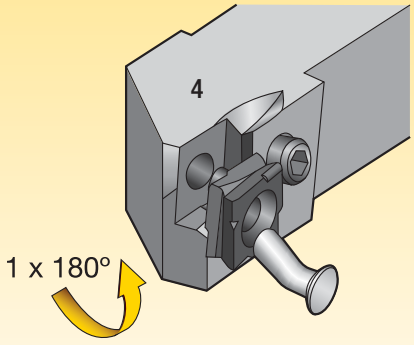


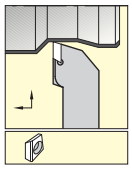
Quick and easy cutting edge switch —
just loosen the pin, no need to remove it.



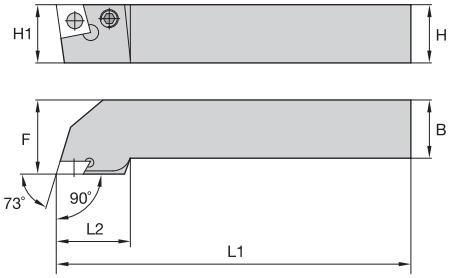








See page F26 for inserts.

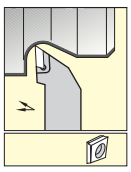


H = H1

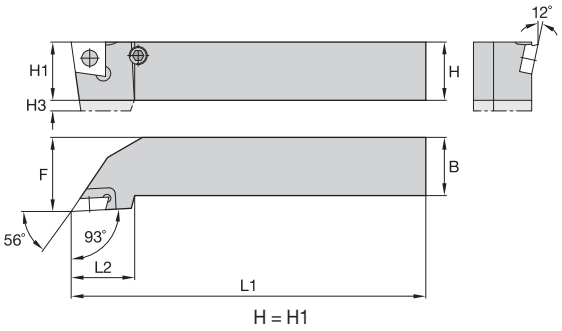
1.108...90° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.10825R700	25	25	150,0	36	32,0	E2FIX10..R..	**410.081**	**121.616**	**170.003**
left hand									
1.10825L700	25	25	150,0	36	32,0	E2FIX10..L..	**410.081**	**121.616**	**170.003**

Application Specific



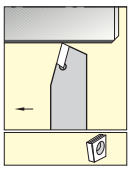
See page F25 for inserts.



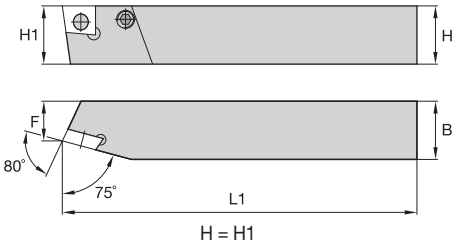
H = H1

1.108...93° • Metric

catalogue number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand										
1.10820R310	20	5	20	125,0	26	25,0	D2FIX15..RHP/FN/MS	**112.403**	**121.612**	**170.003**
1.10825R310	25	–	25	150,0	26	32,0	D2FIX15..RHP/FN/MS	**112.404**	**121.616**	**170.003**
left hand										
1.10820L310	20	5	20	125,0	26	25,0	D2FIX15..LHP/FN/MS	**112.403**	**121.612**	**170.003**
1.10825L310	25	–	25	150,0	26	32,0	D2FIX15..LHP/FN/MS	**112.404**	**121.616**	**170.003**



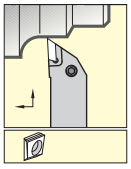
See page F23 for inserts.



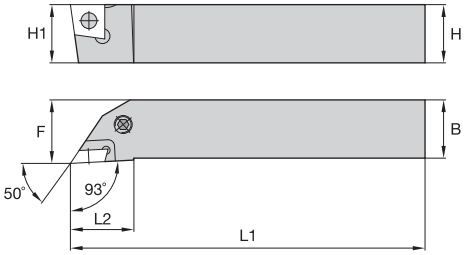
H = H1

1.171...75° • Metric

catalogue number	H	B	L1	F	gage insert	clamp stud	clamping screw	hex wrench
right hand								
1.17120R130	20	20	125,0	15,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.17125R330	25	25	150,0	17,0	C2FIX15..R..	**112.404**	**121.616**	**170.003**
left hand								
1.17120L130	20	20	125,0	15,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.17125L330	25	25	150,0	17,0	C2FIX15..L..	**112.404**	**121.616**	**170.003**



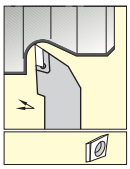
See page F27 for inserts.



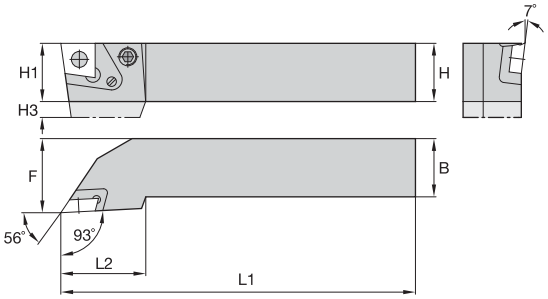
H = H1

1.180...93° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.18025R302	25	20	150,0	36	26,0	K2FIX15..R..	**112.423**	**121.612**	**170.003**
left hand									
1.18025L302	25	20	150,0	36	26,0	K2FIX15..L..	**112.423**	**121.612**	**170.003**



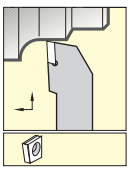
See page F24 for inserts.



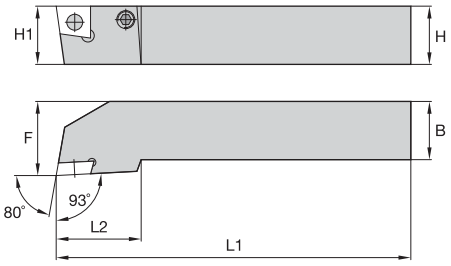
H = H1

1.18 • Metric

catalogue number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench	steel nest assembly
right hand											
1.18016R110	16	4	16	100,0	28	24,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18020R110	20	–	20	125,0	26	25,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18020R310	20	5	20	125,0	26	26,0	D2FIX15..R..	**112.403**	**121.612**	**170.003**	–
1.18025R110	25	–	25	150,0	26	32,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18025R310	25	–	25	150,0	26	32,0	D2FIX15..R..	**112.404**	**121.616**	**170.003**	–
1.18025R315	25	7	25	150,0	36	32,0	D2FIX15..R..	**112.505**	**121.616**	**170.003**	**132.151**
1.18032R315	32	–	25	170,0	36	32,0	D2FIX15..R..	**112.505**	**121.616**	**170.003**	**132.151**
1.18032R410	32	–	25	170,0	36	32,0	D2FIX18..R..	**112.604**	**121.816**	**170.004**	–
left hand											
1.18016L110	16	4	16	100,0	28	24,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18020L110	20	–	20	125,0	26	25,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18020L310	20	5	20	125,0	26	26,0	D2FIX15..L..	**112.403**	**121.612**	**170.003**	–
1.18025L110	25	–	25	150,0	26	32,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18025L310	25	–	25	150,0	26	32,0	D2FIX15..L..	**112.404**	**121.616**	**170.003**	–
1.18025L315	25	7	25	150,0	36	32,0	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**
1.18032L315	32	–	25	170,0	36	32,0	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**
1.18032L410	32	–	25	170,0	36	32,0	D2FIX18..L..	**112.604**	**121.816**	**170.004**	–



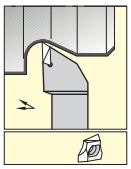
See page F23 for inserts.



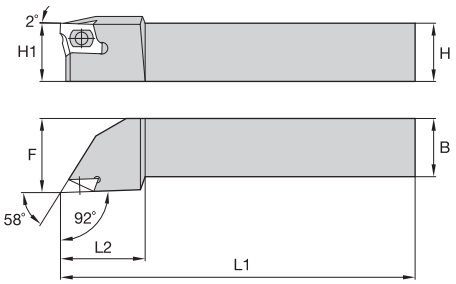
H = H1

1.180...93° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.18020R130	20	20	125,0	26	26,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.18025R130	25	25	150,0	26	32,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.18025R330	25	25	150,0	36	32,0	C2FIX15..R..	**112.404**	**121.616**	**170.003**
1.18032R430	32	25	170,0	36	32,0	C2FIX18..R..	**112.604**	**121.816**	**170.004**
left hand									
1.18020L130	20	20	125,0	26	26,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.18025L130	25	25	150,0	26	32,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.18025L330	25	25	150,0	36	32,0	C2FIX15..L..	**112.404**	**121.616**	**170.003**
1.18032L430	32	25	170,0	36	32,0	C2FIX18..L..	**112.604**	**121.816**	**170.004**



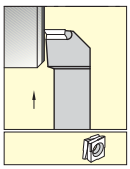
See page F27 for inserts.



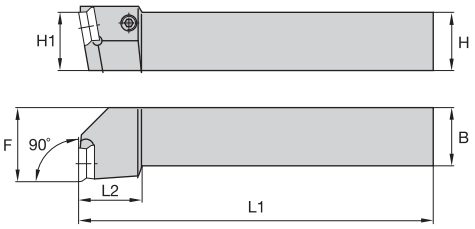
H = H1

1.380...92° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.38020R021	20	20	125,0	35	25,0	D4FIX..R..	**114.111**	**121.812**	**170.004**
1.38025R021	25	25	150,0	36	32,0	D4FIX..R..	**114.111**	**121.816**	**170.004**
left hand									
1.38020L021	20	20	125,0	35	25,0	D4FIX..L..	**114.111**	**121.812**	**170.004**
1.38025L021	25	25	150,0	36	32,0	D4FIX..L..	**114.111**	**121.816**	**170.004**



See page F28 for inserts.

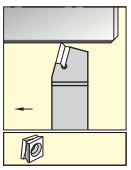


H = H1

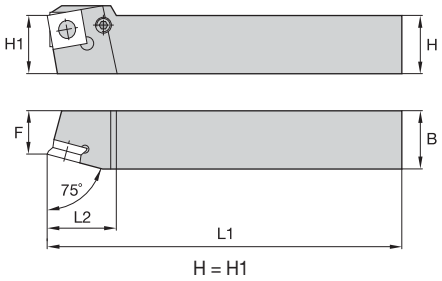
1.777...90° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77720R101	20	20	125,0	26	25,5	1.81201L9	**118.214**	**121.612**	**170.003**
1.77725R301	25	25	150,0	26	32,0	C8FIX15..L..	**118.314**	**121.816**	**170.004**
left hand									
1.77720L101	20	20	125,0	26	25,5	1.81201R9	**118.214**	**121.612**	**170.003**

NOTE: Right-hand tool requires left-hand insert.

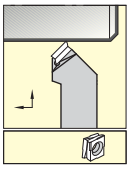


See page F28 for inserts.

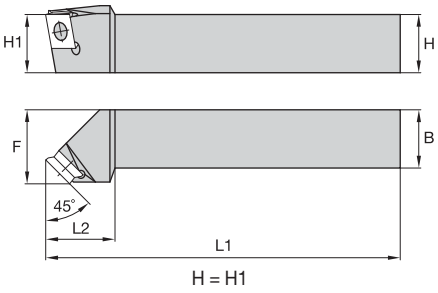


1.771...75° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77120R100	20	20	125,0	20	17,0	C8FIX12..R..	**118.204**	**121.612**	**170.003**
1.77125R300	25	25	150,0	26	21,0	C8FIX15..R..	**410.084**	**121.816**	**170.004**
1.77132R400	32	32	170,0	38	27,0	C8FIX18..R..	**118.404**	**121.820**	**170.004**
left hand									
1.77120L100	20	20	125,0	20	17,0	C8FIX12..L..	**118.204**	**121.612**	**170.003**
1.77132L400	32	32	170,0	38	27,5	C8FIX18..L..	**118.404**	**121.820**	**170.004**



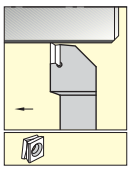
See page F28 for inserts.



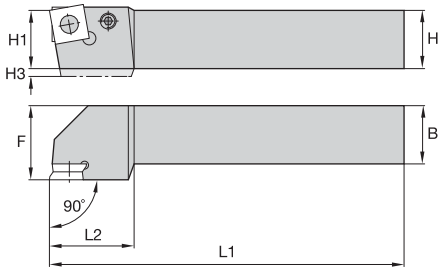
1.772...45° • Metric

catalogue number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77225R301	25	25	150,0	26	32,0	C8FIX15..L..	**118.314**	**121.816**	**170.004**

NOTE: C8FIX15..L.. is usable just for plunging.
For both plunging and turning C4FIX15..L.. has to be used.



See page F28 for inserts.



H = H1

1.780...90° • Metric

catalogue number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	screw	hex wrench
right hand											
1.78012R103	12	–	12	80,0	20	14,0	C8FIX12..R..	–	–	**122.511**	**170.003**
1.78016R100	16	4	16	100,0	28	25,0	C8FIX12..R..	**118.204**	**121.616**	–	**170.003**
1.78020R100	20	–	20	125,0	26	25,0	C8FIX12..R..	**118.204**	**121.616**	–	**170.003**
1.78025R100	25	–	25	150,0	26	32,0	1.81201R...	**118.214**	**121.616**	–	**170.003**
1.78025R300	25	–	25	150,0	36	32,0	C8FIX15..R..	**410.084**	**121.816**	–	**170.004**
1.78032R400	32	–	32	170,0	36	40,0	C8FIX18..R..	**118.404**	**121.825**	–	**170.004**
left hand											
1.78025L100	25	–	25	150,0	26	32,0	1.81201L...	**118.214**	**121.616**	–	**170.003**
1.78025L300	25	–	25	150,0	36	32,0	C8FIX15..L..	**410.084**	**121.816**	–	**170.004**
1.78032L400	32	–	32	170,0	36	40,0	C8FIX18..L..	**118.404**	**121.825**	–	**170.004**

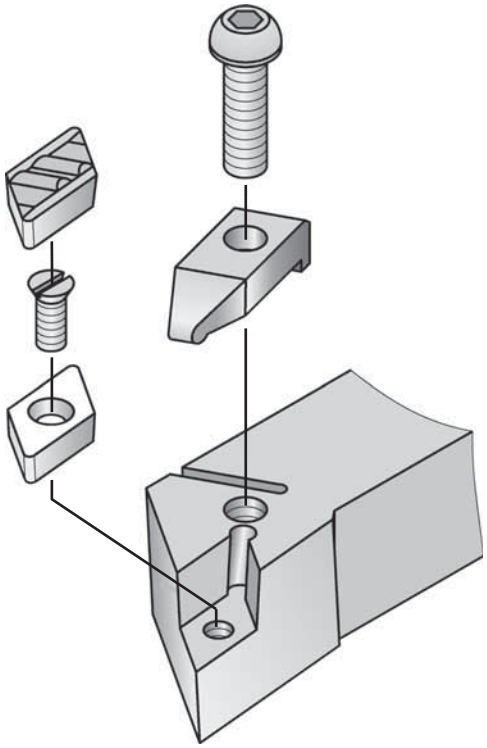
Top Notch™ Profiling

Primary Application

Top Notch is the proven solution for high productivity. The Top Notch system provides consistent tool performance, accurate indexing, and superior clamping to provide excellent surface finishing and superior tool life.

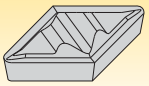
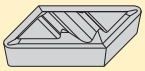
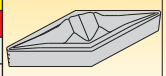
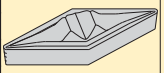
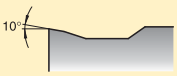
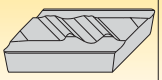
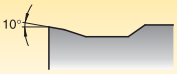
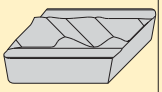
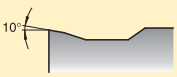
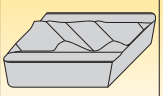
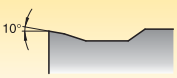
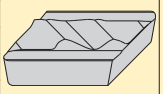
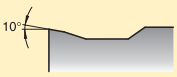
Features and Benefits

- Top Notch guarantees that the insert is rigidly held.
- Stable against alternating cutting force directions, compared with customary clamping methods.
- Second cutting edge well protected against chiphammering.
- Precision-ground inserts guarantee high precision indexing and lower cutting forces.



Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
finishing	DCGR			0,1–0,3 0,3–1,8
	KCGR			0,1–0,3 0,3–1,8
finishing	VBMR			0,1–0,4 0,3–2,0
	VCGR			0,1–0,4 0,3–2,0
finishing	KNGX-15			0,2–0,4 0,8–2,8
medium machining	KNGX-20			0,2–0,5 1,0–3,0
medium machining	KNGX-25			0,3–0,6 1,1–3,6
roughing	KNGX-32			0,3–0,7 1,5–5,1

Step 1 • Select the insert geometry

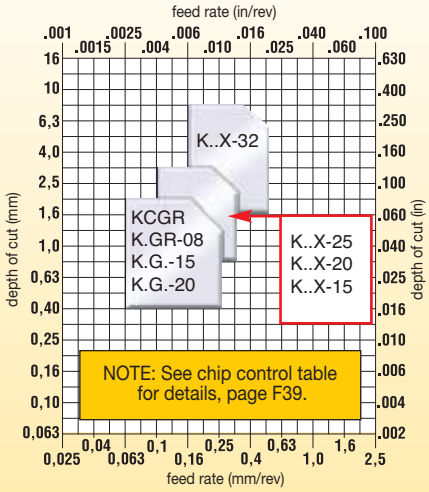
Negative Inserts

-K...X-32
Roughing

-K...X-25—K...X-15,
Medium Machining

-KCGR
Finishing

-K. GR-08, K.G.-15,
K.G.-20
Finishing

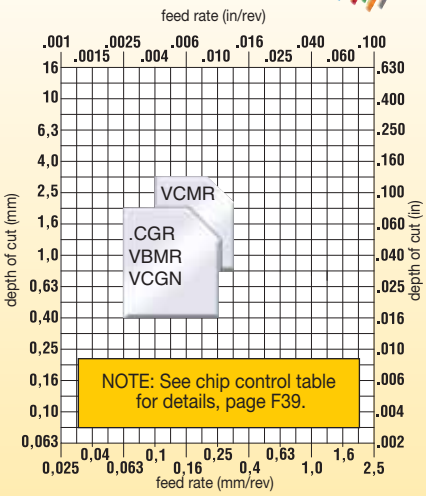


Positive Inserts

-VCMR
Medium Machining

-.CGR, VBMR
Finishing

-VCGN
Finishing



Step 2 • Select the grade

cutting condition		Steel Finishing	Steel Medium Machining	Steel Roughing	Stainless Steel Finishing	Stainless Steel Medium Machining	Stainless Steel Roughing
heavily interrupted cut		KC9125	KC8050	KC8050	KC9225	KC8050	KC8050
lightly interrupted cut		KC9110	KC9125	KC8050	KC5010 KCU10	KC5025 KCU25	KC5025 KCU25
varying depth of cut, casting, or forging skin		KT315	KC9125	KC9125	KT315	KC9225	KC9225
smooth cut, pre-turned surface		KT315	KC9110	KC9110	KT315	KC5010 KCU10	KC9225

cutting condition		Cast Iron Finishing	Cast Iron Medium Machining	Cast Iron Roughing	Non-Ferrous Finishing	Non-Ferrous Medium Machining	Non-Ferrous Roughing
heavily interrupted cut		KC8050	KC8050	KC8050	KC5010 KCU10	KC5010 KCU10	KC5010 KCU10
lightly interrupted cut		KC9315	KC8050	KC8050	KC5410 KD1425	KC5010 KCU10	KC5010 KCU10
varying depth of cut, casting, or forging skin		KC9315	KC9315	KC9315	KD1425	KC5410	KC5410
smooth cut, pre-turned surface		KC5010 KCU10	KC5010 KCU10	KC5010 KCU10	KD1425	KC5410	KC5410

cutting condition		High-Temperature Alloys Finishing	High-Temperature Alloys Medium Machining	High-Temperature Alloys Roughing
heavily interrupted cut		KC5025 KCU25	K68	K68
lightly interrupted cut		KC5010 KCU10	KC5010 KCU10	KC8050
varying depth of cut, casting, or forging skin		KC5010 KCU10	KC5010 KCU10	KC5010 KCU10
smooth cut, pre-turned surface		KC5010 KCU10	KC5010 KCU10	KC5010 KCU10

Step 3 • Select the cutting speed

Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	50 (170)	100 (330)	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	m/min	SFM
P	KT315					◁▷				260	850
	KC9110					◁▷				340	800
	KC9125				◁▷					180	600
	KC8050				◁▷					165	550

Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	50 (170)	100 (330)	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	m/min	SFM
M	KT315				◁▷					230	750
	KC5010/KCU10				◁▷					180	600
	KC5025			◁▷						120	400
	KC9225				◁▷					170	550
	KC8050				◁▷					150	500

Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	500 (1600)	750 (2400)	m/min	SFM
K	KB1345								◁▷	760	2520
	KT315				◁▷					275	900
	KC5010/KCU10			◁▷						245	800
	KC9315				◁▷					245	800
	KC8050			◁▷						230	750

Non-Ferrous — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	m/min	SFM
N	K01425			◁▷						765	2500
	KC5410		◁▷							550	1800
	KC5010/KCU10		◁▷							460	1500
	K68	◁▷								150	500

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◁▷

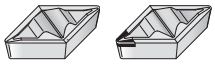
material group	grade	15 (50)	40 (120)	55 (180)	80 (250)	100 (330)	170 (550)	200 (655)	230 (750)	m/min	SFM
S	KC5010/KCU10			◁▷						60	200
	KC5025/KCU25			◁▷						50	170
	KC8050			◁▷						70	230
	K68		◁▷							30	100

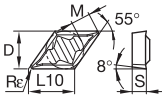
◁▷ Represents the recommended starting conditions. Optimise for your specific application.

● first choice
○ alternate choice

		K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
P			●	●	●			○	○	○	○	○		●		
M								●	●	●	●	●		○		
K			○	○		●	●							○		
N		○											●		●	
S		●							●	●	●	●				●
H																

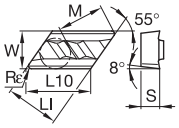
■ DCGR • DPGR





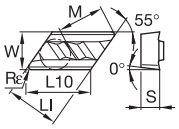
ISO catalogue number	D mm	L10 mm	S mm	M mm	Rε mm
DCGR150404	12,70	15,50	4,76	6,94	0,4
DCGR150408	12,70	15,50	4,76	6,48	0,8
DCGR150412	12,70	15,50	4,76	6,01	1,2

■ KCGR • NPGR



ISO catalogue number	LI mm	L10 mm	W mm	S mm	M mm	Rε mm
right hand						
KCGR110304R08	9,53	11,60	6,35	3,18	9,10	0,4
KCGR110308R08	9,53	11,60	6,35	3,18	8,66	0,8
left hand						
KCGR110304L08	9,53	11,60	6,35	3,18	9,10	0,4
KCGR110308L08	9,53	11,60	6,35	3,18	8,66	0,8

■ KNGX • NPR/L



ISO catalogue number	LI mm	L10 mm	W mm	S mm	M mm	Rε mm
right hand						
KNGX150401R15	12,70	15,44	9,53	4,76	13,76	0,1
KNGX150402R15	12,70	15,44	9,53	4,76	13,67	0,2
KNGX150404R20	12,70	15,44	9,53	4,76	13,44	0,4
KNGX150408R20	12,70	15,44	9,53	4,76	12,98	0,8
KNGX150408R25	12,70	15,44	9,53	4,76	12,98	0,8
KNGX220404R25	18,62	22,73	9,53	4,76	19,91	0,4
KNGX220408R32	18,62	22,73	9,53	4,76	19,47	0,8
KNGX220408R25	18,62	22,73	9,53	4,76	19,47	0,8
left hand						
KNGX150401L15	12,70	15,44	9,53	4,76	13,76	0,1
KNGX150404L20	12,70	15,44	9,53	4,76	13,44	0,4
KNGX150408L20	12,70	15,44	9,53	4,76	12,98	0,8
KNGX150408L25	12,70	15,44	9,53	4,76	12,98	0,8
KNGX220404L25	18,62	22,73	9,53	4,76	19,91	0,4
KNGX220408L32	18,62	22,73	9,53	4,76	19,47	0,8
KNGX220408L20	18,62	22,73	9,53	4,76	19,47	0,8
KNGX220408L25	18,62	22,73	9,53	4,76	19,47	0,8

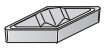
● first choice
○ alternate choice

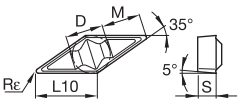
| | | |

● first choice
○ alternate choice

		K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
P			●	●	●			○	○	○	○	○		●		
M								●	●	●	●	●		○		
K			○	○		●	●							○		
N		○											●		●	
S		●							●	●	●	●				●
H																

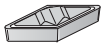
VBMR

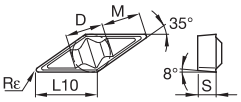




ISO catalogue number	D mm	L10 mm	S mm	M mm	Rε mm
VBMR110302	6,35	11,07	3,18	6,91	0,2
VBMR110304	6,35	11,07	3,18	6,46	0,4
VBMR110308	6,35	11,07	3,18	5,54	0,8

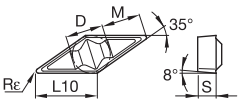
VCMR





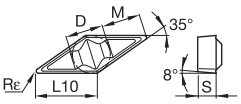
ISO catalogue number	D mm	L10 mm	S mm	M mm	Rε mm
VCMR160404	9,53	16,61	4,76	10,15	0,4
VCMR160408	9,53	16,61	4,76	9,23	0,8

VCGN



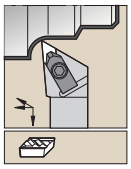
ISO catalogue number	D mm	L10 mm	S mm	M mm	Rε mm
VCGN160404	9,53	16,61	4,76	10,15	0,4
VCGN160408	9,53	16,61	4,76	9,23	0,8
VCGN160412	9,53	16,61	4,76	8,31	1,2

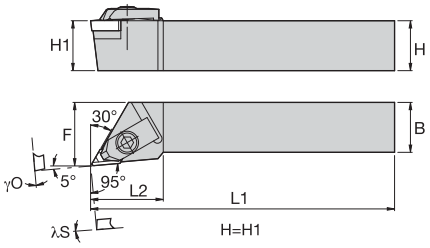
VCGR • VPGR



ISO catalogue number	D mm	L10 mm	S mm	M mm	Rε mm
VCGR160402	9,53	16,61	4,76	10,60	0,2
VCGR160404	9,53	16,61	4,76	10,15	0,4
VCGR160408	9,53	16,61	4,76	9,23	0,8
VCGR160412	9,53	16,61	4,76	8,31	1,2
VCGR160416	9,53	16,61	4,76	7,38	1,6

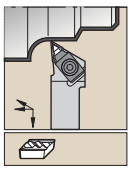
Application Specific

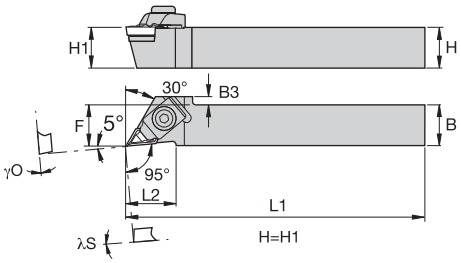




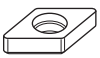
NKLC 95°

catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKLCR1212F11	12	12	16,0	80	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm
NKLCR1616H11	16	16	20,0	100	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm
NKLCR2020K11	20	20	25,0	125	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm
NKLCR2525M11	25	25	32,0	150	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm
left hand														
NKLCL1212F11	12	12	16,0	80	24,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
NKLCL1616H11	16	16	20,0	100	24,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
NKLCL2020K11	20	20	25,0	125	24,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
NKLCL2525M11	25	25	32,0	150	24,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm

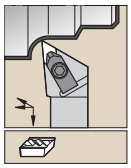


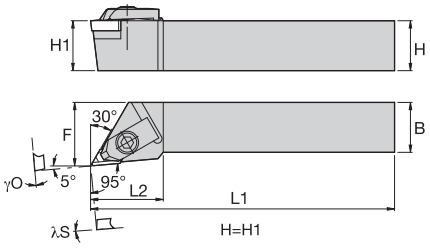


NKLC-F 95°

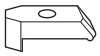


catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKLCRF1212M11Q	12	12	12,0	150	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM180	MS524	3 mm
NKLCRF1616K11Q	16	16	16,0	125	24,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM180	MS524	3 mm
left hand														
NKLCLF1616K11Q	16	16	16,0	125	24,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM180	MS524	3 mm

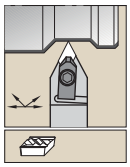


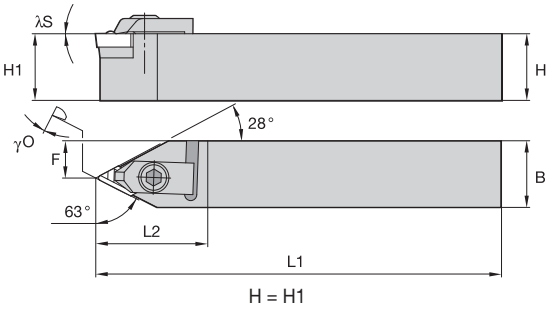


NKLN 95°

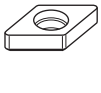


catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKLNR2020K15	20	20	25,0	125	32,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm
NKLNR2525M15	25	25	32,0	150	32,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm
NKLNR3225P15	32	25	32,0	170	32,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm
left hand														
NKLNL2020K15	20	20	25,0	125	32,0	-2.0	-5.0	KN..150410L	SM871	MS111	2 mm	CM66	MS625	4 mm
NKLNL2525M15	25	25	32,0	150	32,0	-2.0	-5.0	KN..150410L	SM871	MS111	2 mm	CM66	MS625	4 mm

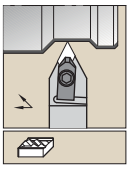


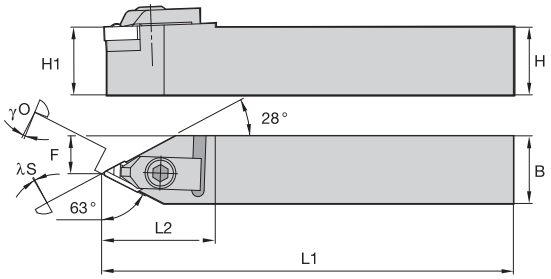


NKNC 63°



catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKNCR1616H11	16	16	9,0	100	27,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm
left hand														
NKNCL1616H11	16	16	9,0	100	27,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm

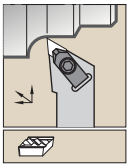


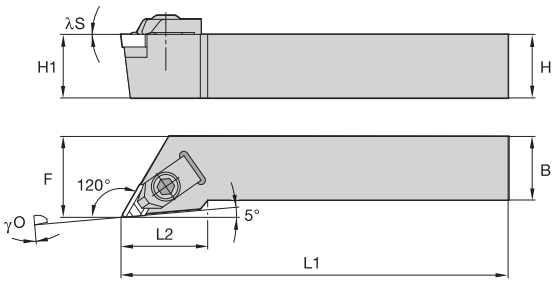


H = H1

NKNN 63°

catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKNNR2020K15	20	20	12,0	125	37,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm
NKNNR2525M15	25	25	12,0	150	37,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm
left hand														
NKNNL2020K15	20	20	12,0	125	37,0	-2.0	-5.0	KN..150410L	SM871	MS111	2 mm	CM66	MS625	4 mm
NKNNL2525M15	25	25	12,0	150	37,0	-2.0	-5.0	KN..150410L	SM871	MS111	2 mm	CM66	MS625	4 mm

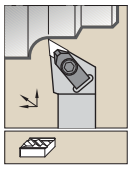


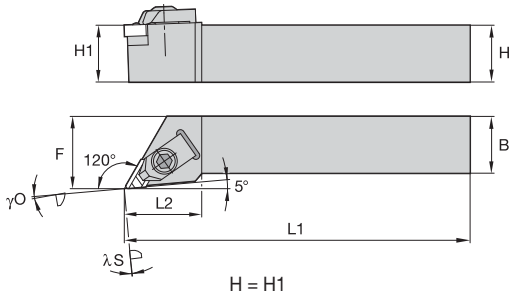


H = H1

NKXC 120°

catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKXCR1212F11	12	12	16,0	80	27,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
NKXCR1616H11	16	16	20,0	100	27,0	0.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
left hand														
NKXCL1616H11	16	16	20,0	100	27,0	0.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm



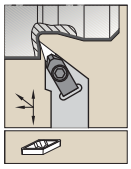


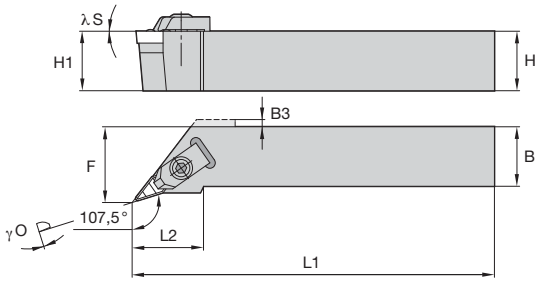
H = H1

NKXN 120°

catalogue number	H	B	F	L1	L2	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
NKXNR2525M15	25	25	32,0	150	35,0	-2.0	-5.0	KN..150410L	SM871	MS111	2 mm	CM66	MS625	4 mm
left hand														
NKXNL2525M15	25	25	32,0	150	35,0	-2.0	-5.0	KN..150410R	SM872	MS111	2 mm	CM66	MS625	4 mm

Application Specific

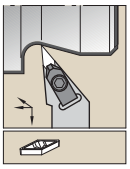


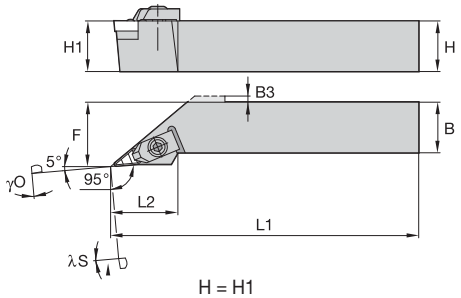


H = H1

NVHB 107,5°

catalogue number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
NVHBR1616H11	16	16	20,0	100	25,0	3,0	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
NVHBR2020K11	20	20	25,0	125	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
NVHBR2525M11	25	25	32,0	150	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
left hand															
NVHBL1616H11	16	16	20,0	100	25,0	3,0	0.0	0.0	VB..110304	SM813	MS959	4 mm	CM159	MS518	4 mm
NVHBL2020K11	20	20	25,0	125	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM159	MS518	2.5 mm
NVHBL2525M11	25	25	32,0	150	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM159	MS518	2.5 mm

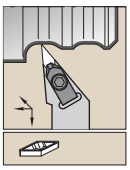


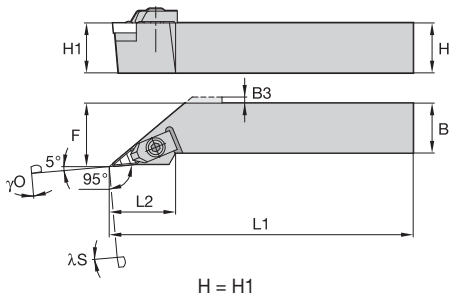


H = H1

NVLB 95°

catalogue number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
NVLBR1616H11	16	16	20,0	100	25,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
NVLBR2020K11	20	20	25,0	125	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
NVLBR2525M11	25	25	32,0	150	32,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
left hand															
NVLBL2020K11	20	20	25,0	125	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM159	MS518	2.5 mm
NVLBL2525M11	25	25	32,0	150	32,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM159	MS518	2.5 mm

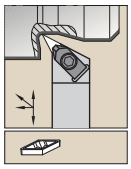


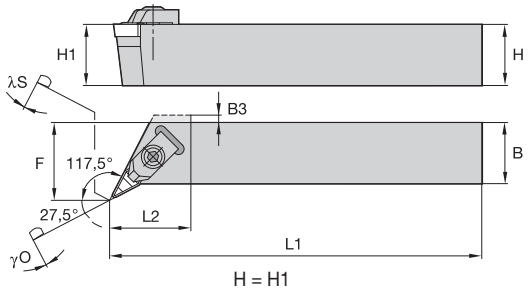


H = H1

NVLC 95°

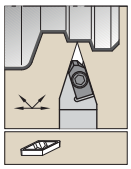
catalogue number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
NVLCR1616H16	16	16	20,0	100	37,0	5,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVLCR2020K16	20	20	25,0	125	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVLCR2525M16	25	25	32,0	150	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVLCR3225P16	32	25	32,0	170	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
left hand															
NVLCL1616H16	16	16	20,0	100	37,0	5,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm
NVLCL2020K16	20	20	25,0	125	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm
NVLCL2525M16	25	25	32,0	150	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm
NVLCL3225P16	32	25	32,0	170	37,0	–	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm

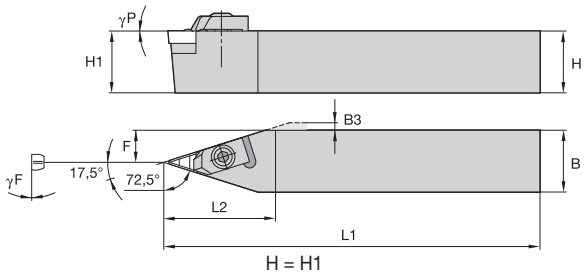




NVOC 117,5°

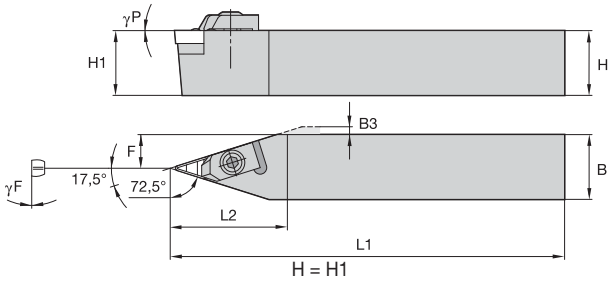
catalogue number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
NVOCR2020K16	20	20	32,0	125	29,0	3,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVOCR2525M16	25	25	32,0	150	29,0	3,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
left hand															
NVOCL2020K16	20	20	32,0	125	29,0	3,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm
NVOCL2525M16	25	25	32,0	150	29,0	3,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM114	MS412	4 mm





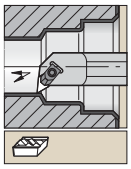
NVVB 72,5°

catalogue number	H	B	F	L1	L2	B3	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
NVVBN2020K11	20	20	10,0	125	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm
NVVBN2525M11	25	25	12,5	150	30,0	–	0.0	0.0	VB..110304	SM813	MS959	2.5 mm	CM158	MS518	2.5 mm

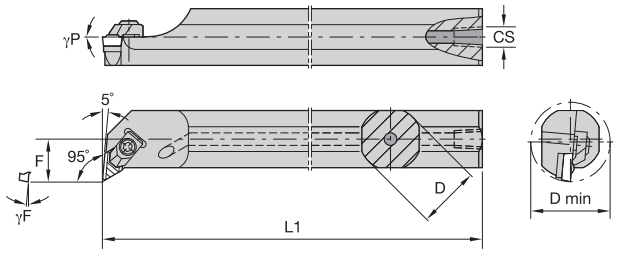


NVVC 72,5°

catalogue number	H	B	F	L1	L2	B3	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
NVVCN1616H16	16	16	8,0	100	42,0	4,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVVCN2020K16	20	20	10,0	125	42,0	2,0	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm
NVVCN2525M16	25	25	12,5	150	42,0	—	0.0	0.0	VC..160408	SM812	MS959	4 mm	CM113	MS412	4 mm

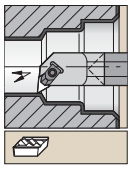


Steel shank with through coolant.

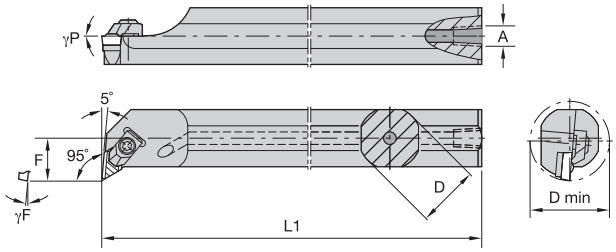


A-NKLC 95°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A12MNKLCR11	12	16,0	9,0	150	1/16-27 NPT	-5.0	0.0	KC..110305L	—	—	2.5 mm	**CM106**	**MS518**	2.5 mm
A16MNKLCR11	16	20,0	11,0	150	1/8-27 NPT	-7.0	0.0	KC..110305L	**SM886**	**MS959**	2.5 mm	**CM106**	**MS518**	2.5 mm
A20QNKLCR11	20	25,0	13,0	180	1/8-27 NPT	-5.0	0.0	KC..110305L	**SM886**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
A25RNKLCR11	25	32,0	16,0	200	1/4-18 NPT	-5.0	0.0	KC..110305L	**SM886**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
A32SNKLCR11	32	40,0	22,0	250	1/4-18 NPT	-5.0	0.0	KC..110305L	**SM886**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
left hand														
A12MNKLCL11	12	16,0	9,0	150	1/16-27 NPT	-5.0	0.0	KC..110305R	—	—	2.5 mm	**CM106**	**MS518**	2.5 mm
A16MNKLCL11	16	20,0	11,0	150	1/8-27 NPT	-7.0	0.0	KC..110305R	**SM885**	**MS959**	2.5 mm	**CM105**	**MS518**	2.5 mm
A20QNKLCL11	20	25,0	13,0	180	1/8-27 NPT	-5.0	0.0	KC..110305R	**SM885**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
A25RNKLCL11	25	32,0	16,0	200	1/4-18 NPT	-5.0	0.0	KC..110305R	**SM885**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
A32SNKLCL11	32	40,0	22,0	250	1/4-18 NPT	-5.0	0.0	KC..110305R	**SM885**	**MS959**	3 mm	**CM68**	**MS524**	3 mm

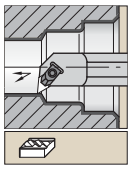


Carbide shank with through coolant.

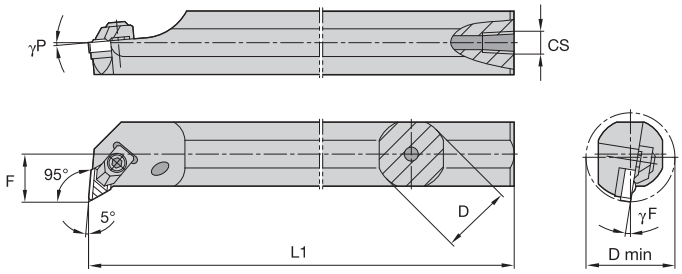


E-NKLC 95°

catalogue number	D	D min	F	L1	A	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
E12QNKLCR11	12	16,0	9,0	180	4,8	–	-5.0	0.0	KC..110308L	–	–	2.5 mm	**CM106**	**MS518**	2.5 mm
E16RNKLCR11	16	20,0	11,0	200	5,5	–	-5.0	0.0	KC..110308L	**SM886**	**MS959**	2.5 mm	**CM106**	**MS518**	2.5 mm
E20SNKLCR11	20	25,0	13,0	250	7,1	–	-5.0	0.0	KC..110308L	**SM886**	**MS959**	3 mm	**CM68**	**MS524**	3 mm
left hand															
E12QNKLCL11	12	16,0	9,0	180	4,8	–	-5.0	0.0	KC..110308R	–	–	2.5 mm	**CM105**	**MS518**	2.5 mm
E16RNKLCL11	16	20,0	11,0	200	5,5	–	-5.0	0.0	KC..110308R	**SM885**	**MS959**	2.5 mm	**CM105**	**MS518**	2.5 mm
E20SNKLCL11	20	25,0	13,0	250	7,1	–	-5.0	0.0	KC..110308R	**SM885**	**MS959**	3 mm	**CM68**	**MS524**	3 mm

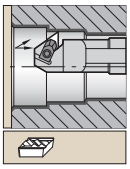


Steel shank with through coolant.

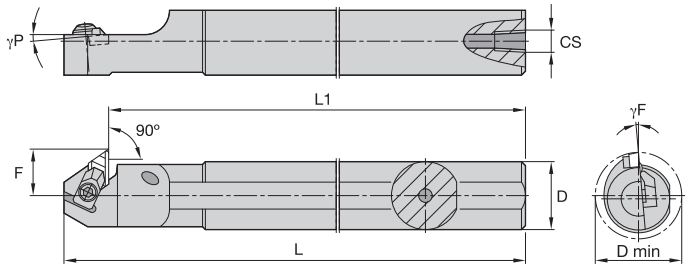


A-NKLN 95°

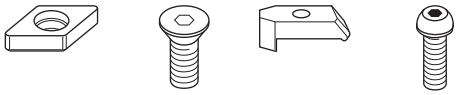
catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A25RNKLNR15	25	32,0	17,0	200	1/4-18 NPT	-9.0	-5.0	KN..150410L	**SM871**	**MS111**	2 mm	**CM77**	**MS1221**	T25
A32SNKLNR15	32	40,0	22,0	250	1/4-18 NPT	-9.0	-5.0	KN..150410L	**SM871**	**MS111**	2 mm	**CM66**	**MS624**	4 mm
A40TNKLNR15	40	50,0	27,0	300	1/4-18 NPT	-5.0	-5.0	KN..150410L	**SM871**	**MS111**	2 mm	**CM66**	**MS624**	4 mm
left hand														
A25RNKLNL15	25	32,0	17,0	200	1/4-18 NPT	-9.0	-5.0	KN..150410R	**SM872**	**MS111**	2 mm	**CM69**	**MS1221**	T25
A32SNKLNL15	32	40,0	22,0	250	1/4-18 NPT	-9.0	-5.0	KN..150410R	**SM872**	**MS111**	2 mm	**CM66**	**MS624**	4 mm
A40TNKLNL15	40	50,0	27,0	300	1/4-18 NPT	-5.0	-5.0	KN..150410R	**SM872**	**MS111**	2 mm	**CM66**	**MS624**	4 mm



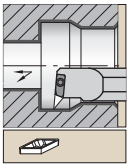
Steel shank with through coolant.



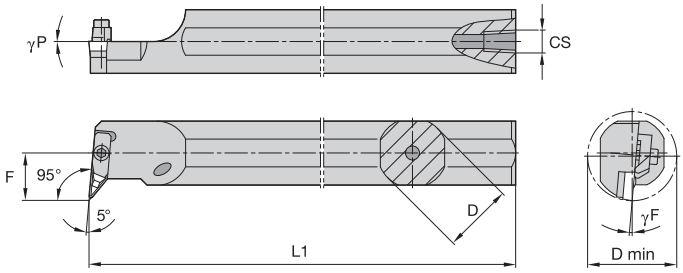
A-NKXC 90°



catalogue number	D	D min	F	L1	L	CS	γF°	γP°	gage insert	shim	shim screw	clamp	clamp screw	hex (mm)
left hand														
A20QNKXCL11	20	25,0	13,0	180	199	1/8-27 NPT	-5.0	-5.0	KC..110305R	**SM886**	**MS959**	**CM79**	**MS1220**	T25

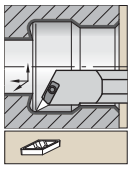


Steel shank with through coolant.

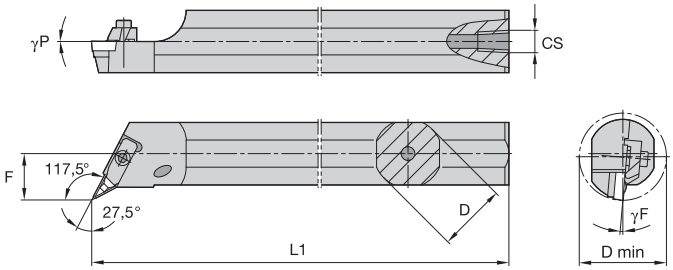


A-NVLB 95°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A20SNVLBR11	20	26,0	13,0	250	1/8-27 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
A25TNVLBR11	25	32,0	17,0	300	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
left hand														
A20SNVLBL11	20	26,0	13,0	250	1/8-27 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM158**	**MS518**	2.5 mm
A25TNVLBL11	25	32,0	17,0	300	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM158**	**MS518**	2.5 mm



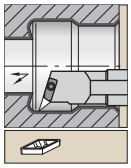
Steel shank with
through coolant.



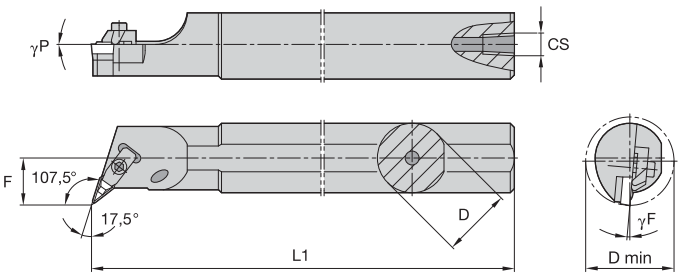
A-NVOC 117,5°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A32SNVOCR16	32	40,0	22,0	250	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM113**	**MS412**	4 mm
A40TNVOCR16	40	50,0	27,0	300	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM113**	**MS412**	4 mm
A50UNVOCR16	50	63,0	35,0	350	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM113**	**MS412**	4 mm
left hand														
A32SNVOCL16	32	40,0	22,0	250	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM114**	**MS412**	4 mm
A40TNVOCL16	40	50,0	27,0	300	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM114**	**MS412**	4 mm

Application Specific

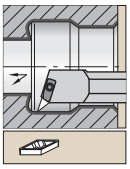


Steel shank with
through coolant.

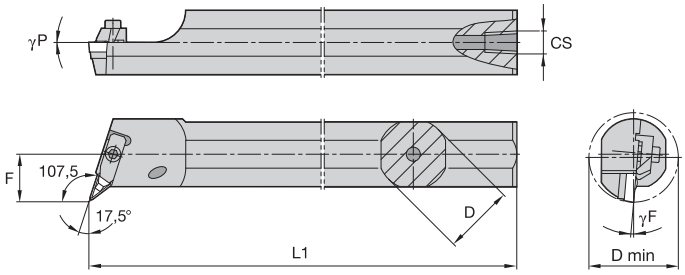


A-NVQB 107,5°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A16RNVQBR11	16	22,0	11,0	200	1/8-27 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
A20SNVQBR11	20	25,0	13,0	250	1/8-27 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
A25TNVQBR11	25	32,0	17,0	300	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
left hand														
A20SNVQBL11	20	25,0	13,0	250	1/8-27 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM158**	**MS518**	2.5 mm
A25TNVQBL11	25	32,0	17,0	300	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM158**	**MS518**	2.5 mm

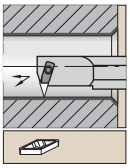


Steel shank with through coolant.

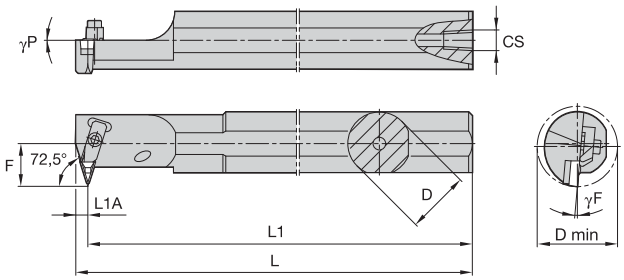


A-NVQC 107,5°

catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A32SNVQCR16	32	40,00	22,0	250	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM113**	**MS412**	4 mm
A40TNVQCR16	40	50,00	27,0	300	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM113**	**MS412**	4 mm
left hand														
A32SNVQCL16	32	40,00	22,0	250	1/4-18 NPT	-2.0	0.0	VC..160408	**SM812**	**MS959**	4 mm	**CM114**	**MS412**	4 mm

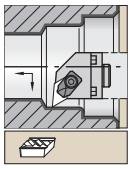


Steel shank with through coolant.

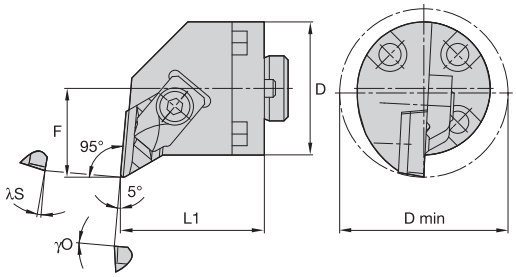


A-NVVB 72,5°

catalogue number	D	D min	F	L1	L	L1A	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand																
A25TNVVBR11	25	32,0	17,0	300	306,6	6,6	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM159**	**MS518**	2.5 mm
left hand																
A25TNVVBL11	25	32,0	17,0	300	306,6	6,6	1/4-18 NPT	-5.0	0.0	VB..110304	**SM813**	**MS959**	2.5 mm	**CM158**	**MS518**	2.5 mm



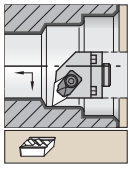
With through coolant.



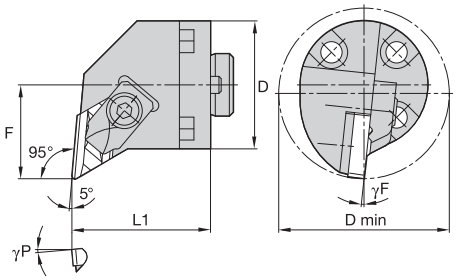
H-NKLC 95°

catalogue number	D	D min	F	L1	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand													
H25NKLCR11	25	32	17	41	-5.0	0.0	KC..110305L	SM886	MS959	3 mm	CM68	MS524	3 mm
left hand													
H25NKLCL11	25	32	17	41	-5.0	0.0	KC..110305R	SM885	MS959	3 mm	CM68	MS524	3 mm

Application Specific



With through coolant.



H-NKLN 95°

catalogue number	D	D min	F	L1	λS°	γF°	γP°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
H32NKLNR15	32	40	22	41	—	-6.0	-5.0	—	KN..150410L	**SM871**	**MS111**	2 mm	**CM66**	**MS624**	4 mm
left hand															
H32NKLNL15	32	40	22	41	—	-6.0	-5.0	—	KN..150410R	**SM872**	**MS111**	2 mm	**CM66**	**MS624**	4 mm

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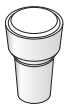
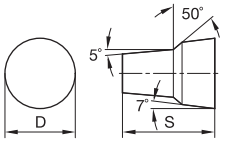
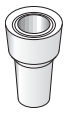
RCGK-FS

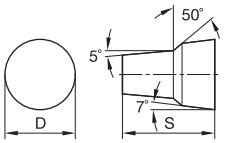




ISO catalogue number	D mm	S mm	K68	KCU10	KCU25	KC5010	KC5025	KC5410
RCGK040300FS	4,76	6,38		●		●		
RCGK060400FS	6,35	9,09		●		●		
RCGK090700FS	9,53	13,23		●	●	●	●	
RCGK120800FS	12,70	16,61		●		●		

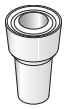
RCGK-HP

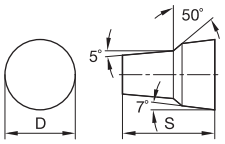




ISO catalogue number	D mm	S mm						
RCGK040300HP	4,76	6,38		●		●		●
RCGK060400HP	6,35	9,09		●		●		●
RCGK090700HP	9,53	13,23		●		●		●
RCGK120800HP	12,70	16,61		●		●		●

RCMK





ISO catalogue number	D mm	S mm						
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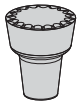
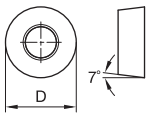
RCMK060400	6,35	9,09		●		●		
RCMK090700	9,53	13,23		●		●		
RCMK120800	12,70	16,61		●		●		

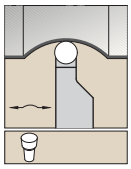
RCMK-MP

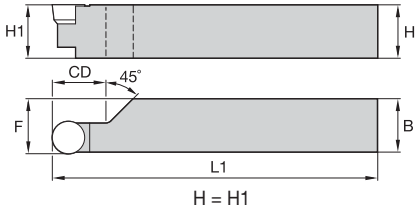




● first choice
○ alternate choice

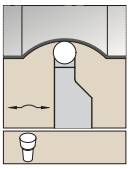
ISO catalogue number	D mm	L10 mm	Rε mm	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCMK040300MP	4,76	–	–															●									
RCMK060400MP	6,35	–	–															●									
RCMK090700MP	9,53	–	–															●									
RCMK120800MP	12,70	–	–															●									

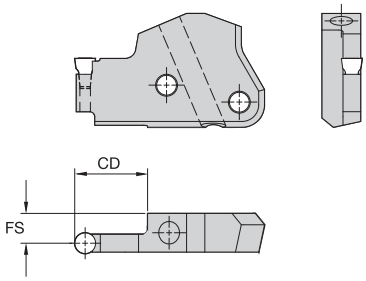




TRAO

catalogue number	H1	B	F	L1	CD	gage insert
right hand						
TRAOR2525M04	25	25	25,4	150	20	RC..040300
TRAOR2525M06	25	25	25,5	150	20	RC..060400
TRAOR3225P06	32	25	25,5	170	20	RC..060400
TRAOR3232P12	32	32	33,0	170	25	RC..120800
left hand						
TRAOL2525M06	25	25	25,5	150	20	RC..060400
TRAOL3225P06	32	25	25,5	170	20	RC..060400
TRAOL3225P09	32	25	25,8	170	25	RC..090700





TRM

catalogue number	CD mm	FS mm	cartridge size	gage insert
right hand				
TRM50R0432M	32	9,62	50	RCMK152
TRM50R0620M	19	8,98	50	RCMK23
TRM50R0632M	32	8,98	50	RCMK-23
TRM50R0640M	38	8,98	50	RCGK23
TRM50R0657M	57	8,98	50	RCMK-23
TRM50R0720M	19	8,42	50	RCMK-2.55
TRM50R0725M	25	8,42	50	RCMK-2.55
TRM50R0732M	32	8,42	50	RCMK-2.55
TRM50R0920M	19	7,64	50	RC_K35
TRM50R0932M	32	7,65	50	RCMK-35
TRM50R0940M	38	7,64	50	RC_K35
TRM50R0950M	50	7,65	50	RCMK-35
TRM50R0957M	57	7,65	50	RCMK-35
TRM50R1250M	51	6,25	50	RC_K46
left hand				
TRM50L0432M	32	9,62	50	RCMK152
TRM50L0620M	19	8,98	50	RCMK23
TRM50L0632M	32	8,98	50	RCMK-23
TRM50L0640M	38	8,98	50	RCGK23
TRM50L0657M	57	8,98	50	RCMK-23
TRM50L0720M	19	8,42	50	RCMK-2.55
TRM50L0725M	25	8,42	50	RCMK-2.55
TRM50L0732M	32	8,42	50	RCMK-2.55
TRM50L0920M	19	7,64	50	RC_K35
TRM50L0932M	32	7,65	50	RCMK-35
TRM50L0940M	38	7,64	50	RC_K35
TRM50L0950M	50	7,65	50	RCMK-35
TRM50L0957M	57	7,65	50	RCMK-35
TRM50L1250M	51	6,25	50	RC_K46

Kendex™ Mini Boring Bars

Primary Application

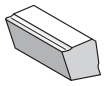
Ground inserts in their neutral position and the precision insert pocket combine to ensure superior surface finishes. The unique system design protects the second cutting edge from damage while the first edge is in operation.

Features and Benefits

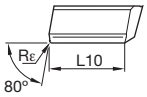
- Kendex mini boring bars are specially designed to finish bore diameters as small as 6,35mm.
- Kendex mini inserts contain two precision ground cutting edges.
- Inserts are available in uncoated and PVD coated grades.

● first choice
○ alternate choice

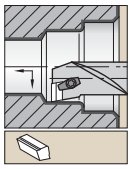
P		○
M		●
K	○	○
N	●	
S	●	●
H		



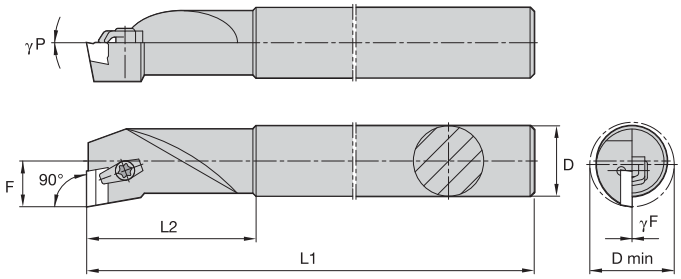
■ BPGF



ISO catalogue number	L10 mm	W mm	Rε mm	B mm	K68	KC720
right hand						
BPGF030202R14	3,00	2,00	0,20	1,40	●	●
BPGF050302R12	4,50	2,50	0,20	1,20	●	●
left hand						
BPGF030201L14	3,00	2,00	0,05	1,40	●	●
BPGF030202L14	3,00	2,00	0,20	1,40	●	●
BPGF050301L12	4,50	2,50	0,05	1,20	●	●
BPGF050302L12	4,50	2,50	0,20	1,20	●	●
BPGF050304L16	4,50	2,50	0,40	1,60	●	●
BPGF070304L18	7,00	2,50	0,40	1,80	●	●
BPGF080404L22	8,00	4,00	0,40	2,20		●

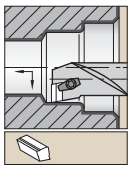


Steel shank with
through coolant.

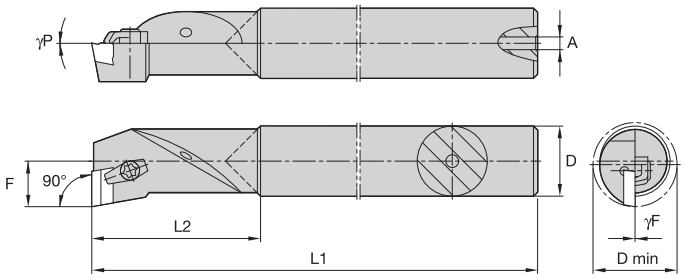


S-CBFP 90°

catalogue number	D	D min	F	L1	L2	γF°	γP°	gage insert	clamp assembly	Torx
right hand										
S06DCBFPR03	6	6	3,3	60	16,0	0.0	0.0	BP..030202L	**E1031**	T6
S06DCBFPR05	6	8	4,5	60	16,0	0.0	0.0	BP..050302L	**E1014**	T8
S08FCBFPR05	8	10	5,5	80	20,0	0.0	0.0	BP..050302L	**E1014**	T8
S10HCBFPR05	10	12	6,5	100	24,0	0.0	0.0	BP..050302L	**E1014**	T8
S12KCBFPR08	12	15	8,5	125	30,0	0.0	0.0	BP..080404L	**E1010**	T8
left hand										
S06DCBFPL03	6	6	3,3	60	16,0	0.0	0.0	BP..030202R	**E1031**	T6

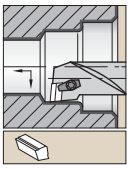


Carbide shank with
through coolant.

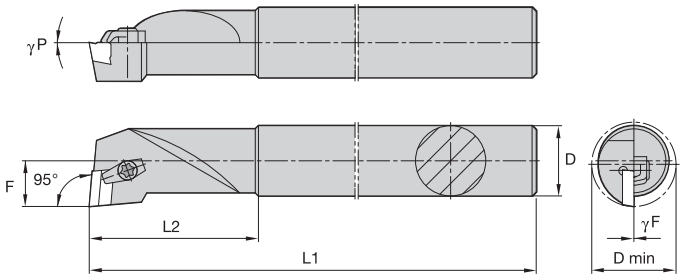


E-CBFP 90°

catalogue number	D	D min	F	L1	L2	A	γF°	γP°	gage insert	clamp assembly	Torx
right hand											
E06HCBFPR03	6	6	3,3	100	16,0	1,0	0.0	0.0	BP..030202L	**E1031**	T6
E06HCBFPR05	6	8	4,5	100	16,0	1,0	0.0	0.0	BP..050304L	**E1014**	T8
E08KCBFPR05	8	10	5,5	125	20,0	2,0	0.0	0.0	BP..050304L	**E1014**	T8
E10MCBFPR05	10	12	6,5	150	24,0	2,0	0.0	0.0	BP..050304L	**E1014**	T8

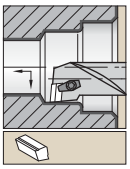


Steel shank with
through coolant.

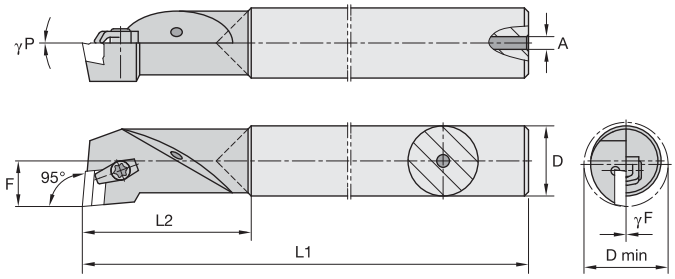


S-CBLP 95°

catalogue number	D	D min	F	L1	L2	γF°	γP°	gage insert	clamp assembly	Torx
right hand										
S06DCBLPR03	6	6	3,3	60	16,0	0.0	0.0	BP..030202L	**CE1031**	T6
S06DCBLPR05	6	8	4,5	60	16,0	0.0	0.0	BP..050302L	**CE1014**	T8
S08FCBLPR05	8	10	5,5	80	20,0	0.0	0.0	BP..050302L	**CE1014**	T8
S10HCBLPR05	10	12	6,5	100	24,0	0.0	0.0	BP..050302L	**CE1014**	T8
S12KCBLPR08	12	15	8,5	125	30,0	0.0	0.0	BP..080404L	**E1010**	T8
left hand										
S06DCBLPL03	6	6	3,3	60	16,0	0.0	0.0	BP..030202R	**CE1031**	T6
S06DCBLPL05	6	8	4,5	60	16,0	0.0	0.0	BP..050302R	**CE1014**	T8
S08FCBLPL05	8	10	5,5	80	20,0	0.0	0.0	BP..050302R	**CE1014**	T8



Carbide shank with
through coolant.



E-CBLP 95°

catalogue number	D	D min	F	L1	L2	A	γF°	γP°	gage insert	clamp assembly	Torx
right hand											
E06HCBLPR03	6	6	3,3	100	16,0	1,0	0.0	0.0	BP..030202L	**CE1031**	T6
E06HCBLPR05	6	8	4,5	100	16,0	1,0	0.0	0.0	BP..050304L	**CE1014**	T8
E08KCBLPR05	8	10	5,5	125	20,0	2,0	0.0	0.0	BP..050304L	**CE1014**	T8
E10MCBLPR05	10	12	6,5	150	24,0	2,0	0.0	0.0	BP..050304L	**CE1014**	T8
E12QCBLPR08	12	15	8,5	180	30,0	3,0	0.0	0.0	BP..080404L	**E1010**	T8
left hand											
E06HCBLPL03	6	6	3,3	100	30,0	1,0	0.0	0.0	BP..030202R	**CE1031**	T6
E06HCBLPL05	6	8	4,5	100	30,0	1,0	0.0	0.0	BP..050304R	**CE1014**	T8
E08KCBLPL05	8	10	5,5	125	20,0	2,0	0.0	0.0	BP..050304R	**CE1014**	T8
E10MCBLPL05	10	12	6,5	150	24,0	2,0	0.0	0.0	BP..050304R	**CE1014**	T8

Wheel Reprofiling/Wheelset Truing

Primary Application

Kennametal offers a complete line of tooling for wheel and axle maintenance in railroad shops. All tools incorporate the latest in tooling technology for maximum metal removal and higher productivity. All tools are proven performers in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs.

Features and Benefits

Versatility

Included in the new expanded line are tools for reconditioning mounted wheel sets, wheel boring, wheel turning, wheel truing, axle turning, and journal burnishing.

Advantages

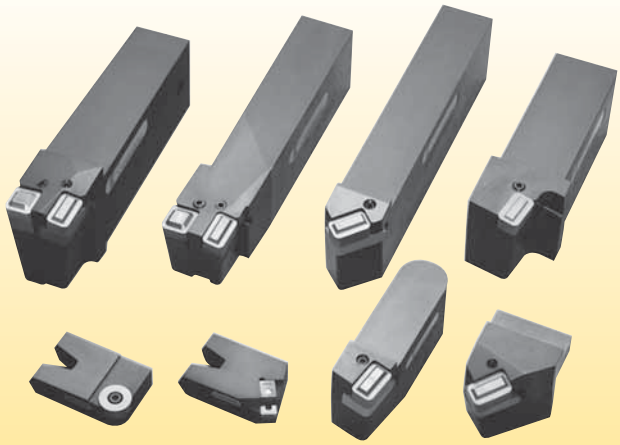
Machining conditions for these tools vary with the type of service the wheel has seen. Among the problems encountered are skid flat areas, overheating of spinning wheels, accidental torch burns, excessive mushroom and rollovers that are hardened by unusual hump retarder pressure and mismatched wheels that cause excessive wear on the side of the flange. Each of these conditions require a different machining speed and depth of cut. Even under these tough conditions, Kennametal tools have produced superior results through reduced production time and lower maintenance costs.

Wheel Lathe Tooling

Kennametal railroad tooling incorporates a unique locking unit design developed through years of testing on all types of wheel lathes and machining wheels with all types of tread surfaces.

This heavy-duty, rugged design has proven to be effective in reducing machining costs on tread turning applications, the most severe machining operation encountered in wheel and axle shops.

Strong inserts, with raised chipbreaker land and honed cutting edges, offer more effective chip control and a stronger cutting edge. Combining this tool geometry with Kennametal's grade selection delivers higher wheel turning productivity.



Wheelset Reconditioning

Advantages of Kennametal Wheel Lathe Tools:

- No top clamp to wear out or interfere with chip flow.
- Insert locks against two walls in the toolholder to prevent insert movement under heavy cutting loads.
- Hardened steel locking unit provides positive insert seating and holder protection.
- Fast, trouble-free insert indexing — just unlock one screw to release the insert.
- Quick removal of the steel locking unit and insert for cleaning or replacement.
- Heavy-duty steel locking unit design ensures longer life and helps reduce operating costs.
- Fewer parts to inventory.
- Toolholders and steel locking units, made from heat-treated alloy steel, provide support to withstand severe roughing cuts on work-hardened wheels.

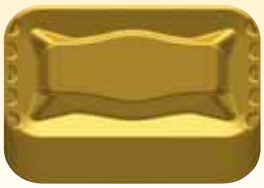
LNUX-RRH

LNUX-RRP

KRR6586-71

KRR6586-75

LNUX-RRSM

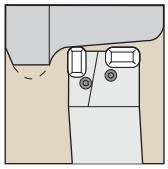


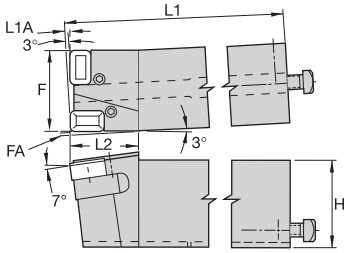
KRR6586-65

KRR6586-52

KRR6586-50

- Portal-type wheel lathe is a fully automatic, heavy-duty wheel lathe. An integrated measuring device determines wheel set profile wear to establish minimum stock removal.
- The portal-type machine bed enables roll-through operation.
- This tooling is suitable for economical machining of wheel sets for locomotives, transit, passenger, and freight cars.





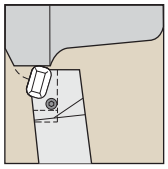
Tread Profile Turning

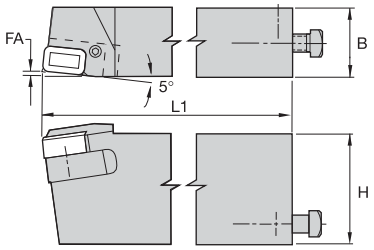
order number	catalogue number	H mm	F mm	L1 mm	L2 mm	FA mm	L1A mm	insert 1
1015754	**HUWTCL**	80,00	76,20	275,00	63,50	3,00	3,00	KRR6586__
1015723	**HUWTCR**	80,00	76,20	275,00	63,50	3,00	3,00	KRR6586__

Spare Parts

catalogue number	shim	shim	lock screw	cup point socket set screw	brass plug	heavy-duty clamp screw
HUWTCL	**SU7**	**SU8**	**S1006PKG**	**S751**	**S1033**	**S1014**
HUWTCR	**SU6**	**SU8**	**S1006PKG**	**S751**	**S1033**	**S1014**

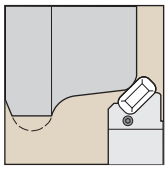
NOTE: Requires two inserts.
See page F80 for insert selection.

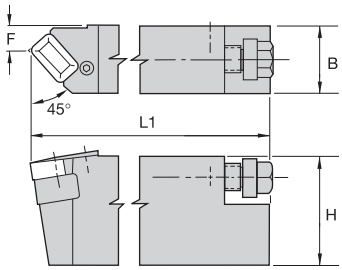




Flange Topping

order number	catalogue number	H mm	B mm	L1 mm	FA mm	insert 1
1015755	**HUWFTR**	80,00	50,00	265,00	3,53	KRR6586__
1015756	**HUWFTL**	80,00	50,00	265,00	3,53	KRR6586__





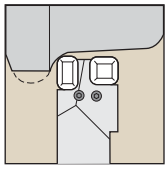
Mushroom Removal

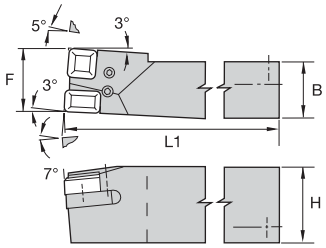
order number	catalogue number	H mm	B mm	F mm	L1 mm	insert 1
1015685	**HUMRR**	80,00	50,00	19,50	265,00	KRR6586__
1015686	**HUMRL**	80,00	50,00	19,50	265,00	KRR6586__

NOTE: See page F80 for insert selection.

- Tools and inserts are specifically designed for the feeds and speeds normally used on this type of lathe.
- Style HUTC is used for profiling the tread contours on the wheel, and style HUFT is used for normal flange topping.
- For heavy flange topping it may be necessary to use two flange-topping tools, styles HUFT-A and HUFT-B.

Hegenscheidt Portal-Type Wheel Lathe

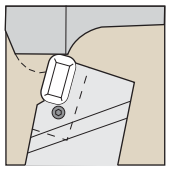


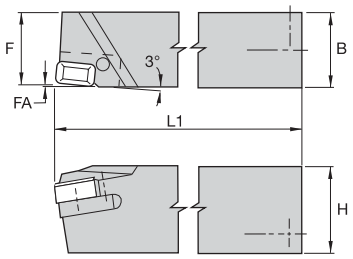


Tread Profile Turning

order number	catalogue number	H mm	B mm	F mm	L1 mm	insert 1	insert 2
1015757	**HUTCR**	69,85	50,00	57,15	275,00	KRR6586__	KRR86650
1015758	**HUTCL**	69,85	50,00	57,15	275,00	KRR6586__	KRR86650

NOTE: Requires 2 inserts.





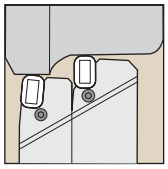
Flange Topping

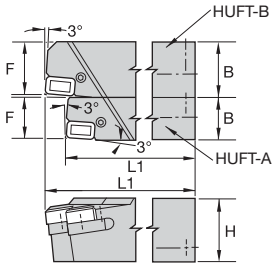
order number	catalogue number	H mm	B mm	F mm	L1 mm	FA mm	insert 1
1015717	**HUFTR**	69,85	60,00	58,17	250,00	1,70	KRR6586__
1015718	**HUFTL**	69,85	60,00	58,17	250,00	1,70	KRR6586__

Spare Parts

catalogue number	steel locking unit	cone point screw	optional set screw	optional brass slug	optional square head bolt
HUFTR	**SU2**	**S1006PKG**	**S1015**	**S1033**	**S1014**
HUFTL	**SU3**	**S1006PKG**	**S1015**	**S1033**	**S1014**

NOTE: See page F80 for insert selection.





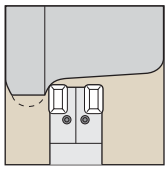
Heavy Flange Topping

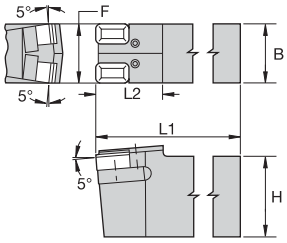
order number	catalogue number	H mm	B mm	F mm	L1 mm	insert 1
1015719	**HUFTRA**	69,85	47,00	45,21	228,60	KRR6586__
3385736	**HUFTRB**	69,85	60,00	55,12	250,00	KRR6586__
3385735	**HUFTLA**	69,85	47,00	45,21	228,60	KRR6586__
3385737	**HUFTLB**	69,85	60,00	55,12	250,00	KRR6586__

NOTE: See page F80 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Gage location on tool, over insert, is held to +/- 0,08mm (.003").
- No top clamp is used so it won't wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Indexable inserts with pre-formed chipbreakers deliver chip control at optimum feeds and speeds.

Simmons-Niles Wheel Turning Lathe

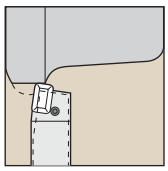


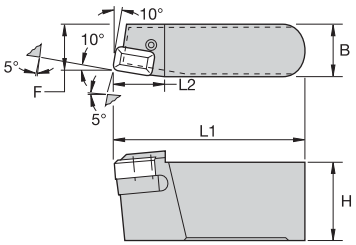


Wheel Tread Contouring

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1	steel locking unit	lock screw
1015684	**NUWTC**	76,20	57,15	57,15	412,75	95,25	KRR6586__	**SU3**	**S1006PKG**

NOTE: Requires two inserts.
See page F80 for insert selection.

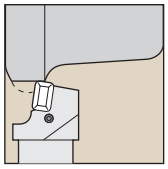


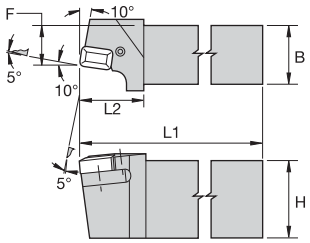


Wheel Flange Topping

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1
1015689	**NUFRR**	63,50	41,28	36,53	152,40	39,62	KRR6586__
1015690	**NUFRL**	63,50	41,28	36,53	152,40	39,62	KRR6586__

NOTE: See page F80 for insert selection.

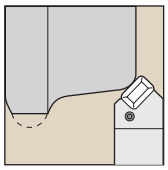


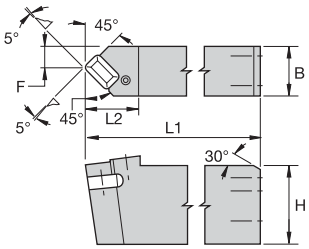


Wheel Flange Roughing

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1
1015693	**NUFRAR**	76,20	57,15	38,10	212,85	63,50	KRR6586__
1015714	**NUFRAL**	76,20	57,15	38,10	212,85	63,50	KRR6586__

NOTE: See page F80 for insert selection.

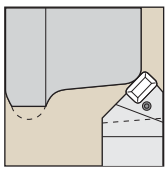


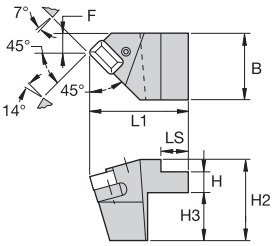


Mushroom Removal

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1
3385765	**NUMRAR**	76,20	47,63	19,51	311,15	50,80	KRR6586__
3385766	**NUMRAL**	76,20	47,63	19,51	311,15	50,80	KRR6586__

NOTE: See page F80 for insert selection.





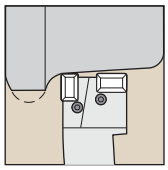
Mushroom Removal

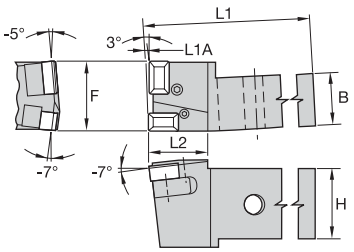
order number	catalogue number	H mm	H2 mm	H3 mm	B mm	F mm	L1 mm	LS mm	insert 1
3385767	**NUMRR**	19,05	76,20	45,21	63,50	19,05	93,52	25,40	KRR6586__
3385768	**NUMRL**	19,05	76,20	45,21	63,50	19,05	93,52	25,40	KRR6586__

NOTE: See page F80 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Gage location on tool, over insert, is held to +/- 0,08mm (.003").
- No top clamp is used to wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Improved inserts with chip control are offered.

Simmons-Farrel CNC Portal Wheel Lathe





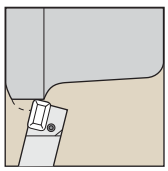
Wheel Tread Contouring

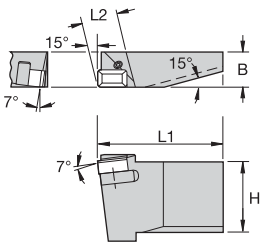
order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	L1A mm	insert 1
1015687	**FUWTCR**	76,20	57,15	76,20	254,00	66,55	3,05	KRR6586__
1015688	**FUWTCL**	76,20	57,15	76,20	254,00	66,55	3,05	KRR6586__

Spare Parts

catalogue number	steel locking unit	steel locking unit	lock screw
FUWTCR	**SU6**	**SU8**	**S1006PKG**
FUWTCL	**SU6**	**SU8**	**S1006PKG**

NOTE: Requires two inserts
See page F80 for insert selection.



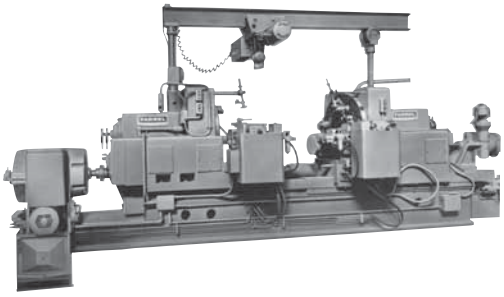


Wheel Flange Topping

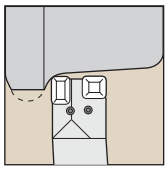
order number	catalogue number	H mm	B mm	L1 mm	L2 mm	insert 1	steel locking unit	set screw
1015662	**FUWFTR**	76,20	38,10	133,35	38,10	KRR6586__	**SU4**	**S1006PKG**
1015663	**FUWFTL**	76,20	38,10	133,35	38,10	KRR6586__	**SU4**	**S1006PKG**

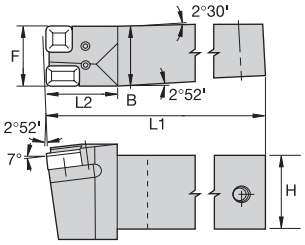
NOTE: See page F80 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Minimum parts for lower inventory.
- No top clamp is used to wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Indexable inserts with pre-formed chipbreakers deliver chip control at optimum feeds and speeds.



Simmons-Farrel (Sellers) Tracer Wheel Lathe





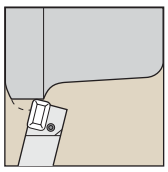
Wheel Tread Contouring

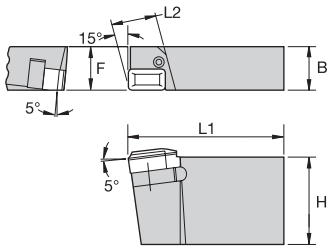
order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1	insert 2
1015658	**SUWTCR**	76,20	57,15	57,15	254,00	66,55	KRR6586__	KRR86650
1015659	**SUWTCL**	76,20	57,15	57,15	254,00	66,55	KRR6586__	KRR86650

Spare Parts

catalogue number	shim	shim	cone point socket set screw	lock screw
SUWTCR	**SU2**	**SU11**	**S939**	**S1006PKG**
SUWTCL	**SU3**	**SU10**	**S939**	**S1006PKG**

NOTE: Requires two inserts.
See page F82 for insert selection.





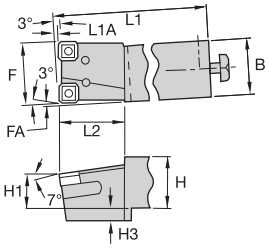
Wheel Flange Topping

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	insert 1	steel locking unit	cone point set screw
1864582	**SUWFTR**	76,20	38,10	38,10	133,35	37,72	KRR6586__	**–**	**–**
1015661	**SUWFTL**	76,20	38,10	38,10	133,35	37,72	KRR6586__	**SU5**	**S1006PKG**

NOTE: See page F80 for insert selection.

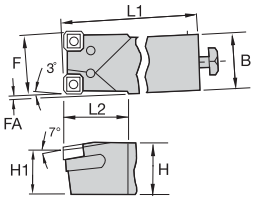
- Kennametal tooling for underfloor wheel lathes features a steel sliding shim unit. The sliding shim unit holds the insert securely in the pocket, ensures easy insert indexing, and is simple and economical to replace.
- The insert used in these holders, KRR-6610, features improved chip control for safer and easier chip disposal.

Hegenscheidt Underfloor Wheel Lathe



Model 104 Tread Profile Turning

order number	catalogue number	H mm	H1 mm	H3 mm	B mm	F mm	L1 mm	L2 mm	FA mm	L1A mm	insert 1
1015759	**H104R55**	49,91	31,88	12,00	54,86	54,86	250,00	63,50	3,00	3,00	KRR6610
1015760	**H104R60**	49,91	31,88	12,00	54,86	59,87	250,00	63,50	3,00	3,00	KRR6610
1015761	**H104L55**	49,91	31,88	12,00	54,86	54,86	250,00	63,50	3,00	3,00	KRR6610
1015762	**H104L60**	49,91	31,88	12,00	54,86	59,87	250,00	63,50	3,00	3,00	KRR6610



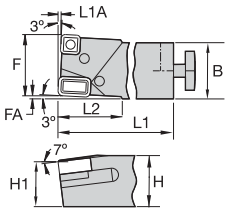
Model 106 Tread Profile Turning

order number	catalogue number	H mm	H1 mm	B mm	F mm	L1 mm	L2 mm	FA mm	insert 1
3385769	**H106R55**	49,91	43,87	54,86	54,86	225,00	63,50	3,00	KRR6610
1015763	**H106R60**	49,91	43,87	54,86	59,87	225,00	63,50	3,00	KRR6610
3385770	**H106L55**	49,91	43,87	54,86	54,86	225,00	63,50	3,00	KRR6610
1015784	**H106L60**	49,91	43,87	54,86	59,87	225,00	63,50	3,00	KRR6610

Spare Parts

catalogue number	steel locking unit	steel locking unit	cone point set screw	optional socket set screw	optional brass slug	optional square head bolt
H106R55	**SU12**	**SU13**	**S1006PKG**	**S749**	**S1033**	**S1014**
H106R60	**SU12**	**SU13**	**S1006PKG**	**S749**	**S1033**	**S1014**
H106L60	**SU12**	**SU13**	**S1006PKG**	**S749**	**S1033**	**S1014**
H106L60	**SU12**	**SU13**	**S1006PKG**	**S749**	**S1033**	**S1014**

NOTE: Requires two inserts.
See page F82 for insert selection.



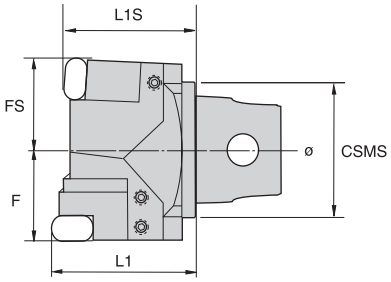
Model 106 Tread Profile Turning • Carbide Shim

order number	catalogue number	H mm	H1 mm	B mm	F mm	L1 mm	L2 mm	FA mm	L1A mm	insert 1	insert 2
1015557	**H106R60H**	50,00	43,87	54,86	59,87	225,00	63,50	3,00	3,00	KRR658671	KRR6610
1015558	**H106L60H**	50,00	43,87	54,86	59,87	225,00	63,50	3,00	3,00	KRR658671	KRR6610

Spare Parts

catalogue number	steel locking unit	cone point set screw	optional socket set screw	optional brass slug	optional square head bolt
H106R60H	**SU6B**	**S1006PKG**	**S751**	**S1033**	**S1014**
H106L60H	**SU7B**	**S1006PKG**	**S751**	**S1033**	**S1014**

NOTE: Requires two inserts.
See page F82 for insert selection.



TK

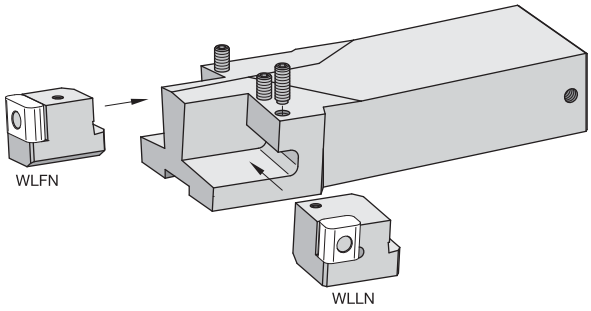
order number	catalogue number	CSMS system size	F mm	FS mm	L1 mm	L1S mm
1781756	**TK01339D**	KM63	42,50	42,50	66,00	60,00
1781755	**TK01338D**	KM63	42,50	42,50	66,00	60,00

NOTE: See page F82 for insert selection.

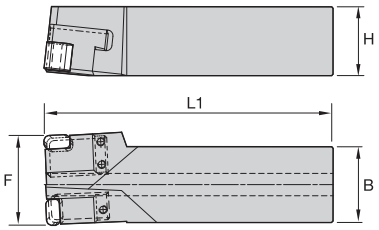
Application Specific

Assembly Instructions

basic/KM shank	cartridge WLLN..	cartridge WLFN..
right	right	left
left	left	right



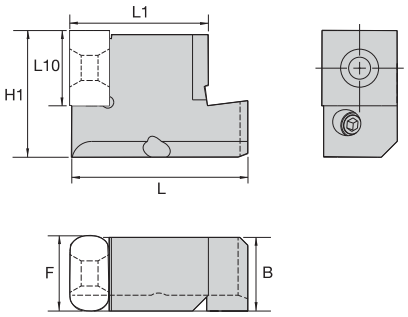
Assembly of complete tool

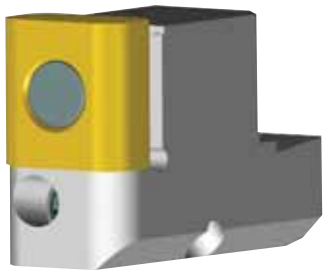


Basic Shank WXXN

order number	catalogue number	H mm	B mm	F assembly mm	L1 assembly mm	clamp screw
1251262	**WXXNR4455X-FL**	50,00	55,00	65,00	210,00	**PT00163**
1251261	**WXXNL4455X-FL**	50,00	55,00	65,00	210,00	**PT00163**

NOTE: See page F82 for insert selection.





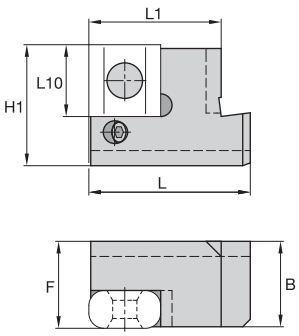
Cartridge WLFN

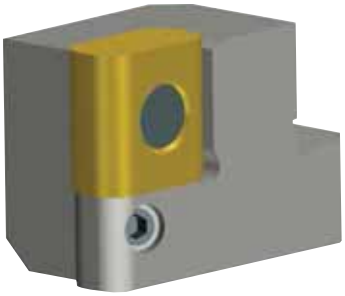
order number	catalogue number	H1 mm	B mm	F mm	L10 mm	L1 mm	L mm	gage insert
2435187	**WLFNR32CA19S**	32,00	18,60	19,00	19,00	35,00	45,00	LNUX191940...
2435188	**WLFNL32CA19S**	32,00	18,60	19,00	19,00	35,00	45,00	LNUX191940...

Spare Parts

catalogue number	clamp stud	clamp screw	hex wrench
WLFNR32CA19S	**114.305**	**121.616**	**170.003**
WLFNL32CA19S	**114.305**	**121.616**	**170.003**

NOTE: See page F82 for insert selection.





Cartridge WLLN

order number	catalogue number	H1 mm	B mm	F mm	L10 mm	L1 mm	L mm	gage insert
2435183	**WLLNR32CA19S**	32,00	22,60	23,00	19,00	35,00	45,00	LNUX191940...
2435185	**WLLNR32CA30S**	32,00	22,60	23,00	30,00	35,00	45,00	LNUX301940...
2435184	**WLLNL32CA19S**	32,00	22,60	23,00	19,00	35,00	45,00	LNUX191940...
2435186	**WLLNL32CA30S**	32,00	22,60	23,00	30,00	35,00	45,00	LNUX301940...

Spare Parts

catalogue number	clamp stud	clamp screw	hex wrench
WLLNR32CA19S	**114.305**	**121.616**	**170.003**
WLLNR32CA30S	**114.305**	**121.616**	**170.003**
WLLNL32CA19S	**114.305**	**121.616**	**170.003**
WLLNL32CA30S	**114.305**	**121.616**	**170.003**

NOTE: See page F82 for insert selection.

Kennametal stocks a complete line of standard inserts for wheel and axle machining. Inserts are available in various styles, sizes, and grades.

- **Wheel boring** — moulded chipbreaker inserts in round, square, octagon, and regrindable inserts.
- **Axle turning** — triangle- and diamond-shaped inserts with chipbreakers.
- **Wheel turning** — rectangular and square styles, with or without molded chipbreakers.
- **Wheel truing** — round buttons with center hole for locking.

LNUX-RRH

WTS10P

LNUX-RRP

LNUX-RRSM

KRR6586-65

KRR6586-71

KRR6586-75

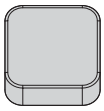
KRR6586-52

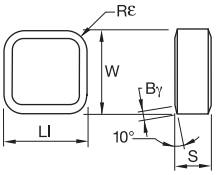
KRR6586-50

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

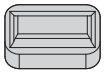
KRR-K

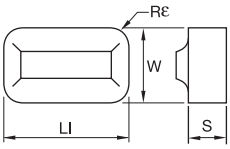




ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm
KRR16K	25,40	25,40	9,53	4,76	–	0,76

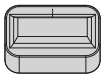
KRR-6566

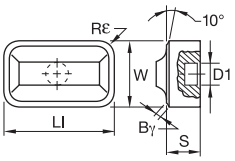




ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm
KRR6566	19,05	31,75	9,53	4,76	–	–

KRR-6586-50 / 80





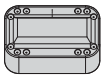
ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm
KRR658650	19,05	31,75	12,70	4,76	7,87	0,51
KRR658680	19,05	31,75	12,70	4,76	7,87	0,51

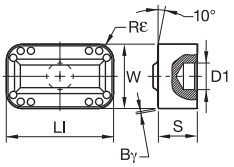
Application Specific

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

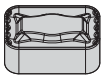
KRR-6586-52

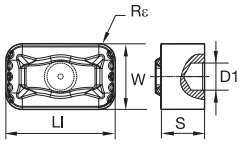




ISO catalogue number	W mm	Ll mm	S mm	Rε mm	D1 mm	Bγ mm
KRR658652	19,05	31,75	12,70	4,76	7,87	0,51

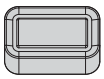
KRR-6586-65

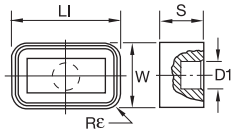




ISO catalogue number	W mm	Ll mm	S mm	Rε mm	D1 mm	Bγ mm
KRR658665	19,05	31,75	12,70	4,76	7,87	–

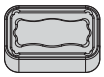
KRR-6586-71

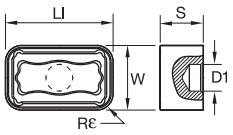




ISO catalogue number	W mm	Ll mm	S mm	Rε mm	D1 mm	Bγ mm
KRR658671	19,05	31,75	12,70	4,76	7,87	–

KRR-6586-75



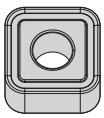


ISO catalogue number	W mm	Ll mm	S mm	Rε mm	D1 mm	Bγ mm
KRR658675	19,05	31,75	12,70	4,76	7,87	–

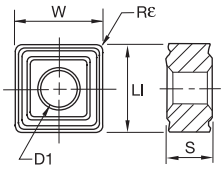
Application Specific

● first choice
○ alternate choice

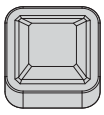
	K40	KC9110	KC9125	KCU10	KCU25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P	●	●	●	●	●	●	●	●	●	●	●
M											
K	●	●	●	●	●	●	●				●
N											
S											
H											



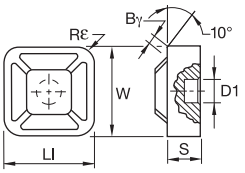
KRR-6610



ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm	K40	KC9110	KC9125	KCU10	KCU25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR6610	19,05	19,05	9,53	4,00	7,87	–	●									●	

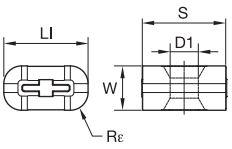


KRR-866-50



ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm
KRR86650	25,40	25,40	9,53	4,76	7,87	0,51

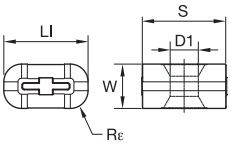
LNUX-RRH



ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm	K40	KC9110	KC9125	KCU10	KCU25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
LNUX191940RRH	10,00	19,00	19,05	4,00	6,35	–		●	●	●	●						
LNUX301940RRH	12,00	30,00	19,05	4,00	6,35	–		●	●	●	●						

NOTE: Also available in KC9105.

LNUX-RRF



ISO catalogue number	W mm	LI mm	S mm	Rε mm	D1 mm	Bγ mm	K40	KC9110	KC9125	KCU10	KCU25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
LNUX191940RRF	10,00	19,00	19,05	4,00	6,35	–				●	●						
LNUX301940RRF	12,00	30,00	19,05	4,00	6,35	–				●	●						

NOTE: Also available in KC9105.

Application Specific

● first choice
○ alternate choice

| | | |

Kennametal Tools for Railways and Wheel Machining

Primary Application

Kennametal offers a complete line of tooling that incorporates the latest technology for maximum metal removal and higher productivity. All tools perform in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs. Tools in this range are for reconditioning mounted wheel sets, wheel boring, wheel truing, axle turning and journal burnishing.

Features and Benefits

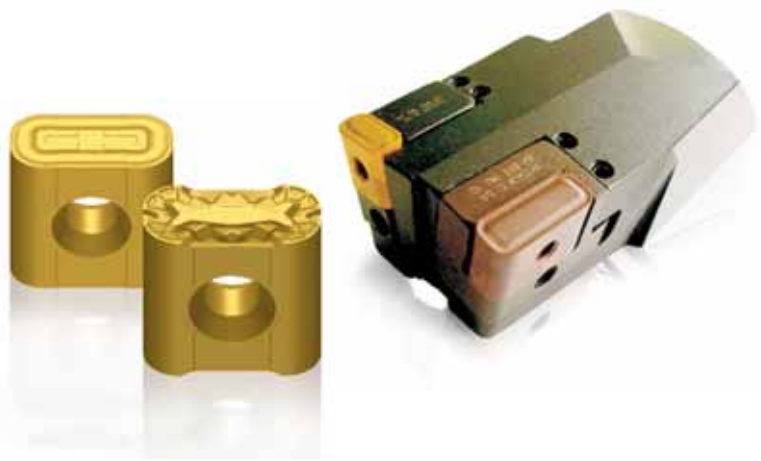
Machining conditions vary with the wheel's type of service. Reduced production time and lower maintenance costs produce superior results even under these tough conditions.

- Skid flat areas.
- Accidental torch burns.
- Overheating of spinning wheels.
- Excessive mushroom and rollovers that are hardened by unusual hump retarder pressure.
- Mismatched wheels that cause excessive wear on the side of the flange.

Each of these conditions requires a different machining speed and depth of cut.

Advantages of Wheelset Reconditioning with Kennametal Wheel Lathe Tools.

- Heavy-duty steel locking unit ensures longer life and reduces operating costs.
- No top clamp to wear out or interfere with chip flow.
- Hardened-steel locking unit locks the insert against two walls in the toolholder to prevent insert movement under heavy cutting loads.
- Quick removal of the steel locking unit.
- Fast trouble free insert indexing.
- Made from heat-treated alloy steel to withstand severe roughing cuts on work-hardened wheels.



L-Type Boring Bars

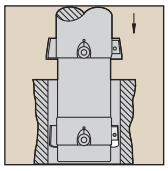
Railroad wheels are wrought steel and cast steel made in a number of designs. Steel wheels are classified as multiple-wear, two-wear, or one-wear wheels.

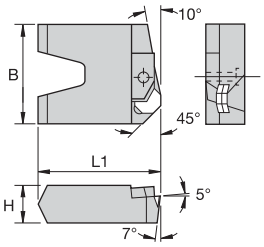
Composition and specifications of wheels include Class A, a relativity low carbon steel wheel; Class L, a lower carbon content than Class A; Class B, an intermediate carbon steel; and Class C, a relativity high-carbon steel wheel.

Kennametal provides L-type bar tooling to bore wheels to match journal sizes from 114,3mm x 203,2mm to 203,2mm x 406,4mm.

- Tools are precision ground and hardened for maximum life.
- Lower profile permits use in L-type bars without modification.
- Fast insert indexing reduces tool changing downtime.
- Enables free cutting action at higher feed rates.
- Delivers good chip control under a wide range of conditions.
- Inserts are available in both coated and uncoated grades.
- Kennametal also provides cartridges to fit Kennametal-supplied bars to run on CNC boring machines.
- Most bars and cartridges are supplied as specials per machine manufacturers' specifications.

- Uses OPG-524 positive rake, octagonal inserts for free cutting action while finish boring.
- Tool positions the insert parallel to the bore in the operation.
- Consistently produces bore finishes to specifications.
- Inserts have eight indexable cutting edges.
- Available in 11 sizes to fit L-type boring bars.



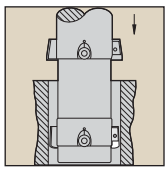


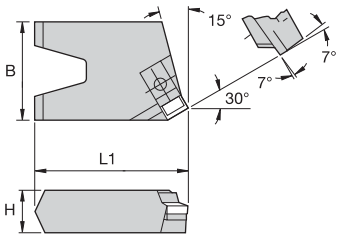
OWF-Style Tools for Roughing

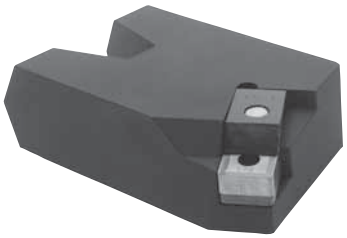
order number	catalogue number	min wheel bore mm	H mm	B mm	L1 mm	journal size	insert 1	shim	shim screw	clamp	clamp screw
1015785	**OWF744SET**	139,70	22,23	50,80	69,06	4 1/2 X 8	OPG524	**SM159**	**S125**	**CMR15**	**S472**
1015793	**OWF863SET**	200,03	25,40	57,15	99,21	6 1/2 X 12	OPG524	**SM159**	**S125**	**CMR15**	**S421**

NOTE: Tool sets contain a ground matched pair of toolholders.
See page F93 for insert selection.

- Uses SNMG-style moulded chipbreaker inserts with eight cutting edges.
- Available in 11 sizes to fit L-type boring bars.
- Employs a low-profile design.
- Delivers fast insert indexing while maintaining bore size.
- Tools have a protective insert seat.





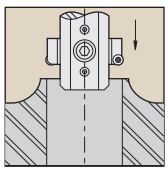


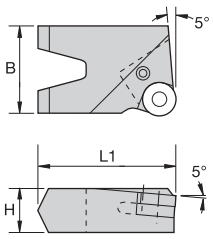
SWR-Style Tools for Roughing

order number	catalogue number	min wheel bore mm	H mm	B mm	L1 mm	journal size	insert 1
1015559	**SWR744SET**	234,95	22,23	50,80	69,06	4 1/2 X 8	SNMG433
1015560	**SWR750SET**	158,75	22,23	50,80	78,59	5 X 9	SNMG433
1015561	**SWR754SET**	171,45	22,23	50,80	84,94	5 1/2 X 10	SNMG433
1015562	**SWR759SET**	187,33	22,23	50,80	92,86	6 X 11	SNMG433
1015563	**SWR763SET**	200,03	22,23	50,80	99,21	6 1/2 X 12	SNMG433
1015584	**SWR770SET**	222,25	22,23	50,80	107,16	7 X 14	SNMG433
1015585	**SWR854SET**	171,45	25,40	57,15	84,94	5 1/2 X 10	SNMG433
1015586	**SWR859SET**	187,33	25,40	57,15	92,86	6 X 11	SNMG433
1015587	**SWR863SET**	200,03	25,40	57,15	99,21	6 1/2 X 12	SNMG433
1015588	**SWR870SET**	222,25	25,40	57,15	107,16	7 X 14	SNMG433
1015589	**SWR874SET**	234,95	25,40	57,15	116,69	8 X 16	SNMG433

NOTE: Tool sets contain a ground matched pair of toolholders.
See page F92 for insert selection.

- Available in the rugged unit locking design for operating at higher feed ranges.
- Unit locking design ensures maximum insert locking by pulling the insert down and back into the pocket.
- Locking unit protects the holder and properly seats the insert.
- Insert can be released quickly for fast indexing, minimising downtime.
- Available in 11 sizes to fit L-type boring bars.





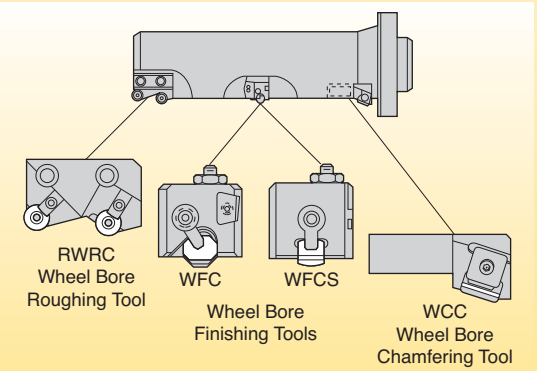
RUWR-Style Tools for Roughing

order number	catalogue number	min wheel bore mm	H mm	B mm	L1 mm	journal size	insert 1
1015656	**RUWR870SET**	222,25	25,40	57,15	107,16	7 X 14	RNMG64

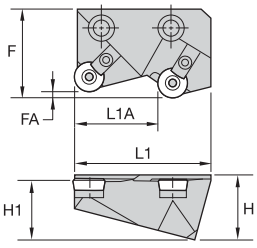
NOTE: Tool sets contain a ground matched pair of toolholders.
See page F92 for insert selection.

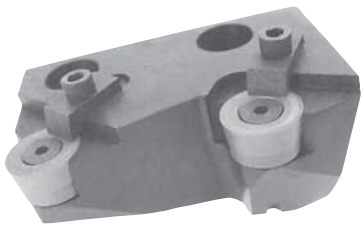
Advantages of Kennametal Wheel Boring Tools

- Available in several styles for rough and finish boring.
- Tools are available for finishing KRR- or OPG-style inserts.
- Rough boring tools use RCMH round inserts.
- Tools keep the insert parallel to the bore during operation to ensure a smooth cut within established finish specifications.
- All styles of tools are designed with insert locking confined within the shank height. This enables the tools to be retracted to bore the smaller sizes without modifying the standard bar.
- Check the catalogue number and dimensions of your cartridges before ordering. Bars and cartridges on older machines may not be the same. Call Kennametal's Customer Application Support team for assistance.



- Uses RCMH-style inserts for free cutting action while rough boring.
- This is a double-pocket cartridge and requires two inserts and two sets of hardware.
- Cartridges are easily replaceable.

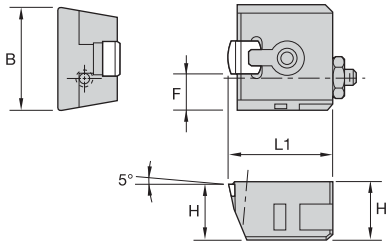


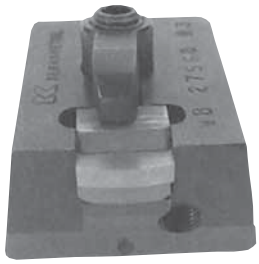


RWRC-Style Tools for Roughing

order number	catalogue number	H mm	H1 mm	F mm	L1 mm	FA mm	L1A mm	H mm	insert 1	insert screw	shim	clamp	clamp screw
1015616	**RWRC**	41,15	38,10	57,11	85,85	4,75	52,38	41,15	RCMH64	**S1001**	**SM381**	**S412**	**S412**

NOTE: See page F91 for insert selection.





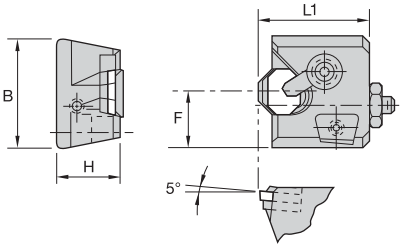
WFCS-Style Tools for Finishing

order number	catalogue number	H mm	B mm	F mm	L1 mm	H1 mm	insert 1
1015615	**WFCS**	23,88	39,68	14,28	41,15	22,23	KRR4210R

Spare Parts

catalogue number	adjusting screw	jam nut	chipbreaker	shim	shim screw	clamp	clamp screw
WFCS	**S846**	**S936**	**CBS16**	**SRR4210R**	**S111**	**CK13**	**STC4**

NOTE: See page F93 for insert selection.



WFC-Style Tools for Finishing

order number	catalogue number	H mm	B mm	F mm	L1 mm	gage insert
1177582	**WFC**	23,80	39,68	20,63	41,15	OPG524

Spare Parts

catalogue number	adjusting screw	jam nut	chipbreaker	shim	shim screw	clamp	clamp screw
WFC	**S846**	**S936**	**CBO560**	**SM159**	**S125**	**CK13**	**STC4**

NOTE: See page F93 for insert selection.

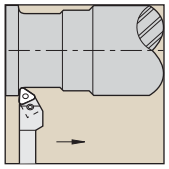
Axle Turning Tools

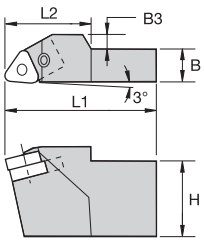
Freight car and passenger car axles are usually made of carbon steel and may be heat treated or untreated. Locomotive axles, electric transit axles, and industrial-use axles are made of a variety of carbon and alloy steels. The alloy steel axles are heat treated, while the carbon steel axles are either heat treated or untreated.

Kennametal offers two styles of holders to suit user needs for re-machining journal surfaces on car axles.

- These two standard designs use indexable inserts and have a 3° lead built into the holder to conform to the AAR standards.
- To use these tools in some dual-end-drive axle lathes, a slight modification to the existing tool block is necessary. This is required to clear the head portion of the tool to generate the required radius on the axle.
- Kennametal offers a wide variety of standard off-the-shelf tooling as well as special tooling for all types of machining applications on various machines for reconditioning axles.

- Steel locking unit design ensures maximum insert locking pressure.
- Insert locks firmly in place against the one-wall pocket for fast insert indexing.
- Locking unit protects holders and provides secure seating for the insert.
- Indexable inserts eliminate regrinding.
- Uses 12,7mm IC triangular inserts that provide up to six cutting edges.





JTU-Style Tools

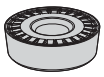
order number	catalogue number	H mm	B mm	B3 mm	L1 mm	L2 mm	insert 1	lock screw	steel locking unit
1015592	**JTU56R**	38,10	15,88	6,35	73,03	41,15	TNMP438_/KRRT438	**S1007PKG**	**SU9**
1015593	**JTU56L**	38,10	15,88	6,35	73,03	41,15	TNMP438_/KRRT438	**S1007PKG**	**SU9**

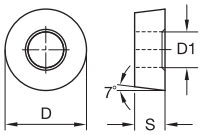
NOTE: See page F93 for insert selection.

● first choice
○ alternate choice

P	●	●	○	○	●	●	
M				●			
K	○	○	●	○	○	○	
N				○			
S				●			
H				○			

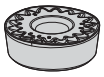
RCMH-UP

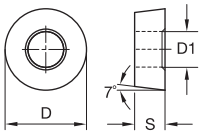




ISO catalogue number	D mm	D1 mm	S mm	KCP10	KCP25	KCK20	KCU10	KC9110	KC9125
RCMH2507M0TUP	25	7,55	7,94	●	●	●		●	●
RCMH3209M0TUP	32	10,35	9,53	●	●	●		●	●

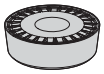
RCMH-RU

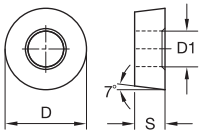




ISO catalogue number	D mm	D1 mm	S mm	KCP10	KCP25	KCK20	KCU10	KC9110	KC9125
RCMH2507M0RU	25	7,55	7,94	●	●	●		●	●
RCMH3209M0RU	32	10,35	9,53	●	●	●	●	●	●

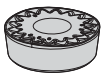
RCMX-UP

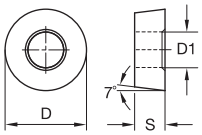




ISO catalogue number	D mm	D1 mm	S mm	KCP10	KCP25	KCK20	KCU10	KC9110	KC9125
RCMX2507M0TUP	25	7,19	7,94	●	●	●		●	●
RCMX3209M0TUP	32	9,78	9,53	●	●	●		●	●

RCMX-RU





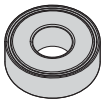
ISO catalogue number	D mm	D1 mm	S mm	KCP10	KCP25	KCK20	KCU10	KC9110	KC9125
RCMX2507M0RU	25	7,19	7,94	●	●	●		●	●
RCMX3209M0RU	32	9,78	9,53	●		●	●	●	●

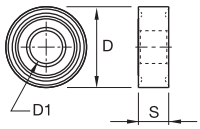
Application Specific

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

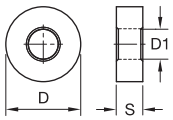
RNMG





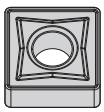
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RNMG4009M0	40,00	–	9,52	–	12,70
RNMG190600	19,05	–	6,35	–	7,93

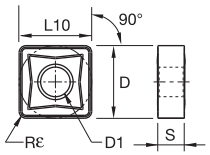
RNMG-RN



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RNMG090300RN	9,53	–	3,18	–	3,81
RNMG120400RN	12,70	–	4,76	–	5,16
RNMG150600RN	15,88	–	6,35	–	6,35
RNMG190600RN	19,05	–	6,35	–	7,93
RNMG190900RN	19,05	–	9,52	–	7,93
RNMG250900RN	25,40	–	9,53	–	9,12

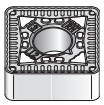
SNMG

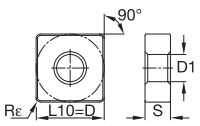




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
SNMG120412	12,70	12,70	4,76	1,20	5,16
SNMG190612	19,05	19,05	6,35	1,20	7,93
SNMG190616	19,05	19,05	6,35	1,60	7,93
SNMG250924	25,40	25,40	9,53	2,40	9,12

SNMG-RN





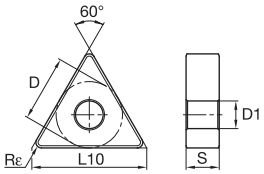
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
SNMG090412RN	9,53	9,53	4,76	1,20	3,81
SNMG120408RN	12,70	12,70	4,76	0,80	5,16
SNMG120412RN	12,70	12,70	4,76	1,20	5,16
SNMG120416RN	12,70	12,70	4,76	1,60	5,16
SNMG150608RN	15,88	15,88	6,35	0,80	6,35
SNMG150612RN	15,88	15,88	6,35	1,20	6,35
SNMG150616RN	15,88	15,88	6,35	1,60	6,35
SNMG190608RN	19,05	19,05	6,35	0,80	7,93
SNMG190612RN	19,05	19,05	6,35	1,20	7,93
SNMG190616RN	19,05	19,05	6,35	1,60	7,93
SNMG190624RN	19,05	19,05	6,35	2,40	7,93

Application Specific

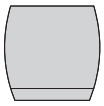
● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

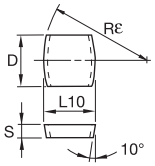
TNMG-RP



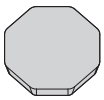
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMG160408RP	9,53	16,50	4,76	0,79	3,81
TNMG160412RP	9,53	16,50	4,76	1,20	3,81
TNMG160416RP	9,53	16,50	4,76	1,60	3,81
TNMG220408RP	12,70	22,00	4,76	0,79	5,16
TNMG220412RP	12,70	22,00	4,76	1,19	5,16
TNMG220416RP	12,70	22,00	4,76	1,59	5,16
TNMG220432RP	12,70	22,00	4,76	3,18	5,16
TNMG270612RP	15,88	27,50	6,35	1,19	6,35
TNMG270616RP	15,88	27,50	6,35	1,60	6,35
TNMG330924RP	19,05	33,00	9,53	2,38	7,92



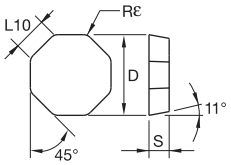
KRR4210R



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
KRR4210R	12,70	12,70	3,18	–	–



OPG



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
OPGN060316	15,88	6,58	3,18	1,60	–

Application Specific

New Railroad Wheel Manufacturing Tooling

Features and Benefits

Wheel Production

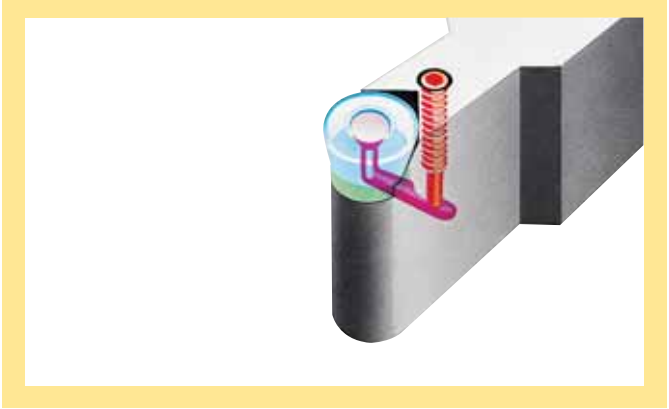
In wheel production, the forged blanks are mainly machined using RC.. inserts.

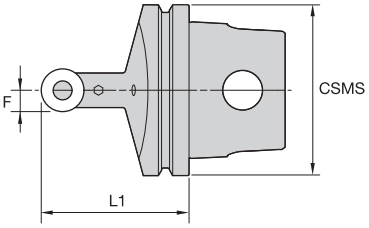
For this, Kennametal offers a comprehensive range of high-performance indexable inserts. Proprietary coatings combined with application-specific chipbreakers make these inserts well suited for new wheel production.

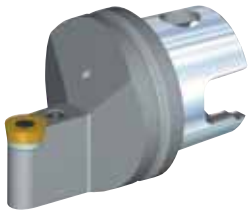
Together with the KM™ Quick Change tooling system, high stability, repeatability, and process security are ensured.

Clamping System

Our Fix-Perfect™ clamping system will provide optimum security during the most arduous machining process. With just a few revolutions of the clamping screw, the complete insert set (insert, shim, and clamping stud) can be changed.



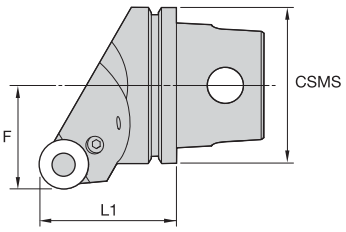




KM-PRDCN

order number	catalogue number	CSMS system size	F mm	L1 mm	insert 1	shim	clamp stud	set screw
3662606	**KM80TSPRDCN20**	KM80TS	10,00	70,00	RCMT2006M0	**169.333**	**119.073**	**121.820**
3662607	**KM80TSPRDCN25**	KM80TS	12,50	70,00	RCMX2507M0RP	**169.337**	**118.404**	**121.820**

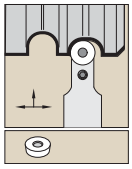
NOTE: Engineered solutions available.
KM100 units are made to order.
KM80 units require torque wrench TWH60R, which must be purchased separately.
See page F103 for insert selection.

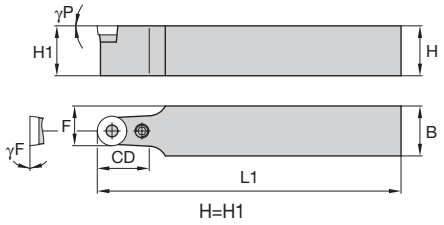


KM-PRGC

order number	catalogue number	CSMS system size	F mm	L1 mm	insert 1	shim	clamp stud	set screw
1238702	**KM80PRGCL32**	KM80	53,00	80,00	RC..3209M0	**169.339**	**118.604**	**121.030**
1238697	**KM80PRGCR20**	KM80	53,00	70,00	RC..2006M0	**169.333**	**119.073**	**121.820**

NOTE: Engineered solutions available.
KM100 units are made to order.
KM80 units require torque wrench TWH60R, which must be purchased separately.
See page F103 for insert selection.





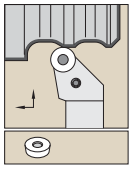
PRCC

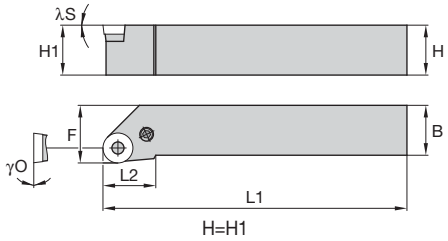
order number	catalogue number	H mm	B mm	F mm	L1 mm	CD mm	γF°	γP°	insert 1
1244761	**PRCCN2020K08H1**	20,00	20,00	14,00	125,00	16,00	0.0	0.0	RC..0803M0
1244762	**PRCCN2020K10H1**	20,00	20,00	15,00	125,00	24,00	0.0	0.0	RC..1003M0
1244826	**PRCCN2525M08H1**	25,00	25,00	16,50	150,00	16,00	0.0	0.0	RC..0803M0
1244827	**PRCCN2525M10H1**	25,00	25,00	17,50	150,00	24,00	0.0	0.0	RC..1003M0
1244828	**PRCCN2525M12H1**	25,00	25,00	18,50	150,00	24,00	0.0	0.0	RC..1204M0
5002098	**PRCCN2020M0H1**	31,75	31,75	25,62	152,40	31,80	0.0	0.0	RCMT2006M0
1192388	**PRCCN3225P16H1**	32,00	25,00	20,50	170,00	33,00	0.0	0.0	RC..1606M0
1192389	**PRCCN3232P20H1**	32,00	32,00	26,00	170,00	32,00	0.0	0.0	RC..2006M0
5002099	**PRCCN2425M0H1**	38,10	38,10	31,30	177,80	38,10	0.0	0.0	RCMX2507M0-RP
1228888	**PRCCN4040S25H1**	40,00	40,00	32,50	250,00	78,00	0.0	0.0	RC..2507M0

Spare Parts

catalogue number	shim	clamp stud	clamp screw	hex wrench
PRCCN2020K08H1	**–**	**119.069**	**–**	**170.001**
PRCCN2020K10H1	**169.325**	**119.069**	**–**	**170.001**
PRCCN2525M08H1	**–**	**119.069**	**–**	**170.001**
PRCCN2525M10H1	**169.325**	**119.069**	**–**	**170.001**
PRCCN2525M12H1	**169.322**	**119.071**	**–**	**170.002**
PRCCN2020M0H1	**169.333**	**119.073**	**121.820**	**–**
PRCCN3225P16H1	**169.327**	**410.081**	**–**	**170.003**
PRCCN3232P20H1	**169.333**	**119.073**	**121.820**	**170.004**
PRCCN2425M0H1	**169.337**	**118.404**	**121.820**	**–**
PRCCN4040S25H1	**169.337**	**118.404**	**121.820**	**170.004**

NOTE: Engineered solutions available.
See page F103 for insert selection.





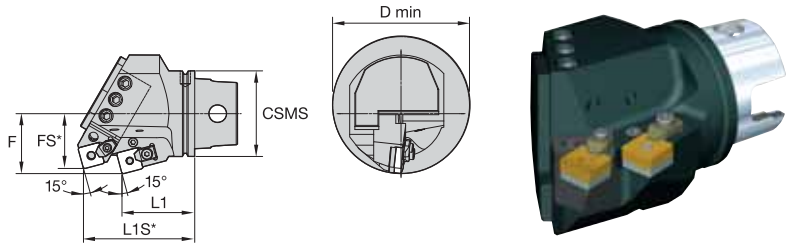
PRGC

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	λS°	γO°	insert 1
1244829	PRGCL4040S25H1	40,00	40,00	50,00	250,00	47,00	0.0	0.0	RC..2507M0
1192390	PRGCL6050U32H1	60,00	50,00	60,00	350,00	75,00	0.0	0.0	RC..3209M0
1192391	PRGCR6050U32H1	60,00	50,00	60,00	350,00	75,00	0.0	0.0	RC..3209M0
1197549	PRGCR4040S25H1	40,00	40,00	50,00	250,00	47,00	0.0	0.0	RC..2507M0

Spare Parts

catalogue number	shim	clamp stud	clamp screw	hex wrench
PRGCL4040S25H1	169.337	118.404	121.820	170.004
PRGCL6050U32H1	169.339	118.604	121.030	170.005
PRGCR6050U32H1	169.339	118.604	121.030	170.005
PRGCR4040S25H1	169.337	118.404	121.820	170.004

NOTE: Engineered solutions available.
See page F103 for insert selection.



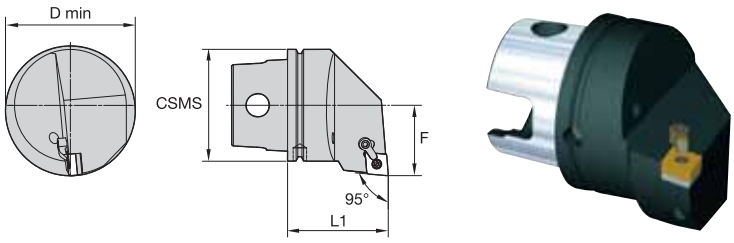
KM-PSDN 95° with Adjustable Cartridge

order number	catalogue number	CSMS system size	F mm	FS mm	L1 mm	L1S mm	D min mm	insert 1
1152381	**KM100-TK00055D**	KM100	70,00	64,00	85,00	130,00	160,00	SN..250724/SN..856

Cartridge • PSDN 95°

order number	catalogue number	CSMS system size	F mm	L1 mm	gage insert
1178625	**PSDNN3240X25-01**	–	21,00	120,00	SN..250724/SN..856

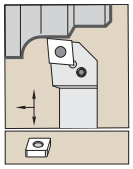
NOTE: Adjustable top cartridge.
Made to order.
See page F104 for insert selection.

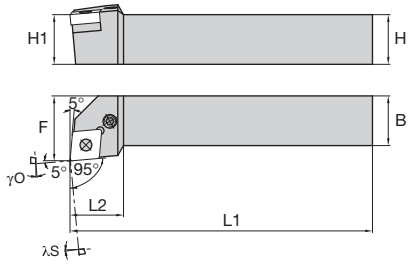


KM • MCLN 95°

order number	catalogue number	CSMS system size	D min mm	F mm	L1 mm	insert 1
1151977	**KM100-TK00344D**	KM100	116,00	63,00	90,00	CN..190612/CN..643

NOTE: Made to order.
See page F103 for insert selection.





H = H1

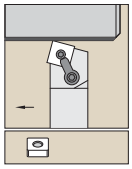
PCLN 95°

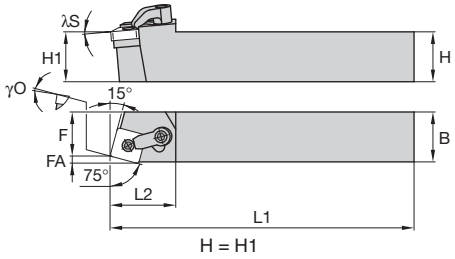
order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	λS°	γO°	insert 1
	right hand								
1192379	**PCLNR4040S19**	40,00	40,00	50,00	250,00	36,00	-6.000	-6.000	CN..190612
	left hand								
1192377	**PCLNL4040S19**	40,00	40,00	50,00	250,00	36,00	-6.000	-6.000	CN..190612

Spare Parts

catalogue number	shim	shim pin	toggle lever	clamp screw	punch
right hand					
PCLNR4040S19	**512.123**	**513.033**	**511.033**	**514.133**	**515.022**
left hand					
PCLNL4040S19	**512.123**	**513.033**	**511.033**	**514.133**	**515.022**

NOTE: Engineered solutions available.
See page F103 for insert selection.





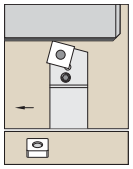
MSBN 75°

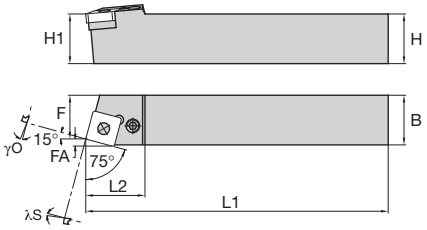
order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	FA mm	λS°	γO°	insert 1
1101954	**MSBNR4040R19**	40,00	40,00	35,00	200,00	40,00	4,60	-5.000	-5.000	SN..190612
1099148	**MSBNL4040R19**	40,00	40,00	35,00	200,00	40,00	4,60	-5.000	-5.000	SN..190612

Spare Parts

catalogue number	shim	lock pin	clamp	clamp screw
MSBNR4040R19	**ISSN633**	**KLM68**	**CKM12**	**STCM4**
MSBNL4040R19	**ISSN633**	**KLM68**	**CKM12**	**STCM4**

NOTE: Engineered solutions available.
See page F104 for insert selection.





H = H1

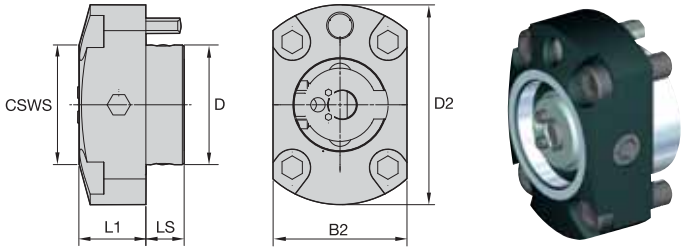
PSBN 75°

order number	catalogue number	H mm	B mm	F mm	L1 mm	L2 mm	FA mm	λS°	γO°	insert 1
1244682	**PSBNR4040S19**	40,00	40,00	35,00	250,00	38,00	4,60	-6.000	-6.000	SN..190612
1244683	**PSBNR4040S25**	40,00	40,00	35,00	250,00	47,00	5,90	-6.000	-6.000	SN..250724
1244674	**PSBNL4040S19**	40,00	40,00	35,00	250,00	38,00	4,60	-6.000	-6.000	SN..190612
1244675	**PSBNL4040S25**	40,00	40,00	35,00	250,00	47,00	5,90	-6.000	-6.000	SN..250724

Spare Parts

catalogue number	shim	shim pin	toggle lever	clamp screw	punch
PSBNR4040S19	**512.083**	**513.033**	**511.033**	**514.133**	**515.022**
PSBNR4040S25	**512.092**	**513.038**	**511.038**	**514.138**	**515.028**
PSBNL4040S19	**512.083**	**513.033**	**511.033**	**514.133**	**515.022**
PSBNL4040S25	**512.092**	**513.038**	**511.038**	**514.138**	**515.028**

NOTE: Engineered solutions available.
See page F104 for insert selection.

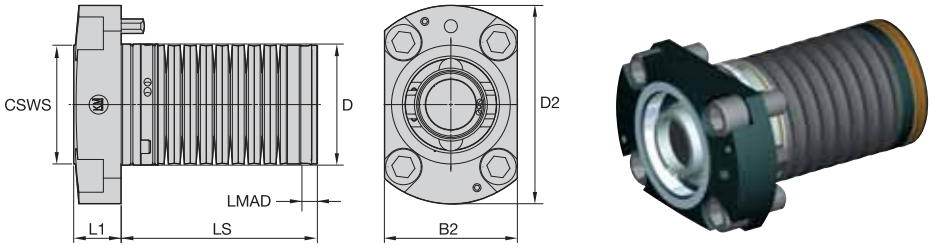


KM-NCM-EF

order number	catalogue number	CSWS system size	L1 mm	LS mm	B2 mm	D mm	D2 mm	KM spare parts package	screw
2420366	**KM100NCMEF**	KM100	56,00	32,00	112,00	100,00	167,00	–	–
1021576	**KM32NCMEF**	KM32	20,00	12,00	36,00	32,00	54,00	**KM32PKG3L**	–
1021642	**KM40NCMEF**	KM40	25,00	15,00	44,00	40,00	68,00	**KM40PKG3L**	**MS1217**
1021749	**KM50NCMEF**	KM50	30,00	20,00	55,00	50,00	84,00	**KM50PKG3L**	**MS1361**
1021753	**KM63NCMEF**	KM63	40,00	20,00	72,00	63,00	102,00	**KM63PKG3L**	**MS1460**
1144799	**KM80NCMEF**	KM80	50,00	25,00	90,00	80,00	132,00	**KM80PKG3L**	**DWG MS1599**

NOTE: KM100 clamping units are made to order.

Application Specific



KM100-Spring Packs

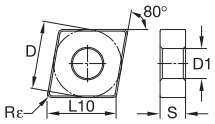
order number	catalogue number	CSWS system size	L1 mm	LS mm	LMAD travel mm	B2 mm	D mm	D2 mm	KM spare parts package	screw
1178668	**KM100-PK00001D**	KM100	40,00	165,25	13,00	112,00	101,98	167,00	**KM80PKG3L**	**MS1566**

NOTE: KM100 clamping units are made to order.

● first choice
○ alternate choice

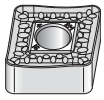
		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

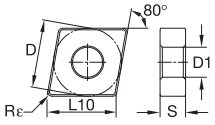
CNMM-RH



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
CNMM190612RH	19,05	19,34	6,35	1,20	7,93
CNMM190616RH	19,05	19,34	6,35	1,60	7,93
CNMM190624RH	19,05	19,34	6,35	2,40	7,93
CNMM250924RH	25,40	25,79	9,53	2,40	9,12

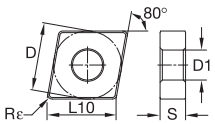
CNMM-RM





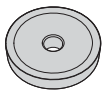
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
CNMM120408RM	12,70	12,90	4,76	0,80	5,16
CNMM120412RM	12,70	12,90	4,76	1,20	5,16
CNMM120416RM	12,70	12,90	4,76	1,60	5,16
CNMM160612RM	15,88	16,12	6,35	1,20	6,35
CNMM160616RM	15,88	16,12	6,35	1,60	6,35
CNMM160624RM	15,88	16,12	6,35	2,40	6,35
CNMM190612RM	19,05	19,34	6,35	1,20	7,93
CNMM190616RM	19,05	19,34	6,35	1,60	7,93
CNMM190624RM	19,05	19,34	6,35	2,40	7,93
CNMM250924RM	25,40	25,79	9,53	2,40	9,12

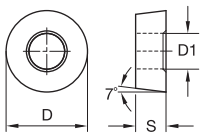
CNMM-RW



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
CNMM190624RW	19,05	19,34	6,35	2,40	7,93
CNMM250924RW	25,40	25,79	9,53	2,40	9,12

RCGX





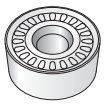
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RCGX1003M0RP	10,00	–	3,18	–	3,80

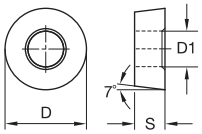
Application Specific

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

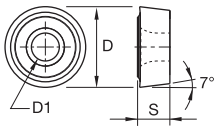
RCMX-RH





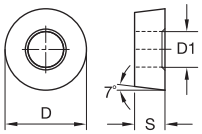
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RCMT2006M0RH	20,00	–	6,35	–	6,50
RCMX2507M0RH	25,00	–	7,94	–	7,55
RCMX3209M0RH	32,00	–	9,53	–	10,20

RCMT-RM



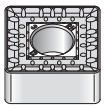
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RCMT2006M0RM	20,00	–	6,35	–	6,50

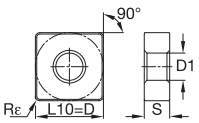
RCMX-RP



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RCGT0602M0RP	6,00	–	2,38	–	2,85
RCGT0803M0RP	8,00	–	3,18	–	3,40
RCMT1204M0RP	12,00	–	4,76	–	4,40
RCMT1606M0RP	16,00	–	6,35	–	5,50
RCMT2006M0RP	20,00	–	6,35	–	6,50
RCMX1003M0RP	10,00	–	3,18	–	3,80
RCMX2507M0RP	25,00	–	7,94	–	7,55
RCMX3209M0RP	32,00	–	9,53	–	10,20

SNMM-RH

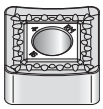




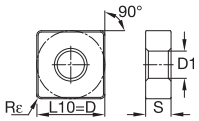
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
SNMM190612RH	19,05	19,05	6,35	1,20	7,93
SNMM190616RH	19,05	19,05	6,35	1,60	7,93
SNMM190624RH	19,05	19,05	6,35	2,40	7,93
SNMM250724RH	25,40	25,40	7,94	2,40	9,12
SNMM250732RH	25,40	25,40	7,94	3,20	9,12
SNMM250924RH	25,40	25,40	9,53	2,40	9,12

Application Specific

● first choice
○ alternate choice

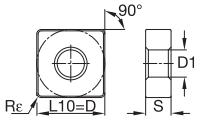


SNMM-RM

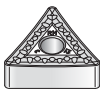


ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMM120408RM	12,70	12,70	4,76	0,80	5,16		●	●		●						
SNMM120412RM	12,70	12,70	4,76	1,20	5,16		●	●		●						
SNMM120416RM	12,70	12,70	4,76	1,60	5,16			●		●						
SNMM150612RM	15,88	15,88	6,35	1,20	6,35		●	●	●	●						
SNMM150616RM	15,88	15,88	6,35	1,60	6,35			●	●	●						
SNMM190612RM	19,05	19,05	6,35	1,20	7,93			●	●	●						
SNMM190616RM	19,05	19,05	6,35	1,60	7,93		●	●	●	●						
SNMM190624RM	19,05	19,05	6,35	2,40	7,93			●		●						
SNMM250724RM	25,40	25,40	7,94	2,40	9,12		●	●	●	●						
SNMM250924RM	25,40	25,40	9,53	2,40	9,12		●	●	●	●						

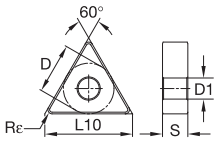
SNMM-RW



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMM190624RW	19,05	19,05	6,35	2,40	7,93			●								
SNMM250724RW	25,40	25,40	7,94	2,40	9,12			●								
SNMM250924RW	25,40	25,40	9,53	2,40	9,12			●								



TNMM-RM



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
TNMM160408RM	9,53	16,50	4,76	0,80	3,81			●	●	●						
TNMM160412RM	9,53	16,50	4,76	1,20	3,81					●						
TNMM220408RM	12,70	22,00	4,76	0,80	5,16		●	●		●						
TNMM220412RM	12,70	22,00	4,76	1,20	5,16			●		●						
TNMM220416RM	12,70	22,00	4,76	1,60	5,16		●	●	●	●						
TNMM270612RM	15,88	27,50	6,35	1,20	6,35			●		●						
TNMM270616RM	15,88	27,50	6,35	1,60	6,35		●	●		●						

Application Specific

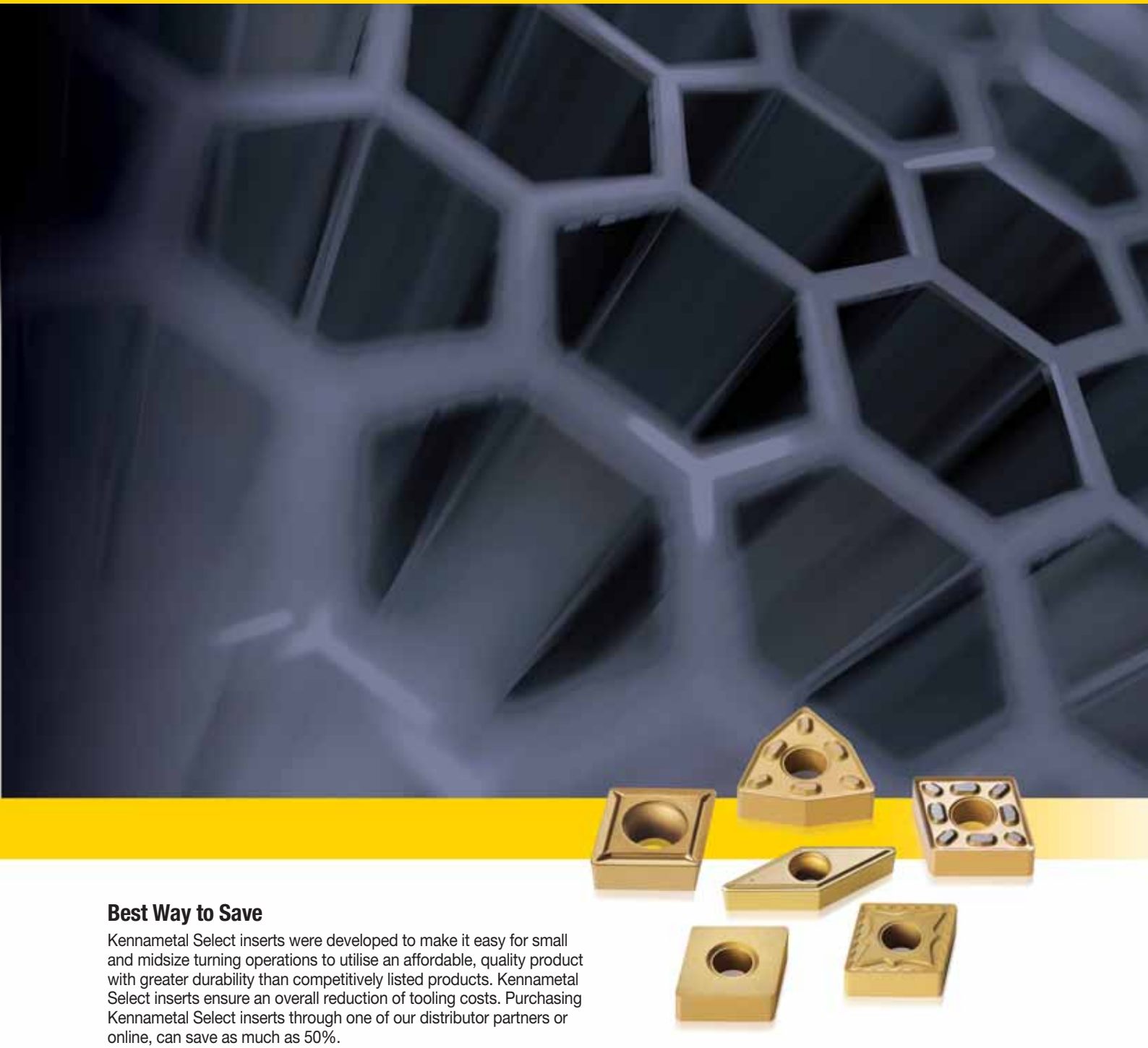
Kennametal Select • The Inserts You Want at a Price You'll Love

Introducing Kennametal Select inserts — the cost-effective line from the brand you already know and trust for quality. Each insert is engineered and manufactured by Kennametal to outperform competitive inserts when cutting steel, stainless steel, cast iron, and high-temperature alloys. These inserts can be used in an incredible 80% of all applications. This versatility, along with the simple grade selection method and great price, make Kennametal Select inserts perfect for small and midsize turning operations.

Features and Benefits

Getting the Most from Every Insert

Kennametal Select products make it simple to get the most out of your inserts, and your money. Every insert is gold, which exposes wear as the tool continues to be used — making it easy to detect when an insert is ready to be changed — maximising the product's value and protecting the workpiece. Also, because Kennametal Select inserts can be used in most applications, a single insert can take on any number of tasks, thus reducing your inventory. Kennametal Select products are also reliable enough to cut steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.

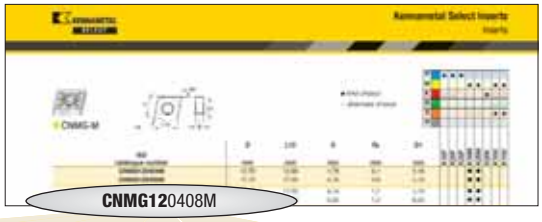


Best Way to Save

Kennametal Select inserts were developed to make it easy for small and midsize turning operations to utilise an affordable, quality product with greater durability than competitively listed products. Kennametal Select inserts ensure an overall reduction of tooling costs. Purchasing Kennametal Select inserts through one of our distributor partners or online, can save as much as 50%.

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Application Specific

C — Insert Shape

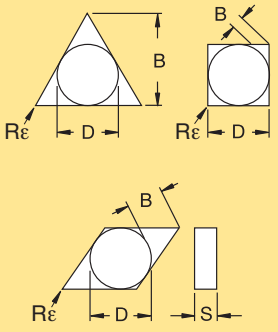
H	Hexagon 120°	
O	Octagon 135°	
P	Pentagon 108°	
R	Round —	
S	Square 90°	
T	Triangular 60°	
C D E M V	Rhomboid 80° 55° 75° 86° 35°	
W	Trigon 80° with enlarged corner angles	
L	Rectangular 90°	
A B N/K	Parallelogram 85° 82° 55°	

N — Insert Clearance Angle

A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	
O	Indicated for other clearance angles requiring descriptions.	

M — Tolerance Class

Tolerances apply prior to edge prep and coating



D = Theoretical diameter of the insert inscribed circle
S = Thickness
B = See figures below

G — Insert Features

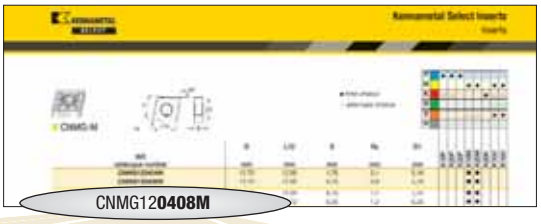
N	
R	
F	
A	
M	
G	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special Design

12 — Size

"D" mm	Code for metric cutting edge length "L10" C	D	R	S	T	V	W
3,97	S4	04	03	03	06	–	–
4,76	04	05	04	04	08	08	S3
5,56	05	06	05	05	09	09	03
6,00	–	–	06	–	–	–	–
6,35	06	07	06	06	11	11	04
7,94	08	09	07	07	13	13	05
8,00	–	–	08	–	–	–	–
9,52	09	11	09	09	16	16	06
10,00	–	–	10	–	–	–	–
11,11	11	13	11	11	19	19	07
12,00	–	–	12	–	–	–	–
12,70	12	15	12	12	22	22	08
14,29	14	17	14	14	24	24	09
15,88	16	19	15	15	27	27	10
16,00	–	–	16	–	–	–	–
17,46	17	21	17	17	30	30	11
19,05	19	23	19	19	33	33	13
20,00	–	–	20	–	–	–	–
22,22	22	27	22	22	38	38	15
25,00	–	–	25	–	–	–	–
25,40	25	31	25	25	44	44	17
31,75	32	38	31	31	54	54	21
32,00	–	–	32	–	–	–	–

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±0,025	±0,013	±0,025
H	±0,013	±0,013	±0,025
E	±0,025	±0,025	±0,025
G	±0,025	±0,025	±0,13
M	see tables in size column		±0,13
U	see tables in size column		±0,13

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

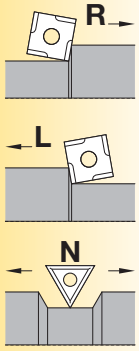


04	08			M
Thickness S	Corner Radius "Rε"	Hand of Insert *(optional)*	Cutting Edge *(optional)*	Chipbreaker *(optional)*

symbol mm	thickness mm
–	0,79
T0	1,00
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52
11	11,11
12	12,70

symbol mm	corner radius mm
X0	0,04
01	0,1
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
28	2,8
32	3,2
00	round insert
M0	

R = Right hand
L = Left hand
N = Neutral

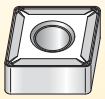


F	Sharp
E	Rounded
T	Chamfered
S	Chamfered and Rounded
K	Double-Chamfered
P	Double-Chamfered and Rounded

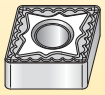
GT-F	Finishing	**M**	Medium Machining
MT-F	Finishing	**R**	Medium Roughing
F	Finishing	**..MA**	Roughing
..GP	Medium Machining	**H**	Heavy Roughing

Step 1 • Select the insert geometry

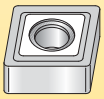
Negative Inserts



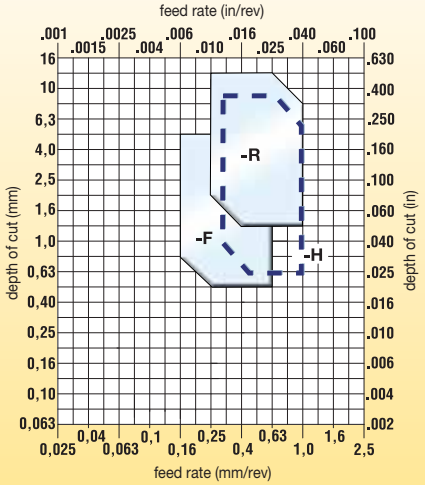
-F
Finishing



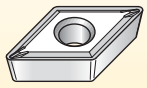
-R
Roughing



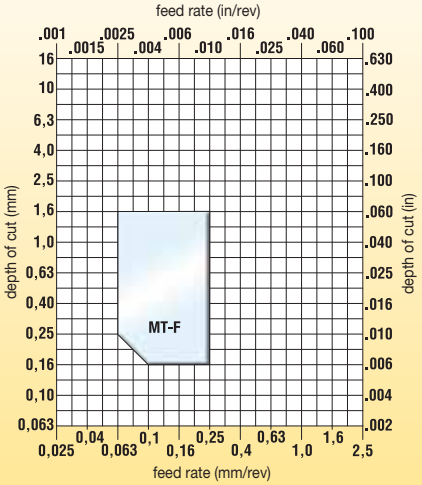
-H
Heavy Roughing



Positive Inserts



MT-F
Finishing



Step 2 • Select the grade

		Negative Insert Geometry			Positive Insert Geometry
cutting condition		**-F**	**-R**	**-H**	**MT-F**
heavily interrupted cut		K35P	K35P	K35P	K35P
lightly interrupted cut		K25P/K35P	K25P/K35P	K25P/K35P	K25P
varying depth of cut, casting, or forging skin		K10P	K10P	K10P	K10P
smooth cut, pre-turned surface		K10P	K10P	K10P	K10P

Step 3 • Select the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel — speed — m/min — starting conditions

material group	grade	135	180	225	275	320	360	410	455	495	m/min
P0/P1	K10P					◁▷					316
	K25P				◁▷						248
	K35P			◁▷							189

Medium- and High-Carbon Steels (<0,3% C) — speed — m/min — starting conditions

material group	grade	135	180	225	275	320	360	410	455	495	m/min
P2	K10P			◁▷							212
	K25P		◁▷								176
	K35P	◁▷									135

Alloy Steels and Tool Steels (≤330 HB) (≤35 HRC) — speed — m/min — starting conditions

material group	grade	135	180	225	275	320	360	410	455	495	m/min
P3	K10P		◁▷								152
	K25P		◁▷								140
	K35P	◁▷									108

Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC) — speed — m/min — starting conditions

material group	grade	60	90	120	150	180	210	240	270	300	m/min
P4	K10P			◁▷							116
	K25P		◁▷								95
	K35P	◁▷									86

Ferritic, Martensitic, and PH Stainless Steels (≤330 HB) (≤35 HRC) — speed — m/min — starting conditions

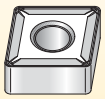
material group	grade	120	150	180	210	240	270	300	330	360	m/min
P5	K10P			◁▷							172
	K25P		◁▷								176
	K35P	◁▷									122

Ferritic, Martensitic, and PH Stainless Steels (340–450 HB) (36–48 HRC) — speed — m/min — starting conditions

material group	grade	105	135	165	195	225	255	285	315	345	m/min
P6	K10P		◁▷								144
	K25P	◁▷									135
	K35P	◁▷									95

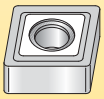
Step 1 • Select the insert geometry

Negative Inserts

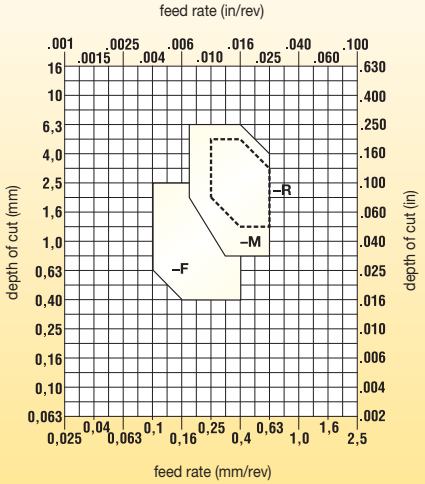


-F
Finishing

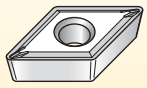
-M
Medium



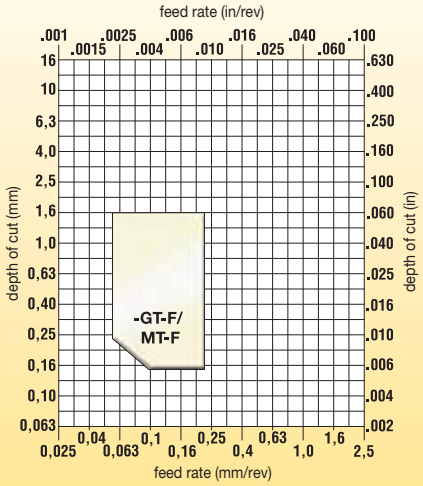
-R
Roughing



Positive Inserts



-GT-F/MT-F
Finishing



Step 2 • Select the grade

		Negative Insert Geometry			Positive Insert Geometry	
cutting condition		**-M**	**-R**	**-F**	**GT-F**	**MT-F**
heavily interrupted cut		**K25M**	**K25M**	**K10M**	**K25M**	**K25M**
lightly interrupted cut		**K25M**	**K25M**	**K10M**	**K25M**	**K25M**
varying depth of cut, casting, or forging skin		**K10M/K25M**	**K10M/K25M**	**K10M**	**K10M/K25M**	**K10M/K25M**
smooth cut, pre-turned surface		**K10M**	**K10M**	**K10M**	**K10M**	**K10M**

Step 3 • Select the cutting speed

Austenitic Stainless Steel — **speed — m/min** — **starting conditions** ◁▷

material group	grade	90	135	180	225	270	315	360	405	450	m/min
M1	K10M			◁▷							162
	K25M		◁▷								135
	K10U				◁▷						194
	K15U		◁▷								129

Austenitic Stainless Steel — **speed — m/min** — **starting conditions** ◁▷

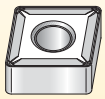
material group	grade	90	135	180	225	270	315	360	405	450	m/min
M2	K10M		◁▷								149
	K25M		◁▷								135
	K10U			◁▷							180
	K15U		◁▷								120

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture) — **speed — m/min** — **starting conditions** ◁▷

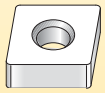
material group	grade	90	135	180	225	270	315	360	405	450	m/min
M3	K10M		◁▷								135
	K25M	◁▷									108
	K10U			◁▷							167
	K15U	◁▷									111

Step 1 • Select the insert geometry

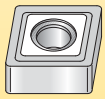
Negative Inserts



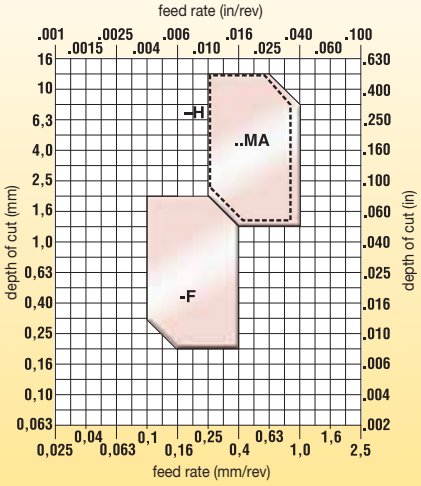
-F
Finishing



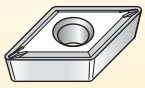
-MA
Heavy Roughing



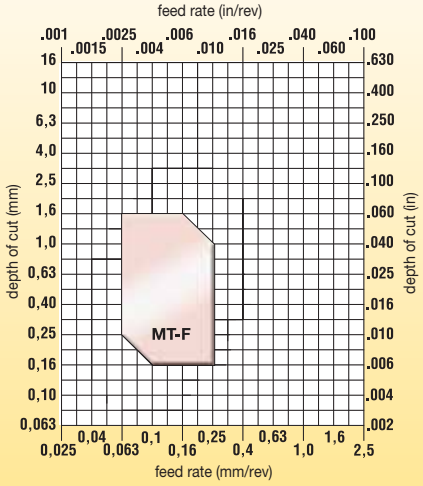
-H
Heavy Roughing



Positive Inserts



MT-F
Finishing



Step 2 • Select the grade

cutting condition	Negative Insert Geometry ..MA	-H	-F	Positive Insert Geometry MT-F
heavily interrupted cut	K20K	K20K	K20K	K20K
lightly interrupted cut	K20K	K20K	K20K	K20K
varying depth of cut, casting, or forging skin	K20K	K20K	K20K	K20K
smooth cut, pre-turned surface	K20K	K20K	K20K	K20K

Step 3 • Select the cutting speed

Grey Cast Iron — speed — m/min — starting conditions ◁▷

material group	grade	60	150	240	330	420	510	600	690	780	m/min
K1	K20K			◁▷							270

Ductile, Compacted Graphite, and Malleable Cast Irons (<80 KSI tensile strength) — speed — m/min — starting conditions ◁▷

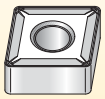
material group	grade	60	150	240	330	420	510	600	690	780	m/min
K2	K20K			◁▷							216

Ductile, Compacted Graphite, and Malleable Cast Irons (>80 KSI tensile strength) — speed — m/min — starting conditions ◁▷

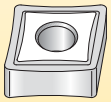
material group	grade	60	150	240	330	420	510	600	690	780	m/min
K3	K20K			◁▷							189

Step 1 • Select the insert geometry

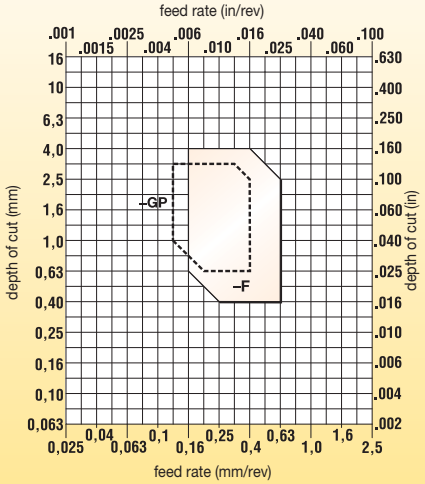
Negative Inserts



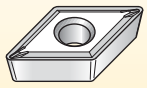
-F
Finishing



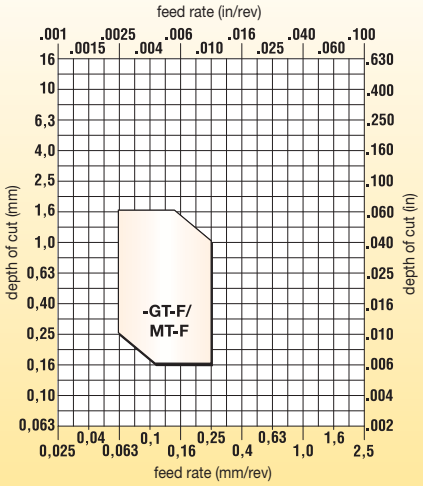
..GP
Medium



Positive Inserts



GT-F/MT-F
Finishing



Step 2 • Select the grade

		Negative Insert Geometry		Positive Insert Geometry	
cutting condition		**..GP**	**-F**	**GT-F**	**MT-F**
heavily interrupted cut		—	K15U	K15U	K15U
lightly interrupted cut		K10U	K10U	K15U	K15U
varying depth of cut, casting, or forging skin		K10U	K10U	K10U	K10U
smooth cut, pre-turned surface		K10U	K10U	K10U	K10U

Step 3 • Select the cutting speed

Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC) — speed — m/min — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min
S1	K10U		◁▷								50
	K15U		◁▷								33

Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC) — speed — m/min — starting conditions

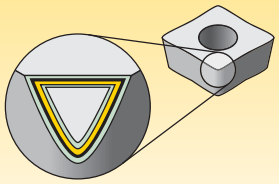
material group	grade	15	45	75	105	140	170	200	230	260	m/min
S2	K10U		◁▷								54
	K15U		◁▷								36

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min — starting conditions

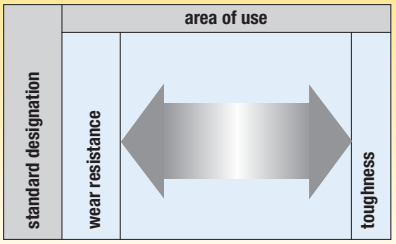
material group	grade	15	45	75	105	140	170	200	230	260	m/min
S3	K10U			◁▷							63
	K15U		◁▷								42

Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min — starting conditions

material group	grade	15	45	75	105	140	170	200	230	260	m/min
S4	K10U			◁▷							63
	K15U		◁▷								42



- Engineered to optimise performance.
- Gold coating on every insert.
- Proven grade technologies.



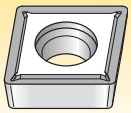
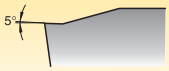
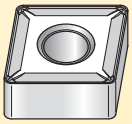
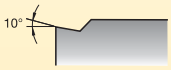
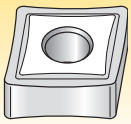
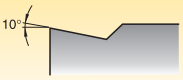
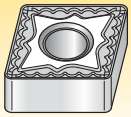
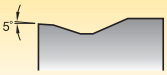
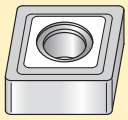
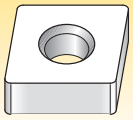
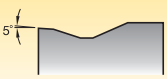
Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
K10P	C3, C7	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for light finishing to medium machining applications. Superior wear resistance.	P	P	P	P					
K25P	C2, C3, C6-C7	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Great general-purpose turning grade for steels. Ideal for semi-finishing to moderately heavy roughing.		P	P	P	P	P			
K35P	C5-C6	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Tough carbide grade. Ideal for roughing and heavy roughing applications						P	P	P	P
K10M	M10-M20	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for finishing to medium machining of austenitic stainless steels.			P	P	P				
K25M	C1-C2	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for general-purpose machining of stainless steels.						P	P	P	
K20K	C3-C4	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Great when used for straight or lightly interrupted cut applications of ductile and cast irons.	P	P	P						
K10U	C3-C4	Coated carbide. PVD-TiAlN-TiN. Ideal for finishing of difficult-to-machine alloys and stainless steels.		P	P	P					
K15U	C3	Uncoated carbide. Excellent abrasion resistance for machining cast irons, austenitic stainless steels, and most high-temperature alloys.		P	P	P					

Application Specific

Select the geometry — based on feed rate and depth of cut

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

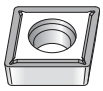
operation	insert style application	insert geometry	profile	feed rate — mm: 0,04 / 0,063 / 0,01 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 5,0 depth of cut — mm: 0,1 / 0,16 / 0,25 / 0,4 / 0,63 / 1,0 / 1,6 / 2,5 / 4,0 / 6,3 / 10,0
finishing	GT-F MT-F			0,15–0,4 0,5–2,3
finishing	F			0,01–0,25 0,25–1,3
medium	..GP			0,3–0,5 1,5–3,2
medium	M			0,15–0,5 0,75–5,0
roughing	R			0,2–0,6 1,1–6,4
roughing	H			0,3–0,6 1,1–6,4
roughing	..MA			0,3–0,6 1,1–6,4

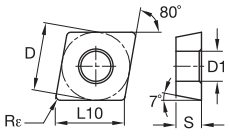
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

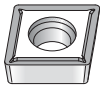
CCGT-F

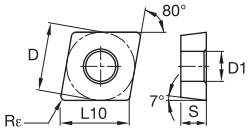




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CCGT060202F	6,35	6,45	2,38	0,2	2,80							●	●
CCGT060204F	6,35	6,45	2,38	0,4	2,80							●	●
CCGT060208F	6,35	6,45	2,38	0,8	2,80							●	
CCGT09T302F	9,53	9,67	3,97	0,2	4,40							●	●
CCGT09T301F	9,53	9,67	3,97	0,1	4,40							●	●
CCGT09T304F	9,53	9,67	3,97	0,4	4,40							●	●
CCGT09T308F	9,53	9,67	3,97	0,8	4,40							●	●

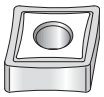
CCMT-F

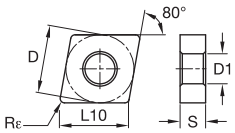




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CCMT060202F	6,35	6,45	2,38	0,2	2,80	●			●	●	●	●	●
CCMT060204F	6,35	6,45	2,38	0,4	2,80	●	●		●	●	●	●	●
CCMT060208F	6,35	6,45	2,38	0,8	2,80	●	●		●	●	●	●	
CCMT09T302F	9,53	9,67	3,97	0,2	4,40							●	●
CCMT09T304F	9,53	9,67	3,97	0,4	4,40	●	●		●	●	●	●	●
CCMT09T308F	9,53	9,67	3,97	0,8	4,40	●	●		●	●	●	●	●
CCMT120404F	12,70	12,90	4,76	0,4	5,50	●	●		●	●	●	●	
CCMT120408F	12,70	12,90	4,76	0,8	5,50	●	●		●	●	●	●	

CNGP



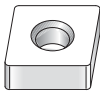


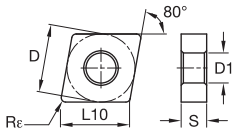
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNGP120401	12,70	12,90	4,76	0,1	5,16							●	
CNGP120402	12,70	12,90	4,76	0,2	5,16							●	
CNGP120404	12,70	12,90	4,76	0,4	5,16							●	●
CNGP120408	12,70	12,90	4,76	0,8	5,16							●	●
CNGP120412	12,70	12,90	4,76	1,2	5,16							●	●

● first choice
○ alternate choice

P	●	●	●	○	○	○	○	○
M				●	●		●	●
K	○	○				●	○	○
N							○	○
S				○	○		●	●
H								

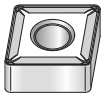
CNMA

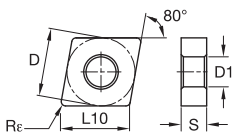




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMA120404	12,70	12,90	4,76	0,4	5,16						●		
CNMA120408	12,70	12,90	4,76	0,8	5,16						●		
CNMA120412	12,70	12,90	4,76	1,2	5,16						●		
CNMA120416	12,70	12,90	4,76	1,6	5,16						●		
CNMA160612	15,88	16,12	6,35	1,2	6,35						●		
CNMA160616	15,88	16,12	6,35	1,6	6,35						●		
CNMA190612	19,05	19,34	6,35	1,2	7,93						●		
CNMA190616	19,05	19,34	6,35	1,6	7,93						●		

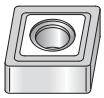
CNMG-F

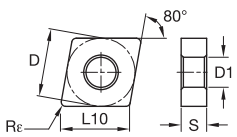




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMG120404F	12,70	12,90	4,76	0,4	5,16	●	●		●	●	●	●	●
CNMG120408F	12,70	12,90	4,76	0,8	5,16	●	●		●	●	●	●	●
CNMG120412F	12,70	12,90	4,76	1,2	5,16	●	●		●		●	●	

CNMG-H





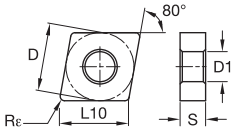
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMG120404H	12,70	12,90	4,76	0,4	5,16	●	●				●		
CNMG120408H	12,70	12,90	4,76	0,8	5,16	●	●	●			●		
CNMG120412H	12,70	12,90	4,76	1,2	5,16	●	●	●			●		
CNMG120416H	12,70	12,90	4,76	1,6	5,16	●	●				●		
CNMG160612H	15,88	16,12	6,35	1,2	6,35	●	●	●			●		
CNMG160616H	15,88	16,12	6,35	1,6	6,35	●	●				●		
CNMG190608H	19,05	19,34	6,35	0,8	7,93	●					●		
CNMG190612H	19,05	19,34	6,35	1,2	7,93	●	●	●			●		
CNMG190616H	19,05	19,34	6,35	1,6	7,93	●	●	●			●		
CNMG250924H	25,40	25,79	9,53	2,4	9,12			●					

Application Specific

● first choice
○ alternate choice

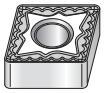
		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

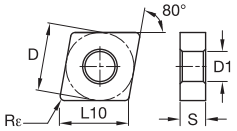
CNMG-M



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
CNMG120404M	12,70	12,90	4,76	0,4	5,16
CNMG120408M	12,70	12,90	4,76	0,8	5,16
CNMG120412M	12,70	12,90	4,76	1,2	5,16
CNMG160612M	15,88	16,12	6,35	1,2	6,35
CNMG190612M	19,05	19,34	6,35	1,2	7,93

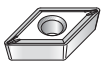
CNMG-R

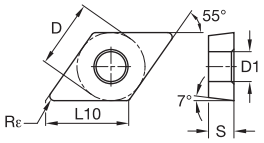




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMG090308R	9,53	9,67	3,18	0,8	3,81	●	●		●	●			
CNMG120404R	12,70	12,90	4,76	0,4	5,16	●	●		●	●			
CNMG120408R	12,70	12,90	4,76	0,8	5,16	●	●	●	●	●			
CNMG120412R	12,70	12,90	4,76	1,2	5,16	●	●	●	●	●			
CNMG160612R	15,88	16,12	6,35	1,2	6,35		●	●	●	●			
CNMG190612R	19,05	19,34	6,35	1,2	7,93		●	●	●	●			

DCGT-F



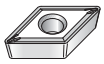


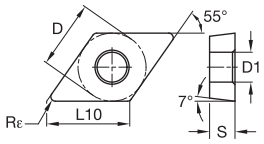
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DCGT070201F	6,35	7,75	2,38	0,1	2,80							●	●
DCGT11T301F	9,53	11,63	3,97	0,1	4,40							●	●
DCGT150408F	12,70	15,50	4,76	0,8	5,50							●	

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

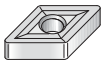
DCMT-F

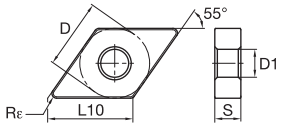




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DCMT070202F	6,35	7,75	2,38	0,2	2,80							●	●
DCMT070204F	6,35	7,75	2,38	0,4	2,80	●	●		●	●	●	●	●
DCMT11T302F	9,53	11,63	3,97	0,2	4,40							●	●
DCMT11T304F	9,53	11,63	3,97	0,4	4,40	●	●		●	●	●	●	●
DCMT11T308F	9,53	11,63	3,97	0,8	4,40	●	●		●	●	●	●	
DCMT11T312F	9,53	11,63	3,97	1,2	4,40	●			●		●	●	
DCMT150404F	12,70	15,50	4,76	0,4	5,50	●	●				●		
DCMT150408F	12,70	15,50	4,76	0,8	5,50	●	●				●		

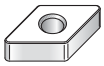
DNGP

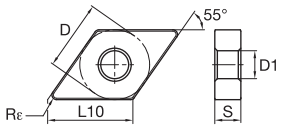




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNGP150401	12,70	15,50	4,76	0,1	5,16							●	
DNGP150402	12,70	15,50	4,76	0,2	5,16							●	●
DNGP150404	12,70	15,50	4,76	0,4	5,16							●	●
DNGP150408	12,70	15,50	4,76	0,8	5,16							●	●

DNMA





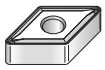
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMA150408	12,70	15,50	4,76	0,8	5,16						●		
DNMA150412	12,70	15,50	4,76	1,2	5,16						●		
DNMA150608	12,70	15,50	6,35	0,8	5,16						●		
DNMA150612	12,70	15,50	6,35	1,2	5,16						●		

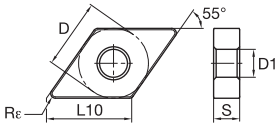
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

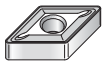
DNMG-F

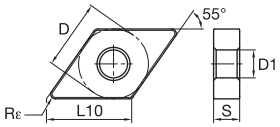




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
DNMG150404F	12,70	15,50	4,76	0,4	5,16
DNMG150408F	12,70	15,50	4,76	0,8	5,16
DNMG150604F	12,70	15,50	6,35	0,4	5,16
DNMG150608F	12,70	15,50	6,35	0,8	5,16
DNMG150612F	12,70	15,50	6,35	1,2	5,16

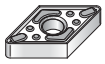
DNMG-H

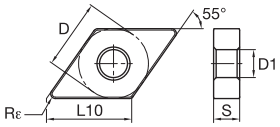




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
DNMG150404H	12,70	15,50	4,76	0,4	5,16
DNMG150408H	12,70	15,50	4,76	0,8	5,16
DNMG150412H	12,70	15,50	4,76	1,2	5,16
DNMG150608H	12,70	15,50	6,35	0,8	5,16
DNMG150612H	12,70	15,50	6,35	1,2	5,16
DNMG190612H	15,88	19,38	6,35	1,2	6,35

DNMG-M



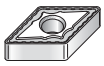


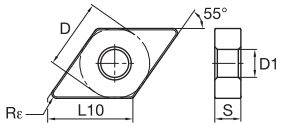
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
DNMG150404M	12,70	15,50	4,76	0,4	5,16
DNMG150408M	12,70	15,50	4,76	0,8	5,16
DNMG150604M	12,70	15,50	6,35	0,4	5,16
DNMG150608M	12,70	15,50	6,35	0,8	5,16
DNMG150612M	12,70	15,50	6,35	1,2	5,16

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

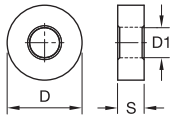
DNMG-R





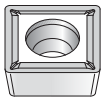
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
DNMG110408R	9,53	11,63	4,76	0,8	3,81
DNMG150404R	12,70	15,50	4,76	0,4	5,16
DNMG150408R	12,70	15,50	4,76	0,8	5,16
DNMG150412R	12,70	15,50	4,76	1,2	5,16
DNMG150604R	12,70	15,50	6,35	0,4	5,16
DNMG150608R	12,70	15,50	6,35	0,8	5,16
DNMG150612R	12,70	15,50	6,35	1,2	5,16
DNMG190612R	15,88	19,38	6,35	1,2	6,35

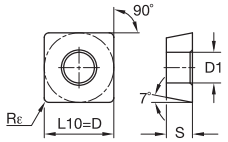
RNMG-H



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
RNMG1204H	12,70	–	4,76	–	5,16
RNMG1906H	19,05	–	6,35	–	7,93

SCMT-F

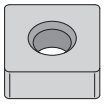




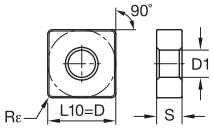
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
SCMT09T304F	9,53	9,53	3,97	0,4	4,40
SCMT09T308F	9,53	9,53	3,97	0,8	4,40
SCMT120404F	12,70	12,70	4,76	0,4	5,50
SCMT120408F	12,70	12,70	4,76	0,8	5,50

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

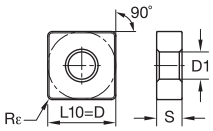


SNMA



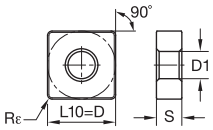
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMA120408	12,70	12,70	4,76	0,8	5,16						●		
SNMA120412	12,70	12,70	4,76	1,2	5,16						●		
SNMA150612	15,88	15,88	6,35	1,2	6,35						●		
SNMA190612	19,05	19,05	6,35	1,2	7,93						●		

SNMG-F



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG090308F	9,53	9,53	3,18	0,8	3,81	●	●				●	●	
SNMG120408F	12,70	12,70	4,76	0,8	5,16	●	●		●		●	●	●

SNMG-H

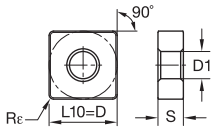


ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG120408H	12,70	12,70	4,76	0,8	5,16	●	●				●		
SNMG120412H	12,70	12,70	4,76	1,2	5,16	●	●	●			●		
SNMG120416H	12,70	12,70	4,76	1,6	5,16	●	●	●			●		
SNMG150612H	15,88	15,88	6,35	1,2	6,35		●	●			●		
SNMG150616H	15,88	15,88	6,35	1,6	6,35		●	●			●		
SNMG190612H	19,05	19,05	6,35	1,2	7,93		●	●			●		
SNMG190616H	19,05	19,05	6,35	1,6	7,93		●	●			●		

● first choice
○ alternate choice

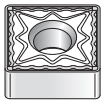
P	●	●	●	○	○	○	○	○
M				●	●		●	●
K	○	○				●	○	○
N							○	○
S				○	○		●	●
H								

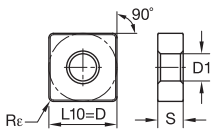
■ SNMG-M



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG120408M	12,70	12,70	4,76	0,8	5,16				●	●			
SNMG120412M	12,70	12,70	4,76	1,2	5,16				●	●			

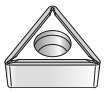
■ SNMG-R

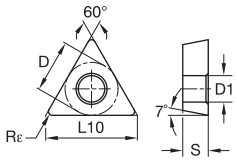




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG090308R	9,53	9,53	3,18	0,8	3,81	●	●						
SNMG120404R	12,70	12,70	4,76	0,4	5,16	●	●		●	●			
SNMG120408R	12,70	12,70	4,76	0,8	5,16	●	●	●	●	●			
SNMG120412R	12,70	12,70	4,76	1,2	5,16	●	●	●	●	●			
SNMG190612R	19,05	19,05	6,35	1,2	7,93		●	●	●	●			

■ TCGT-F





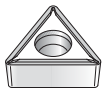
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
TCGT110201F	6,35	11,00	2,38	0,1	2,80							●	●
TCGT110204F	6,35	11,00	2,38	0,4	2,80							●	●
TCGT16T302F	9,53	16,50	3,97	0,2	4,40							●	
TCGT16T304F	9,53	16,50	3,97	0,4	4,40							●	●
TCGT16T308F	9,53	16,50	3,97	0,8	4,40							●	

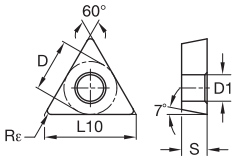
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

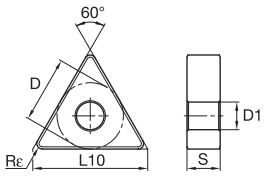
TCMT-F





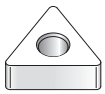
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TCMT110202F	6,35	11,00	2,38	0,2	2,90
TCMT110204F	6,35	11,00	2,38	0,4	2,80
TCMT110208F	6,35	11,00	2,38	0,8	2,80
TCMT16T302F	9,53	16,50	3,97	0,2	4,40
TCMT16T304F	9,53	16,50	3,97	0,4	4,40
TCMT16T308F	9,53	16,50	3,97	0,8	4,40
TCMT16T312F	9,53	16,50	3,97	1,2	4,40
TCMT220408F	12,70	22,00	4,76	0,8	5,50

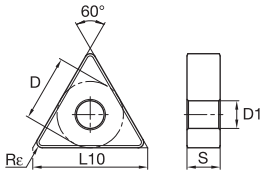
TNGP



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNGP160402	9,53	16,50	4,76	0,2	3,81
TNGP160404	9,53	16,50	4,76	0,4	3,81
TNGP160408	9,53	16,50	4,76	0,8	3,81

TNMA



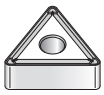


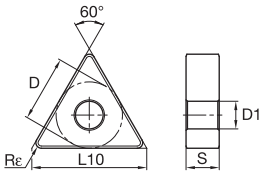
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMA160408	9,53	16,50	4,76	0,8	3,81
TNMA160412	9,53	16,50	4,76	1,2	3,81
TNMA220408	12,70	22,00	4,76	0,8	5,16

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

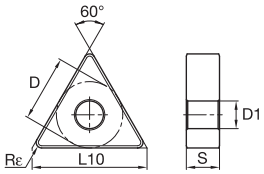
TNMG-F





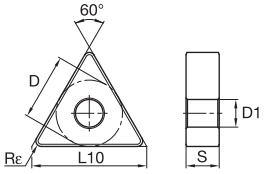
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMG160404F	9,53	16,50	4,76	0,4	3,81
TNMG160408F	9,53	16,50	4,76	0,8	3,81
TNMG160412F	9,53	16,50	4,76	1,2	3,81
TNMG220408F	12,70	22,00	4,76	0,8	5,16

TNMG-H



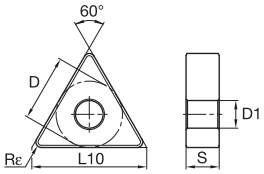
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMG160404H	9,53	16,50	4,76	0,4	3,81
TNMG160408H	9,53	16,50	4,76	0,8	3,81
TNMG160412H	9,53	16,50	4,76	1,2	3,81
TNMG220404H	12,70	22,00	4,76	0,4	5,16
TNMG220408H	12,70	22,00	4,76	0,8	5,16
TNMG220412H	12,70	22,00	4,76	1,2	5,16
TNMG270612H	15,88	27,50	6,35	1,2	6,35
TNMG330924H	19,05	33,00	9,53	2,4	7,93

TNMG-M



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMG160404M	9,53	16,50	4,76	0,4	3,81
TNMG160408M	9,53	16,50	4,76	0,8	3,81
TNMG160412M	9,53	16,50	4,76	1,2	3,81
TNMG220404M	12,70	22,00	4,76	0,4	5,16
TNMG220408M	12,70	22,00	4,76	0,8	5,16

TNMG-R



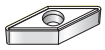
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
TNMG160404R	9,53	16,50	4,76	0,4	3,81
TNMG160408R	9,53	16,50	4,76	0,8	3,81
TNMG160412R	9,53	16,50	4,76	1,2	3,81
TNMG220404R	12,70	22,00	4,76	0,4	5,16
TNMG220408R	12,70	22,00	4,76	0,8	5,16

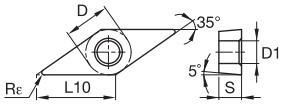
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

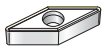
VBGT-F

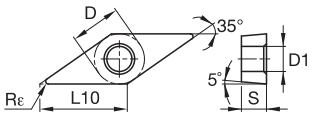




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VBGT110302F	6,35	11,07	3,18	0,2	2,80							●	●
VBGT110301F	6,35	11,07	3,18	0,1	2,80							●	●
VBGT110304F	6,35	11,07	3,18	0,4	2,80							●	
VBGT160402F	9,53	16,61	4,76	0,2	4,40							●	●
VBGT160401F	9,53	16,61	4,76	0,1	4,40							●	
VBGT160404F	9,53	16,61	4,76	0,4	4,40							●	●

VBMT-F



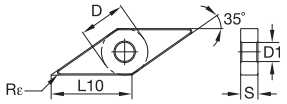


ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VBMT110302F	6,35	11,07	3,18	0,2	2,80							●	●
VBMT110304F	6,35	11,07	3,18	0,4	2,80	●	●		●	●	●	●	●
VBMT110308F	6,35	11,07	3,18	0,8	2,80	●	●		●		●	●	
VBMT160402F	9,53	16,61	4,76	0,2	4,40	●				●	●	●	●
VBMT160404F	9,53	16,61	4,76	0,4	4,40	●	●		●	●	●	●	●
VBMT160408F	9,53	16,61	4,76	0,8	4,40	●	●		●	●	●	●	●

● first choice
○ alternate choice

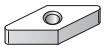
		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

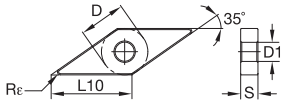
VNGP



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
VNGP160401	9,53	16,61	4,76	0,1	3,81
VNGP160402	9,53	16,61	4,76	0,2	3,81
VNGP220404	12,70	22,14	4,76	0,4	5,16
VNGP220408	12,70	22,14	4,76	0,8	5,16

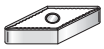
VNMA

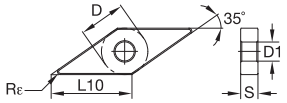




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm
VNMA160408	9,53	16,61	4,76	0,8	3,81

VNMG-F



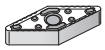


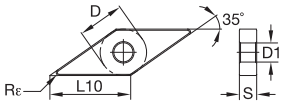
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNMG160404F	9,53	16,61	4,76	0,4	3,81	●	●		●	●	●	●	●
VNMG160408F	9,53	16,61	4,76	0,8	3,81	●	●		●		●	●	●

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

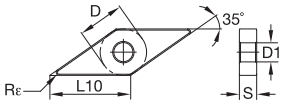
VNMG-M





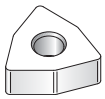
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNMG160404M	9,53	16,61	4,76	0,4	3,81				●	●			
VNMG160408M	9,53	16,61	4,76	0,8	3,81				●	●			

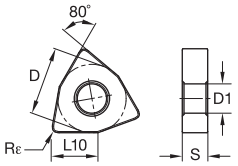
VNMG-R



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNMG160408R	9,53	16,61	4,76	0,8	3,81	●	●		●	●			

WNMA



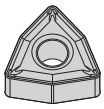


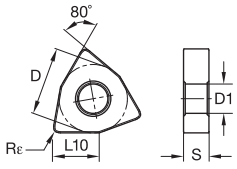
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
WNMA060408	9,53	6,52	4,76	0,8	3,81						●		
WNMA080408	12,70	8,69	4,76	0,8	5,16						●		
WNMA080412	12,70	8,69	4,76	1,2	5,16						●		

● first choice
○ alternate choice

P	●	●	●	○	○	○	○	○
M				●	●		●	●
K	○	○				●	○	○
N							○	○
S				○	○		●	●
H								

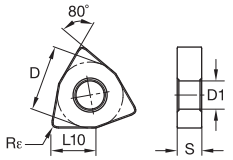
WNMG-F





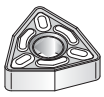
ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
WNMG080404F	12,70	8,69	4,76	0,4	5,16	●	●		●	●	●	●	●
WNMG080408F	12,70	8,69	4,76	0,8	5,16	●	●		●		●	●	●

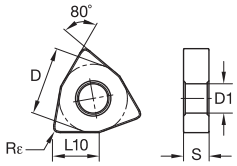
WNMG-H



ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
WNMG080408H	12,70	8,69	4,76	0,8	5,16	●	●	●			●		
WNMG080412H	12,70	8,69	4,76	1,2	5,16	●	●	●			●		
WNMG080416H	12,70	8,69	4,76	1,6	5,16		●	●			●		

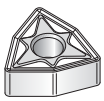
WNMG-M

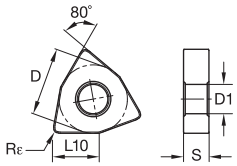




ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
WNMG080404M	12,70	8,69	4,76	0,4	5,16				●	●			
WNMG080408M	12,70	8,69	4,76	0,8	5,16				●	●			
WNMG080412M	12,70	8,69	4,76	1,2	5,16					●			

WNMG-R





ISO catalogue number	D mm	L10 mm	S mm	Rε mm	D1 mm	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
WNMG060408R	9,53	6,52	4,76	0,8	3,81	●	●		●	●			
WNMG080408R	12,70	8,69	4,76	0,8	5,16	●	●	●	●	●			
WNMG080412R	12,70	8,69	4,76	1,2	5,16	●	●	●	●	●			

Application Specific

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

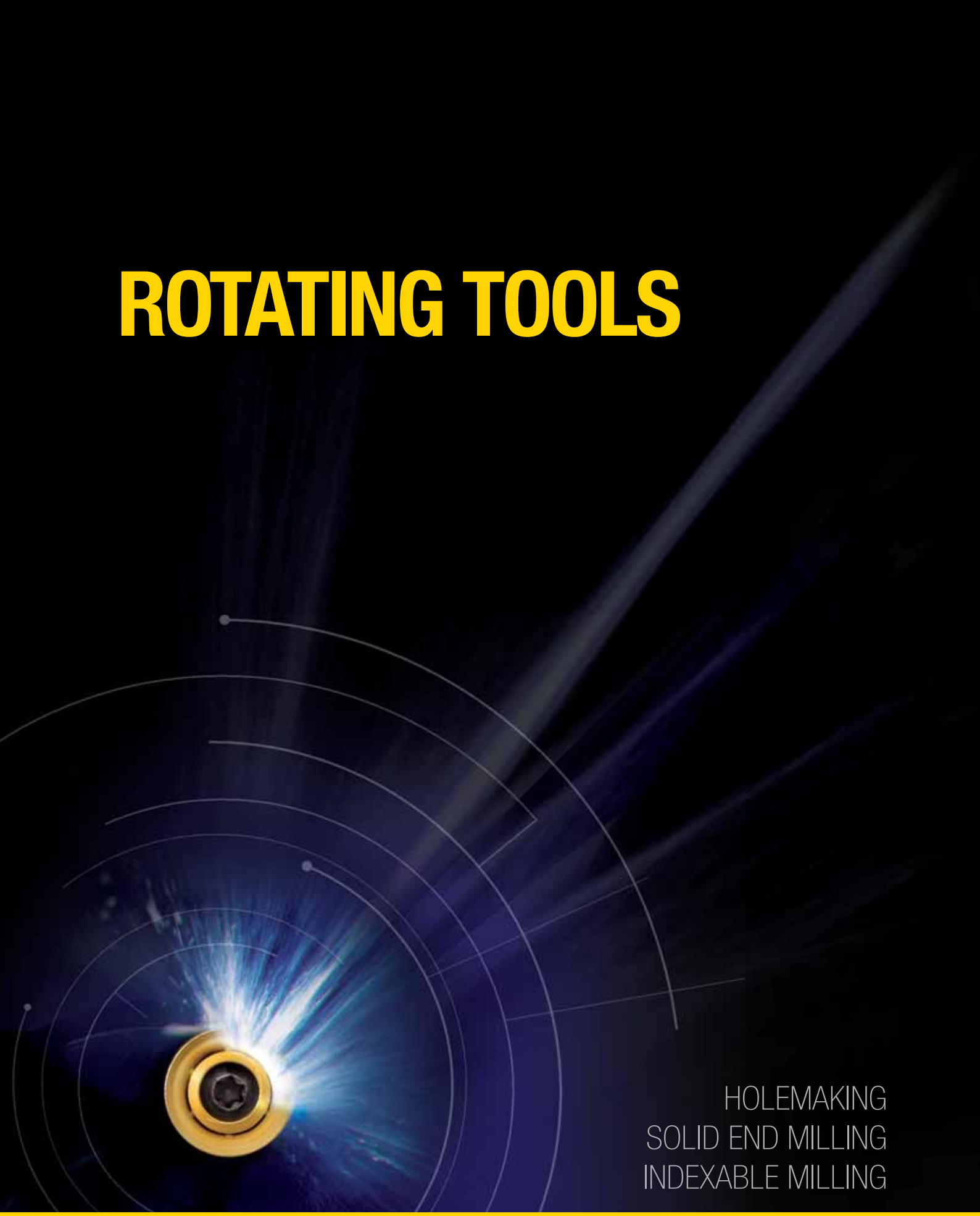
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

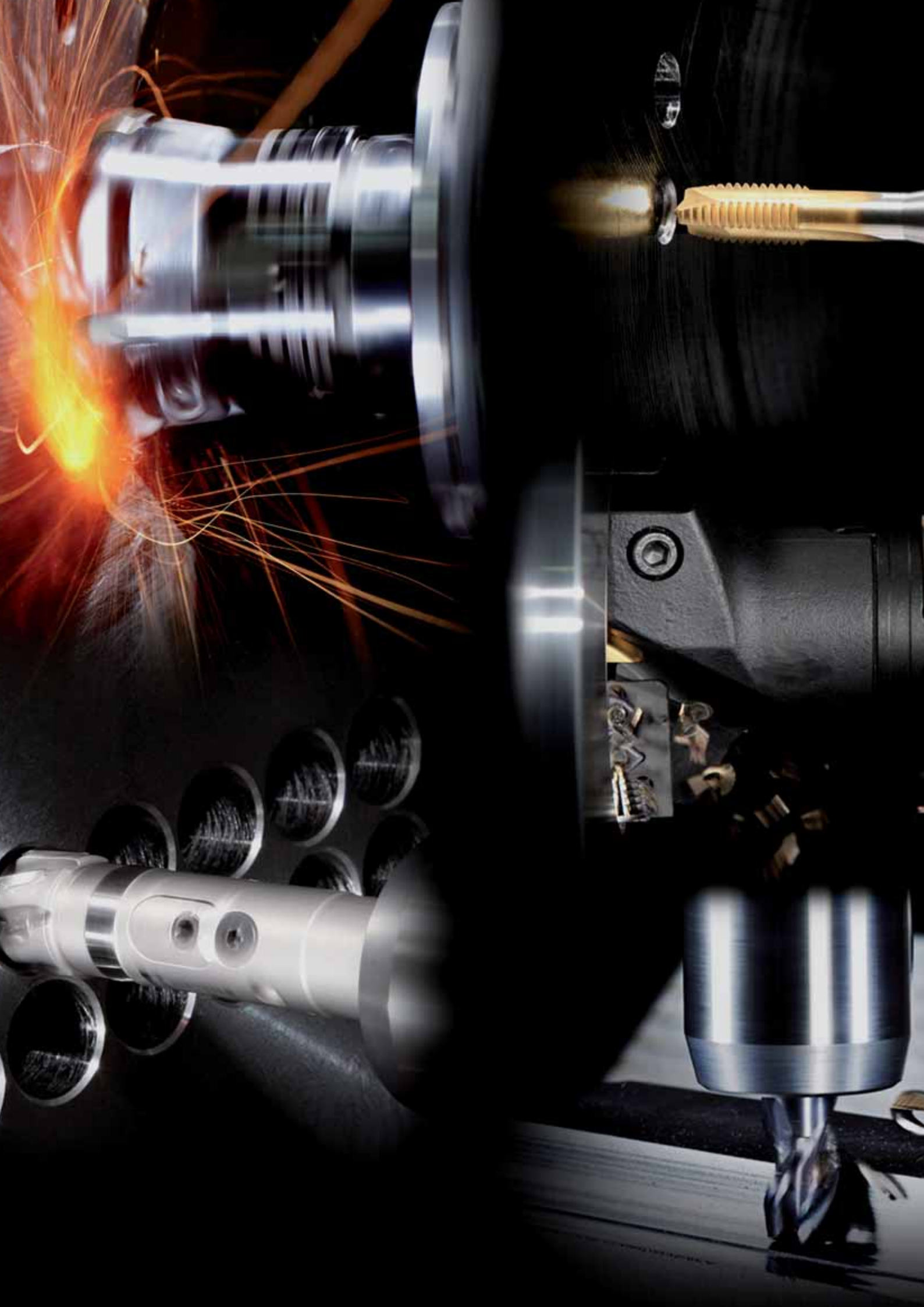
ROTATING TOOLS



HOLEMAKING
SOLID END MILLING
INDEXABLE MILLING

www.kennametal.com

KENNAMETAL®



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KENNAMETAL®

ROTATING TOOLS

Holemaking Products

Our latest Metalcutting Innovations are designed to deliver higher productivity, longer tool life, and increased application versatility.

SOLID CARBIDE DRILLS

See Section G for more details.

- **GOdrill™**
- **TF Drills**
- **Beyond™ Drills**
- **Y-TECH™ Drills**
- **TX Drills**
- **SPF Drills**
- **Flat-Bottom Drills**
- **Kenna Universal™ Drills**
- **NC Spot Drills**

MODULAR DRILLS

See Section H for more details.

- **KenTIP™**
- **KSEM™**
- **KSEM PLUS™**

COMBINATION TOOLS

See Section I for more details.

- **BF Combination Drilling System**
- **SEFAS™ Combination Drilling System**

For more information about the latest products and services from Kennametal, please contact your Kennametal Representative or Authorised Kennametal Distributor, or visit www.kennametal.com.

INDEXABLE DRILLS

See Section J for more details.

Drill Fix™

HTS Series Indexable Deep-Hole Drilling System

Indexable Drill Inserts

CTR Counterboring Tools

Counterboring Inserts

HOLE FINISHING

See Section K for more details.

Reaming Tools

SIF Steerable Toolholders

PCD Customised Tooling

Romicron™ Fine-Boring System

ModBORE™ Boring System

TAPS

See Section L for more details.

Beyond™ High-Performance Solid Carbide Taps

High-Performance HSS-E-PM Taps

High-Performance K Series Taps

General-Purpose Taps High-Performance Solid Carbide

Thread Mills

Select the Correct Holemaking Solution for Your Application

Added Value for Your Performance

Increase of Productivity and Efficiency

- Material and application-specific solutions.
- Maximum metal removal rates and repeatability.
- Standardised design platforms for special tools based on “proven solutions” for individual optimisations and combination tools.

Control of Total Tooling Costs

- High tool utilisation through material and application specific solutions.
- Process-safe regrinding service.
- Reduction of stocks through efficient modular concepts.
- Multiple platforms per application to achieve the most cost-efficient solution.

Solid Drilling

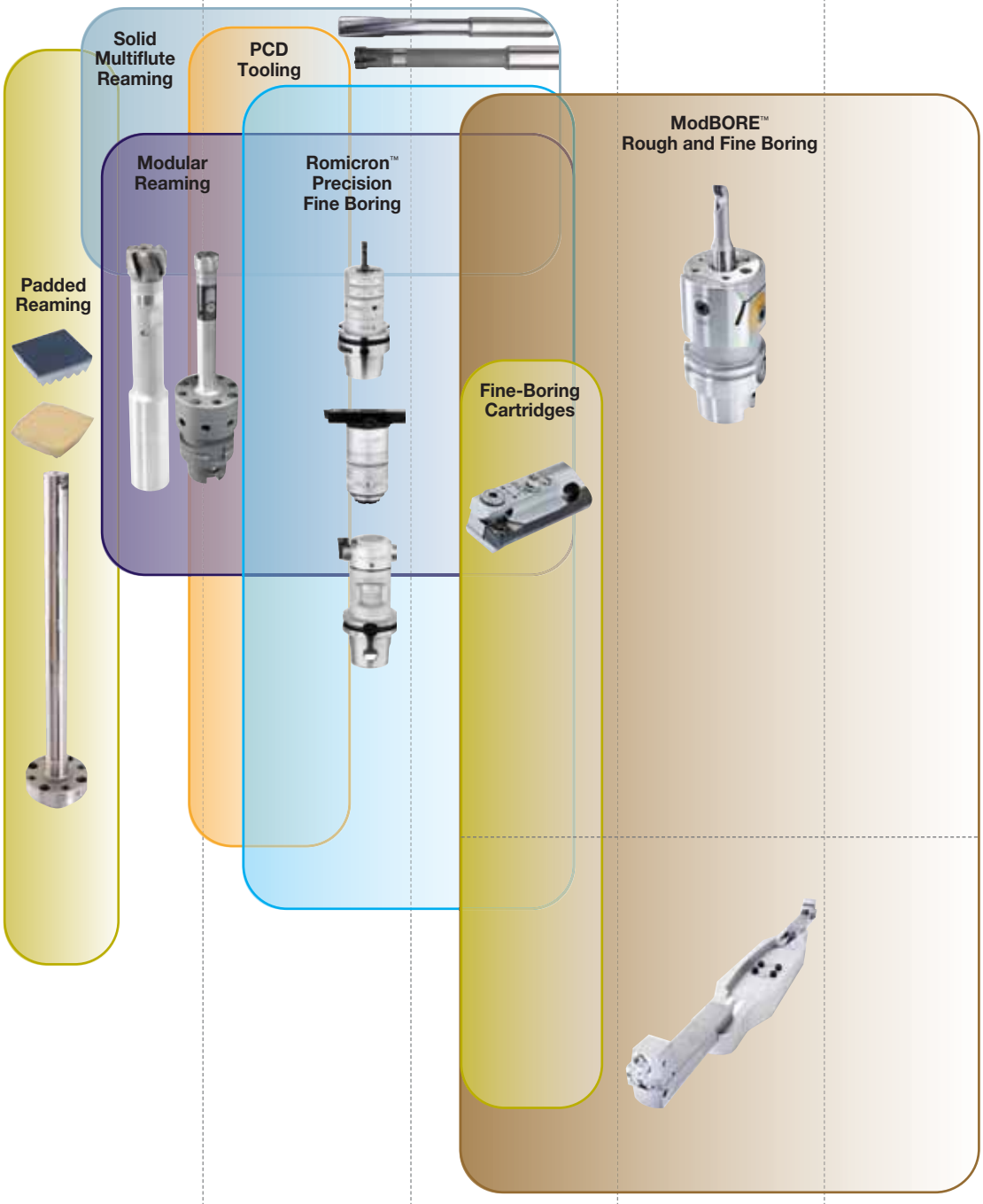
diameter		hourly rate			
		high to normal	normal (M/C)	normal to low	low (rough)
		precision			
mm	inch	IT8	IT9	IT10	IT11
1,0	.0393				
3,0	.1181				
6,0	.2362				
9,0	.3543				
12,0	.4724				
15,0	.5906				
18,0	.7087				
21,0	.8268				
24,0	.9449				
27,0	1.0630				
30,0	1.1811				
33,0	1.2992				
36,0	1.4173				
39,0	1.5354				
42,0	1.6535				
45,0	1.7717				
48,0	1.8898				
51,0	2.0079				
54,0	2.1260				
57,0	2.2441				
60,0	2.3622				
70,0	2.7559				
80,0	3.1496				
90,0	3.5433				
100,0	3.9370				
150,0	5.9055				
200,0	7.8740				
250,0	9.8425				
270,0	10"				

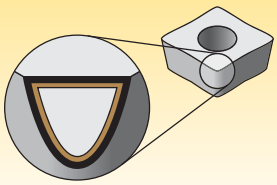
Optimised Purchase

- Broad selection of holemaking tools.
- Integrated into a full range of cutting tools and service offers.
- Onsite service for an efficient development and implementation of machining solutions.

Hole Finishing

diameter		hourly rate				
			very high	high (fine)	high to normal	normal (M/C)
		precision				
mm	inch	IT5	IT6	IT7	IT8	IT9
1,0	.0393					
3,0	.1181					
6,0	.2362					
9,0	.3543					
12,0	.4724					
15,0	.5906					
18,0	.7087					
21,0	.8268					
24,0	.9449					
27,0	1.0630					
30,0	1.1811					
33,0	1.2992					
36,0	1.4173					
39,0	1.5354					
42,0	1.6535					
45,0	1.7717					
48,0	1.8898					
50,0	1.9685					
100,0	3.937					
150,0	5.9055					
200,0	7.878					
250,0	9.8425					
300,0	11.811					
400,0	15.748					
500,0	19.685					
1000,0	39.3701					
1500,0	59.0551					
2000,0	78.7402					
2500,0	98.4252					





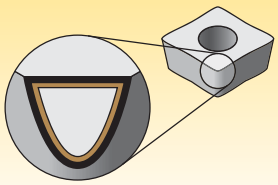
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KF1	• Uncoated finest grain carbide. • Highly wear-resistant grade. • First choice for precision drilling of non-ferrous materials. • High cutting performance with excellent surface quality due to the excellent geometry of the TX drill.	K, N	K, N							
KN15	• Uncoated carbide. • Highly wear-resistant grade. • Excellent surface quality for superior chip evacuation. • First choice for flat-bottom drilling of non-ferrous materials.	N, S	N, S	N, S	N, S	N, S				
KN25	• Uncoated finest grain carbide. • Highly wear-resistant grade. • Excellent surface quality for superior chip flow. • Used in deep-hole drilling applications in non-ferrous materials.	N	N	N	N	N	N			
K10	• Uncoated carbide grade with high degree of temperature resistance. • Suitable for cast iron material, non-ferrous materials, and titanium alloys. • High cutting performance, safe drilling process. • Dry machining also with cooling lubricants.	K, N, S	K, N, S	K, N, S						
K605	• Uncoated finest grain carbide. • First choice for reaming under normal conditions. • High-precision carbide grade for free-machining non-ferrous alloys.	K, N	K							
K715	• Uncoated carbide grade. • Enables very sharp cutting edges. • Primarily used for super-alloys and titanium. • Ideal for aerospace materials, including non-ferrous materials.	N, S		N, S	N, S	N, S				



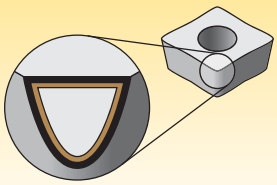
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Grade		05	10	15	20	25	30	35	40	45
KCPK15	• Multilayer TiAlN-PVD-coated universal fine-grain grade. • Highest level of wear resistance for higher cutting speeds. • Excellent surface quality for superior chip evacuation even when MQL is applied. • More efficient than TiN-PVD grades. • First choice for alloyed and high-alloy steel as well as cast iron.	P, K								
KCM15	• Nanolayer TiAlN-TiN-PVD coated fine-grain carbide. • High wear resistance and low adhesion to stainless steel materials. • Excellent surface quality for superior chip evacuation even when low-pressure coolant is applied.	M, S								
KCK10	• Multilayer AlCr-PVD-coated fine-grain carbide. • Newly developed unique coating. • Excellent surface quality for superior chip evacuation even when MQL is applied. • Extraordinary wear resistance in drilling of cast iron materials. • High-temperature hardness allows for elevated speeds.	K								
KCP15	• Nanolayer AlTiN-PVD-coated over fine-grain carbide. • Nanostructured coating with improved bonding process for longer tool life. • Increased Al content for better thermal and chemical stability (oxidation resistance) and higher toughness and hardness.	P, K								
KCPK10	Composition: Advanced TiCN-Al_2O_3-CVD coating combined with a cobalt-enriched carbide substrate, this grade offers a balanced combination of deformation resistance and edge toughness. Application: KCPK10 offers outstanding abrasion and crater wear resistance for high-speed machining of steels and cast irons. Use for very high cutting speeds with low to medium feed rates.	P, K								
KCU25	Composition: Advanced TiCN-Al_2O_3-CVD coating, together with a newly engineered tough carbide substrate, provides adequate deformation resistance along with excellent edge strength and offers very good wear resistance over a wide range of machining conditions. Application: KCU25 is a high productivity grade with high speeds and feeds, and the first choice for productive process with very good reliability in steels, stainless steels, and cast irons.	P, M, K								

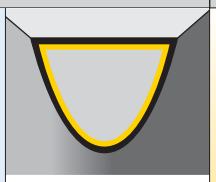
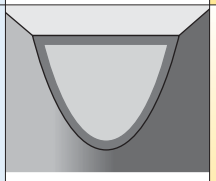
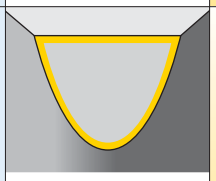
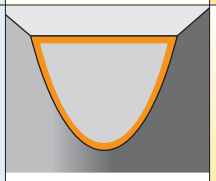
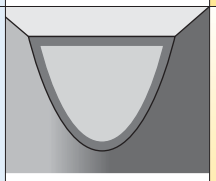
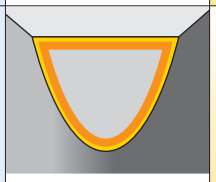


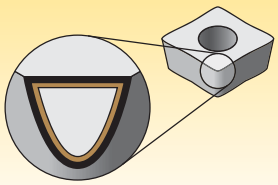
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05 10 15 20 25 30 35 40 45
KCU40 	Composition: Multilayered TiN-TiAlN-PVD coating and a tough substrate, that withstands interruptions and provides high wear resistance for long tool life. Application: KCU40 is the first choice for high reliability in most materials. This grade should be used at medium speeds and high feeds due to sharper edges. KCU40 covers steel, stainless steel, cast iron, and high-temperature alloys for high toughness applications under certain conditions.	P M K
KC5410 	• TiB_2-PVD coating over a very deformation-resistant unalloyed substrate. • Designed for roughing, semifinishing, and finishing of free machining (hypoeutectic <12,2% Si) aluminium, aluminium alloys, and magnesium alloys. • High hardness and extremely smooth surface, resulting in reduced surface friction, speedy chip flow, and outstanding wear resistance. • Prevents built-up edge because of a very low affinity for aluminium.	N
KC6005 	• TiN-PVD-coated carbide. • Highly wear-resistant substrate. • Reaming grade with universal applications in high-precision carbide cutting.	P M K S
KC6105 	• TiCN-PVD-coated carbide. • Reaming grade with highly wear-resistant substrate for steel and stainless steel. • Particularly high level of wear resistance for stainless steel with high-precision carbide cutting values.	P M
KC6305 	• TiAlN-PVD-coated carbide. • Reaming grade with highly wear-resistant substrate. • Particularly suitable for cast iron and steel. • For exceptionally high-precision finishing. • High-precision carbide cutting values.	P K
KC7135 	• TiCN-TiN-PVD-coated carbide. • Highly wear-resistant grade. • For universal application in steel, stainless steel, and irons. • Specifically used for KSEM PCM precentring inserts.	P M K



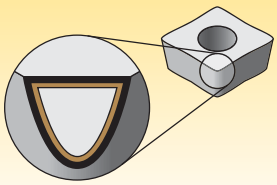
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05 10 15 20 25 30 35 40 45
KC7140	• TiCN-TiN-PVD-coated alloyed carbide. • Tough substrate containing 11% cobalt. • Ideal for general machining of alloy steel, low- and medium-carbon steel, tool steels, and 400 series stainless steels.	P K
KC720	• TiN-PVD-coated carbide. • Particularly high-impact strength grade. • For all steels, stainless steels, super-alloys, and titanium. • First choice for difficult conditions such as interrupted cutting, unstable clamping, etc.	P M S
KC7210	• TiAlN-PVD-coated carbide. • Excellent heat resistance with a good level of toughness. • First choice for high-speed cutting of cast iron materials when dry machining with TF drill and under cooling lubricants with indexable inserts.	K
KC7215	• TiAlN-PVD-coated universal fine-grain grade. • Highest level of wear resistance resulting in higher cutting speeds. • More wear resistant than TiN-PVD grades. • Particularly suitable for alloyed steel and cast iron.	P K
KC7225	• TiAlN-PVD-coated fine-grain carbide. • High level of wear resistance and tough structure. • Highest level of process safety for stainless steel, cast iron materials, non-ferrous materials, super-alloys and titanium.	M K N S
KC7235	• TiAlN-PVD-coated fine-grain carbide. • Tough substrate. • Highly wear-resistant coating. • Suitable for machining steel, even in difficult conditions.	P

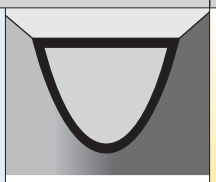
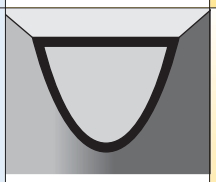
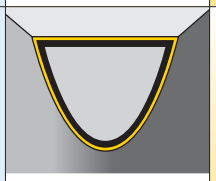
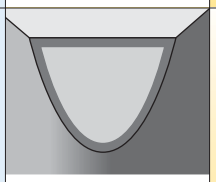
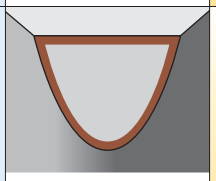
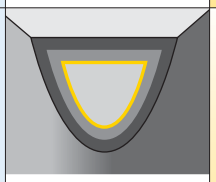


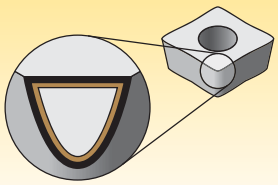
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05 10 15 20 25 30 35 40 45
KC7315 	• Multilayer TiAlN-PVD-coated universal fine-grain grade. • Highest level of wear resistance for higher cutting speeds. • More efficient than TiN-PVD grades. • First choice for alloyed and high-alloy steel and cast iron.	P, K
KC7320 	• AlTiN-PVD-coated universal fine-grain grade. • Increased aluminium content for better thermal and chemical stability (oxidation resistance), and higher toughness and hardness. • High level of wear resistance. • Used for modular drilling of austenitic stainless steel.	M, S
KC7325 	• Multilayer TiAlN-PVD-coated universal fine-grain grade. • Highest level of wear resistance for higher cutting speeds. • TiN top layer serves as wear indicator. • First choice for alloyed and high-alloy steel and cast iron.	P, M, K, N, S, H
KC7410 	• Multilayer AlCr-PVD-coated fine-grain carbide. • Newly developed unique coating. • Extraordinary wear resistance in drilling of cast iron materials. • High hot hardness allows for elevated speeds.	K
KC7425 	• Multilayer AlCrN-PVD-coated ultra-fine-grain carbide. • Very hard coating for excellent wear resistance. • Excellent surface quality for superior chip flow. • Used in deep-hole drilling applications in low carbon, carbon, alloyed steels, and grey cast irons.	P, K
KC7935 	• TiCN-Al_2O_3-CVD-coated carbide with a very tough substrate. • For normal to stable conditions. • High cutting values. • For cutting steel and cast iron materials. • Can also be used in dry machining.	P, K



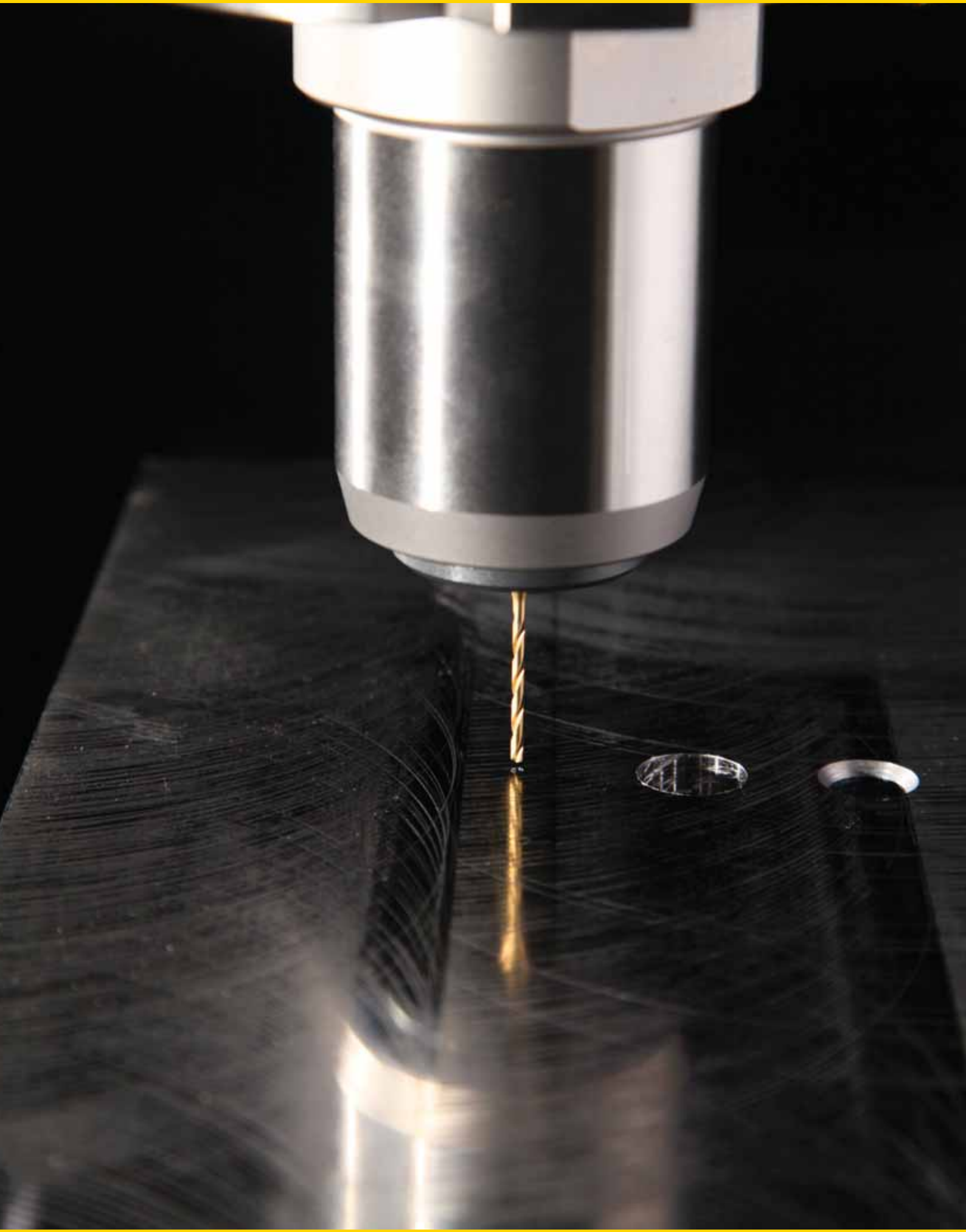
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KDF400	• CVD-diamond-coated carbide. • Excellent abrasive wear resistance. • Sharp cutting edges. • First choice for delamination free drilling of CFRP and composite materials.	N	N	N						
KD1415	• Polycrystalline diamond cutting material. • Mean grain size of 25 µm, cobalt binder. • Excellent for aluminium with high silicon content, abrasive non-ferrous materials, and fibre-reinforced plastics at very high cutting speeds. • Provides excellent surface quality.	N		N	N	N				
KD1425	KD1425 is a PCD-brazed tip, varied-grain grade that provides outstanding cutting performance and tool life for machining aluminium, non-ferrous, heavy metals, CFRP, and plastics. This grade's sharp cutting edges ensure best cutting capability and good surface finish. Suitable for wet and dry machining.	N		N	N	N	N	N		
		S	S							
		H	H							
KB1610	• Ceramic binder and low PCBN content. • Finishing of hardened steel up to 65 HRC. • For higher cutting speeds. • For operations requiring high dimensional consistency.	H	H	H						
KT325	• Uncoated cermet. • High level of productivity at higher speed. • Excellent wear properties, finishing operations. • Steel. • High dimensional consistency especially in dry machining.	P			P	P	P			
KT6215	• TiAlN-PVD-coated cermet. • Reaming grade with excellent wear resistance. • Required level of toughness for HPC cutting. • High cutting speeds in steel and cast iron fine machining.	P	P	P	P					
		K	K	K	K					



High-Performance Solid Carbide Drills

Tool Selection Guide G2–G3
GOdrill • Microdrilling G5–G14
TF Drills • High Metal Removal Rates G15–G18
TF Drills • Titanium G19–G20
HP Beyond Drills • Stainless Steel G21–G26
HP Beyond Drills • Steel G27–G37
YPC Beyond Drills • Iron Materials G38–G43
SE 4-Margin Drills • Steel G44–G46
HP Beyond 4-Margin, Long-Length Drills G47–G50
HP Deep-Hole Drills • Steel and Non-Ferrous G51–G62
HP Drills • High-Temperature-Resistant Alloys G63–G65
Y-TECH Drills • Difficult-to-Machine Materials G66–G70
TX Drills • Close Tolerance Holes G71–G73
SPF Drills • CFRP G74–G75
Flat-Bottom Drills G76–G80
HP Beyond Step Drills G81–G84
Kenna Universal Drills G85–G96
NC Spot Drills G97

solid carbide drills for external coolant or dry machining		series	grade	standard* ● first choice ○ alternate choice P	M	K	N	S	H	hole tolerance	standard range diameter range D1 mm min–max	D1 in min–max	drilling depth L/D1
	GOdrill™ for microdrilling applications	B04_CPG	KC7325	●	●	●	●	●	○	IT9–IT10	1,0–12,7	.0394–.500	3–5 x
	TF Drill for high metal removal rates	B/K105	K10			●	●	○		IT9–IT10	3,0–21,0	.1130–.8101	5 x D
		B/K105	KC7210	○		●				IT9–IT10	3,5–18,5	.1250–.6563	5 x D
	HP Drill for dry applications or flood coolant	B221/B222_HP	KCPK15	●		●				IT9–IT10	3,0–21,0	.1181–.8268	3–5 x
	SPF Drill for composite (CFRP) materials	B/K53_SPF	KDF400				●			IT9–IT10	3,2–12,7	.1260–.5010	3–5 x
	KU-Drill for universal applications	B966	KC7315	●		●				IT9–IT10	3,0–20,0	.1181–.7874	3 x D
	NC Spot Drill 120°	B501	K10	●	○	●	○	○		–	6,0–12,0	.2352–.4724	1 x D
	NC Spot Drill 90°	B505	K10	●	○	●	○	○		–	6,0–20,0	.2362–.7874	1 x D

solid carbide drills with internal coolant channel		series	grade	standard* ● first choice ○ alternate choice P	M	K	N	S	H	hole tolerance	standard range diameter range D1 mm min–max	D1 inch min–max	drilling depth L/D1
	GOdrill for microdrilling applications	B05_CPG	KC7325	●	●	●	●	●	○	IT9–IT10	1,5–12,7	.0591–.500	3–8 x
	TF Drill for high metal removal rates	B/K125	K715					●		IT9–IT10	6,0–15,9	.2500–.6250	5 x D
	HP Drill for stainless steel	B/K21_HP	KCM15	○	●			○		IT9–IT10	3,0–21,0	.1181–.8268	3–8 x
	HP Drill for steel	B224/B225_HP	KCPK15	●		○				IT9–IT10	3,0–21,0	.1181–.8268	3–5 x
	YPC Drill for cast iron materials	B/K25_YPC	KCK10			●				IT9–IT10	3,0–25,0	.1181–.9844	3–8 x
	SE Drill for steel	B256	KC7315	●		○				IT9–IT10	5,0–16,0	.1969–.6299	8 x D
	Long-Length Drill for steel, iron, and stainless steel	B269_HP	KCPK15	●	○	○				IT9–IT10	3,0–20,0	.1181–.7874	12 x D
	Deep-Hole Drill for steel, iron, and non-ferrous materials	B27_HPG	KC7425	●	○	●				IT9–IT10	2,4–16,0	.0938–.6299	15–30 x
		B27_HPS	KN25				●			IT9–IT10	2,4–16,0	.0938–.6299	15–30 x
	HP Drill for high-temperature alloys	B/K28_	K715				○	●		IT9–IT10	3,97–25,0	.1563–.9843	5 x D
	Y-TECH™ Drill for high-temperature alloys	B29_YPL	KC7315		●			●		IT9–IT10	3,0–21,0	.1181–.8268	3–5 x
	TX Drill for close tolerance holes	B411	KF1			●	●			IT8–IT9	3,2–25,0	.1250–.9843	5 x D
	Flat-Bottom Drill for flat-bottom applications	B707_FBG	KC7315	●		●				IT9–IT10	3,0–21,0	.1181–.8268	3 x D
		B707_FBL	KC7315		●			●		IT9–IT10	3,0–21,0	.1181–.8268	3 x D
		B707_FBS	KN15				●			IT9–IT10	3,0–21,0	.1181–.8268	3 x D
	HP Step Drill for steel and iron	B73_HP	KCPK15	●		●				IT9–IT10	3,7–19,45	.1470–.7656	short, long
	KU-Drill for universal applications	B97_	KC7315	●	○	●	○	○		IT9–IT10	2,4–20,0	.0938–.7874	3–8 x

* In regard to coatings, anything is possible. If a specific drill is not suitable for your workpiece material, please contact our Engineered Solutions Department for an offer about special coatings and edge preparations.

engineered solution range			■ standard □ engineered solution capabilities																					metric
diameter range D1 metric min–max	diameter range D1 in min–max	drilling depth																						page(s)
1,0–20,0	.0394–1.00	1.5–8 x	■				■			■			□	□				□	■	■	□			G5
3,0–25,0	.1130–1.00	1.5–8 x	■				■			■			□	□				□	■	□				G15
3,0–25,0	.1130–1.00	1.5–8 x	■	■			■			■			□	□				□	■	□				
3,0–25,0	.1181–1.00	1.5–8 x	■	■			■			■			□	□	■		□	□	■	□				G27
3,0–25,0	.1181–1.00	1.5–5 x	■	■			■			■			□	□				□	■	□				G74
3,0–25,0	.1181–1.00	1.5–8 x	■				■	■		■			□	□	□		■	■	■	■				G85
6,0–20,0	.2362–.7874	1 x D	■																					G97
6,0–20,0	.2362–.7874	1 x D	■																					

engineered solution range			■ standard □ engineered solution capabilities																					metric
diameter range D1 metric min–max	diameter range D1 inch min–max	drilling depth																						page(s)
1,0–20,0	.0394–1.00	1.5–8 x			■	■	■			■			□	□				□	■	■	□			G10
6,0–25,0	.2500–1.00	3–8 x			■		■	■		■			□	□				□	■	□				G19
3,0–25,0	.1181–1.00	1.5–8 x			■		■						□	□	■		□	□	■	□				G21
3,0–25,0	.1181–1.00	1.5–5 x			■	■	■			■			□	□	■		□	□	■	□				G33
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■	■		■			□	□		■		■	■	□				G38
3,0–25,0	.1181–1.00	1.5–12 x			■	■	■	■		■			□	□	□		■	□	■	□				G44
3,0–25,0	.1181–.7874	1.5–12 x			■	■	■	■		■			□	□	□		■	□	■	□				G47
2,4–16,0	.0938–.6299	430mm			■	■	■	■		■			□	□	□		■	□	■	□				G51
2,4–16,0	.0938–.6299	430mm			■	■	■	■		■			□	□	□		■	□	■	□				
3,0–25,0	.1181–1.00	1.5–8 x			■		■			■			□	□	■		□	□	■	□				G63
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■	■		■			□	□		■		□	■	□				G66
3,0–25,0	.1181–1.00	1.5–12 x			■	■	■	■	■	■	■		□	□	□			□	■	□				G71
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■	■	■		■	■	□	□	□		■	■	■	□				G76
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■	■	■		■	■	□	□	□		■	■	■	□				
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■	■	■		■	■	□	□	□		■	■	■	□				
3,0–25,0	.1181–1.00	1.5–8 x			■	■	■						■	■	■		□	□	■	□				G81
2,4–25,0	.1181–1.00	1.5–12 x			■	■	■	■		■			□	□	□		■	■	■	■				G89

HIGH-PERFORMANCE SOLID CARBIDE DRILLS

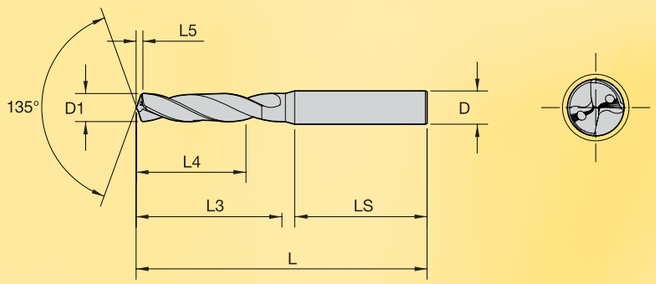
Solid Carbide Drills • Dimension Tables

Dimensions for Kennametal Solid Carbide Drills (B_Series) • Metric

mm Ø		DIN 6535		SHORT* ~3 x D			LONG* ~5 x D			EXTRA LONG** ~8 x D		
D1 min	D1 max	D	LS	L	L3	L4 max	L	L3	L4 max	L	L3	L4 max
1,000	1,400	4	28	58	7	5	58	9	6	58	12	10
1,401	1,900	4	28	58	9	6	58	12	9	58	18	15
1,901	2,300	4	28	58	13	9	58	18	14	66	26	22
2,301	2,999	4	28	58	17	12	58	22	17	66	30	25
3,000	3,750	6	36	62	20	14	66	28	23	78	40	33
3,751	4,750	6	36	66	24	17	74	36	29	87	49	41
4,751	6,000	6	36	66	28	20	82	44	35	94	56	48
6,001	7,000	8	36	79	34	24	91	53	43	105	67	57
7,001	8,000	8	36	79	41	29	91	53	43	110	72	61
8,001	10,000	10	40	89	47	35	103	61	49	122	80	68
10,001	12,000	12	45	102	55	40	118	71	56	141	94	79
12,001	14,000	14	45	107	60	43	124	77	60	155	108	91
14,001	16,000	16	48	115	65	45	133	83	63	171	121	101
16,001	18,000	18	48	123	73	51	143	93	71	185	135	113
18,001	20,000	20	50	131	79	55	153	101	77	200	148	124
20,001	22,000	20	50	141	86	60	167	112	85	217	162	136
22,001	25,000	25	56	153	95	65	184	126	98	238	180	150

* D1<20mm to DIN 6537K
D1>20mm to factory standard
** To factory standard

NOTE: Solid Carbide Drills from Kennametal in short and regular lengths conform to DIN 6537.
Drills with long lengths conform to Kennametal factory standard.
Solid Carbide Drills with diameter D1>20mm (not DIN 6537) are also standardised to factory standard.



Shank Designs to DIN 6535

Form HE,
2° angle
Design F

Form HA,
straight round
Design A

Tolerances of Drills and Holes

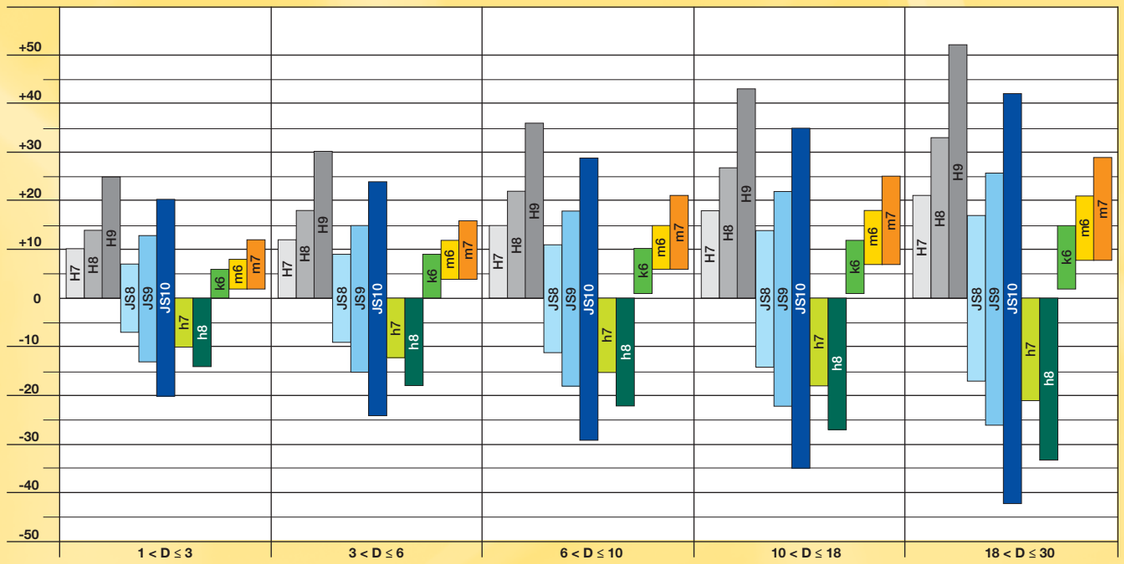
Solid carbide drills with tolerance of m7 (SE Drill, TF Drill, KU Drill) create holes with tolerances of H9. H8 can be achieved in very good conditions. The TX Drill should be used for holes in H8, in favourable conditions H7 can be achieved.

Solid carbide drills (BF Drill) with h7 create holes in **JS9–JS11**.
Other drilling tolerances require special solid carbide drill versions.

Holemaking Drilling Portfolio • Diameter Tolerances

drill type	drill tolerance	hole tolerance	hole tolerance (best*)	details
TX	k6	H8	H7	B410, B411, B412
TF	m6	H9	H8	B125
TF	m7	H9	H8	B104, B105, B106
KU	m7	H9	H8	B966, B976, B977, B978
SE	m7	H9	H8	B256
HP	m7	H9	H8	B210_HP, B211_HP, B212_HP; B221_HP, B222_HP, B224_HP, B225_HP, B226_HP; B269_HP; B284, B285
FB*	m7	H9	H8	B706_FB*, B707_FB*, B708_FB*, B709_FB*
YPC	m7	H9	H8	B254_YPC, B255_YPC, B256_YPC
YPL	m7	H9	H8	B291_YPL, B292_YPL, B293_YPL
SPF	m7	H9	H8	B531, B532, B533
BF	h7	JS9	JS8	B343
GO	h7	JS9	JS8	B041_CPG, B042_CPG, B043_CPG, B051_CPG, B052_CPG, B053_CPG
HPG	h7	JS9	JS8	B271_HPG, B272_HPG, B273_HPG, B274_HPG
HPS	h8	JS10	JS9	B271_HPS, B272_HPS, B273_HPS, B274_HPS

* Can be achieved in very good conditions.



KENNAMETAL®

Solid Carbide Drills • Recommendation Chart

standard first choice = bold alternate choice = regular simple special = grey	**through coolant**	**flood coolant**	**MQL**	**dry**	**deep hole**	**flat bottom**	**drill and chamfer**	**universal**
P — Steel	**B224_HP** **B225_HP** B226_HP **B256**	**B221_HP** **B222_HP**	**B221_HP, B222_HP** **B224_HP, B225_HP** B226_HP **B256**	**B221_HP** **B222_HP**	**B269_HP** **B271_HPG** **B272_HPG** **B273_HPG** **B274_HPG**	B706_FBG **B707_FBG** B708_FBG B709_FBG	**B731_HP** **B732_HP**	**B966** **B976, B977, B978** **B041_CPG, B042_CPG** **B051_CPG, B052_CPG, B053_CPG**
M — Stainless Steel	**B210_HP/K210_HP** **B211_HP/K211_HP** B212_HP/K212_HP					B706_FBL B707_FBL B708_FBL B709_FBL		B966 B976, B977, B978 **B041_CPG, B042_CPG** **B051_CPG, B052_CPG, B053_CPG**
K — Cast Iron	**B254_YPC/K254_YPC** **B255_YPC/K255_YPC** **B256_YPC/K256_YPC**	B104/K104 **B105/K105** B106/K106	**B254_YPC/K254_YPC** **B255_YPC/K255_YPC** **B256_YPC/K256_YPC**	B104/K104 **B105/K105** B106/K106	**B269_HP** **B271_HPG** **B272_HPG** **B273_HPG** **B274_HPG**	B706_FBG **B707_FBG** B708_FBG B709_FBG	**B731_HP** **B732_HP**	**B966** **B976, B977, B978** **B041_CPG, B042_CPG** **B051_CPG, B052_CPG, B053_CPG**
N — Non-Ferrous	B410/K410 **B411/K411** B412/K412 B413/K413	B104/K104 **B105/K105** B106/K106			**B271_HPS** **B272_HPS** **B273_HPS** **B274_HPS**	B706_FBS **B707_FBS** B708_FBS B709_FBS		B966 B976, B977, B978 **B041_CPG, B042_CPG** **B051_CPG, B052_CPG, B053_CPG**
N — CFRP		**B531A/K531A** **B532A/K532A** B533A/K533A		**B531A/K531A** **B532A/K532A** B533A/K533A				
S — Heat-Resistant Alloys, Titanium Alloys	**B291_YPL, B292_YPL** **B284/K284, B285/K285** **B125/K125**					B706_FBL **B707_FBL** B708_FBL B709_FBL		B966 B976, B977, B978 B041_CPG, B042_CPG B051_CPG, B052_CPG, B053_CPG

GOdrill™ • Kennametal's First Microdrill

The high-performance solid carbide drill tailored for very small- to medium-diameter drilling applications.

Primary Application

The all new GOdrill addresses drilling operations in a diameter range of 1–12,7mm (.0394–.5") in a broad variety of materials and applications such as fuel systems or medical components. Due to its very unique design, the GOdrill expands the advantages of modular drills into the small diameter range: high-end grades, wear-indicator coating, and new, proprietary geometries enable full utilization of the drill's tool life capacity. The GOdrill qualifies as a very cost-effective, throwaway-type tool in the given diameter range.

Features and Benefits

GOdrill Design

- Marginless design for reduced friction and heat — thus longer tool life.
- Very versatile tool works in a wide range of materials.
- Cost effective, no regrind logistics.
- No setup.
- Throw away or recycle.
- Through-coolant option down to diameter 1,5mm (.0591").

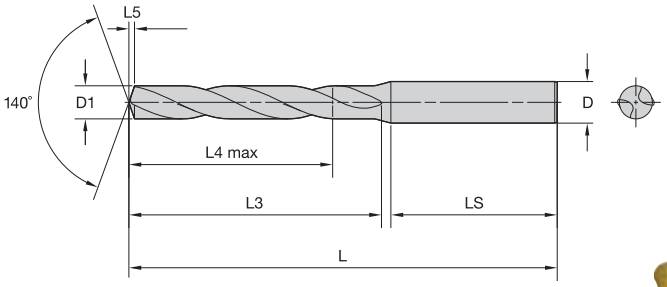
CPG Point

- Optimised gashing design for microdrilling ensures free flow of chips in the centre of the drill.
- Excellent centering capabilities.
- Reduced axial forces.
- Good hole quality, roundness, and cylindricity for all materials.

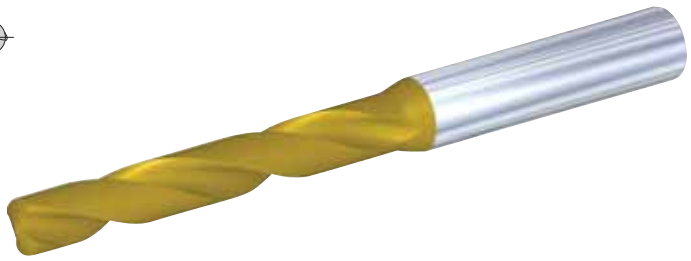
KC7325™ Grade

The grade contains a double coating:

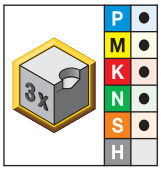
- The multilayer, TiAlN-based coating with high hot hardness enables the drill to run at high cutting speeds as well as in MQL applications.
- A TiN top layer serves as wear indicator for easier monitoring on small drills, which can be difficult to see.
- Improved visibility of wear helps to utilise the tool's full tool life capacity.

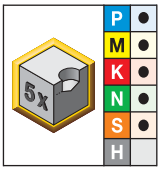


For information on L, L3, and L4 max, see the Solid Carbide foldout table.



B041A/B042A • ~3 x D/~5 x D



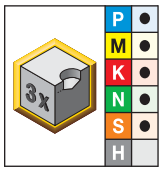


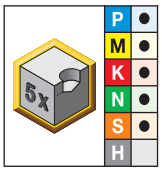
● first choice
○ alternate choice

short • KC7325	long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B041A01000CPG	B042A01000CPG	1,000	.0394	–	–	0,1	28	4
B041A01016CPG	B042A01016CPG	1,016	.0400	–	–	0,1	28	4
B041A01041CPG	B042A01041CPG	1,041	.0410	–	–	0,2	28	4
B041A01067CPG	B042A01067CPG	1,067	.0420	–	–	0,2	28	4
B041A01092CPG	B042A01092CPG	1,092	.0430	–	–	0,2	28	4
B041A01100CPG	B042A01100CPG	1,100	.0433	–	–	0,2	28	4
B041A01181CPG	B042A01181CPG	1,181	.0465	–	–	0,2	28	4
B041A01191CPG	B042A01191CPG	1,191	.0469	–	–	0,2	28	4
B041A01200CPG	B042A01200CPG	1,200	.0472	–	–	0,2	28	4
B041A01300CPG	B042A01300CPG	1,300	.0512	–	–	0,2	28	4
B041A01321CPG	B042A01321CPG	1,321	.0520	–	–	0,2	28	4
B041A01397CPG	B042A01397CPG	1,397	.0550	–	–	0,2	28	4
B041A01400CPG	B042A01400CPG	1,400	.0551	–	–	0,2	28	4
B041A01500CPG	B042A01500CPG	1,500	.0591	–	–	0,2	28	4
B041A01600CPG	B042A01600CPG	1,600	.0630	–	–	0,2	28	4
B041A01700CPG	B042A01700CPG	1,700	.0669	–	–	0,3	28	4
B041A01800CPG	B042A01800CPG	1,800	.0709	–	–	0,3	28	4
B041A01900CPG	B042A01900CPG	1,900	.0748	–	–	0,3	28	4
B041A01984CPG	B042A01984CPG	1,984	.0781	–	–	0,3	28	4
B041A02000CPG	B042A02000CPG	2,000	.0787	–	–	0,3	28	4
B041A02100CPG	B042A02100CPG	2,100	.0827	–	–	0,3	28	4
B041A02200CPG	B042A02200CPG	2,200	.0866	–	–	0,3	28	4
B041A02300CPG	B042A02300CPG	2,300	.0906	–	–	0,4	28	4
B041A02383CPG	B042A02383CPG	2,383	.0938	3/32	–	0,4	28	4
B041A02400CPG	B042A02400CPG	2,400	.0945	–	–	0,4	28	4
B041A02439CPG	B042A02439CPG	2,439	.0960	–	41	0,4	28	4
B041A02489CPG	B042A02489CPG	2,489	.0980	–	40	0,4	28	4
B041A02500CPG	B042A02500CPG	2,500	.0984	–	–	0,4	28	4
B041A02578CPG	B042A02578CPG	2,578	.1015	–	38	0,4	28	4
B041A02600CPG	B042A02600CPG	2,600	.1024	–	–	0,4	28	4
B041A02642CPG	B042A02642CPG	2,642	.1040	–	37	0,4	28	4
B041A02700CPG	B042A02700CPG	2,700	.1063	–	–	0,4	28	4
B041A02705CPG	B042A02705CPG	2,705	.1065	–	36	0,4	28	4
B041A02779CPG	B042A02779CPG	2,779	.1094	7/64	–	0,4	28	4
B041A02800CPG	B042A02800CPG	2,800	.1102	–	–	0,5	28	4
B041A02820CPG	B042A02820CPG	2,820	.1110	–	34	0,5	28	4
B041A02870CPG	B042A02870CPG	2,870	.1130	–	33	0,5	28	4
B041A02900CPG	B042A02900CPG	2,900	.1142	–	–	0,5	28	4
B041A02947CPG	B042A02947CPG	2,947	.1160	–	32	0,5	28	4
B041A03000CPG	B042A03000CPG	3,000	.1181	–	–	0,5	36	6

(continued)

(B041A/B042A • ~3 x D/~5 x D continued)

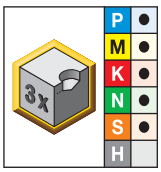


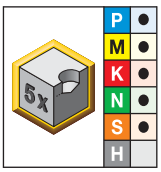


short • KC7325	long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B041A03048CPG	B042A03048CPG	3,048	.1200	–	31	0,5	36	6
B041A03100CPG	B042A03100CPG	3,100	.1220	–	–	0,5	36	6
B041A03175CPG	B042A03175CPG	3,175	.1250	1/8	–	0,5	36	6
B041A03200CPG	B042A03200CPG	3,200	.1260	–	–	0,5	36	6
B041A03264CPG	B042A03264CPG	3,264	.1285	–	30	0,5	36	6
B041A03300CPG	B042A03300CPG	3,300	.1299	–	–	0,5	36	6
B041A03400CPG	B042A03400CPG	3,400	.1339	–	–	0,6	36	6
B041A03455CPG	B042A03455CPG	3,455	.1360	–	29	0,6	36	6
B041A03500CPG	B042A03500CPG	3,500	.1378	–	–	0,6	36	6
B041A03571CPG	B042A03571CPG	3,571	.1406	9/64	–	0,6	36	6
B041A03600CPG	B042A03600CPG	3,600	.1417	–	–	0,6	36	6
B041A03658CPG	B042A03658CPG	3,658	.1440	–	27	0,6	36	6
B041A03700CPG	B042A03700CPG	3,700	.1457	–	–	0,6	36	6
B041A03734CPG	B042A03734CPG	3,734	.1470	–	26	0,6	36	6
B041A03800CPG	B042A03800CPG	3,800	.1496	–	–	0,6	36	6
B041A03900CPG	B042A03900CPG	3,900	.1535	–	–	0,6	36	6
B041A03970CPG	B042A03970CPG	3,970	.1563	5/32	–	0,7	36	6
B041A04000CPG	B042A04000CPG	4,000	.1575	–	–	0,7	36	6
B041A04039CPG	B042A04039CPG	4,039	.1590	–	21	0,7	36	6
B041A04090CPG	B042A04090CPG	4,090	.1610	–	20	0,7	36	6
B041A04100CPG	B042A04100CPG	4,100	.1614	–	–	0,7	36	6
B041A04200CPG	B042A04200CPG	4,200	.1654	–	–	0,7	36	6
B041A04217CPG	B042A04217CPG	4,217	.1660	–	19	0,7	36	6
B041A04300CPG	B042A04300CPG	4,300	.1693	–	–	0,7	36	6
B041A04366CPG	B042A04366CPG	4,366	.1719	11/64	–	0,7	36	6
B041A04400CPG	B042A04400CPG	4,400	.1732	–	–	0,7	36	6
B041A04500CPG	B042A04500CPG	4,500	.1772	–	–	0,7	36	6
B041A04600CPG	B042A04600CPG	4,600	.1811	–	–	0,8	36	6
B041A04623CPG	B042A04623CPG	4,623	.1820	–	14	0,8	36	6
B041A04700CPG	B042A04700CPG	4,700	.1850	–	13	0,8	36	6
B041A04763CPG	B042A04763CPG	4,763	.1875	3/16	–	0,8	36	6
B041A04800CPG	B042A04800CPG	4,800	.1890	–	12	0,8	36	6
B041A04852CPG	B042A04852CPG	4,852	.1910	–	11	0,8	36	6
B041A04900CPG	B042A04900CPG	4,900	.1929	–	–	0,8	36	6
B041A05000CPG	B042A05000CPG	5,000	.1969	–	–	0,8	36	6
B041A05100CPG	B042A05100CPG	5,100	.2008	–	–	0,8	36	6
B041A05106CPG	B042A05106CPG	5,106	.2010	–	7	0,8	36	6
B041A05159CPG	B042A05159CPG	5,159	.2031	13/64	–	0,9	36	6
B041A05200CPG	B042A05200CPG	5,200	.2047	–	–	0,9	36	6
B041A05300CPG	B042A05300CPG	5,300	.2087	–	–	0,9	36	6
B041A05400CPG	B042A05400CPG	5,400	.2126	–	–	0,9	36	6
B041A05410CPG	B042A05410CPG	5,410	.2130	–	3	0,9	36	6
B041A05500CPG	B042A05500CPG	5,500	.2165	–	–	0,9	36	6
B041A05558CPG	B042A05558CPG	5,558	.2188	7/32	–	0,9	36	6
B041A05600CPG	B042A05600CPG	5,600	.2205	–	–	0,9	36	6
B041A05616CPG	B042A05616CPG	5,616	.2211	–	2	0,9	36	6
B041A05700CPG	B042A05700CPG	5,700	.2244	–	–	1,0	36	6
B041A05800CPG	B042A05800CPG	5,800	.2283	–	–	1,0	36	6
B041A05900CPG	B042A05900CPG	5,900	.2323	–	–	1,0	36	6
B041A05954CPG	B042A05954CPG	5,954	.2344	15/64	–	1,0	36	6
B041A06000CPG	B042A06000CPG	6,000	.2362	–	–	1,0	36	6
B041A06100CPG	B042A06100CPG	6,100	.2402	–	–	1,0	36	8

(continued)

(B041A/B042A • ~3 x D/~5 x D continued)

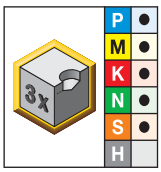


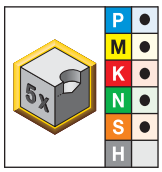


short • KC7325	long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B041A06200CPG	B042A06200CPG	6,200	.2441	–	–	1,0	36	8
B041A06300CPG	B042A06300CPG	6,300	.2480	–	–	1,1	36	8
B041A06350CPG	B042A06350CPG	6,350	.2500	1/4	E	1,1	36	8
B041A06400CPG	B042A06400CPG	6,400	.2520	–	–	1,1	36	8
B041A06500CPG	B042A06500CPG	6,500	.2559	–	–	1,1	36	8
B041A06528CPG	B042A06528CPG	6,528	.2570	–	F	1,1	36	8
B041A06600CPG	B042A06600CPG	6,600	.2598	–	–	1,1	36	8
B041A06630CPG	B042A06630CPG	6,630	.2610	–	G	1,1	36	8
B041A06700CPG	B042A06700CPG	6,700	.2638	–	–	1,1	36	8
B041A06746CPG	B042A06746CPG	6,746	.2656	17/64	–	1,1	36	8
B041A06800CPG	B042A06800CPG	6,800	.2677	–	–	1,1	36	8
B041A06900CPG	B042A06900CPG	6,900	.2717	–	–	1,2	36	8
B041A07000CPG	B042A07000CPG	7,000	.2756	–	–	1,2	36	8
B041A07100CPG	B042A07100CPG	7,100	.2795	–	–	1,2	36	8
B041A07145CPG	B042A07145CPG	7,145	.2813	9/32	–	1,2	36	8
B041A07200CPG	B042A07200CPG	7,200	.2835	–	–	1,2	36	8
B041A07300CPG	B042A07300CPG	7,300	.2874	–	–	1,2	36	8
B041A07400CPG	B042A07400CPG	7,400	.2913	–	–	1,3	36	8
B041A07500CPG	B042A07500CPG	7,500	.2953	–	–	1,3	36	8
B041A07541CPG	B042A07541CPG	7,541	.2969	19/64	–	1,3	36	8
B041A07600CPG	B042A07600CPG	7,600	.2992	–	–	1,3	36	8
B041A07700CPG	B042A07700CPG	7,700	.3031	–	–	1,3	36	8
B041A07800CPG	B042A07800CPG	7,800	.3071	–	–	1,3	36	8
B041A07900CPG	B042A07900CPG	7,900	.3110	–	–	1,3	36	8
B041A07938CPG	B042A07938CPG	7,938	.3125	5/16	–	1,3	36	8
B041A08000CPG	B042A08000CPG	8,000	.3150	–	–	1,4	36	8
B041A08100CPG	B042A08100CPG	8,100	.3189	–	–	1,4	40	10
B041A08200CPG	B042A08200CPG	8,200	.3228	–	–	1,4	40	10
B041A08300CPG	B042A08300CPG	8,300	.3268	–	–	1,4	40	10
B041A08334CPG	B042A08334CPG	8,334	.3281	21/64	–	1,4	40	10
B041A08400CPG	B042A08400CPG	8,400	.3307	–	–	1,4	40	10
B041A08433CPG	B042A08433CPG	8,433	.3320	–	Q	1,4	40	10
B041A08500CPG	B042A08500CPG	8,500	.3346	–	–	1,4	40	10
B041A08600CPG	B042A08600CPG	8,600	.3386	–	–	1,5	40	10
B041A08700CPG	B042A08700CPG	8,700	.3425	–	–	1,5	40	10
B041A08733CPG	B042A08733CPG	8,733	.3438	11/32	–	1,5	40	10
B041A08800CPG	B042A08800CPG	8,800	.3465	–	–	1,5	40	10
B041A08900CPG	B042A08900CPG	8,900	.3504	–	–	1,5	40	10
B041A09000CPG	B042A09000CPG	9,000	.3543	–	–	1,5	40	10
B041A09100CPG	B042A09100CPG	9,100	.3583	–	–	1,5	40	10
B041A09129CPG	B042A09129CPG	9,129	.3594	23/64	–	1,6	40	10
B041A09200CPG	B042A09200CPG	9,200	.3622	–	–	1,6	40	10
B041A09300CPG	B042A09300CPG	9,300	.3661	–	–	1,6	40	10
B041A09347CPG	B042A09347CPG	9,347	.3680	–	U	1,6	40	10
B041A09400CPG	B042A09400CPG	9,400	.3701	–	–	1,6	40	10
B041A09500CPG	B042A09500CPG	9,500	.3740	–	–	1,6	40	10
B041A09525CPG	B042A09525CPG	9,525	.3750	3/8	–	1,6	40	10
B041A09600CPG	B042A09600CPG	9,600	.3780	–	–	1,6	40	10
B041A09700CPG	B042A09700CPG	9,700	.3819	–	–	1,7	40	10
B041A09800CPG	B042A09800CPG	9,800	.3858	–	–	1,7	40	10
B041A09900CPG	B042A09900CPG	9,900	.3898	–	–	1,7	40	10
B041A09921CPG	B042A09921CPG	9,921	.3906	25/64	–	1,7	40	10

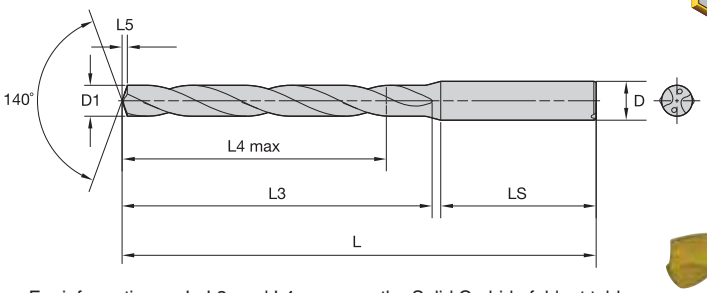
(continued)

(B041A/B042A • ~3 x D/~5 x D continued)



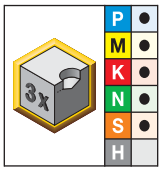


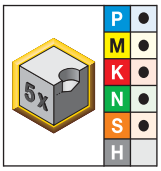
short • KC7325	long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B041A10000CPG	B042A10000CPG	10,000	.3937	–	–	1,7	40	10
B041A10100CPG	B042A10100CPG	10,100	.3976	–	–	1,7	45	12
B041A10200CPG	B042A10200CPG	10,200	.4016	–	–	1,7	45	12
B041A10300CPG	B042A10300CPG	10,300	.4055	–	–	1,8	45	12
B041A10320CPG	B042A10320CPG	10,320	.4063	13/32	–	1,8	45	12
B041A10400CPG	B042A10400CPG	10,400	.4094	–	–	1,8	45	12
B041A10500CPG	B042A10500CPG	10,500	.4134	–	–	1,8	45	12
B041A10600CPG	B042A10600CPG	10,600	.4173	–	–	1,8	45	12
B041A10700CPG	B042A10700CPG	10,700	.4213	–	–	1,8	45	12
B041A10716CPG	B042A10716CPG	10,716	.4219	27/64	–	1,8	45	12
B041A10800CPG	B042A10800CPG	10,800	.4252	–	–	1,8	45	12
B041A10900CPG	B042A10900CPG	10,900	.4291	–	–	1,9	45	12
B041A11000CPG	B042A11000CPG	11,000	.4331	–	–	1,9	45	12
B041A11100CPG	B042A11100CPG	11,100	.4370	–	–	1,9	45	12
B041A11113CPG	B042A11113CPG	11,113	.4375	7/16	–	1,9	45	12
B041A11200CPG	B042A11200CPG	11,200	.4409	–	–	1,9	45	12
B041A11300CPG	B042A11300CPG	11,300	.4449	–	–	1,9	45	12
B041A11400CPG	B042A11400CPG	11,400	.4488	–	–	2,0	45	12
B041A11500CPG	B042A11500CPG	11,500	.4528	–	–	2,0	45	12
B041A11509CPG	B042A11509CPG	11,509	.4531	29/64	–	2,0	45	12
B041A11600CPG	B042A11600CPG	11,600	.4567	–	–	2,0	45	12
B041A11700CPG	B042A11700CPG	11,700	.4606	–	–	2,0	45	12
B041A11800CPG	B042A11800CPG	11,800	.4646	–	–	2,0	45	12
B041A11900CPG	B042A11900CPG	11,900	.4685	–	–	2,0	45	12
B041A11908CPG	B042A11908CPG	11,908	.4688	15/32	–	2,0	45	12
B041A12000CPG	B042A12000CPG	12,000	.4724	–	–	2,1	45	12
B041A12100CPG	B042A12100CPG	12,100	.4764	–	–	2,1	45	14
B041A12200CPG	B042A12200CPG	12,200	.4803	–	–	2,1	45	14
B041A12300CPG	B042A12300CPG	12,300	.4843	–	–	2,1	45	14
B041A12304CPG	B042A12304CPG	12,304	.4844	31/64	–	2,1	45	14
B041A12400CPG	B042A12400CPG	12,400	.4882	–	–	2,1	45	14
B041A12500CPG	B042A12500CPG	12,500	.4921	–	–	2,1	45	14
B041A12600CPG	B042A12600CPG	12,600	.4961	–	–	2,2	45	14
B041A12700CPG	B042A12700CPG	12,700	.5000	1/2	–	2,2	45	14

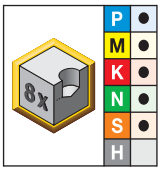


For information on L, L3, and L4 max, see the Solid Carbide foldout table.

B051A/B052A/B053A • ~3 x D/~5 x D/~8 x D





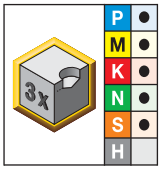


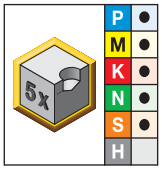
● first choice
○ alternate choice

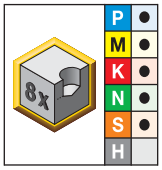
short • KC7325	long • KC7325	extra long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B051A01500CPG	B052A01500CPG	B053A01500CPG	1,500	.0591	–	–	0,2	28	4
B051A01600CPG	B052A01600CPG	B053A01600CPG	1,600	.0630	–	–	0,2	28	4
B051A01700CPG	B052A01700CPG	B053A01700CPG	1,700	.0669	–	–	0,3	28	4
B051A01800CPG	B052A01800CPG	B053A01800CPG	1,800	.0709	–	–	0,3	28	4
B051A01900CPG	B052A01900CPG	B053A01900CPG	1,900	.0748	–	–	0,3	28	4
B051A01984CPG	B052A01984CPG	B053A01984CPG	1,984	.0781	–	–	0,3	28	4
B051A02000CPG	B052A02000CPG	B053A02000CPG	2,000	.0787	–	–	0,3	28	4
B051A02100CPG	B052A02100CPG	B053A02100CPG	2,100	.0827	–	–	0,3	28	4
B051A02200CPG	B052A02200CPG	B053A02200CPG	2,200	.0866	–	–	0,3	28	4
B051A02300CPG	B052A02300CPG	B053A02300CPG	2,300	.0906	–	–	0,4	28	4
B051A02383CPG	B052A02383CPG	B053A02383CPG	2,383	.0938	3/32	–	0,4	28	4
B051A02400CPG	B052A02400CPG	B053A02400CPG	2,400	.0945	–	–	0,4	28	4
B051A02439CPG	B052A02439CPG	B053A02439CPG	2,439	.0960	–	41	0,4	28	4
B051A02489CPG	B052A02489CPG	B053A02489CPG	2,489	.0980	–	40	0,4	28	4
B051A02500CPG	B052A02500CPG	B053A02500CPG	2,500	.0984	–	–	0,4	28	4
B051A02578CPG	B052A02578CPG	B053A02578CPG	2,578	.1015	–	38	0,4	28	4
B051A02600CPG	B052A02600CPG	B053A02600CPG	2,600	.1024	–	–	0,4	28	4
B051A02642CPG	B052A02642CPG	B053A02642CPG	2,642	.1040	–	37	0,4	28	4
B051A02700CPG	B052A02700CPG	B053A02700CPG	2,700	.1063	–	–	0,4	28	4
B051A02705CPG	B052A02705CPG	B053A02705CPG	2,705	.1065	–	36	0,4	28	4
B051A02779CPG	B052A02779CPG	B053A02779CPG	2,779	.1094	7/64	–	0,4	28	4
B051A02800CPG	B052A02800CPG	B053A02800CPG	2,800	.1102	–	–	0,5	28	4
B051A02820CPG	B052A02820CPG	B053A02820CPG	2,820	.1110	–	34	0,5	28	4
B051A02870CPG	B052A02870CPG	B053A02870CPG	2,870	.1130	–	33	0,5	28	4
B051A02900CPG	B052A02900CPG	B053A02900CPG	2,900	.1142	–	–	0,5	28	4
B051A02947CPG	B052A02947CPG	B053A02947CPG	2,947	.1160	–	32	0,5	28	4
B051A03000CPG	B052A03000CPG	B053A03000CPG	3,000	.1181	–	–	0,5	36	6
B051A03048CPG	B052A03048CPG	B053A03048CPG	3,048	.1200	–	31	0,5	36	6
B051A03100CPG	B052A03100CPG	B053A03100CPG	3,100	.1220	–	–	0,5	36	6
B051A03175CPG	B052A03175CPG	B053A03175CPG	3,175	.1250	1/8	–	0,5	36	6
B051A03200CPG	B052A03200CPG	B053A03200CPG	3,200	.1260	–	–	0,5	36	6
B051A03264CPG	B052A03264CPG	B053A03264CPG	3,264	.1285	–	30	0,5	36	6
B051A03300CPG	B052A03300CPG	B053A03300CPG	3,300	.1299	–	–	0,5	36	6
B051A03400CPG	B052A03400CPG	B053A03400CPG	3,400	.1339	–	–	0,6	36	6
B051A03455CPG	B052A03455CPG	B053A03455CPG	3,455	.1360	–	29	0,6	36	6
B051A03500CPG	B052A03500CPG	B053A03500CPG	3,500	.1378	–	–	0,6	36	6
B051A03571CPG	B052A03571CPG	B053A03571CPG	3,571	.1406	9/64	–	0,6	36	6
B051A03600CPG	B052A03600CPG	B053A03600CPG	3,600	.1417	–	–	0,6	36	6
B051A03658CPG	B052A03658CPG	B053A03658CPG	3,658	.1440	–	27	0,6	36	6
B051A03700CPG	B052A03700CPG	B053A03700CPG	3,700	.1457	–	–	0,6	36	6

(continued)

(B051A/B052A/B053A • ~3 x D/~5 x D/~8 x D continued)



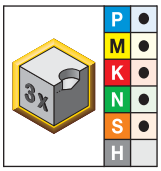


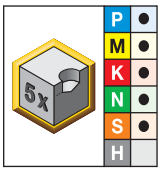


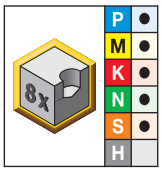
short • KC7325	long • KC7325	extra long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B051A03734CPG	B052A03734CPG	B053A03734CPG	3,734	.1470	–	26	0,6	36	6
B051A03800CPG	B052A03800CPG	B053A03800CPG	3,800	.1496	–	–	0,6	36	6
B051A03900CPG	B052A03900CPG	B053A03900CPG	3,900	.1535	–	–	0,6	36	6
B051A03970CPG	B052A03970CPG	B053A03970CPG	3,970	.1563	5/32	–	0,7	36	6
B051A04000CPG	B052A04000CPG	B053A04000CPG	4,000	.1575	–	–	0,7	36	6
B051A04039CPG	B052A04039CPG	B053A04039CPG	4,039	.1590	–	21	0,7	36	6
B051A04090CPG	B052A04090CPG	B053A04090CPG	4,090	.1610	–	20	0,7	36	6
B051A04100CPG	B052A04100CPG	B053A04100CPG	4,100	.1614	–	–	0,7	36	6
B051A04200CPG	B052A04200CPG	B053A04200CPG	4,200	.1654	–	–	0,7	36	6
B051A04217CPG	B052A04217CPG	B053A04217CPG	4,217	.1660	–	19	0,7	36	6
B051A04300CPG	B052A04300CPG	B053A04300CPG	4,300	.1693	–	–	0,7	36	6
B051A04366CPG	B052A04366CPG	B053A04366CPG	4,366	.1719	11/64	–	0,7	36	6
B051A04400CPG	B052A04400CPG	B053A04400CPG	4,400	.1732	–	–	0,7	36	6
B051A04500CPG	B052A04500CPG	B053A04500CPG	4,500	.1772	–	–	0,7	36	6
B051A04600CPG	B052A04600CPG	B053A04600CPG	4,600	.1811	–	–	0,8	36	6
B051A04623CPG	B052A04623CPG	B053A04623CPG	4,623	.1820	–	14	0,8	36	6
B051A04700CPG	B052A04700CPG	B053A04700CPG	4,700	.1850	–	13	0,8	36	6
B051A04763CPG	B052A04763CPG	B053A04763CPG	4,763	.1875	3/16	–	0,8	36	6
B051A04800CPG	B052A04800CPG	B053A04800CPG	4,800	.1890	–	12	0,8	36	6
B051A04852CPG	B052A04852CPG	B053A04852CPG	4,852	.1910	–	11	0,8	36	6
B051A04900CPG	B052A04900CPG	B053A04900CPG	4,900	.1929	–	–	0,8	36	6
B051A05000CPG	B052A05000CPG	B053A05000CPG	5,000	.1969	–	–	0,8	36	6
B051A05100CPG	B052A05100CPG	B053A05100CPG	5,100	.2008	–	–	0,8	36	6
B051A05106CPG	B052A05106CPG	B053A05106CPG	5,106	.2010	–	7	0,8	36	6
B051A05159CPG	B052A05159CPG	B053A05159CPG	5,159	.2031	13/64	–	0,9	36	6
B051A05200CPG	B052A05200CPG	B053A05200CPG	5,200	.2047	–	–	0,9	36	6
B051A05300CPG	B052A05300CPG	B053A05300CPG	5,300	.2087	–	–	0,9	36	6
B051A05400CPG	B052A05400CPG	B053A05400CPG	5,400	.2126	–	–	0,9	36	6
B051A05410CPG	B052A05410CPG	B053A05410CPG	5,410	.2130	–	3	0,9	36	6
B051A05500CPG	B052A05500CPG	B053A05500CPG	5,500	.2165	–	–	0,9	36	6
B051A05558CPG	B052A05558CPG	B053A05558CPG	5,558	.2188	7/32	–	0,9	36	6
B051A05600CPG	B052A05600CPG	B053A05600CPG	5,600	.2205	–	–	0,9	36	6
B051A05616CPG	B052A05616CPG	B053A05616CPG	5,616	.2211	–	2	0,9	36	6
B051A05700CPG	B052A05700CPG	B053A05700CPG	5,700	.2244	–	–	1,0	36	6
B051A05800CPG	B052A05800CPG	B053A05800CPG	5,800	.2283	–	–	1,0	36	6
B051A05900CPG	B052A05900CPG	B053A05900CPG	5,900	.2323	–	–	1,0	36	6
B051A05954CPG	B052A05954CPG	B053A05954CPG	5,954	.2344	15/64	–	1,0	36	6
B051A06000CPG	B052A06000CPG	B053A06000CPG	6,000	.2362	–	–	1,0	36	6
B051A06100CPG	B052A06100CPG	B053A06100CPG	6,100	.2402	–	–	1,0	36	8
B051A06200CPG	B052A06200CPG	B053A06200CPG	6,200	.2441	–	–	1,0	36	8
B051A06300CPG	B052A06300CPG	B053A06300CPG	6,300	.2480	–	–	1,1	36	8
B051A06350CPG	B052A06350CPG	B053A06350CPG	6,350	.2500	1/4	E	1,1	36	8
B051A06400CPG	B052A06400CPG	B053A06400CPG	6,400	.2520	–	–	1,1	36	8
B051A06500CPG	B052A06500CPG	B053A06500CPG	6,500	.2559	–	–	1,1	36	8
B051A06528CPG	B052A06528CPG	B053A06528CPG	6,528	.2570	–	F	1,1	36	8
B051A06600CPG	B052A06600CPG	B053A06600CPG	6,600	.2598	–	–	1,1	36	8
B051A06630CPG	B052A06630CPG	B053A06630CPG	6,630	.2610	–	G	1,1	36	8
B051A06700CPG	B052A06700CPG	B053A06700CPG	6,700	.2638	–	–	1,1	36	8
B051A06746CPG	B052A06746CPG	B053A06746CPG	6,746	.2656	17/64	–	1,1	36	8
B051A06800CPG	B052A06800CPG	B053A06800CPG	6,800	.2677	–	–	1,1	36	8
B051A06900CPG	B052A06900CPG	B053A06900CPG	6,900	.2717	–	–	1,2	36	8

(continued)

(B051A/B052A/B053A • ~3 x D/~5 x D/~8 x D continued)



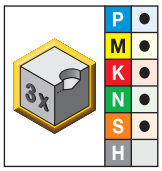


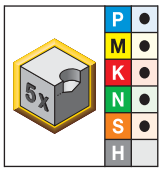


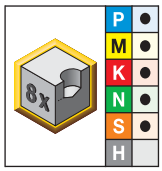
short • KC7325	long • KC7325	extra long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B051A07000CPG	B052A07000CPG	B053A07000CPG	7,000	.2756	–	–	1,2	36	8
B051A07100CPG	B052A07100CPG	B053A07100CPG	7,100	.2795	–	–	1,2	36	8
B051A07145CPG	B052A07145CPG	B053A07145CPG	7,145	.2813	9/32	–	1,2	36	8
B051A07200CPG	B052A07200CPG	B053A07200CPG	7,200	.2835	–	–	1,2	36	8
B051A07300CPG	B052A07300CPG	B053A07300CPG	7,300	.2874	–	–	1,2	36	8
B051A07400CPG	B052A07400CPG	B053A07400CPG	7,400	.2913	–	–	1,3	36	8
B051A07500CPG	B052A07500CPG	B053A07500CPG	7,500	.2953	–	–	1,3	36	8
B051A07541CPG	B052A07541CPG	B053A07541CPG	7,541	.2969	19/64	–	1,3	36	8
B051A07600CPG	B052A07600CPG	B053A07600CPG	7,600	.2992	–	–	1,3	36	8
B051A07700CPG	B052A07700CPG	B053A07700CPG	7,700	.3031	–	–	1,3	36	8
B051A07800CPG	B052A07800CPG	B053A07800CPG	7,800	.3071	–	–	1,3	36	8
B051A07900CPG	B052A07900CPG	B053A07900CPG	7,900	.3110	–	–	1,3	36	8
B051A07938CPG	B052A07938CPG	B053A07938CPG	7,938	.3125	5/16	–	1,3	36	8
B051A08000CPG	B052A08000CPG	B053A08000CPG	8,000	.3150	–	–	1,4	36	8
B051A08100CPG	B052A08100CPG	B053A08100CPG	8,100	.3189	–	–	1,4	40	10
B051A08200CPG	B052A08200CPG	B053A08200CPG	8,200	.3228	–	–	1,4	40	10
B051A08300CPG	B052A08300CPG	B053A08300CPG	8,300	.3268	–	–	1,4	40	10
B051A08334CPG	B052A08334CPG	B053A08334CPG	8,334	.3281	21/64	–	1,4	40	10
B051A08400CPG	B052A08400CPG	B053A08400CPG	8,400	.3307	–	–	1,4	40	10
B051A08433CPG	B052A08433CPG	B053A08433CPG	8,433	.3320	–	Q	1,4	40	10
B051A08500CPG	B052A08500CPG	B053A08500CPG	8,500	.3346	–	–	1,4	40	10
B051A08600CPG	B052A08600CPG	B053A08600CPG	8,600	.3386	–	–	1,5	40	10
B051A08700CPG	B052A08700CPG	B053A08700CPG	8,700	.3425	–	–	1,5	40	10
B051A08733CPG	B052A08733CPG	B053A08733CPG	8,733	.3438	11/32	–	1,5	40	10
B051A08800CPG	B052A08800CPG	B053A08800CPG	8,800	.3465	–	–	1,5	40	10
B051A08900CPG	B052A08900CPG	B053A08900CPG	8,900	.3504	–	–	1,5	40	10
B051A09000CPG	B052A09000CPG	B053A09000CPG	9,000	.3543	–	–	1,5	40	10
B051A09100CPG	B052A09100CPG	B053A09100CPG	9,100	.3583	–	–	1,5	40	10
B051A09129CPG	B052A09129CPG	B053A09129CPG	9,129	.3594	23/64	–	1,6	40	10
B051A09200CPG	B052A09200CPG	B053A09200CPG	9,200	.3622	–	–	1,6	40	10
B051A09300CPG	B052A09300CPG	B053A09300CPG	9,300	.3661	–	–	1,6	40	10
B051A09347CPG	B052A09347CPG	B053A09347CPG	9,347	.3680	–	U	1,6	40	10
B051A09400CPG	B052A09400CPG	B053A09400CPG	9,400	.3701	–	–	1,6	40	10
B051A09500CPG	B052A09500CPG	B053A09500CPG	9,500	.3740	–	–	1,6	40	10
B051A09525CPG	B052A09525CPG	B053A09525CPG	9,525	.3750	3/8	–	1,6	40	10
B051A09600CPG	B052A09600CPG	B053A09600CPG	9,600	.3780	–	–	1,6	40	10
B051A09700CPG	B052A09700CPG	B053A09700CPG	9,700	.3819	–	–	1,7	40	10
B051A09800CPG	B052A09800CPG	B053A09800CPG	9,800	.3858	–	–	1,7	40	10
B051A09900CPG	B052A09900CPG	B053A09900CPG	9,900	.3898	–	–	1,7	40	10
B051A09921CPG	B052A09921CPG	B053A09921CPG	9,921	.3906	25/64	–	1,7	40	10

(continued)

(B051A/B052A/B053A • ~3 x D/~5 x D/~8 x D continued)







short • KC7325	long • KC7325	extra long • KC7325	D1 diameter mm	in	fraction	wire size	L5	LS	D
B051A10000CPG	B052A10000CPG	B053A10000CPG	10,000	.3937	–	–	1,7	40	10
B051A10100CPG	B052A10100CPG	B053A10100CPG	10,100	.3976	–	–	1,7	45	12
B051A10200CPG	B052A10200CPG	B053A10200CPG	10,200	.4016	–	–	1,7	45	12
B051A10300CPG	B052A10300CPG	B053A10300CPG	10,300	.4055	–	–	1,8	45	12
B051A10320CPG	B052A10320CPG	B053A10320CPG	10,320	.4063	13/32	–	1,8	45	12
B051A10400CPG	B052A10400CPG	B053A10400CPG	10,400	.4094	–	–	1,8	45	12
B051A10500CPG	B052A10500CPG	B053A10500CPG	10,500	.4134	–	–	1,8	45	12
B051A10600CPG	B052A10600CPG	B053A10600CPG	10,600	.4173	–	–	1,8	45	12
B051A10700CPG	B052A10700CPG	B053A10700CPG	10,700	.4213	–	–	1,8	45	12
B051A10716CPG	B052A10716CPG	B053A10716CPG	10,716	.4219	27/64	–	1,8	45	12
B051A10800CPG	B052A10800CPG	B053A10800CPG	10,800	.4252	–	–	1,8	45	12
B051A10900CPG	B052A10900CPG	B053A10900CPG	10,900	.4291	–	–	1,9	45	12
B051A11000CPG	B052A11000CPG	B053A11000CPG	11,000	.4331	–	–	1,9	45	12
B051A11100CPG	B052A11100CPG	B053A11100CPG	11,100	.4370	–	–	1,9	45	12
B051A11113CPG	B052A11113CPG	B053A11113CPG	11,113	.4375	7/16	–	1,9	45	12
B051A11200CPG	B052A11200CPG	B053A11200CPG	11,200	.4409	–	–	1,9	45	12
B051A11300CPG	B052A11300CPG	B053A11300CPG	11,300	.4449	–	–	1,9	45	12
B051A11400CPG	B052A11400CPG	B053A11400CPG	11,400	.4488	–	–	2,0	45	12
B051A11500CPG	B052A11500CPG	B053A11500CPG	11,500	.4528	–	–	2,0	45	12
B051A11509CPG	B052A11509CPG	B053A11509CPG	11,509	.4531	29/64	–	2,0	45	12
B051A11600CPG	B052A11600CPG	B053A11600CPG	11,600	.4567	–	–	2,0	45	12
B051A11700CPG	B052A11700CPG	B053A11700CPG	11,700	.4606	–	–	2,0	45	12
B051A11800CPG	B052A11800CPG	B053A11800CPG	11,800	.4646	–	–	2,0	45	12
B051A11900CPG	B052A11900CPG	B053A11900CPG	11,900	.4685	–	–	2,0	45	12
B051A11908CPG	B052A11908CPG	B053A11908CPG	11,908	.4688	15/32	–	2,0	45	12
B051A12000CPG	B052A12000CPG	B053A12000CPG	12,000	.4724	–	–	2,1	45	12
B051A12100CPG	B052A12100CPG	B053A12100CPG	12,100	.4764	–	–	2,1	45	14
B051A12200CPG	B052A12200CPG	B053A12200CPG	12,200	.4803	–	–	2,1	45	14
B051A12300CPG	B052A12300CPG	B053A12300CPG	12,300	.4843	–	–	2,1	45	14
B051A12304CPG	B052A12304CPG	B053A12304CPG	12,304	.4844	31/64	–	2,1	45	14
B051A12400CPG	B052A12400CPG	B053A12400CPG	12,400	.4882	–	–	2,1	45	14
B051A12500CPG	B052A12500CPG	B053A12500CPG	12,500	.4921	–	–	2,1	45	14
B051A12600CPG	B052A12600CPG	B053A12600CPG	12,600	.4961	–	–	2,2	45	14
B051A12700CPG	B052A12700CPG	B053A12700CPG	12,700	.5000	1/2	–	2,2	45	14

Tolerance • Metric

nominal size range	D1 tolerance	D tolerance h6
1–3	0,000/-0,014 (h8)	0,000/-0,006
>3–6	0,000/-0,012 (h7)	0,000/-0,008
>6–10	0,000/-0,015 (h7)	0,000/-0,009
>10–18	0,000/-0,018 (h7)	0,000/-0,011
>18–20	0,000/-0,021 (h7)	0,000/-0,013

GOdrill™ • B04_CPG Series • Grade KC7325™ • Flood Coolant for Drill Diameters 1–20mm

Material Group		Cutting Speed – vc Range – m/min			Metric Recommended Feed Rate (f) by Diameter										
		min	Starting Value	max		1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	60	**70**	100	mm/r	0,04 - 0,09	0,05 - 0,11	0,06 - 0,13	0,09 - 0,16	0,11 - 0,22	0,13 - 0,26	0,15 - 0,31	0,18 - 0,35	0,22 - 0,42	0,28 - 0,54
	2	80	**90**	100	mm/r	0,04 - 0,09	0,05 - 0,11	0,06 - 0,13	0,08 - 0,16	0,12 - 0,22	0,14 - 0,26	0,17 - 0,31	0,20 - 0,35	0,24 - 0,42	0,31 - 0,53
	3	50	**70**	90	mm/r	0,05 - 0,11	0,06 - 0,13	0,07 - 0,15	0,09 - 0,17	0,13 - 0,23	0,15 - 0,28	0,19 - 0,33	0,22 - 0,38	0,26 - 0,47	0,34 - 0,59
	4	50	**70**	100	mm/r	0,04 - 0,12	0,05 - 0,13	0,06 - 0,15	0,08 - 0,17	0,12 - 0,23	0,14 - 0,28	0,17 - 0,33	0,19 - 0,38	0,23 - 0,47	0,29 - 0,59
	6	30	**40**	60	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,07	0,06 - 0,10	0,08 - 0,14	0,10 - 0,18	0,12 - 0,22	0,14 - 0,24	0,18 - 0,32	0,23 - 0,41
M	1	20	**30**	40	mm/r	0,02 - 0,05	0,03 - 0,06	0,04 - 0,70	0,05 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
	2	30	**40**	50	mm/r	0,02 - 0,06	0,03 - 0,07	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,14	0,10 - 0,16	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
	3	20	**30**	40	mm/r	0,02 - 0,05	0,03 - 0,06	0,04 - 0,07	0,06 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
K	1	80	**130**	170	mm/r	0,09 - 0,18	0,10 - 0,20	0,11 - 0,22	0,12 - 0,24	0,16 - 0,31	0,20 - 0,38	0,23 - 0,44	0,25 - 0,49	0,31 - 0,06	0,38 - 0,47
	2	90	**110**	120	mm/r	0,06 - 0,13	0,08 - 0,15	0,10 - 0,17	0,12 - 0,19	0,16 - 0,25	0,20 - 0,31	0,23 - 0,36	0,25 - 0,40	0,31 - 0,48	0,38 - 0,60
	3	80	**110**	130	mm/r	0,05 - 0,11	0,06 - 0,13	0,07 - 0,15	0,09 - 0,19	0,12 - 0,25	0,14 - 0,30	0,17 - 0,35	0,19 - 0,40	0,25 - 0,48	0,30 - 0,60
N	1	90	**230**	270	mm/r	0,05 - 0,12	0,06 - 0,13	0,08 - 0,14	0,10 - 0,16	0,12 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,48
	2	90	**220**	270	mm/r	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16	0,10 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,44	0,32 - 0,52
	3	90	**180**	225	mm/r	0,10 - 0,13	0,11 - 0,14	0,12 - 0,14	0,13 - 0,16	0,14 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,44
	5	90	**130**	270	mm/r	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16	0,10 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,40	0,32 - 0,48
S	1	20	**25**	30	mm/r	0,01 - 0,04	0,02 - 0,05	0,03 - 0,06	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,13	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18
	2	10	**20**	30	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16
	3	20	**25**	40	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,02 - 0,05	0,04 - 0,07	0,06 - 0,09	0,07 - 0,10	0,08 - 0,11	0,09 - 0,13	0,10 - 0,15
	4	20	**25**	50	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16

GOdrill™ • B05_CPG Series • Grade KC7325™ • Internal Coolant for Drill Diameters 1–20mm

Material Group		Cutting Speed – vc Range – m/min			Metric Recommended Feed Rate (f) by Diameter										
		min	Starting Value	max		1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	70	**100**	140	mm/r	0,04 - 0,09	0,05 - 0,12	0,07 - 0,14	0,08 - 0,16	0,11 - 0,22	0,13 - 0,26	0,15 - 0,31	0,18 - 0,35	0,22 - 0,42	0,28 - 0,54
	2	90	**120**	140	mm/r	0,04 - 0,09	0,05 - 0,12	0,07 - 0,14	0,08 - 0,16	0,12 - 0,22	0,14 - 0,26	0,17 - 0,31	0,20 - 0,35	0,24 - 0,42	0,31 - 0,53
	3	60	**80**	100	mm/r	0,05 - 0,10	0,06 - 0,13	0,08 - 0,15	0,09 - 0,17	0,13 - 0,23	0,15 - 0,28	0,19 - 0,33	0,22 - 0,38	0,26 - 0,47	0,34 - 0,59
	4	50	**80**	100	mm/r	0,05 - 0,10	0,06 - 0,13	0,07 - 0,15	0,08 - 0,17	0,12 - 0,23	0,14 - 0,28	0,17 - 0,33	0,19 - 0,38	0,23 - 0,47	0,29 - 0,59
	6	40	**50**	70	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,14	0,10 - 0,18	0,13 - 0,22	0,14 - 0,24	0,18 - 0,32	0,23 - 0,41
M	1	20	**30**	40	mm/r	0,02 - 0,05	0,03 - 0,06	0,04 - 0,07	0,05 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
	2	30	**40**	50	mm/r	0,02 - 0,06	0,03 - 0,07	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,14	0,10 - 0,16	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
	3	20	**30**	40	mm/r	0,02 - 0,05	0,03 - 0,06	0,04 - 0,07	0,05 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
K	1	80	**120**	170	mm/r	0,08 - 0,16	0,09 - 0,17	0,11 - 0,22	0,12 - 0,24	0,16 - 0,31	0,20 - 0,38	0,23 - 0,44	0,25 - 0,49	0,31 - 0,60	0,38 - 0,74
	2	80	**110**	140	mm/r	0,10 - 0,14	0,11 - 0,15	0,12 - 0,16	0,13 - 0,19	0,16 - 0,25	0,20 - 0,31	0,23 - 0,36	0,25 - 0,40	0,31 - 0,48	0,38 - 0,60
	3	80	**100**	130	mm/r	0,05 - 0,13	0,07 - 0,15	0,08 - 0,17	0,09 - 0,19	0,12 - 0,25	0,14 - 0,30	0,17 _ 0,35	0,19 - 0,40	0,24 - 0,48	0,30 - 0,60
N	1	90	**230**	315	mm/r	0,05 - 0,12	0,06 - 0,13	0,08 - 0,14	0,10 - 0,16	0,12 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,48
	2	90	**225**	270	mm/r	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16	0,10 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,44	0,32 - 0,52
	3	90	**180**	270	mm/r	0,10 - 0,13	0,11 - 0,14	0,12 - 0,14	0,13 - 0,16	0,14 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,44
	5	90	**135**	180	mm/r	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16	0,10 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,40	0,32 - 0,48
S	1	10	**25**	30	mm/r	0,01 - 0,04	0,02 - 0,05	0,03 - 0,06	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,13	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18
	2	10	**20**	25	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16
	3	10	**25**	30	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,02 - 0,05	0,04 - 0,07	0,06 - 0,09	0,07 - 0,10	0,08 - 0,11	0,09 - 0,13	0,10 - 0,15
	4	10	**25**	40	mm/r	0,01 - 0,03	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16

TF Drills for High Metal Removal Rates

Primary Application

B105 Solid Carbide Drills are ideal for high metal removal rates and excellent hole quality in short chipping materials such as grey cast iron, ductile iron, and aluminium as well as in short-hole titanium applications.

Features and Benefits

Three Cutting Edges

- Higher feed rates than with two-edged drills.

Three Spacious Flutes

- Rapid chip evacuation.
- Three-margin lands deliver better hole quality and straightness than two-flute drills.

Wear-Resistant Carbide Grade

- High tool life in abrasive materials such as cast iron and aluminium die cast alloys.

TiAlN-Coated KC7210™ Grade

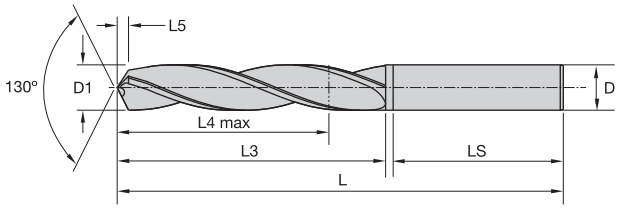
- Higher wear resistance at elevated speeds.

Uncoated K10™ Grade

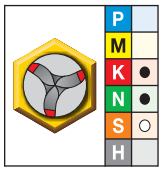
- The uncoated grade helps to prevent built-up edge in drilling aluminium and high-temp alloys.

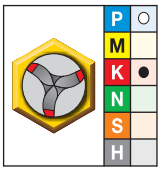
Customisation

- Intermediate diameters available as engineered solutions.
- Length variations and step drills available as engineered solutions.



B105 • ~5 x D



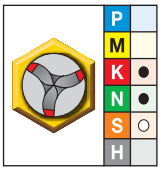


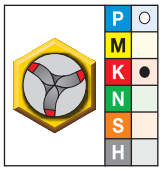
● first choice
○ alternate choice

K10	KC7210	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B105A03000	–	3,000	.1181	–	–	66	23	0,7	36	6
B105A03100	–	3,100	.1220	–	–	66	23	0,8	36	6
B105A03200	–	3,200	.1260	–	–	66	23	0,8	36	6
B105A03300	–	3,300	.1299	–	–	66	23	0,8	36	6
B105A03500	**B105A03500**	3,500	.1378	–	–	66	23	0,9	36	6
B105A03700	–	3,700	.1457	–	–	66	23	0,9	36	6
B105A03800	–	3,800	.1496	–	–	74	29	0,9	36	6
B105A04000	**B105A04000**	4,000	.1575	–	–	74	29	1,0	36	6
B105A04100	–	4,100	.1614	–	–	74	29	1,0	36	6
B105A04200	**B105A04200**	4,200	.1654	–	–	74	29	1,0	36	6
B105A04300	–	4,300	.1693	–	–	74	29	1,1	36	6
B105A04500	–	4,500	.1772	–	–	74	29	1,1	36	6
B105A04650	–	4,650	.1831	–	–	74	29	1,2	36	6
B105A04700	–	4,700	.1850	–	13	74	29	1,2	36	6
B105A04800	–	4,800	.1890	–	12	82	35	1,2	36	6
B105A05000	**B105A05000**	5,000	.1969	–	–	82	35	1,2	36	6
B105A05100	–	5,100	.2008	–	–	82	35	1,3	36	6
B105A05200	–	5,200	.2047	–	–	82	35	1,3	36	6
B105A05500	**B105A05500**	5,500	.2165	–	–	82	35	1,4	36	6
B105A05550	–	5,550	.2185	–	–	82	35	1,4	36	6
B105A05700	–	5,700	.2244	–	–	82	35	1,4	36	6
B105A05800	–	5,800	.2283	–	–	82	35	1,4	36	6
B105A06000	**B105A06000**	6,000	.2362	–	–	82	35	1,5	36	6
B105A06100	–	6,100	.2402	–	–	91	43	1,5	36	8
B105A06300	–	6,300	.2480	–	–	91	43	1,6	36	8
B105A06400	–	6,400	.2520	–	–	91	43	1,6	36	8
B105A06500	**B105A06500**	6,500	.2559	–	–	91	43	1,6	36	8
B105A06600	–	6,600	.2598	–	–	91	43	1,6	36	8
B105A06700	–	6,700	.2638	–	–	91	43	1,7	36	8
B105A06800	**B105A06800**	6,800	.2677	–	–	91	43	1,7	36	8
B105A07000	**B105A07000**	7,000	.2756	–	–	91	43	1,7	36	8
B105A07100	–	7,100	.2795	–	–	91	43	1,8	36	8
B105A07400	–	7,400	.2913	–	–	91	43	1,8	36	8
B105A07500	–	7,500	.2953	–	–	91	43	1,9	36	8
B105A07600	–	7,600	.2992	–	–	91	43	1,9	36	8
B105A07800	–	7,800	.3071	–	–	91	43	1,9	36	8
B105A08000	**B105A08000**	8,000	.3150	–	–	91	43	2,0	36	8
B105A08100	–	8,100	.3189	–	–	103	49	2,0	40	10
B105A08300	–	8,300	.3268	–	–	103	49	2,1	40	10
B105A08400	–	8,400	.3307	–	–	103	49	2,1	40	10
B105A08500	**B105A08500**	8,500	.3346	–	–	103	49	2,1	40	10
B105A08600	–	8,600	.3386	–	–	103	49	2,1	40	10

(continued)

(B105 • ~5 x D continued)





K10	KC7210	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B105A08700	–	8,700	.3425	–	–	103	49	2,2	40	10
B105A08800	–	8,800	.3465	–	–	103	49	2,2	40	10
B105A09000	**B105A09000**	9,000	.3543	–	–	103	49	2,2	40	10
B105A09100	–	9,100	.3583	–	–	103	49	2,3	40	10
B105A09300	–	9,300	.3661	–	–	103	49	2,3	40	10
B105A09500	–	9,500	.3740	–	–	103	49	2,4	40	10
B105A09700	–	9,700	.3819	–	–	103	49	2,4	40	10
B105A09800	–	9,800	.3858	–	–	103	49	2,4	40	10
B105A10000	**B105A10000**	10,000	.3937	–	–	103	49	2,5	40	10
B105A10100	–	10,100	.3976	–	–	118	56	2,5	45	12
B105A10200	**B105A10200**	10,200	.4016	–	–	118	56	2,5	45	12
B105A10300	–	10,300	.4055	–	–	118	56	2,6	45	12
B105A10500	**B105A10500**	10,500	.4134	–	–	118	56	2,6	45	12
B105A10700	–	10,700	.4213	–	–	118	56	2,7	45	12
B105A10800	–	10,800	.4252	–	–	118	56	2,7	45	12
B105A11000	**B105A11000**	11,000	.4331	–	–	118	56	2,7	45	12
B105A11100	–	11,100	.4370	–	–	118	56	2,8	45	12
B105A11200	–	11,200	.4409	–	–	118	56	2,8	45	12
B105A11500	**B105A11500**	11,500	.4528	–	–	118	56	2,9	45	12
B105A11700	–	11,700	.4606	–	–	118	56	2,9	45	12
B105A11800	–	11,800	.4646	–	–	118	56	2,9	45	12
B105A12000	**B105A12000**	12,000	.4724	–	–	118	56	3,0	45	12
B105A12100	–	12,100	.4764	–	–	124	60	3,0	45	14
B105A12500	**B105A12500**	12,500	.4921	–	–	124	60	3,1	45	14
B105A12700	–	12,700	.5000	1/2	–	124	60	3,2	45	14
B105A12800	–	12,800	.5039	–	–	124	60	3,2	45	14
B105A13000	**B105A13000**	13,000	.5118	–	–	124	60	3,2	45	14
B105A13100	–	13,100	.5157	–	–	124	60	3,3	45	14
B105A13500	**B105A13500**	13,500	.5315	–	–	124	60	3,4	45	14
B105A13800	–	13,800	.5433	–	–	124	60	3,4	45	14
B105A14000	**B105A14000**	14,000	.5512	–	–	124	60	3,5	45	14
B105A14200	–	14,200	.5591	–	–	133	63	3,5	48	16
B105A14500	–	14,500	.5709	–	–	133	63	3,6	48	16
B105A15000	**B105A15000**	15,000	.5906	–	–	133	63	3,7	48	16
B105A15100	–	15,100	.5945	–	–	133	63	3,8	48	16
B105A15500	**B105A15500**	15,500	.6102	–	–	133	63	3,9	48	16
B105A15800	–	15,800	.6220	–	–	133	63	3,9	48	16
B105A16000	–	16,000	.6299	–	–	133	63	4,0	48	16
B105A16500	–	16,500	.6496	–	–	143	71	4,1	48	18
B105A17000	–	17,000	.6693	–	–	143	71	4,2	48	18
B105A17500	**B105A17500**	17,500	.6890	–	–	143	71	4,4	48	18
B105A18000	**B105A18000**	18,000	.7087	–	–	143	71	4,5	48	18
B105A18500	**B105A18500**	18,500	.7283	–	–	153	77	4,6	50	20
B105A19000	–	19,000	.7480	–	–	153	77	4,7	50	20
B105A19500	–	19,500	.7677	–	–	153	77	4,9	50	20
B105A20000	–	20,000	.7874	–	–	153	77	5,0	50	20
B105A20500	–	20,500	.8071	–	–	167	85	5,1	50	20
B105A21000	–	21,000	.8268	–	–	167	85	5,2	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

TF Drills • B105 Series • Grade K10™ • Flood Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
K	1	60	**85**	110	mm/r	0,11 - 0,20	0,12 - 0,20	0,16 - 0,28	0,20 - 0,35	0,22 - 0,42	0,24 - 0,50	0,28 - 0,61	0,30 - 0,68
	2	70	**72**	90	mm/r	0,11 - 0,20	0,12 - 0,20	0,16 - 0,28	0,20 - 0,35	0,22 - 0,42	0,24 - 0,50	0,28 - 0,61	0,30 - 0,68
	3	50	**51**	70	mm/r	0,09 - 0,18	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	,020 - 0,40	0,22 - 0,48	0,26 - 0,59	0,28 - 0,66
N	1	100	**210**	410	mm/r	0,09 - 0,15	0,10 - 0,20	0,18 - 0,33	0,20 - 0,38	0,25 - 0,43	,033 - 0,51	0,43 - 0,58	0,64 - 0,79
	2	100	**248**	250	mm/r	0,10 - 0,19	0,12 - 0,21	0,18 - 0,33	0,25 - 0,42	0,30 - 0,50	0,35 - 0,58	0,44 - 0,74	0,52 - 0,88
	5	60	**173**	250	mm/r	0,08 - 0,15	0,13 - 0,18	0,18 - 0,33	0,20 - 0,36	0,23 - 0,38	0,33 - 0,46	0,38 - 0,48	0,58 - 0,76
S	4	30	**20**	51	mm/r	0,03 - 0,05	0,04 - 0,07	0,07 - 0,09	0,09 - 0,12	0,11 - 0,15	0,13 - 0,18	0,17 - 0,24	0,22 - 0,30

TF Drills • B105 Series • Grade KC7210™ • Flood Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
K	1	80	**140**	161	mm/r	0,13 - 0,20	0,14 - 0,24	0,17 - 0,31	0,20 - 0,39	0,25 - 0,45	0,29 - 0,51	0,33 - 0,62	0,36 - 0,70
	2	80	**120**	120	mm/r	0,13 - 0,20	0,15 - 0,23	0,19 - 0,28	0,23 - 0,34	0,26 - 0,38	0,29 - 0,43	0,34 - 0,50	0,36 - 0,54
	3	60	**84**	130	mm/r	0,09 - 0,18	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,20 - 0,40	0,22 - 0,48	0,26 - 0,59	0,28 - 0,66
N	2	100	**298**	300	mm/r	0,10 - 0,19	0,12 - 0,21	0,18 - 0,33	0,25 - 0,42	0,30 - 0,50	0,35 - 0,58	0,44 - 0,74	0,52 - 0,88
	5	60	**225**	300	mm/r	0,08 - 0,15	0,13 - 0,18	0,18 - 0,33	0,20 - 0,36	0,23 - 0,38	0,33 - 0,46	0,38 - 0,48	0,58 - 0,76

TF Drills • B105 Series • Grade KC7210 • MQL (Minimum Quantity Lubricant) or Dry Applications for Drill Diameters 3–20mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
K	1	60	**110**	150	mm/r	0,10 - 0,20	0,13 - 0,24	0,16 - 0,31	0,20 - 0,39	0,24 - 0,44	0,27 - 0,51	0,33 - 0,62	0,36 - 0,70
	2	60	**94**	100	mm/r	0,13 - 0,20	0,16 - 0,23	0,20 - 0,28	0,23 - 0,34	0,26 - 0,38	0,29 - 0,43	0,34 - 0,50	0,36 - 0,54
	3	50	**84**	110	mm/r	,010 - 0,19	0,13 - 0,20	0,16 - 0,31	0,20 - 0,37	0,23 - 0,44	0,26 - 0,48	0,31 - 0,58	0,33 - 0,64

TF Drills with Through Coolant for Titanium Materials

Primary Application

B125 Solid Carbide Drills are specifically designed for titanium and titanium alloy workpiece materials.

Features and Benefits

Three Cutting Edges

- Higher feed rates than two-edged drills.

Three-Flute Design

- Three-margin lands deliver better hole quality and straightness than two-flute drills.

Through-Coolant Design

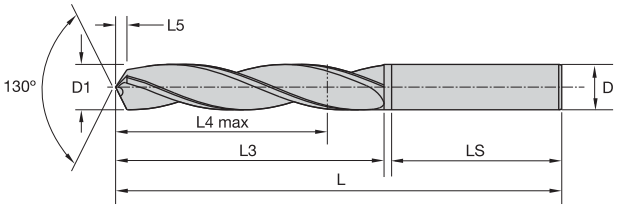
- Improved chip evacuation enables deeper holes.
- More effective cooling of the cutting edges and longer tool life.
- Lubrication of the margin lands and better hole surface quality.

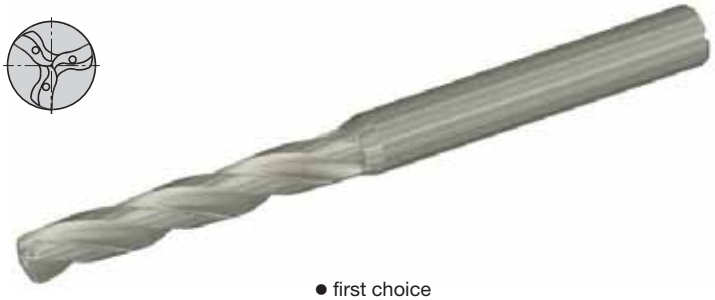
Fine-Grained Carbide Grade

- Optimum combination of toughness and wear resistance for titanium drilling applications.

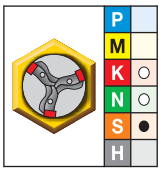
Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.





B125 • ~5 x D



● first choice
○ alternate choice

K715	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B125A06000	6,000	.2362	—	—	94	35	1,6	48	6
B125A06500	6,500	.2559	—	—	105	43	1,7	50	8
B125A06800	6,800	.2677	—	—	105	43	1,8	50	8
B125A07000	7,000	.2756	—	—	105	43	1,9	50	8
B125A07400	7,400	.2913	—	—	110	43	2,0	55	8
B125A07500	7,500	.2953	—	—	110	43	2,0	55	8
B125A08000	8,000	.3150	—	—	110	43	2,1	55	8
B125A08500	8,500	.3346	—	—	122	49	2,3	59	10
B125A09000	9,000	.3543	—	—	122	49	2,4	59	10
B125A09500	9,500	.3740	—	—	122	49	2,5	59	10
B125A10000	10,000	.3937	—	—	122	49	2,7	59	10
B125A10500	10,500	.4134	—	—	141	56	2,8	68	12
B125A11000	11,000	.4331	—	—	141	56	3,0	68	12
B125A12000	12,000	.4724	—	—	141	56	3,2	68	12
B125A14000	14,000	.5512	—	—	155	60	3,8	76	14

nominal size range	Tolerance D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

TF Drills • B125 Series • Grade K715™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
S	4	80	**70**	90	mm/r	—	—	0,03 - 0,08	0,03 - 0,08	0,03 - 0,08	0,08 - 0,15	0,08 - 0,15	—

HP Beyond™ Drills with Through Coolant for Stainless Steel

Primary Application

B210_HP Series Solid Carbide Drills are designed specifically for stainless steel applications, offering high performance and long tool life in regular steel and titanium materials. By combining unique Kennametal technologies, such as the HP-point, flute geometry, and a new post-coat treatment technology into one tool, the B2_HP Beyond is the ultimate high-volume production tool.

Features and Benefits

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.

Unique Flute Design

- Improved chip evacuation.
- Capability to drill deeper holes in difficult-to-machine materials.

KCM15™ Beyond Grade

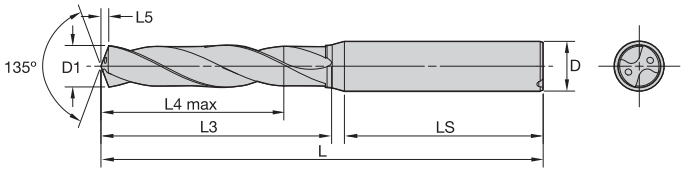
- A nanolayer, TiAlN-based coating with high wear resistance and low adhesion to stainless steel materials.
- The highly polished surface ensures superior chip evacuation even when low-pressure coolant is applied.
- The average metal removal rate and tool life dramatically improve (minimum 10–30%).

Customisation

- Intermediate diameters available as engineered solutions.
- Length variations and step drills available as engineered solutions.
- High step diameter ratios and very complex step drill geometries are not recommended for austenitic stainless steel.
- Using Kennametal Slim Line Hydraulic Chucks together with standard B21_HP is recommended if workpiece contours need to be bypassed.

F-Shank

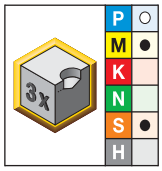
- For standard line items with F-shank, please refer to the e-catalogue on www.kennametal.com.

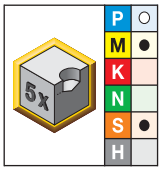


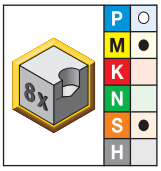
For information on L, L3, and L4 max, see the Solid Carbide foldout table.

beyond

B210/B211/B212_HP • ~3 x D/~5 x D/~8 x D





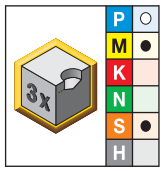


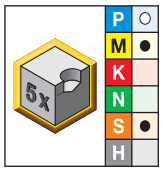
● first choice
○ alternate choice

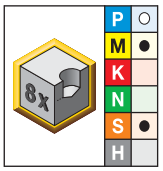
short • KCM15	long • KCM15	extra long • KCM15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B210A03000HP	B211A03000HP	B212A03000HP	3,000	.1181	–	–	0,6	36	6
B210A03048HP	B211A03048HP	B212A03048HP	3,048	.1200	–	31	0,6	36	6
–	B211A03100HP	–	3,100	.1220	–	–	0,6	36	6
B210A03175HP	B211A03175HP	B212A03175HP	3,175	.1250	1/8	–	0,6	36	6
–	B211A03200HP	–	3,200	.1260	–	–	0,6	36	6
B210A03264HP	B211A03264HP	B212A03264HP	3,264	.1285	–	30	0,6	36	6
B210A03300HP	B211A03300HP	B212A03300HP	3,300	.1299	–	–	0,6	36	6
–	B211A03400HP	–	3,400	.1339	–	–	0,6	36	6
B210A03455HP	B211A03455HP	B212A03455HP	3,455	.1360	–	29	0,7	36	6
B210A03500HP	B211A03500HP	B212A03500HP	3,500	.1378	–	–	0,7	36	6
B210A03571HP	B211A03571HP	B212A03571HP	3,571	.1406	9/64	–	0,7	36	6
–	B211A03600HP	–	3,600	.1417	–	–	0,7	36	6
B210A03658HP	B211A03658HP	B212A03658HP	3,658	.1440	–	27	0,7	36	6
B210A03700HP	B211A03700HP	B212A03700HP	3,700	.1457	–	–	0,7	36	6
B210A03734HP	B211A03734HP	B212A03734HP	3,734	.1470	–	26	0,7	36	6
–	B211A03800HP	B212A03800HP	3,800	.1496	–	–	0,7	36	6
–	B211A03861HP	–	3,861	.1520	–	24	0,7	36	6
–	B211A03900HP	–	3,900	.1535	–	–	0,7	36	6
B210A04000HP	B211A04000HP	B212A04000HP	4,000	.1575	–	–	0,8	36	6
B210A04039HP	B211A04039HP	B212A04039HP	4,039	.1590	–	21	0,8	36	6
B210A04090HP	B211A04090HP	B212A04090HP	4,090	.1610	–	20	0,8	36	6
–	B211A04100HP	B212A04100HP	4,100	.1614	–	–	0,8	36	6
B210A04200HP	B211A04200HP	B212A04200HP	4,200	.1654	–	–	0,8	36	6
B210A04217HP	B211A04217HP	B212A04217HP	4,217	.1660	–	19	0,8	36	6
–	B211A04300HP	–	4,300	.1693	–	–	0,8	36	6
B210A04366HP	B211A04366HP	B212A04366HP	4,366	.1719	11/64	–	0,8	36	6
–	B211A04400HP	–	4,400	.1732	–	–	0,8	36	6
B210A04500HP	B211A04500HP	B212A04500HP	4,500	.1772	–	–	0,8	36	6
B210A04700HP	B211A04700HP	B212A04700HP	4,700	.1850	–	13	0,9	36	6
–	B211A04800HP	B212A04800HP	4,800	.1890	–	12	0,9	36	6
B210A04852HP	B211A04852HP	B212A04852HP	4,852	.1910	–	11	0,9	36	6
–	B211A04900HP	–	4,900	.1929	–	–	0,9	36	6
B210A05000HP	B211A05000HP	B212A05000HP	5,000	.1969	–	–	0,9	36	6
B210A05100HP	B211A05100HP	B212A05100HP	5,100	.2008	–	–	1,0	36	6
B210A05106HP	B211A05106HP	B212A05106HP	5,106	.2010	–	7	1,0	36	6
B210A05159HP	B211A05159HP	B212A05159HP	5,159	.2031	13/64	–	1,0	36	6
B210A05200HP	B211A05200HP	–	5,200	.2047	–	–	1,0	36	6
–	B211A05300HP	–	5,300	.2087	–	–	1,0	36	6
B210A05400HP	B211A05400HP	–	5,400	.2126	–	–	1,0	36	6
B210A05410HP	–	–	5,410	.2130	–	3	1,0	36	6

(continued)

(B210/B211/B212_HP • ~3 x D/~5 x D/~8 x D continued)



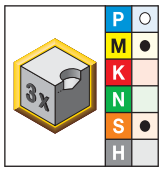


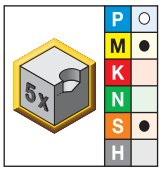


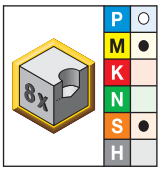
short • KCM15	long • KCM15	extra long • KCM15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B210A05500HP	B211A05500HP	B212A05500HP	5,500	.2165	–	–	1,0	36	6
–	B211A05600HP	–	5,600	.2205	–	–	1,1	36	6
B210A05616HP	B211A05616HP	B212A05616HP	5,616	.2211	–	2	1,1	36	6
–	B211A05700HP	–	5,700	.2244	–	–	1,1	36	6
B210A05800HP	B211A05800HP	B212A05800HP	5,800	.2283	–	–	1,1	36	6
–	B211A05900HP	–	5,900	.2323	–	–	1,1	36	6
B210A05954HP	B211A05954HP	–	5,954	.2344	15/64	–	1,1	36	6
B210A06000HP	B211A06000HP	B212A06000HP	6,000	.2362	–	–	1,1	36	6
B210A06100HP	B211A06100HP	–	6,100	.2402	–	–	1,1	36	8
B210A06200HP	B211A06200HP	–	6,200	.2441	–	–	1,2	36	8
B210A06300HP	B211A06300HP	–	6,300	.2480	–	–	1,2	36	8
B210A06350HP	B211A06350HP	B212A06350HP	6,350	.2500	1/4	E	1,2	36	8
–	B211A06400HP	–	6,400	.2520	–	–	1,2	36	8
B210A06500HP	B211A06500HP	B212A06500HP	6,500	.2559	–	–	1,2	36	8
B210A06528HP	–	–	6,528	.2570	–	F	1,2	36	8
–	B211A06600HP	–	6,600	.2598	–	–	1,2	36	8
B210A06630HP	B211A06630HP	B212A06630HP	6,630	.2610	–	G	1,2	36	8
B210A06700HP	B211A06700HP	–	6,700	.2638	–	–	1,3	36	8
B210A06800HP	B211A06800HP	B212A06800HP	6,800	.2677	–	–	1,3	36	8
B210A06900HP	B211A06900HP	–	6,900	.2717	–	–	1,3	36	8
B210A07000HP	B211A07000HP	B212A07000HP	7,000	.2756	–	–	1,3	36	8
B210A07100HP	B211A07100HP	–	7,100	.2795	–	–	1,3	36	8
–	B211A07200HP	–	7,200	.2835	–	–	1,3	36	8
–	B211A07300HP	–	7,300	.2874	–	–	1,4	36	8
–	B211A07400HP	–	7,400	.2913	–	–	1,4	36	8
B210A07500HP	B211A07500HP	B212A07500HP	7,500	.2953	–	–	1,4	36	8
–	B211A07600HP	–	7,600	.2992	–	–	1,4	36	8
–	B211A07700HP	–	7,700	.3031	–	–	1,4	36	8
B210A07800HP	B211A07800HP	B212A07800HP	7,800	.3071	–	–	1,5	36	8
–	B211A07900HP	–	7,900	.3110	–	–	1,5	36	8
B210A07938HP	–	–	7,938	.3125	5/16	–	1,5	36	8
B210A08000HP	B211A08000HP	B212A08000HP	8,000	.3150	–	–	1,5	36	8
B210A08100HP	B211A08100HP	–	8,100	.3189	–	–	1,5	40	10
B210A08200HP	B211A08200HP	–	8,200	.3228	–	–	1,5	40	10
–	B211A08300HP	–	8,300	.3268	–	–	1,6	40	10
B210A08400HP	B211A08400HP	B212A08400HP	8,400	.3307	–	–	1,6	40	10
B210A08433HP	–	–	8,433	.3320	–	Q	1,6	40	10
B210A08500HP	B211A08500HP	B212A08500HP	8,500	.3346	–	–	1,6	40	10
B210A08600HP	B211A08600HP	–	8,600	.3386	–	–	1,6	40	10
B210A08700HP	B211A08700HP	–	8,700	.3425	–	–	1,6	40	10
–	B211A08800HP	B212A08800HP	8,800	.3465	–	–	1,6	40	10
–	B211A08900HP	–	8,900	.3504	–	–	1,7	40	10
B210A09000HP	B211A09000HP	B212A09000HP	9,000	.3543	–	–	1,7	40	10
B210A09093HP	–	–	9,093	.3580	–	T	1,7	40	10
–	B211A09100HP	–	9,100	.3583	–	–	1,7	40	10
–	B211A09200HP	–	9,200	.3622	–	–	1,7	40	10
–	B211A09300HP	–	9,300	.3661	–	–	1,7	40	10
–	B211A09400HP	–	9,400	.3701	–	–	1,8	40	10
B210A09500HP	B211A09500HP	B212A09500HP	9,500	.3740	–	–	1,8	40	10
–	B211A09600HP	–	9,600	.3780	–	–	1,8	40	10
B210A09700HP	B211A09700HP	–	9,700	.3819	–	–	1,8	40	10
B210A09800HP	B211A09800HP	–	9,800	.3858	–	–	1,8	40	10

(continued)

(B210/B211/B212_HP • ~3 x D/~5 x D/~8 x D continued)



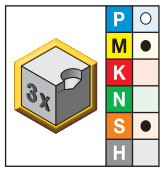


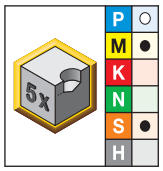


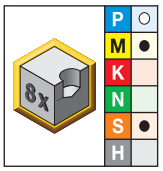
short • KCM15	long • KCM15	extra long • KCM15	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B211A09900HP	–	9,900	.3898	–	–	1,8	40	10
B210A09921HP	–	–	9,921	.3906	25/64	–	1,9	40	10
B210A10000HP	B211A10000HP	B212A10000HP	10,000	.3937	–	–	1,9	40	10
–	B211A10100HP	–	10,100	.3976	–	–	1,9	45	12
B210A10200HP	B211A10200HP	B212A10200HP	10,200	.4016	–	–	1,9	45	12
–	B211A10300HP	–	10,300	.4055	–	–	1,9	45	12
B210A10400HP	B211A10400HP	–	10,400	.4094	–	–	1,9	45	12
B210A10500HP	B211A10500HP	B212A10500HP	10,500	.4134	–	–	2,0	45	12
–	B211A10600HP	–	10,600	.4173	–	–	2,0	45	12
–	B211A10700HP	–	10,700	.4213	–	–	2,0	45	12
B210A10716HP	–	–	10,716	.4219	27/64	–	2,0	45	12
B210A10800HP	B211A10800HP	–	10,800	.4252	–	–	2,0	45	12
–	B211A10900HP	–	10,900	.4291	–	–	2,0	45	12
B210A11000HP	B211A11000HP	B212A11000HP	11,000	.4331	–	–	2,1	45	12
–	B211A11100HP	–	11,100	.4370	–	–	2,1	45	12
B210A11200HP	B211A11200HP	–	11,200	.4409	–	–	2,1	45	12
–	B211A11400HP	–	11,400	.4488	–	–	2,1	45	12
B210A11500HP	B211A11500HP	–	11,500	.4528	–	–	2,1	45	12
B210A11509HP	–	–	11,509	.4531	29/64	–	2,1	45	12
–	B211A11600HP	–	11,600	.4567	–	–	2,2	45	12
–	B211A11700HP	–	11,700	.4606	–	–	2,2	45	12
–	B211A11800HP	B212A11800HP	11,800	.4646	–	–	2,2	45	12
–	B211A11900HP	–	11,900	.4685	–	–	2,2	45	12
B210A12000HP	B211A12000HP	B212A12000HP	12,000	.4724	–	–	2,2	45	12
–	B211A12100HP	–	12,100	.4764	–	–	2,3	45	14
B210A12200HP	B211A12200HP	–	12,200	.4803	–	–	2,3	45	14
–	B211A12300HP	–	12,300	.4843	–	–	2,3	45	14
B210A12304HP	–	–	12,304	.4844	31/64	–	2,3	45	14
B210A12500HP	B211A12500HP	B212A12500HP	12,500	.4921	–	–	2,3	45	14
–	B211A12600HP	–	12,600	.4961	–	–	2,3	45	14
B210A12700HP	B211A12700HP	B212A12700HP	12,700	.5000	1/2	–	2,4	45	14
B210A12800HP	B211A12800HP	–	12,800	.5039	–	–	2,4	45	14
–	B211A12900HP	–	12,900	.5079	–	–	2,4	45	14
B210A13000HP	B211A13000HP	B212A13000HP	13,000	.5118	–	–	2,4	45	14
–	B211A13100HP	–	13,100	.5157	–	–	2,4	45	14
–	B211A13200HP	–	13,200	.5197	–	–	2,5	45	14
–	B211A13300HP	–	13,300	.5236	–	–	2,5	45	14
B210A13495HP	–	–	13,495	.5313	17/32	–	2,5	45	14
B210A13500HP	B211A13500HP	B212A13500HP	13,500	.5315	–	–	2,5	45	14
–	B211A13800HP	–	13,800	.5433	–	–	2,6	45	14
–	B211A13900HP	–	13,900	.5472	–	–	2,6	45	14
B210A14000HP	B211A14000HP	B212A14000HP	14,000	.5512	–	–	2,6	45	14
B210A14100HP	B211A14100HP	–	14,100	.5551	–	–	2,6	48	16
B210A14200HP	B211A14200HP	–	14,200	.5591	–	–	2,6	48	16
–	B211A14300HP	–	14,300	.5630	–	–	2,7	48	16
–	B211A14400HP	–	14,400	.5669	–	–	2,7	48	16
B210A14500HP	B211A14500HP	–	14,500	.5709	–	–	2,7	48	16
–	B211A14600HP	–	14,600	.5748	–	–	2,7	48	16
–	B211A14800HP	–	14,800	.5827	–	–	2,8	48	16
B210A15000HP	B211A15000HP	–	15,000	.5906	–	–	2,8	48	16
–	B211A15100HP	–	15,100	.5945	–	–	2,8	48	16
–	B211A15200HP	–	15,200	.5984	–	–	2,8	48	16

(continued)

(B210/B211/B212_HP • ~3 x D/~5 x D/~8 x D continued)







short • KCM15	long • KCM15	extra long • KCM15	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B211A15300HP	–	15,300	.6024	–	–	2,8	48	16
–	B211A15400HP	–	15,400	.6063	–	–	2,9	48	16
B210A15500HP	B211A15500HP	–	15,500	.6102	–	–	2,9	48	16
–	B211A15600HP	–	15,600	.6142	–	–	2,9	48	16
–	B211A15700HP	–	15,700	.6181	–	–	2,9	48	16
–	B211A15800HP	–	15,800	.6220	–	–	2,9	48	16
B210A15875HP	B211A15875HP	B212A15875HP	15,875	.6250	5/8	–	3,0	48	16
–	B211A15900HP	–	15,900	.6260	–	–	3,0	48	16
B210A16000HP	B211A16000HP	B212A16000HP	16,000	.6299	–	–	3,0	48	16
–	B211A16100HP	–	16,100	.6339	–	–	3,0	48	18
B210A16500HP	B211A16500HP	–	16,500	.6496	–	–	3,1	48	18
B210A16670HP	–	–	16,670	.6563	21/32	–	3,1	48	18
B210A17000HP	B211A17000HP	–	17,000	.6693	–	–	3,2	48	18
B210A17500HP	B211A17500HP	–	17,500	.6890	–	–	3,3	48	18
–	B211A17700HP	–	17,700	.6969	–	–	3,3	48	18
B210A18000HP	B211A18000HP	–	18,000	.7087	–	–	3,3	48	18
–	B211A18400HP	–	18,400	.7244	–	–	3,4	50	20
B210A18500HP	B211A18500HP	–	18,500	.7283	–	–	3,4	50	20
B210A19000HP	B211A19000HP	–	19,000	.7480	–	–	3,5	50	20
B210A19050HP	B211A19050HP	B212A19050HP	19,050	.7500	3/4	–	3,5	50	20
–	B211A19100HP	–	19,100	.7520	–	–	3,5	50	20
–	B211A19200HP	–	19,200	.7559	–	–	3,6	50	20
–	B211A19300HP	–	19,300	.7598	–	–	3,6	50	20
B210A19500HP	B211A19500HP	–	19,500	.7677	–	–	3,6	50	20
B210A20000HP	B211A20000HP	–	20,000	.7874	–	–	3,7	50	20
–	B211A20500HP	–	20,500	.8071	–	–	3,8	50	20
–	B211A21000HP	–	21,000	.8268	–	–	3,9	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Drills • B21_HP Series • Grade KCM15™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	110	**160**	210	mm/r	0,05 - 0,13	0,08 - 0,19	0,11 - 0,24	0,14 - 0,30	0,16 - 0,35	0,18 - 0,39	0,20 - 0,46	0,23 - 0,51
	2	130	**170**	210	mm/r	0,05 - 0,13	0,08 - 0,17	0,11 - 0,20	0,14 - 0,24	0,16 - 0,28	0,18 - 0,32	0,20 - 0,37	0,23 - 0,41
	3	110	**150**	190	mm/r	0,08 - 0,13	0,12 - 0,19	0,14 - 0,24	0,17 - 0,30	0,20 - 0,35	0,22 - 0,39	0,26 - 0,46	0,29 - 0,51
	4	80	**120**	150	mm/r	0,08 - 0,12	0,11 - 0,18	0,12 - 0,23	0,15 - 0,28	0,17 - 0,33	0,19 - 0,37	0,22 - 0,43	0,25 - 0,48
	5	60	**80**	90	mm/r	0,03 - 0,11	0,04 - 0,11	0,05 - 0,11	0,05 - 0,14	0,08 - 0,18	0,11 - 0,21	0,14 - 0,24	0,16 - 0,26
	6	70	**120**	170	mm/r	0,05 - 0,11	0,08 - 0,14	0,11 - 0,17	0,13 - 0,21	0,15 - 0,24	0,17 - 0,27	0,19 - 0,33	0,22 - 0,36
M	1	60	**80**	90	mm/r	0,03 - 0,08	0,06 - 0,14	0,08 - 0,19	0,11 - 0,21	0,13 - 0,23	0,14 - 0,24	0,16 - 0,26	0,19 - 0,29
	2	50	**80**	80	mm/r	0,03 - 0,08	0,06 - 0,14	0,08 - 0,19	0,11 - 0,21	0,13 - 0,23	0,14 - 0,24	0,16 - 0,26	0,19 - 0,29
	3	40	**60**	70	mm/r	0,03 - 0,08	0,06 - 0,14	0,08 - 0,19	0,11 - 0,21	0,13 - 0,23	0,14 - 0,24	0,16 - 0,26	0,19 - 0,29
S	1	20	**20**	20	mm/r	0,03 - 0,08	0,04 - 0,09	0,05 - 0,11	0,05 - 0,11	0,08 - 0,14	0,11 - 0,16	0,14 - 0,19	0,16 - 0,21
	2	10	**20**	30	mm/r	0,03 - 0,11	0,04 - 0,11	0,05 - 0,11	0,05 - 0,11	0,08 - 0,14	0,11 - 0,16	0,14 - 0,19	0,16 - 0,21
	4	30	**50**	60	mm/r	0,02 - 0,04	0,04 - 0,06	0,05 - 0,07	0,05 - 0,07	0,07 - 0,11	0,07 - 0,11	0,11 - 0,13	0,11 - 0,13

HP Beyond™ Drills for Steel

Primary Application

B221_HP Series Solid Carbide Drills offer the highest metal removal rates and longest tool life in steel and iron materials when dry cutting or using external flood coolant. Dry drilling up to 5 x D possible.

B224_HP Series Solid Carbide Drills are ideal for super high-speed drilling of unalloyed and alloyed steel. Achieve 100% higher cutting speed without compromising tool life. Operate these drills with standard through coolant or MQL.

By combining unique Kennametal technologies, such as the HP-point, flute geometry, and a new Beyond grade technology into one tool, the B2_HP Beyond is the ultimate high-volume production tool.

Features and Benefits

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.

Unique Flute Design

- Improved chip evacuation in dry and mid L/D drilling operations.
- Better hole surface quality.

KCPK15™ Beyond Grade

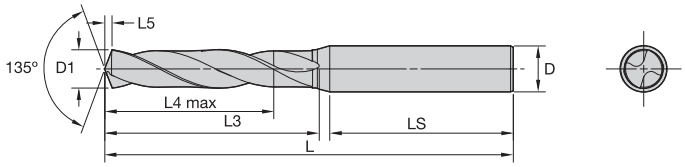
- The grade is a multilayer, TiAlN-based coating with high hot hardness. High cutting speeds enable use in MQL applications.
- The highly polished surface ensures superior chip evacuation even when low-pressure coolant is applied.
- The average metal removal rate and tool life performance improved dramatically (10–30%).

Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.
- For holes deeper than 5 x D, internal coolant is recommended.
- Using Kennametal Slim Line Hydraulic Chucks together with standard B22_HP is recommended if workpiece contours need to be bypassed.

F-Shank

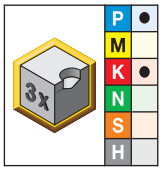
- For standard line items with F-shank, please refer to the e-catalogue on www.kennametal.com.

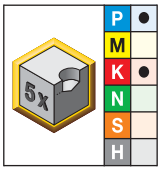


For information on L, L3, and L4 max, see the Solid Carbide foldout table.

beyond

B221/B222_HP • ~3 x D/~5 x D



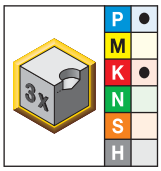


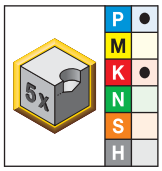
● first choice
○ alternate choice

short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B221A03000HP	B222A03000HP	3,000	.1181	–	–	0,6	36	6
B221A03048HP	B222A03048HP	3,048	.1200	–	31	0,6	36	6
B221A03100HP	–	3,100	.1220	–	–	0,6	36	6
B221A03175HP	B222A03175HP	3,175	.1250	1/8	–	0,6	36	6
B221A03200HP	–	3,200	.1260	–	–	0,6	36	6
B221A03264HP	B222A03264HP	3,264	.1285	–	30	0,6	36	6
B221A03300HP	B222A03300HP	3,300	.1299	–	–	0,6	36	6
B221A03400HP	–	3,400	.1339	–	–	0,6	36	6
B221A03455HP	B222A03455HP	3,455	.1360	–	29	0,7	36	6
B221A03500HP	B222A03500HP	3,500	.1378	–	–	0,7	36	6
B221A03571HP	B222A03571HP	3,571	.1406	9/64	–	0,7	36	6
B221A03600HP	–	3,600	.1417	–	–	0,7	36	6
B221A03658HP	–	3,658	.1440	–	27	0,7	36	6
B221A03700HP	B222A03700HP	3,700	.1457	–	–	0,7	36	6
B221A03734HP	–	3,734	.1470	–	26	0,7	36	6
B221A03800HP	B222A03800HP	3,800	.1496	–	–	0,7	36	6
B221A03900HP	–	3,900	.1535	–	–	0,7	36	6
B221A03970HP	B222A03970HP	3,970	.1563	5/32	–	0,7	36	6
B221A04000HP	B222A04000HP	4,000	.1575	–	–	0,8	36	6
B221A04039HP	–	4,039	.1590	–	21	0,8	36	6
B221A04090HP	–	4,090	.1610	–	20	0,8	36	6
B221A04100HP	–	4,100	.1614	–	–	0,8	36	6
B221A04200HP	B222A04200HP	4,200	.1654	–	–	0,8	36	6
B221A04217HP	–	4,217	.1660	–	19	0,8	36	6
B221A04300HP	–	4,300	.1693	–	–	0,8	36	6
B221A04366HP	B222A04366HP	4,366	.1719	11/64	–	0,8	36	6
B221A04400HP	–	4,400	.1732	–	–	0,8	36	6
B221A04500HP	B222A04500HP	4,500	.1772	–	–	0,8	36	6
B221A04600HP	B222A04600HP	4,600	.1811	–	–	0,9	36	6
B221A04623HP	–	4,623	.1820	–	14	0,9	36	6
B221A04700HP	–	4,700	.1850	–	13	0,9	36	6
B221A04763HP	B222A04763HP	4,763	.1875	3/16	–	0,9	36	6
B221A04800HP	B222A04800HP	4,800	.1890	–	12	0,9	36	6
B221A04852HP	–	4,852	.1910	–	11	0,9	36	6
B221A04900HP	–	4,900	.1929	–	–	0,9	36	6
B221A05000HP	B222A05000HP	5,000	.1969	–	–	0,9	36	6
B221A05100HP	B222A05100HP	5,100	.2008	–	–	1,0	36	6
B221A05106HP	B222A05106HP	5,106	.2010	–	7	1,0	36	6
B221A05159HP	B222A05159HP	5,159	.2031	13/64	–	1,0	36	6
B221A05200HP	–	5,200	.2047	–	–	1,0	36	6

(continued)

(B221/B222_HP • ~3 x D/~5 x D continued)

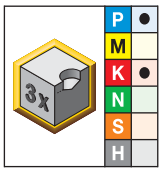


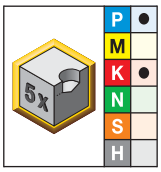


short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B221A05300HP	–	5,300	.2087	–	–	1,0	36	6
B221A05400HP	–	5,400	.2126	–	–	1,0	36	6
B221A05410HP	**B222A05410HP**	5,410	.2130	–	3	1,0	36	6
B221A05500HP	**B222A05500HP**	5,500	.2165	–	–	1,0	36	6
B221A05558HP	**B222A05558HP**	5,558	.2188	7/32	–	1,0	36	6
B221A05600HP	–	5,600	.2205	–	–	1,1	36	6
B221A05616HP	–	5,616	.2211	–	2	1,1	36	6
B221A05700HP	–	5,700	.2244	–	–	1,1	36	6
B221A05800HP	**B222A05800HP**	5,800	.2283	–	–	1,1	36	6
B221A05900HP	–	5,900	.2323	–	–	1,1	36	6
B221A05954HP	**B222A05954HP**	5,954	.2344	15/64	–	1,1	36	6
B221A06000HP	**B222A06000HP**	6,000	.2362	–	–	1,1	36	6
B221A06100HP	–	6,100	.2402	–	–	1,1	36	8
B221A06200HP	–	6,200	.2441	–	–	1,2	36	8
B221A06300HP	–	6,300	.2480	–	–	1,2	36	8
B221A06350HP	**B222A06350HP**	6,350	.2500	1/4	E	1,2	36	8
B221A06400HP	–	6,400	.2520	–	–	1,2	36	8
B221A06500HP	**B222A06500HP**	6,500	.2559	–	–	1,2	36	8
B221A06528HP	**B222A06528HP**	6,528	.2570	–	F	1,2	36	8
B221A06600HP	–	6,600	.2598	–	–	1,2	36	8
B221A06630HP	–	6,630	.2610	–	G	1,2	36	8
B221A06700HP	**B222A06700HP**	6,700	.2638	–	–	1,3	36	8
B221A06746HP	**B222A06746HP**	6,746	.2656	17/64	–	1,3	36	8
B221A06800HP	**B222A06800HP**	6,800	.2677	–	–	1,3	36	8
B221A06900HP	–	6,900	.2717	–	–	1,3	36	8
B221A07000HP	**B222A07000HP**	7,000	.2756	–	–	1,3	36	8
B221A07100HP	–	7,100	.2795	–	–	1,3	36	8
B221A07145HP	**B222A07145HP**	7,145	.2813	9/32	–	1,3	36	8
B221A07200HP	–	7,200	.2835	–	–	1,3	36	8
B221A07300HP	–	7,300	.2874	–	–	1,4	36	8
B221A07400HP	–	7,400	.2913	–	–	1,4	36	8
B221A07500HP	**B222A07500HP**	7,500	.2953	–	–	1,4	36	8
B221A07541HP	**B222A07541HP**	7,541	.2969	19/64	–	1,4	36	8
B221A07600HP	–	7,600	.2992	–	–	1,4	36	8
B221A07700HP	–	7,700	.3031	–	–	1,4	36	8
B221A07800HP	**B222A07800HP**	7,800	.3071	–	–	1,5	36	8
B221A07900HP	–	7,900	.3110	–	–	1,5	36	8
B221A07938HP	**B222A07938HP**	7,938	.3125	5/16	–	1,5	36	8
B221A08000HP	**B222A08000HP**	8,000	.3150	–	–	1,5	36	8
B221A08100HP	–	8,100	.3189	–	–	1,5	40	10
B221A08200HP	**B222A08200HP**	8,200	.3228	–	–	1,5	40	10
B221A08300HP	–	8,300	.3268	–	–	1,6	40	10
B221A08334HP	**B222A08334HP**	8,334	.3281	21/64	–	1,6	40	10
B221A08400HP	–	8,400	.3307	–	–	1,6	40	10
B221A08433HP	**B222A08433HP**	8,433	.3320	–	Q	1,6	40	10
B221A08500HP	**B222A08500HP**	8,500	.3346	–	–	1,6	40	10
B221A08600HP	–	8,600	.3386	–	–	1,6	40	10
B221A08700HP	–	8,700	.3425	–	–	1,6	40	10
B221A08733HP	**B222A08733HP**	8,733	.3438	11/32	–	1,6	40	10
B221A08800HP	**B222A08800HP**	8,800	.3465	–	–	1,6	40	10
B221A08900HP	–	8,900	.3504	–	–	1,7	40	10
B221A09000HP	**B222A09000HP**	9,000	.3543	–	–	1,7	40	10

(continued)

(B221/B222_HP • ~3 x D/~5 x D continued)

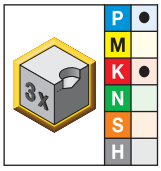


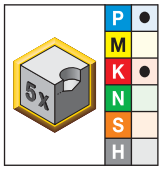


short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B221A09100HP	–	9,100	.3583	–	–	1,7	40	10
B221A09129HP	B222A09129HP	9,129	.3594	23/64	–	1,7	40	10
B221A09200HP	–	9,200	.3622	–	–	1,7	40	10
B221A09300HP	B222A09300HP	9,300	.3661	–	–	1,7	40	10
B221A09347HP	B222A09347HP	9,347	.3680	–	U	1,7	40	10
B221A09400HP	–	9,400	.3701	–	–	1,8	40	10
B221A09500HP	B222A09500HP	9,500	.3740	–	–	1,8	40	10
B221A09525HP	B222A09525HP	9,525	.3750	3/8	–	1,8	40	10
B221A09600HP	–	9,600	.3780	–	–	1,8	40	10
B221A09700HP	–	9,700	.3819	–	–	1,8	40	10
B221A09800HP	B222A09800HP	9,800	.3858	–	–	1,8	40	10
B221A09900HP	–	9,900	.3898	–	–	1,8	40	10
B221A09921HP	B222A09921HP	9,921	.3906	25/64	–	1,9	40	10
B221A10000HP	B222A10000HP	10,000	.3937	–	–	1,9	40	10
B221A10100HP	–	10,100	.3976	–	–	1,9	45	12
B221A10200HP	B222A10200HP	10,200	.4016	–	–	1,9	45	12
B221A10300HP	–	10,300	.4055	–	–	1,9	45	12
B221A10320HP	B222A10320HP	10,320	.4063	13/32	–	1,9	45	12
B221A10400HP	–	10,400	.4094	–	–	1,9	45	12
B221A10500HP	B222A10500HP	10,500	.4134	–	–	2,0	45	12
B221A10600HP	–	10,600	.4173	–	–	2,0	45	12
B221A10700HP	–	10,700	.4213	–	–	2,0	45	12
B221A10716HP	B222A10716HP	10,716	.4219	27/64	–	2,0	45	12
B221A10800HP	B222A10800HP	10,800	.4252	–	–	2,0	45	12
B221A10900HP	–	10,900	.4291	–	–	2,0	45	12
B221A11000HP	B222A11000HP	11,000	.4331	–	–	2,1	45	12
B221A11100HP	–	11,100	.4370	–	–	2,1	45	12
B221A11113HP	B222A11113HP	11,113	.4375	7/16	–	2,1	45	12
B221A11200HP	–	11,200	.4409	–	–	2,1	45	12
B221A11300HP	–	11,300	.4449	–	–	2,1	45	12
B221A11400HP	–	11,400	.4488	–	–	2,1	45	12
B221A11500HP	B222A11500HP	11,500	.4528	–	–	2,1	45	12
B221A11509HP	B222A11509HP	11,509	.4531	29/64	–	2,1	45	12
B221A11600HP	–	11,600	.4567	–	–	2,2	45	12
B221A11700HP	–	11,700	.4606	–	–	2,2	45	12
B221A11800HP	–	11,800	.4646	–	–	2,2	45	12
B221A11900HP	–	11,900	.4685	–	–	2,2	45	12
B221A11908HP	B222A11908HP	11,908	.4688	15/32	–	2,2	45	12
B221A12000HP	B222A12000HP	12,000	.4724	–	–	2,2	45	12
B221A12100HP	–	12,100	.4764	–	–	2,3	45	14
B221A12200HP	–	12,200	.4803	–	–	2,3	45	14
B221A12300HP	–	12,300	.4843	–	–	2,3	45	14
–	B222A12304HP	12,304	.4844	31/64	–	2,3	45	14
B221A12400HP	–	12,400	.4882	–	–	2,3	45	14
B221A12500HP	B222A12500HP	12,500	.4921	–	–	2,3	45	14
B221A12600HP	–	12,600	.4961	–	–	2,3	45	14
B221A12700HP	B222A12700HP	12,700	.5000	1/2	–	2,4	45	14
B221A12800HP	–	12,800	.5039	–	–	2,4	45	14
B221A12900HP	–	12,900	.5079	–	–	2,4	45	14
B221A13000HP	B222A13000HP	13,000	.5118	–	–	2,4	45	14
B221A13100HP	–	13,100	.5157	–	–	2,4	45	14
B221A13200HP	–	13,200	.5197	–	–	2,5	45	14

(continued)

(B221/B222_HP • ~3 x D/~5 x D continued)





short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B221A13300HP	–	13,300	.5236	–	–	2,5	45	14
B221A13500HP	B222A13500HP	13,500	.5315	–	–	2,5	45	14
B221A13600HP	–	13,600	.5354	–	–	2,5	45	14
B221A13700HP	–	13,700	.5394	–	–	2,6	45	14
B221A13800HP	–	13,800	.5433	–	–	2,6	45	14
B221A13891HP	–	13,891	.5469	35/64	–	2,6	45	14
B221A13900HP	–	13,900	.5472	–	–	2,6	45	14
B221A14000HP	B222A14000HP	14,000	.5512	–	–	2,6	45	14
B221A14100HP	–	14,100	.5551	–	–	2,6	48	16
B221A14200HP	–	14,200	.5591	–	–	2,6	48	16
B221A14288HP	B222A14288HP	14,288	.5625	9/16	–	2,7	48	16
B221A14300HP	–	14,300	.5630	–	–	2,7	48	16
B221A14400HP	–	14,400	.5669	–	–	2,7	48	16
B221A14500HP	B222A14500HP	14,500	.5709	–	–	2,7	48	16
B221A14600HP	–	14,600	.5748	–	–	2,7	48	16
B221A14684HP	–	14,684	.5781	37/64	–	2,7	48	16
B221A14700HP	–	14,700	.5787	–	–	2,7	48	16
B221A14800HP	–	14,800	.5827	–	–	2,8	48	16
B221A14900HP	–	14,900	.5866	–	–	2,8	48	16
B221A15000HP	B222A15000HP	15,000	.5906	–	–	2,8	48	16
B221A15083HP	–	15,083	.5938	19/32	–	2,8	48	16
B221A15100HP	–	15,100	.5945	–	–	2,8	48	16
B221A15200HP	–	15,200	.5984	–	–	2,8	48	16
B221A15300HP	–	15,300	.6024	–	–	2,8	48	16
B221A15400HP	–	15,400	.6063	–	–	2,9	48	16
B221A15479HP	–	15,479	.6094	39/64	–	2,9	48	16
B221A15500HP	B222A15500HP	15,500	.6102	–	–	2,9	48	16
B221A15600HP	–	15,600	.6142	–	–	2,9	48	16
B221A15700HP	–	15,700	.6181	–	–	2,9	48	16
B221A15800HP	–	15,800	.6220	–	–	2,9	48	16
B221A15875HP	B222A15875HP	15,875	.6250	5/8	–	3,0	48	16
B221A15900HP	–	15,900	.6260	–	–	3,0	48	16
B221A16000HP	B222A16000HP	16,000	.6299	–	–	3,0	48	16
B221A16500HP	B222A16500HP	16,500	.6496	–	–	3,1	48	18
B221A17000HP	B222A17000HP	17,000	.6693	–	–	3,2	48	18
B221A17463HP	B222A17463HP	17,463	.6875	11/16	–	3,2	48	18
B221A17500HP	B222A17500HP	17,500	.6890	–	–	3,3	48	18
B221A17700HP	–	17,700	.6969	–	–	3,3	48	18
B221A18000HP	B222A18000HP	18,000	.7087	–	–	3,3	48	18
B221A18500HP	B222A18500HP	18,500	.7283	–	–	3,4	50	20
B221A19000HP	B222A19000HP	19,000	.7480	–	–	3,5	50	20
B221A19050HP	B222A19050HP	19,050	.7500	3/4	–	3,5	50	20
B221A19500HP	–	19,500	.7677	–	–	3,6	50	20
B221A20000HP	B222A20000HP	20,000	.7874	–	–	3,7	50	20
B221A20500HP	–	20,500	.8071	–	–	3,8	50	20
B221A21000HP	–	21,000	.8268	–	–	3,9	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Drills • B221_HP, B222_HP Series • Grade KCPK15™ • Flood Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	70	**110**	150	mm/r	0,08 - 0,16	0,07 - 0,17	0,08 - 0,24	0,08 - 0,29	0,09 - 0,35	0,12 - 0,42	0,25 - 0,55	0,33 - 0,67
	2	90	**120**	160	mm/r	0,08 - 0,15	0,07 - 0,14	0,12 - 0,23	0,14 - 0,29	0,16 - 0,28	0,19 - 0,40	0,25 - 0,50	0,33 - 0,60
	3	60	**90**	120	mm/r	0,09 - 0,16	0,09 - 0,17	0,15 - 0,27	0,18 - 0,33	0,20 - 0,35	0,25 - 0,44	0,33 - 0,55	0,37 - 0,67
	4	50	**80**	120	mm/r	0,08 - 0,16	0,08 - 0,17	0,13 - 0,27	0,16 - 0,33	0,17 - 0,33	0,21 - 0,44	0,26 - 0,54	0,32 - 0,62
	6	50	**80**	120	mm/r	0,06 - 0,11	0,07 - 0,13	0,09 - 0,17	0,13 - 0,24	0,15 - 0,24	0,18 - 0,30	0,23 - 0,40	0,28 - 0,49
K	1	70	**100**	120	mm/r	0,11 - 0,21	0,09 - 0,18	0,14 - 0,28	0,16 - 0,37	0,20 - 0,40	0,22 - 0,45	0,28 - 0,58	0,36 - 0,71
	2	70	**120**	120	mm/r	0,11 - 0,19	0,09 - 0,16	0,14 - 0,23	0,16 - 0,32	0,19 - 0,32	0,22 - 0,37	0,28 - 0,47	0,36 - 0,60
	3	50	**90**	130	mm/r	0,08 - 0,17	0,07 - 0,14	0,12 - 0,25	0,13 - 0,27	0,16 - 0,29	0,18 - 0,39	0,25 - 0,48	0,29 - 0,58

Carbide Recycling

Help preserve and protect our planet!

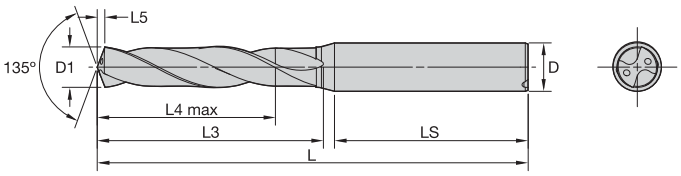
It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

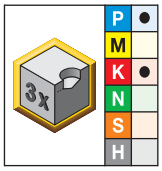
Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

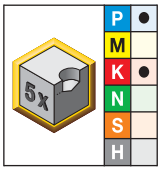


For information on L, L3, and L4 max, see the Solid Carbide foldout table.

beyond

B224/B225_HP • ~3 x D/~5 x D



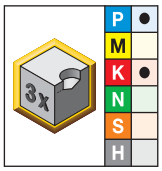


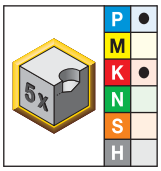
● first choice
○ alternate choice

short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B224A03000HP	B225A03000HP	3,000	.1181	–	–	0,6	36	6
B224A03048HP	B225A03048HP	3,048	.1200	–	31	0,6	36	6
B224A03100HP	B225A03100HP	3,100	.1220	–	–	0,6	36	6
B224A03175HP	B225A03175HP	3,175	.1250	1/8	–	0,6	36	6
B224A03200HP	B225A03200HP	3,200	.1260	–	–	0,6	36	6
B224A03264HP	B225A03264HP	3,264	.1285	–	30	0,6	36	6
B224A03300HP	B225A03300HP	3,300	.1299	–	–	0,6	36	6
B224A03400HP	B225A03400HP	3,400	.1339	–	–	0,6	36	6
B224A03455HP	B225A03455HP	3,455	.1360	–	29	0,7	36	6
B224A03500HP	B225A03500HP	3,500	.1378	–	–	0,7	36	6
B224A03571HP	B225A03571HP	3,571	.1406	9/64	–	0,7	36	6
B224A03600HP	B225A03600HP	3,600	.1417	–	–	0,7	36	6
B224A03658HP	–	3,658	.1440	–	27	0,7	36	6
B224A03700HP	B225A03700HP	3,700	.1457	–	–	0,7	36	6
B224A03734HP	–	3,734	.1470	–	26	0,7	36	6
B224A03797HP	B225A03797HP	3,797	.1495	–	25	0,7	36	6
B224A03800HP	B225A03800HP	3,800	.1496	–	–	0,7	36	6
B224A03900HP	B225A03900HP	3,900	.1535	–	–	0,7	36	6
B224A03970HP	B225A03970HP	3,970	.1563	5/32	–	0,7	36	6
B224A04000HP	B225A04000HP	4,000	.1575	–	–	0,8	36	6
B224A04039HP	–	4,039	.1590	–	21	0,8	36	6
B224A04090HP	–	4,090	.1610	–	20	0,8	36	6
–	B225A04100HP	4,100	.1614	–	–	0,8	36	6
B224A04200HP	B225A04200HP	4,200	.1654	–	–	0,8	36	6
B224A04217HP	–	4,217	.1660	–	19	0,8	36	6
–	B225A04300HP	4,300	.1693	–	–	0,8	36	6
B224A04366HP	B225A04366HP	4,366	.1719	11/64	–	0,8	36	6
–	B225A04400HP	4,400	.1732	–	–	0,8	36	6
B224A04496HP	B225A04496HP	4,496	.1770	–	16	0,8	36	6
–	B225A04500HP	4,500	.1772	–	–	0,8	36	6
–	B225A04600HP	4,600	.1811	–	–	0,9	36	6
B224A04623HP	–	4,623	.1820	–	14	0,9	36	6
B224A04700HP	B225A04700HP	4,700	.1850	–	13	0,9	36	6
–	B225A04760HP	4,760	.1874	–	–	0,9	36	6
B224A04763HP	–	4,763	.1875	3/16	–	0,9	36	6
–	B225A04800HP	4,800	.1890	–	12	0,9	36	6
B224A04852HP	–	4,852	.1910	–	11	0,9	36	6
–	B225A04900HP	4,900	.1929	–	–	0,9	36	6
B224A05000HP	B225A05000HP	5,000	.1969	–	–	0,9	36	6
B224A05100HP	B225A05100HP	5,100	.2008	–	–	1,0	36	6

(continued)

(B224/B225_HP • ~3 x D/~5 x D continued)

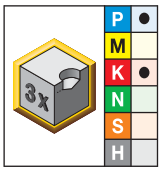


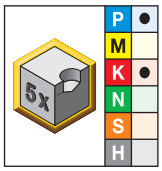


short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B224A05106HP	B225A05106HP	5,106	.2010	–	7	1,0	36	6
B224A05159HP	B225A05159HP	5,159	.2031	13/64	–	1,0	36	6
–	B225A05200HP	5,200	.2047	–	–	1,0	36	6
–	B225A05300HP	5,300	.2087	–	–	1,0	36	6
–	B225A05400HP	5,400	.2126	–	–	1,0	36	6
B224A05410HP	B225A05410HP	5,410	.2130	–	3	1,0	36	6
B224A05500HP	B225A05500HP	5,500	.2165	–	–	1,0	36	6
B224A05558HP	B225A05558HP	5,558	.2188	7/32	–	1,0	36	6
B224A05600HP	B225A05600HP	5,600	.2205	–	–	1,1	36	6
B224A05616HP	–	5,616	.2211	–	2	1,1	36	6
–	B225A05700HP	5,700	.2244	–	–	1,1	36	6
B224A05791HP	B225A05791HP	5,791	.2280	–	1	1,1	36	6
–	B225A05800HP	5,800	.2283	–	–	1,1	36	6
–	B225A05900HP	5,900	.2323	–	–	1,1	36	6
B224A05944HP	B225A05944HP	5,944	.2340	–	A	1,1	36	6
B224A05954HP	B225A05954HP	5,954	.2344	15/64	–	1,1	36	6
B224A06000HP	B225A06000HP	6,000	.2362	–	–	1,1	36	6
–	B225A06100HP	6,100	.2402	–	–	1,1	36	8
–	B225A06200HP	6,200	.2441	–	–	1,2	36	8
–	B225A06300HP	6,300	.2480	–	–	1,2	36	8
B224A06350HP	B225A06350HP	6,350	.2500	1/4	E	1,2	36	8
–	B225A06400HP	6,400	.2520	–	–	1,2	36	8
B224A06500HP	B225A06500HP	6,500	.2559	–	–	1,2	36	8
B224A06528HP	B225A06528HP	6,528	.2570	–	F	1,2	36	8
–	B225A06600HP	6,600	.2598	–	–	1,2	36	8
B224A06630HP	–	6,630	.2610	–	G	1,2	36	8
B224A06700HP	B225A06700HP	6,700	.2638	–	–	1,3	36	8
B224A06746HP	B225A06746HP	6,746	.2656	17/64	–	1,3	36	8
B224A06800HP	B225A06800HP	6,800	.2677	–	–	1,3	36	8
–	B225A06900HP	6,900	.2717	–	–	1,3	36	8
B224A06909HP	B225A06909HP	6,909	.2720	–	I	1,3	36	8
B224A07000HP	B225A07000HP	7,000	.2756	–	–	1,3	36	8
–	B225A07100HP	7,100	.2795	–	–	1,3	36	8
B224A07145HP	B225A07145HP	7,145	.2813	9/32	–	1,3	36	8
–	B225A07200HP	7,200	.2835	–	–	1,3	36	8
–	B225A07300HP	7,300	.2874	–	–	1,4	36	8
B224A07366HP	B225A07366HP	7,366	.2900	–	L	1,4	36	8
B224A07400HP	B225A07400HP	7,400	.2913	–	–	1,4	36	8
B224A07500HP	B225A07500HP	7,500	.2953	–	–	1,4	36	8
B224A07541HP	B225A07541HP	7,541	.2969	19/64	–	1,4	36	8
–	B225A07600HP	7,600	.2992	–	–	1,4	36	8
–	B225A07700HP	7,700	.3031	–	–	1,4	36	8
–	B225A07800HP	7,800	.3071	–	–	1,5	36	8
–	B225A07900HP	7,900	.3110	–	–	1,5	36	8
B224A07938HP	B225A07938HP	7,938	.3125	5/16	–	1,5	36	8
B224A08000HP	B225A08000HP	8,000	.3150	–	–	1,5	36	8
–	B225A08100HP	8,100	.3189	–	–	1,5	40	10
B224A08200HP	B225A08200HP	8,200	.3228	–	–	1,5	40	10
–	B225A08300HP	8,300	.3268	–	–	1,6	40	10
B224A08334HP	B225A08334HP	8,334	.3281	21/64	–	1,6	40	10
–	B225A08400HP	8,400	.3307	–	–	1,6	40	10
B224A08433HP	B225A08433HP	8,433	.3320	–	Q	1,6	40	10

(continued)

(B224/B225_HP • ~3 x D/~5 x D continued)

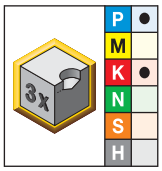


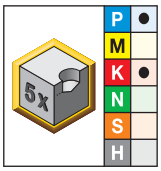


short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B224A08500HP	B225A08500HP	8,500	.3346	–	–	1,6	40	10
–	B225A08600HP	8,600	.3386	–	–	1,6	40	10
B224A08700HP	B225A08700HP	8,700	.3425	–	–	1,6	40	10
B224A08733HP	B225A08733HP	8,733	.3438	11/32	–	1,6	40	10
B224A08800HP	B225A08800HP	8,800	.3465	–	–	1,6	40	10
B224A08839HP	B225A08839HP	8,839	.3480	–	S	1,7	40	10
–	B225A08900HP	8,900	.3504	–	–	1,7	40	10
B224A09000HP	B225A09000HP	9,000	.3543	–	–	1,7	40	10
B224A09093HP	B225A09093HP	9,093	.3580	–	T	1,7	40	10
–	B225A09100HP	9,100	.3583	–	–	1,7	40	10
B224A09129HP	B225A09129HP	9,129	.3594	23/64	–	1,7	40	10
–	B225A09200HP	9,200	.3622	–	–	1,7	40	10
–	B225A09300HP	9,300	.3661	–	–	1,7	40	10
–	B225A09347HP	9,347	.3680	–	U	1,7	40	10
B224A09400HP	B225A09400HP	9,400	.3701	–	–	1,8	40	10
B224A09500HP	B225A09500HP	9,500	.3740	–	–	1,8	40	10
B224A09525HP	B225A09525HP	9,525	.3750	3/8	–	1,8	40	10
–	B225A09600HP	9,600	.3780	–	–	1,8	40	10
–	B225A09700HP	9,700	.3819	–	–	1,8	40	10
–	B225A09800HP	9,800	.3858	–	–	1,8	40	10
–	B225A09900HP	9,900	.3898	–	–	1,8	40	10
B224A09921HP	B225A09921HP	9,921	.3906	25/64	–	1,9	40	10
B224A10000HP	B225A10000HP	10,000	.3937	–	–	1,9	40	10
–	B225A10100HP	10,100	.3976	–	–	1,9	45	12
B224A10200HP	B225A10200HP	10,200	.4016	–	–	1,9	45	12
B224A10300HP	B225A10300HP	10,300	.4055	–	–	1,9	45	12
B224A10320HP	B225A10320HP	10,320	.4063	13/32	–	1,9	45	12
B224A10400HP	B225A10400HP	10,400	.4094	–	–	1,9	45	12
B224A10500HP	B225A10500HP	10,500	.4134	–	–	2,0	45	12
–	B225A10600HP	10,600	.4173	–	–	2,0	45	12
–	B225A10700HP	10,700	.4213	–	–	2,0	45	12
B224A10716HP	B225A10716HP	10,716	.4219	27/64	–	2,0	45	12
B224A10800HP	B225A10800HP	10,800	.4252	–	–	2,0	45	12
–	B225A10900HP	10,900	.4291	–	–	2,0	45	12
B224A11000HP	B225A11000HP	11,000	.4331	–	–	2,1	45	12
–	B225A11100HP	11,100	.4370	–	–	2,1	45	12
B224A11113HP	B225A11113HP	11,113	.4375	7/16	–	2,1	45	12
–	B225A11200HP	11,200	.4409	–	–	2,1	45	12
–	B225A11300HP	11,300	.4449	–	–	2,1	45	12
–	B225A11400HP	11,400	.4488	–	–	2,1	45	12
B224A11500HP	B225A11500HP	11,500	.4528	–	–	2,1	45	12
B224A11509HP	B225A11509HP	11,509	.4531	29/64	–	2,1	45	12
–	B225A11600HP	11,600	.4567	–	–	2,2	45	12
–	B225A11700HP	11,700	.4606	–	–	2,2	45	12
–	B225A11800HP	11,800	.4646	–	–	2,2	45	12
–	B225A11900HP	11,900	.4685	–	–	2,2	45	12
B224A11908HP	B225A11908HP	11,908	.4688	15/32	–	2,2	45	12
B224A12000HP	B225A12000HP	12,000	.4724	–	–	2,2	45	12
–	B225A12100HP	12,100	.4764	–	–	2,3	45	14
–	B225A12200HP	12,200	.4803	–	–	2,3	45	14
B224A12300HP	B225A12300HP	12,300	.4843	–	–	2,3	45	14
B224A12304HP	B225A12304HP	12,304	.4844	31/64	–	2,3	45	14

(continued)

(B224/B225_HP • ~3 x D/~5 x D continued)

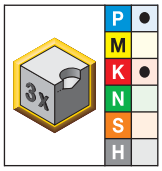


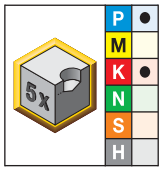


short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B225A12400HP	12,400	.4882	–	–	2,3	45	14
B224A12500HP	B225A12500HP	12,500	.4921	–	–	2,3	45	14
–	B225A12600HP	12,600	.4961	–	–	2,3	45	14
B224A12700HP	B225A12700HP	12,700	.5000	1/2	–	2,4	45	14
B224A12800HP	B225A12800HP	12,800	.5039	–	–	2,4	45	14
–	B225A12900HP	12,900	.5079	–	–	2,4	45	14
B224A13000HP	B225A13000HP	13,000	.5118	–	–	2,4	45	14
B224A13096HP	–	13,096	.5156	33/64	–	2,4	45	14
B224A13100HP	B225A13100HP	13,100	.5157	–	–	2,4	45	14
–	B225A13200HP	13,200	.5197	–	–	2,5	45	14
–	B225A13300HP	13,300	.5236	–	–	2,5	45	14
–	B225A13400HP	13,400	.5276	–	–	2,5	45	14
B224A13495HP	B225A13495HP	13,495	.5313	17/32	–	2,5	45	14
B224A13500HP	B225A13500HP	13,500	.5315	–	–	2,5	45	14
–	B225A13600HP	13,600	.5354	–	–	2,5	45	14
–	B225A13700HP	13,700	.5394	–	–	2,6	45	14
–	B225A13800HP	13,800	.5433	–	–	2,6	45	14
B224A13891HP	B225A13891HP	13,891	.5469	35/64	–	2,6	45	14
–	B225A13900HP	13,900	.5472	–	–	2,6	45	14
B224A14000HP	B225A14000HP	14,000	.5512	–	–	2,6	45	14
–	B225A14100HP	14,100	.5551	–	–	2,6	48	16
–	B225A14200HP	14,200	.5591	–	–	2,6	48	16
B224A14288HP	B225A14288HP	14,288	.5625	9/16	–	2,7	48	16
–	B225A14300HP	14,300	.5630	–	–	2,7	48	16
–	B225A14400HP	14,400	.5669	–	–	2,7	48	16
B224A14500HP	B225A14500HP	14,500	.5709	–	–	2,7	48	16
–	B225A14600HP	14,600	.5748	–	–	2,7	48	16
B224A14684HP	B225A14684HP	14,684	.5781	37/64	–	2,7	48	16
–	B225A14700HP	14,700	.5787	–	–	2,7	48	16
–	B225A14800HP	14,800	.5827	–	–	2,8	48	16
–	B225A14900HP	14,900	.5866	–	–	2,8	48	16
–	B225A15000HP	15,000	.5906	–	–	2,8	48	16
B224A15083HP	B225A15083HP	15,083	.5938	19/32	–	2,8	48	16
–	B225A15100HP	15,100	.5945	–	–	2,8	48	16
–	B225A15200HP	15,200	.5984	–	–	2,8	48	16
–	B225A15300HP	15,300	.6024	–	–	2,8	48	16
–	B225A15400HP	15,400	.6063	–	–	2,9	48	16
B224A15479HP	B225A15479HP	15,479	.6094	39/64	–	2,9	48	16
B224A15500HP	B225A15500HP	15,500	.6102	–	–	2,9	48	16
B224A15600HP	B225A15600HP	15,600	.6142	–	–	2,9	48	16
–	B225A15700HP	15,700	.6181	–	–	2,9	48	16
–	B225A15800HP	15,800	.6220	–	–	2,9	48	16
B224A15875HP	B225A15875HP	15,875	.6250	5/8	–	3,0	48	16
–	B225A15900HP	15,900	.6260	–	–	3,0	48	16
B224A16000HP	B225A16000HP	16,000	.6299	–	–	3,0	48	16
–	B225A16100HP	16,100	.6339	–	–	3,0	48	18
B224A16500HP	B225A16500HP	16,500	.6496	–	–	3,1	48	18
–	B225A16670HP	16,670	.6563	21/32	–	3,1	48	18

(continued)

(B224/B225_HP • ~3 x D/~5 x D continued)





short • KCPK15	long • KCPK15	D1 diameter mm	in	fraction	wire size	L5	LS	D
B224A17000HP	B225A17000HP	17,000	.6693	–	–	3,2	48	18
B224A17463HP	B225A17463HP	17,463	.6875	11/16	–	3,2	48	18
B224A17500HP	B225A17500HP	17,500	.6890	–	–	3,3	48	18
–	B225A17700HP	17,700	.6969	–	–	3,3	48	18
B224A18000HP	B225A18000HP	18,000	.7087	–	–	3,3	48	18
–	B225A18500HP	18,500	.7283	–	–	3,4	50	20
B224A19000HP	B225A19000HP	19,000	.7480	–	–	3,5	50	20
B224A19050HP	B225A19050HP	19,050	.7500	3/4	–	3,5	50	20
–	B225A19200HP	19,200	.7559	–	–	3,6	50	20
–	B225A19250HP	19,250	.7579	–	–	3,6	50	20
–	B225A19300HP	19,300	.7598	–	–	3,6	50	20
–	B225A19500HP	19,500	.7677	–	–	3,6	50	20
B224A20000HP	B225A20000HP	20,000	.7874	–	–	3,7	50	20
–	B225A20500HP	20,500	.8071	–	–	3,8	50	20
–	B225A21000HP	21,000	.8268	–	–	3,9	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Drills • B224HP, B225HP Series • Grade KCPK15™ • Through Coolant or MQL (Minimum Quantity Lubricant) for Drill Diameters 3–20mm

Material Group		Cutting Speed – vc Range – m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	130	240	290	mm/r	0,09 - 0,18	0,11 - 0,21	0,14 - 0,25	0,16 - 0,34	0,18 - 0,39	0,20 - 0,43	0,22 - 0,51	0,26 - 0,58
	2	190	230	270	mm/r	0,09 - 0,18	0,11 - 0,21	0,14 - 0,25	0,16 - 0,34	0,18 - 0,39	0,20 - 0,43	0,22 - 0,51	0,26 - 0,58
	3	130	160	190	mm/r	0,01 - 0,11	0,12 - 0,21	0,14 - 0,24	0,16 - 0,34	0,18 - 0,39	0,20 - 0,43	0,22 - 0,51	0,26 - 0,58
	4	110	150	170	mm/r	0,07 - 0,15	0,09 - 0,18	0,12 - 0,20	0,15 - 0,28	0,17 - 0,33	0,19 - 0,37	0,22 - 0,43	0,25 - 0,48
	6	110	150	190	mm/r	0,07 - 0,13	0,11 - 0,11	0,12 - 0,20	0,15 - 0,28	0,17 - 0,33	0,19 - 0,37	0,22 - 0,43	0,25 - 0,48

YPC Beyond™ Drills with Through Coolant for Iron Materials

Primary Application

The all new B25_YPC Series Solid Carbide Drills are specifically engineered to deliver best-in-class hole quality and longest tool life in cast iron, ductile iron, CGI, and ADI. Operate these drills with standard through coolant or MQL.

The B25_YPC Beyond Solid Carbide Drill combines unique Kennametal technologies, such as the Y-TECH™ flute spacing, the HP-point geometry, the KCK10™ Beyond grade, and the latest, proprietary post-coat treatment technology into one tool.

Features and Benefits

Y-TECH Technology with Uneven Flute-to-Flute Angle

- Unbalanced forces by design avoid chipping on margin lands.

Three-Margin Lands

- Reduce pendulum motion by directing forces towards third margin for superior hole accuracy (cylindricity, constant diameter, hole straightness).

New HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.
- Highest possible feed rates.

Corner Chamfer

- Avoids breakout when drilling through holes in grey iron.
- Significantly increases tool life at elevated speeds and feeds.

KCK10 Beyond Grade

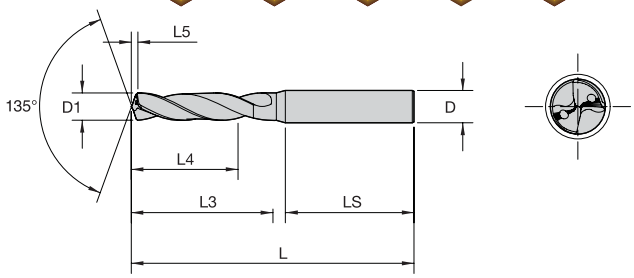
- The grade contains multiple layers of PVD coating offering outstanding wear resistance for the drilling of cast irons.
- The highly polished surface ensures superior chip evacuation even when low-pressure coolant or MQL is applied.

Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.
- Using Kennametal Slim Line hydraulic chucks together with standard B25_YPC is recommended if workpiece contours need to be bypassed.

F-Shank

- For standard line items with F-shank, please refer to the e-catalogue on www.kennametal.com.

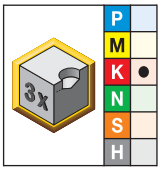


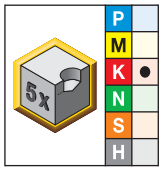
NEW!

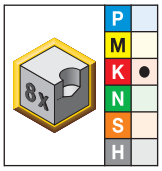
beyond

For information on L, L3, and L4 max, see the Solid Carbide foldout table.

B254/B255/B256_YPC • ~3 x D/~5 x D/~8 x D





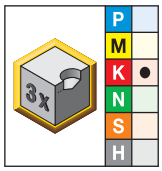


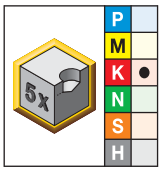
● first choice
○ alternate choice

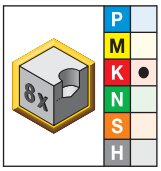
short • KCK10	long • KCK10	extra long • KCK10	D1 diameter mm	in	fraction	wire size	L5	LS	D
B254A03000YPC	B255A03000YPC	B256A03000YPC	3,000	.1181	–	–	0,9	36	6
B254A03048YPC	B255A03048YPC	B256A03048YPC	3,048	.1200	–	31	0,9	36	6
B254A03175YPC	B255A03175YPC	B256A03175YPC	3,175	.1250	1/8	–	0,9	36	6
B254A03200YPC	B255A03200YPC	B256A03200YPC	3,200	.1260	–	–	0,9	36	6
B254A03250YPC	B255A03250YPC	–	3,250	.1280	–	–	0,9	36	6
–	–	B256A03264YPC	3,264	.1285	–	30	0,9	36	6
B254A03300YPC	B255A03300YPC	B256A03300YPC	3,300	.1299	–	–	0,9	36	6
–	B255A03400YPC	–	3,400	.1339	–	–	1,0	36	6
B254A03454YPC	B255A03454YPC	–	3,454	.1360	–	29	1,0	36	6
B254A03500YPC	B255A03500YPC	B256A03500YPC	3,500	.1378	–	–	1,0	36	6
B254A03571YPC	B255A03571YPC	B256A03571YPC	3,571	.1406	9/64	–	1,0	36	6
B254A03600YPC	B255A03600YPC	–	3,600	.1417	–	–	1,0	36	6
–	–	B256A03658YPC	3,658	.1440	–	27	1,0	36	6
B254A03700YPC	B255A03700YPC	B256A03700YPC	3,700	.1457	–	–	1,0	36	6
B254A03734YPC	B255A03734YPC	–	3,734	.1470	–	26	1,1	36	6
B254A03797YPC	B255A03797YPC	–	3,797	.1495	–	25	1,1	36	6
B254A03800YPC	B255A03800YPC	B256A03800YPC	3,800	.1496	–	–	1,1	36	6
B254A03861YPC	B255A03861YPC	–	3,861	.1520	–	24	1,1	36	6
B254A03970YPC	B255A03970YPC	B256A03970YPC	3,970	.1563	5/32	–	1,1	36	6
B254A04000YPC	B255A04000YPC	B256A04000YPC	4,000	.1575	–	–	1,1	36	6
B254A04039YPC	B255A04039YPC	–	4,039	.1590	–	21	1,1	36	6
–	–	B256A04090YPC	4,090	.1610	–	20	1,1	36	6
B254A04100YPC	B255A04100YPC	B256A04100YPC	4,100	.1614	–	–	1,1	36	6
B254A04200YPC	B255A04200YPC	B256A04200YPC	4,200	.1654	–	–	1,2	36	6
–	B255A04217YPC	–	4,217	.1660	–	19	1,2	36	6
–	B255A04300YPC	B256A04300YPC	4,300	.1693	–	–	1,2	36	6
B254A04366YPC	B255A04366YPC	B256A04366YPC	4,366	.1719	11/64	–	1,2	36	6
B254A04496YPC	B255A04496YPC	–	4,496	.1770	–	16	1,2	36	6
B254A04500YPC	B255A04500YPC	B256A04500YPC	4,500	.1772	–	–	1,2	36	6
B254A04572YPC	B255A04572YPC	–	4,572	.1800	–	15	1,3	36	6
–	B255A04600YPC	–	4,600	.1811	–	–	1,3	36	6
–	–	B256A04623YPC	4,623	.1820	–	14	1,3	36	6
B254A04700YPC	B255A04700YPC	B256A04700YPC	4,700	.1850	–	13	1,3	36	6
B254A04763YPC	B255A04763YPC	–	4,763	.1875	3/16	–	1,3	36	6
B254A04800YPC	B255A04800YPC	B256A04800YPC	4,800	.1890	–	12	1,3	36	6
–	–	B256A04852YPC	4,852	.1910	–	11	1,3	36	6
–	B255A04900YPC	–	4,900	.1929	–	–	1,3	36	6
B254A05000YPC	B255A05000YPC	B256A05000YPC	5,000	.1969	–	–	1,4	36	6
B254A05055YPC	B255A05055YPC	–	5,055	.1990	–	8	1,4	36	6
B254A05100YPC	B255A05100YPC	B256A05100YPC	5,100	.2008	–	–	1,4	36	6

(continued)

(B254/B255/B256_YPC • ~3 x D/~5 x D/~8 x D continued)



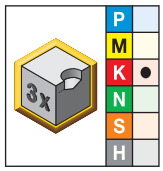


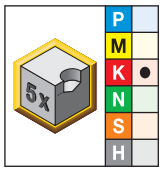


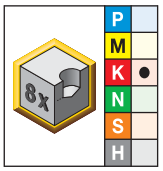
short • KCK10	long • KCK10	extra long • KCK10	D1 diameter mm	in	fraction	wire size	L5	LS	D
B254A05106YPC	B255A05106YPC	–	5,106	.2010	–	7	1,4	36	6
B254A05159YPC	B255A05159YPC	B256A05159YPC	5,159	.2031	13/64	–	1,4	36	6
–	B255A05200YPC	B256A05200YPC	5,200	.2047	–	–	1,4	36	6
–	B255A05250YPC	–	5,250	.2067	–	–	1,4	36	6
B254A05300YPC	B255A05300YPC	B256A05300YPC	5,300	.2087	–	–	1,4	36	6
–	B255A05400YPC	–	5,400	.2126	–	–	1,5	36	6
B254A05410YPC	B255A05410YPC	–	5,410	.2130	–	3	1,5	36	6
B254A05500YPC	B255A05500YPC	B256A05500YPC	5,500	.2165	–	–	1,5	36	6
B254A05558YPC	B255A05558YPC	–	5,558	.2188	7/32	–	1,5	36	6
B254A05600YPC	B255A05600YPC	B256A05600YPC	5,600	.2205	–	–	1,5	36	6
–	–	B256A05616YPC	5,616	.2211	–	2	1,5	36	6
B254A05700YPC	B255A05700YPC	B256A05700YPC	5,700	.2244	–	–	1,5	36	6
B254A05791YPC	B255A05791YPC	–	5,791	.2280	–	1	1,6	36	6
B254A05800YPC	B255A05800YPC	B256A05800YPC	5,800	.2283	–	–	1,6	36	6
–	–	B256A05900YPC	5,900	.2323	–	–	1,6	36	6
B254A05944YPC	B255A05944YPC	–	5,944	.2340	–	A	1,6	36	6
B254A05954YPC	B255A05954YPC	B256A05954YPC	5,954	.2344	15/64	–	1,6	36	6
B254A06000YPC	B255A06000YPC	B256A06000YPC	6,000	.2362	–	–	1,6	36	6
B254A06100YPC	B255A06100YPC	–	6,100	.2402	–	–	1,6	36	8
B254A06200YPC	B255A06200YPC	B256A06200YPC	6,200	.2441	–	–	1,7	36	8
–	B255A06300YPC	–	6,300	.2480	–	–	1,7	36	8
B254A06350YPC	B255A06350YPC	B256A06350YPC	6,350	.2500	1/4	E	1,7	36	8
–	B255A06400YPC	B256A06400YPC	6,400	.2520	–	–	1,7	36	8
B254A06500YPC	B255A06500YPC	B256A06500YPC	6,500	.2559	–	–	1,7	36	8
B254A06528YPC	B255A06528YPC	–	6,528	.2570	–	F	1,7	36	8
B254A06600YPC	B255A06600YPC	B256A06600YPC	6,600	.2598	–	–	1,8	36	8
–	B255A06630YPC	–	6,630	.2610	–	G	1,8	36	8
B254A06700YPC	B255A06700YPC	B256A06700YPC	6,700	.2638	–	–	1,8	36	8
B254A06746YPC	B255A06746YPC	–	6,746	.2656	17/64	–	1,8	36	8
B254A06800YPC	B255A06800YPC	B256A06800YPC	6,800	.2677	–	–	1,8	36	8
B254A06900YPC	B255A06900YPC	–	6,900	.2717	–	–	1,8	36	8
B254A06909YPC	B255A06909YPC	–	6,909	.2720	–	I	1,8	36	8
B254A07000YPC	B255A07000YPC	B256A07000YPC	7,000	.2756	–	–	1,9	36	8
B254A07100YPC	–	–	7,100	.2795	–	–	1,9	36	8
–	B255A07145YPC	–	7,145	.2813	9/32	–	1,9	36	8
–	B255A07200YPC	–	7,200	.2835	–	–	1,9	36	8
–	B255A07300YPC	B256A07300YPC	7,300	.2874	–	–	1,9	36	8
B254A07366YPC	B255A07366YPC	–	7,366	.2900	–	L	1,9	36	8
B254A07400YPC	B255A07400YPC	–	7,400	.2913	–	–	2,0	36	8
B254A07493YPC	B255A07493YPC	–	7,493	.2950	–	M	2,0	36	8
B254A07500YPC	B255A07500YPC	B256A07500YPC	7,500	.2953	–	–	2,0	36	8
B254A07541YPC	B255A07541YPC	–	7,541	.2969	19/64	–	2,0	36	8
B254A07600YPC	B255A07600YPC	B256A07600YPC	7,600	.2992	–	–	2,0	36	8
–	B255A07700YPC	–	7,700	.3031	–	–	2,0	36	8
B254A07800YPC	B255A07800YPC	B256A07800YPC	7,800	.3071	–	–	2,1	36	8
B254A07900YPC	B255A07900YPC	–	7,900	.3110	–	–	2,1	36	8
B254A07938YPC	B255A07938YPC	–	7,938	.3125	5/16	–	2,1	36	8
B254A08000YPC	B255A08000YPC	B256A08000YPC	8,000	.3150	–	–	2,1	36	8
B254A08100YPC	B255A08100YPC	–	8,100	.3189	–	–	2,1	40	10
B254A08200YPC	B255A08200YPC	B256A08200YPC	8,200	.3228	–	–	2,1	40	10
–	B255A08300YPC	B256A08300YPC	8,300	.3268	–	–	2,2	40	10
B254A08334YPC	B255A08334YPC	–	8,334	.3281	21/64	–	2,2	40	10

(continued)

(B254/B255/B256_YPC • ~3 x D/~5 x D/~8 x D continued)



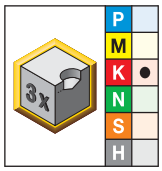


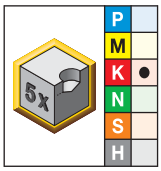


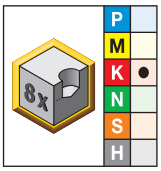
short • KCK10	long • KCK10	extra long • KCK10	D1 diameter mm	in	fraction	wire size	L5	LS	D
B254A08400YPC	–	–	8,400	.3307	–	–	2,2	40	10
B254A08433YPC	B255A08433YPC	–	8,433	.3320	–	Q	2,2	40	10
B254A08500YPC	B255A08500YPC	B256A08500YPC	8,500	.3346	–	–	2,2	40	10
B254A08600YPC	B255A08600YPC	B256A08600YPC	8,600	.3386	–	–	2,2	40	10
B254A08700YPC	B255A08700YPC	B256A08700YPC	8,700	.3425	–	–	2,3	40	10
B254A08733YPC	B255A08733YPC	–	8,733	.3438	11/32	–	2,3	40	10
B254A08800YPC	B255A08800YPC	B256A08800YPC	8,800	.3465	–	–	2,3	40	10
B254A08839YPC	B255A08839YPC	–	8,839	.3480	–	S	2,3	40	10
B254A08900YPC	B255A08900YPC	–	8,900	.3504	–	–	2,3	40	10
B254A09000YPC	B255A09000YPC	B256A09000YPC	9,000	.3543	–	–	2,3	40	10
B254A09093YPC	B255A09093YPC	–	9,093	.3580	–	T	2,4	40	10
B254A09100YPC	B255A09100YPC	B256A09100YPC	9,100	.3583	–	–	2,4	40	10
B254A09129YPC	B255A09129YPC	–	9,129	.3594	23/64	–	2,4	40	10
B254A09200YPC	B255A09200YPC	B256A09200YPC	9,200	.3622	–	–	2,4	40	10
–	B255A09300YPC	B256A09300YPC	9,300	.3661	–	–	2,4	40	10
–	–	B256A09347YPC	9,347	.3680	–	U	2,4	40	10
B254A09400YPC	B255A09400YPC	B256A09400YPC	9,400	.3701	–	–	2,4	40	10
B254A09500YPC	B255A09500YPC	B256A09500YPC	9,500	.3740	–	–	2,5	40	10
B254A09525YPC	B255A09525YPC	–	9,525	.3750	3/8	–	2,5	40	10
–	B255A09600YPC	B256A09600YPC	9,600	.3780	–	–	2,5	40	10
–	B255A09700YPC	B256A09700YPC	9,700	.3819	–	–	2,5	40	10
B254A09800YPC	B255A09800YPC	B256A09800YPC	9,800	.3858	–	–	2,5	40	10
B254A09921YPC	B255A09921YPC	–	9,921	.3906	25/64	–	2,6	40	10
B254A10000YPC	B255A10000YPC	B256A10000YPC	10,000	.3937	–	–	2,6	40	10
B254A10200YPC	B255A10200YPC	B256A10200YPC	10,200	.4016	–	–	2,6	45	12
B254A10262YPC	B255A10262YPC	–	10,262	.4040	–	Y	2,6	45	12
B254A10300YPC	B255A10300YPC	B256A10300YPC	10,300	.4055	–	–	2,6	45	12
B254A10320YPC	B255A10320YPC	–	10,320	.4063	13/32	–	2,7	45	12
B254A10400YPC	B255A10400YPC	B256A10400YPC	10,400	.4094	–	–	2,7	45	12
B254A10490YPC	B255A10490YPC	–	10,490	.4130	–	Z	2,7	45	12
B254A10500YPC	B255A10500YPC	B256A10500YPC	10,500	.4134	–	–	2,7	45	12
–	B255A10600YPC	–	10,600	.4173	–	–	2,7	45	12
B254A10700YPC	–	B256A10700YPC	10,700	.4213	–	–	2,7	45	12
B254A10716YPC	B255A10716YPC	–	10,716	.4219	27/64	–	2,7	45	12
B254A10800YPC	B255A10800YPC	B256A10800YPC	10,800	.4252	–	–	2,8	45	12
B254A10900YPC	B255A10900YPC	–	10,900	.4291	–	–	2,8	45	12
B254A11000YPC	B255A11000YPC	B256A11000YPC	11,000	.4331	–	–	2,8	45	12
B254A11100YPC	B255A11100YPC	–	11,100	.4370	–	–	2,8	45	12
B254A11113YPC	B255A11113YPC	–	11,113	.4375	7/16	–	2,8	45	12
B254A11200YPC	B255A11200YPC	B256A11200YPC	11,200	.4409	–	–	2,9	45	12
–	B255A11300YPC	B256A11300YPC	11,300	.4449	–	–	2,9	45	12
B254A11500YPC	B255A11500YPC	B256A11500YPC	11,500	.4528	–	–	2,9	45	12
B254A11509YPC	B255A11509YPC	–	11,509	.4531	29/64	–	2,9	45	12
–	–	B256A11600YPC	11,600	.4567	–	–	3,0	45	12
–	B255A11700YPC	–	11,700	.4606	–	–	3,0	45	12
B254A11800YPC	B255A11800YPC	B256A11800YPC	11,800	.4646	–	–	3,0	45	12
B254A11900YPC	B255A11900YPC	–	11,900	.4685	–	–	3,0	45	12
B254A11908YPC	B255A11908YPC	–	11,908	.4688	15/32	–	3,0	45	12
B254A12000YPC	B255A12000YPC	B256A12000YPC	12,000	.4724	–	–	3,1	45	12
–	B255A12100YPC	–	12,100	.4764	–	–	3,1	45	14
B254A12200YPC	B255A12200YPC	B256A12200YPC	12,200	.4803	–	–	3,1	45	14
B254A12251YPC	B255A12251YPC	–	12,251	.4823	–	–	3,1	45	14

(continued)

(B254/B255/B256_YPC • ~3 x D/~5 x D/~8 x D continued)



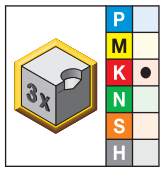


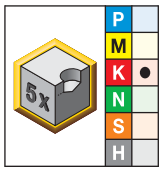


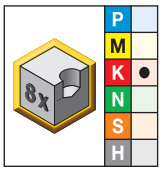
short • KCK10	long • KCK10	extra long • KCK10	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B255A12300YPC	B256A12300YPC	12,300	.4843	–	–	3,1	45	14
B254A12304YPC	B255A12304YPC	–	12,304	.4844	31/64	–	3,1	45	14
–	–	B256A12400YPC	12,400	.4882	–	–	3,1	45	14
B254A12500YPC	B255A12500YPC	B256A12500YPC	12,500	.4921	–	–	3,2	45	14
B254A12700YPC	B255A12700YPC	B256A12700YPC	12,700	.5000	1/2	–	3,2	45	14
B254A12800YPC	B255A12800YPC	B256A12800YPC	12,800	.5039	–	–	3,2	45	14
B254A13000YPC	B255A13000YPC	B256A13000YPC	13,000	.5118	–	–	3,3	45	14
B254A13096YPC	B255A13096YPC	B256A13096YPC	13,096	.5156	33/64	–	3,3	45	14
B254A13100YPC	–	–	13,100	.5157	–	–	3,3	45	14
B254A13200YPC	B255A13200YPC	B256A13200YPC	13,200	.5197	–	–	3,3	45	14
B254A13300YPC	–	–	13,300	.5236	–	–	3,4	45	14
B254A13400YPC	–	–	13,400	.5276	–	–	3,4	45	14
B254A13495YPC	B255A13495YPC	B256A13495YPC	13,495	.5313	17/32	–	3,4	45	14
B254A13500YPC	B255A13500YPC	B256A13500YPC	13,500	.5315	–	–	3,4	45	14
–	–	B256A13700YPC	13,700	.5394	–	–	3,5	45	14
B254A13800YPC	–	B256A13800YPC	13,800	.5433	–	–	3,5	45	14
B254A13891YPC	B255A13891YPC	B256A13891YPC	13,891	.5469	35/64	–	3,5	45	14
B254A14000YPC	B255A14000YPC	B256A14000YPC	14,000	.5512	–	–	3,5	45	14
B254A14100YPC	B255A14100YPC	–	14,100	.5551	–	–	3,6	48	16
B254A14288YPC	B255A14288YPC	–	14,288	.5625	9/16	–	3,6	48	16
B254A14500YPC	B255A14500YPC	B256A14500YPC	14,500	.5709	–	–	3,6	48	16
–	B255A14600YPC	–	14,600	.5748	–	–	3,7	48	16
B254A14684YPC	B255A14684YPC	B256A14684YPC	14,684	.5781	37/64	–	3,7	48	16
–	B255A14700YPC	–	14,700	.5787	–	–	3,7	48	16
B254A14750YPC	B255A14750YPC	–	14,750	.5807	–	–	3,7	48	16
B254A14800YPC	B255A14800YPC	B256A14800YPC	14,800	.5827	–	–	3,7	48	16
B254A15000YPC	B255A15000YPC	B256A15000YPC	15,000	.5906	–	–	3,8	48	16
B254A15083YPC	B255A15083YPC	B256A15083YPC	15,083	.5938	19/32	–	3,8	48	16
B254A15200YPC	B255A15200YPC	B256A15200YPC	15,200	.5984	–	–	3,8	48	16
B254A15250YPC	B255A15250YPC	–	15,250	.6004	–	–	3,8	48	16
–	–	B256A15300YPC	15,300	.6024	–	–	3,8	48	16
B254A15400YPC	B255A15400YPC	B256A15400YPC	15,400	.6063	–	–	3,9	48	16
B254A15479YPC	B255A15479YPC	B256A15479YPC	15,479	.6094	39/64	–	3,9	48	16
B254A15500YPC	B255A15500YPC	B256A15500YPC	15,500	.6102	–	–	3,9	48	16
B254A15600YPC	–	–	15,600	.6142	–	–	3,9	48	16
B254A15800YPC	B255A15800YPC	B256A15800YPC	15,800	.6220	–	–	4,0	48	16
B254A15875YPC	B255A15875YPC	–	15,875	.6250	5/8	–	4,0	48	16
B254A16000YPC	B255A16000YPC	B256A16000YPC	16,000	.6299	–	–	4,0	48	16
–	B255A16271YPC	B256A16271YPC	16,271	.6406	41/64	–	4,1	48	18
–	B255A16300YPC	B256A16300YPC	16,300	.6417	–	–	4,1	48	18
B254A16500YPC	B255A16500YPC	B256A16500YPC	16,500	.6496	–	–	4,1	48	18
B254A16670YPC	B255A16670YPC	B256A16670YPC	16,670	.6563	21/32	–	4,2	48	18
B254A16800YPC	B255A16800YPC	B256A16800YPC	16,800	.6614	–	–	4,2	48	18
–	B255A16900YPC	–	16,900	.6654	–	–	4,2	48	18
B254A17000YPC	B255A17000YPC	B256A17000YPC	17,000	.6693	–	–	4,2	48	18
–	B255A17200YPC	–	17,200	.6772	–	–	4,3	48	18
B254A17300YPC	B255A17300YPC	–	17,300	.6811	–	–	4,3	48	18
–	B255A17400YPC	B256A17400YPC	17,400	.6850	–	–	4,3	48	18
B254A17463YPC	B255A17463YPC	–	17,463	.6875	11/16	–	4,3	48	18
B254A17500YPC	B255A17500YPC	B256A17500YPC	17,500	.6890	–	–	4,3	48	18
B254A17800YPC	B255A17800YPC	B256A17800YPC	17,800	.7008	–	–	4,4	48	18
B254A17859YPC	B255A17859YPC	B256A17859YPC	17,859	.7031	45/64	–	4,4	48	18

(continued)

(B254/B255/B256_YPC • ~3 x D/~5 x D/~8 x D continued)







short • KCK10	long • KCK10	extra long • KCK10	D1 diameter mm	in	fraction	wire size	L5	LS	D
B254A18000YPC	B255A18000YPC	B256A18000YPC	18,000	.7087	–	–	4,5	48	18
B254A18200YPC	–	–	18,200	.7165	–	–	4,5	50	20
B254A18258YPC	B255A18258YPC	B256A18258YPC	18,258	.7188	23/32	–	4,5	50	20
B254A18500YPC	B255A18500YPC	B256A18500YPC	18,500	.7283	–	–	4,6	50	20
B254A18800YPC	B255A18800YPC	B256A18800YPC	18,800	.7402	–	–	4,7	50	20
B254A19000YPC	B255A19000YPC	B256A19000YPC	19,000	.7480	–	–	4,7	50	20
B254A19050YPC	B255A19050YPC	–	19,050	.7500	3/4	–	4,7	50	20
–	B255A19446YPC	B256A19446YPC	19,446	.7656	49/64	–	4,8	50	20
B254A19446YPC	–	–	19,446	.7656	49/64	–	4,8	50	20
B254A19500YPC	B255A19500YPC	B256A19500YPC	19,500	.7677	–	–	4,8	50	20
B254A19700YPC	B255A19700YPC	–	19,700	.7756	–	–	4,9	50	20
B254A19800YPC	B255A19800YPC	B256A19800YPC	19,800	.7795	–	–	4,9	50	20
B254A20000YPC	B255A20000YPC	B256A20000YPC	20,000	.7874	–	–	4,9	50	20
–	B255A20500YPC	–	20,500	.8071	–	–	5,1	50	20
B254A20638YPC	B255A20638YPC	B256A20638YPC	20,638	.8125	13/16	–	5,1	50	20
B254A21000YPC	B255A21000YPC	–	21,000	.8268	–	–	5,2	50	20
B254A22000YPC	B255A22000YPC	B256A22000YPC	22,000	.8661	–	–	5,4	50	20
B254A22225YPC	B255A22225YPC	B256A22225YPC	22,225	.8750	7/8	–	5,5	56	25
B254A23416YPC	B255A23416YPC	–	23,416	.9219	59/64	–	5,7	56	25
B254A24000YPC	B255A24000YPC	–	24,000	.9449	–	–	5,9	56	25
B254A25000YPC	B255A25000YPC	–	25,000	.9843	–	–	6,1	56	25
–	–	B256A25004YPC	25,004	.9844	63/64	–	6,1	56	25

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

YPC Drills • B25_YPC Series • Grade KCK10™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
K	1	130	**160**	210	mm/r	0,08 - 0,12	0,15 - 0,21	0,21 - 0,29	0,26 - 0,37	0,30 - 0,42	0,34 - 0,45	0,38 - 0,53	0,42 - 0,58
	2	90	**130**	180	mm/r	0,08 - 0,12	0,14 - 0,18	0,20 - 0,27	0,24 - 0,32	0,26 - 0,38	0,32 - 0,42	0,36 - 0,48	0,39 - 0,53
	3	70	**90**	130	mm/r	0,07 - 0,11	0,11 - 0,15	0,16 - 0,22	0,20 - 0,27	0,23 - 0,32	0,25 - 0,35	0,29 - 0,40	0,32 - 0,43

SE 4-Margin Drills with Through Coolant for Steel

Primary Application

B256 Series Solid Carbide Drills are the high-performance platform for mid-L/D applications in steel that require high accuracy and consistent hole straightness combined with excellent metal removal rates and long tool life.

Features and Benefits

SE Drill-Point Design

- Sculptured edge enables high feed rates.

Four-Margin Lands

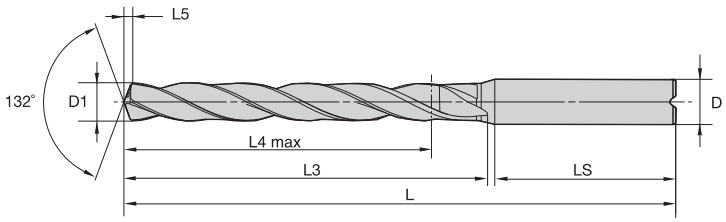
- Improves hole straightness.
- Improves hole alignment when drilling through cross holes.

KC7315™ Grade

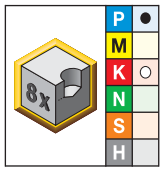
- Multilayer, TiAlN-based coating with high hot hardness allows 30% higher cutting speeds and constant tool life.
- Optimised tool surface finish ensures chip evacuation when drilling deeper holes.

Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.
- For follow-up operations, such as machining screw holes in connecting rods, the point angle of the step drill for the screw head should be adjusted.



B256 • ~8 x D



● first choice
○ alternate choice

extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
B256A05000	5,000	.1969	–	–	1,0	36	6
B256A05100	5,100	.2008	–	–	1,0	36	6
B256A05500	5,500	.2165	–	–	1,1	36	6
B256A05800	5,800	.2283	–	–	1,2	36	6
B256A06000	6,000	.2362	–	–	1,2	36	6
B256A06500	6,500	.2559	–	–	1,3	36	8
B256A06800	6,800	.2677	–	–	1,4	36	8
B256A07000	7,000	.2756	–	–	1,4	36	8
B256A07800	7,800	.3071	–	–	1,6	36	8
B256A08000	8,000	.3150	–	–	1,6	36	8
B256A08400	8,400	.3307	–	–	1,7	40	10
B256A08500	8,500	.3346	–	–	1,7	40	10
B256A08800	8,800	.3465	–	–	1,8	40	10
B256A09000	9,000	.3543	–	–	1,8	40	10
B256A09500	9,500	.3740	–	–	1,9	40	10
B256A10000	10,000	.3937	–	–	2,0	40	10
B256A10200	10,200	.4016	–	–	2,0	45	12
B256A10500	10,500	.4134	–	–	2,1	45	12
B256A11000	11,000	.4331	–	–	2,2	45	12
B256A11800	11,800	.4646	–	–	2,3	45	12
B256A12000	12,000	.4724	–	–	2,4	45	12
B256A12500	12,500	.4921	–	–	2,5	45	14
B256A13000	13,000	.5118	–	–	2,6	45	14
B256A13500	13,500	.5315	–	–	2,7	45	14
B256A14000	14,000	.5512	–	–	2,8	45	14
B256A15000	15,000	.5906	–	–	3,0	48	16
B256A16000	16,000	.6299	–	–	3,2	48	16

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

SE Drills • B256 Series • Grade KC7315™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	120	**145**	175	mm/r	0,08 - 0,11	0,09 - 0,15	0,11 - 0,15	0,13 - 0,19	0,13 - 0,22	0,15 - 0,27	0,18 - 0,33	0,22 - 0,37
	2	80	**100**	120	mm/r	0,08 - 0,11	0,08 - 0,13	0,09 - 0,17	0,15 - 0,21	0,16 - 0,25	0,18 - 0,33	0,22 - 0,42	0,26 - 0,50
	3	80	**90**	120	mm/r	0,08 - 0,11	0,09 - 0,15	0,11 - 0,15	0,13 - 0,19	0,13 - 0,22	0,15 - 0,27	0,18 - 0,33	0,22 - 0,37
	4	60	**70**	80	mm/r	0,06 - 0,09	0,07 - 0,13	0,09 - 0,13	0,11 - 0,15	0,11 - 0,17	0,13 - 0,22	0,15 - 0,27	0,17 - 0,30

HP Beyond™ 4-Margin Long-Length Drills with Through Coolant

beyond™

Primary Application

B269_HP Series Solid Carbide Drills are 12 x D, long-length drills, closing the gap between 8 x D drill (B256_SE) and 15 x D (B271_HP). They are designed for deep-hole applications without pilot drill in steel, cast iron, and stainless steel materials. Operate these drills with standard through coolant or MQL. The drills have a standard A-shank according to DIN 6535 HA (round cylindrical with 2mm steps).

Features and Benefits

Four-Margin Lands

- Improves hole straightness.
- Improves hole alignment when drilling through cross holes or inclined exits.

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.
- Eliminates the need for pilot drilling.

Unique Flute Design

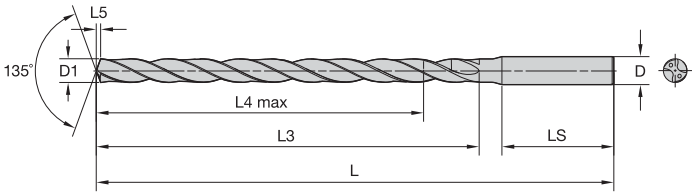
- Drastically improved chip evacuation.
- Better hole surface quality.

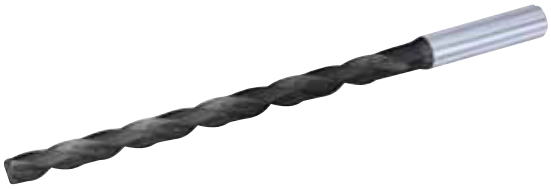
KCPK15™ Beyond Grade

- The grade is a multilayer, TiAlN-based coating with high hot hardness. It enables highest cutting speeds and enables the use in MQL applications.
- The highly polished surface ensures superior chip evacuation even when low-pressure coolant is applied.

Customisation

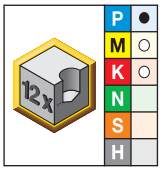
- Intermediate diameters available as engineered solutions.
- Length variations and step drills available as engineered solutions.





beyond

B269_HP • ~12 x D

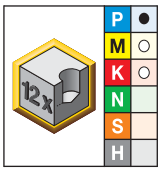


● first choice
○ alternate choice

KCPK15	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B269A03000HP	3,000	.1181	–	–	93	52	44	0,6	36	6
B269A03175HP	3,175	.1250	1/8	–	93	52	44	0,6	36	6
B269A03264HP	3,264	.1285	–	30	93	53	44	0,6	36	6
B269A03500HP	3,500	.1378	–	–	93	53	44	0,7	36	6
B269A03970HP	3,970	.1563	5/32	–	107	66	56	0,7	36	6
B269A04000HP	4,000	.1575	–	–	107	66	56	0,8	36	6
B269A04500HP	4,500	.1772	–	–	107	67	56	0,8	36	6
B269A04600HP	4,600	.1811	–	–	107	68	57	0,9	36	6
B269A04763HP	4,763	.1875	3/16	–	125	82	69	0,9	36	6
B269A04800HP	4,800	.1890	–	12	125	82	69	0,9	36	6
B269A05000HP	5,000	.1969	–	–	125	83	70	0,9	36	6
B269A05100HP	5,100	.2008	–	–	125	83	70	1,0	36	6
B269A05200HP	5,200	.2047	–	–	125	83	70	1,0	36	6
B269A05300HP	5,300	.2087	–	–	125	84	71	1,0	36	6
B269A05410HP	5,410	.2130	–	3	125	84	71	1,0	36	6
B269A05500HP	5,500	.2165	–	–	125	84	71	1,0	36	6
B269A05558HP	5,558	.2188	7/32	–	125	84	71	1,0	36	6
B269A05600HP	5,600	.2205	–	–	125	85	72	1,1	36	6
B269A05700HP	5,700	.2244	–	–	125	85	72	1,1	36	6
B269A05800HP	5,800	.2283	–	–	125	85	71	1,1	36	6
B269A06000HP	6,000	.2362	–	–	125	86	72	1,1	36	6
B269A06200HP	6,200	.2441	–	–	139	97	82	1,2	36	8
B269A06350HP	6,350	.2500	1/4	E	139	98	83	1,2	36	8
B269A06500HP	6,500	.2559	–	–	139	98	83	1,2	36	8
B269A06528HP	6,528	.2570	–	F	139	98	83	1,2	36	8
B269A06600HP	6,600	.2598	–	–	139	99	84	1,2	36	8
B269A06746HP	6,746	.2656	17/64	–	139	99	83	1,3	36	8
B269A06800HP	6,800	.2677	–	–	139	99	83	1,3	36	8
B269A06909HP	6,909	.2720	–	I	139	100	84	1,3	36	8
B269A07000HP	7,000	.2756	–	–	139	100	84	1,3	36	8
B269A07145HP	7,145	.2813	9/32	–	153	111	94	1,3	36	8
B269A07500HP	7,500	.2953	–	–	153	112	95	1,4	36	8
B269A07541HP	7,541	.2969	19/64	–	153	112	95	1,4	36	8
B269A07700HP	7,700	.3031	–	–	153	113	96	1,4	36	8
B269A07800HP	7,800	.3071	–	–	153	113	95	1,5	36	8
B269A07938HP	7,938	.3125	5/16	–	153	114	96	1,5	36	8
B269A08000HP	8,000	.3150	–	–	153	114	96	1,5	36	8
B269A08100HP	8,100	.3189	–	–	185	136	116	1,5	40	10
B269A08334HP	8,334	.3281	21/64	–	185	137	117	1,6	40	10
B269A08433HP	8,433	.3320	–	Q	185	137	117	1,6	40	10

(continued)

(B269_HP • ~12 x D continued)



KCPK15	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B269A08500HP	8,500	.3346	–	–	185	137	117	1,6	40	10
B269A08700HP	8,700	.3425	–	–	185	138	118	1,6	40	10
B269A08733HP	8,733	.3438	11/32	–	185	138	117	1,6	40	10
B269A09000HP	9,000	.3543	–	–	185	139	118	1,7	40	10
B269A09100HP	9,100	.3583	–	–	185	139	118	1,7	40	10
B269A09129HP	9,129	.3594	23/64	–	185	139	118	1,7	40	10
B269A09500HP	9,500	.3740	–	–	185	140	119	1,8	40	10
B269A09525HP	9,525	.3750	3/8	–	185	140	119	1,8	40	10
B269A09921HP	9,921	.3906	25/64	–	185	142	120	1,9	40	10
B269A10000HP	10,000	.3937	–	–	185	142	120	1,9	40	10
B269A10200HP	10,200	.4016	–	–	218	164	140	1,9	45	12
B269A10300HP	10,300	.4055	–	–	218	165	141	1,9	45	12
B269A10320HP	10,320	.4063	13/32	–	218	165	141	1,9	45	12
B269A10500HP	10,500	.4134	–	–	218	165	141	2,0	45	12
B269A10716HP	10,716	.4219	27/64	–	218	166	142	2,0	45	12
B269A10800HP	10,800	.4252	–	–	218	166	141	2,0	45	12
B269A11000HP	11,000	.4331	–	–	218	167	142	2,1	45	12
B269A11113HP	11,113	.4375	7/16	–	218	167	142	2,1	45	12
B269A11500HP	11,500	.4528	–	–	218	168	143	2,1	45	12
B269A11800HP	11,800	.4646	–	–	218	169	143	2,2	45	12
B269A12000HP	12,000	.4724	–	–	218	170	144	2,2	45	12
B269A12100HP	12,100	.4764	–	–	246	192	164	2,3	45	14
B269A12304HP	12,304	.4844	31/64	–	246	193	165	2,3	45	14
B269A12500HP	12,500	.4921	–	–	246	193	165	2,3	45	14
B269A12700HP	12,700	.5000	1/2	–	246	194	166	2,4	45	14
B269A13000HP	13,000	.5118	–	–	246	195	166	2,4	45	14
B269A13100HP	13,100	.5157	–	–	246	195	166	2,4	45	14
B269A13500HP	13,500	.5315	–	–	246	196	167	2,5	45	14
B269A14000HP	14,000	.5512	–	–	246	198	168	2,6	45	14
B269A14100HP	14,100	.5551	–	–	277	220	188	2,6	48	16
B269A14288HP	14,288	.5625	9/16	–	277	220	188	2,7	48	16
B269A14500HP	14,500	.5709	–	–	277	221	189	2,7	48	16
B269A14684HP	14,684	.5781	37/64	–	277	222	190	2,7	48	16
B269A15000HP	15,000	.5906	–	–	277	223	190	2,8	48	16
B269A15500HP	15,500	.6102	–	–	277	224	191	2,9	48	16
B269A15875HP	15,875	.6250	5/8	–	277	225	192	3,0	48	16
B269A16000HP	16,000	.6299	–	–	277	226	192	3,0	48	16
B269A16500HP	16,500	.6496	–	–	305	249	213	3,1	48	18
B269A17000HP	17,000	.6693	–	–	305	250	214	3,2	48	18
B269A17463HP	17,463	.6875	11/16	–	305	252	215	3,2	48	18
B269A17500HP	17,500	.6890	–	–	305	252	215	3,3	48	18
B269A18000HP	18,000	.7087	–	–	305	253	216	3,3	48	18
B269A18500HP	18,500	.7283	–	–	334	277	237	3,4	50	20
B269A19000HP	19,000	.7480	–	–	334	278	238	3,5	50	20
B269A19050HP	19,050	.7500	3/4	–	334	279	239	3,5	50	20
B269A19500HP	19,500	.7677	–	–	334	280	239	3,6	50	20
B269A20000HP	20,000	.7874	–	–	334	281	240	3,7	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Drills • B269_HP Series • Grade KCPK15™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	100	140	150	mm/r	0,12 - 0,17	0,14 - 0,23	0,17 - 0,23	0,20 - 0,29	0,29 - 0,33	0,23 - 0,41	0,27 - 0,50	0,33 - 0,56
	2	70	100	110	mm/r	0,12 - 0,17	0,12 - 0,20	0,14 - 0,26	0,23 - 0,32	0,24 - 0,38	0,27 - 0,50	0,33 - 0,63	0,39 - 0,75
	3	70	90	110	mm/r	0,12 - 0,17	0,14 - 0,23	0,17 - 0,23	0,20 - 0,29	0,29 - 0,33	0,23 - 0,41	0,27 - 0,50	0,33 - 0,56
	4	60	70	90	mm/r	0,09 - 0,14	0,11 - 0,20	0,14 - 0,20	0,17 - 0,23	0,17 - 0,26	0,20 - 0,33	0,23 - 0,41	0,26 - 0,45
M	1	50	60	80	mm/r	0,03 - 0,08	0,06 - 0,13	0,08 - 0,10	0,10 - 0,20	0,12 - 0,22	0,13 - 0,23	0,15 - 0,25	0,18 - 0,28
	2	40	50	80	mm/r	0,03 - 0,08	0,06 - 0,13	0,08 - 0,10	0,10 - 0,20	0,12 - 0,22	0,13 - 0,23	0,15 - 0,25	0,18 - 0,28
	3	40	50	70	mm/r	0,03 - 0,08	0,06 - 0,13	0,08 - 0,10	0,10 - 0,20	0,12 - 0,22	0,13 - 0,23	0,15 - 0,25	0,18 - 0,28
K	1	90	150	150	mm/r	0,12 - 0,17	0,21 - 0,30	0,30 - 0,42	0,38 - 0,42	0,38 - 0,53	0,44 - 0,60	0,54 - 0,75	0,60 - 0,83
	2	80	120	120	mm/r	0,12 - 0,17	0,20 - 0,26	0,29 - 0,39	0,35 - 0,45	0,38 - 0,54	0,45 - 0,60	0,51 - 0,69	0,56 - 0,75
	3	80	80	140	mm/r	0,11 - 0,15	0,15 - 0,21	0,23 - 0,32	0,29 - 0,39	0,33 - 0,45	0,36 - 0,50	0,42 - 0,57	0,45 - 0,62

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HP Solid Carbide Deep-Hole Drills for Steel, Cast Iron, and Non-Ferrous Materials

Primary Application

B27_HPG Series Solid Carbide Drills are the optimum platform for drilling holes up to 30 x D in steel, cast iron, and stainless steel materials. Drill deep holes up to 4x faster than conventional HSS and gun drills. Application of MQL is possible.

The B27_HPS in the new uncoated KN25™ grade now offers the same advantages for drilling in non-ferrous materials such as aluminium, copper, and brass. These series are now available from 2,3–16mm (.09–.63") diameter and in lengths from 15–30 x D.

Features and Benefits

HP Drill-Point Design

- Low thrust.
- Excellent centring capabilities.
- Highest possible feed rates.

Four-Margin Lands

- Improves hole straightness.
- Improves hole alignment when drilling through cross holes.

Unique Flute Design

- Drastically improved chip evacuation.
- Better hole surface quality.

KC7425™ Grade (B27_HPG)

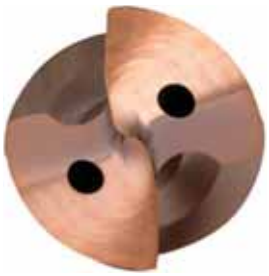
- A multilayer, AlCrN-TiSiN PVD coating provides outstanding wear resistance.
- New ultra-fine-grain carbide ensures process reliability at high feed rates.

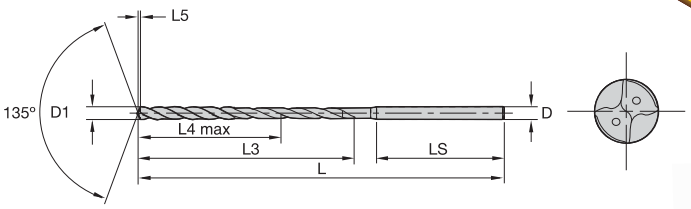
KN25 Grade (B27_HPS)

- The uncoated grade helps to prevent built-up edge when drilling aluminium and high-temp alloys.
- The highly polished surfaces of both grades ensure superior chip evacuation, even when low-pressure coolant or MQL is applied.

Customisation

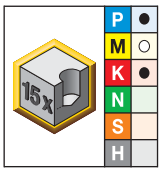
- Intermediate diameters available as semi-standards.
- Length variations — including even longer versions — available as engineered solutions.

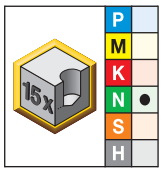




NEW!

B271Z_HPG/HPS • 15 x D



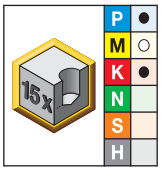


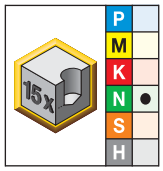
● first choice
○ alternate choice

KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B271Z02383KMG	B271Z02383KMS	2,383	.0938	3/32	–	86	51	44	0,4	30	3
B271Z02400KMG	B271Z02400KMS	2,400	.0945	–	–	86	51	44	0,4	30	3
B271Z02439KMG	B271Z02439KMS	2,439	.0960	–	41	86	51	44	0,5	30	3
B271Z02489KMG	B271Z02489KMS	2,489	.0980	–	40	86	51	44	0,5	30	3
B271Z02500KMG	B271Z02500KMS	2,500	.0984	–	–	86	51	44	0,5	30	3
B271Z02578KMG	B271Z02578KMS	2,578	.1015	–	38	86	51	44	0,5	30	3
B271Z02600KMG	B271Z02600KMS	2,600	.1024	–	–	86	51	44	0,5	30	3
B271Z02642KMG	B271Z02642KMS	2,642	.1040	–	37	86	51	44	0,5	30	3
B271Z02705KMG	B271Z02705KMS	2,705	.1065	–	36	86	52	45	0,5	30	3
B271Z02779KMG	B271Z02779KMS	2,779	.1094	7/64	–	86	52	45	0,5	30	3
B271Z02800KMG	B271Z02800KMS	2,800	.1102	–	–	86	52	45	0,5	30	3
B271Z02820KMG	B271Z02820KMS	2,820	.1110	–	34	86	52	45	0,5	30	3
B271Z02870KMG	B271Z02870KMS	2,870	.1130	–	33	86	52	45	0,5	30	3
B271Z02900KMG	B271Z02900KMS	2,900	.1142	–	–	86	52	45	0,5	30	3
B271Z02947KMG	B271Z02947KMS	2,947	.1160	–	32	86	52	45	0,5	30	3
B271Z03000HPG	B271Z03000HPS	3,000	.1181	–	–	86	52	45	0,6	30	3
B271Z03175HPG	B271Z03175HPS	3,175	.1250	1/8	–	105	67	58	0,6	32	4
–	B271Z03200HPS	3,200	.1260	–	–	105	67	58	0,6	32	4
B271Z03500HPG	B271Z03500HPS	3,500	.1378	–	–	105	68	59	0,6	32	4
B271Z03970HPG	B271Z03970HPS	3,970	.1563	5/32	–	105	70	60	0,7	32	4
B271Z04000HPG	B271Z04000HPS	4,000	.1575	–	–	105	70	60	0,7	32	4
B271Z04500HPG	B271Z04500HPS	4,500	.1772	–	–	124	85	74	0,8	34	5
B271Z04623HPG	–	4,623	.1820	–	14	124	86	75	0,9	34	5
B271Z04763HPG	B271Z04763HPS	4,763	.1875	3/16	–	124	86	75	0,9	34	5
B271Z05000HPG	B271Z05000HPS	5,000	.1969	–	–	124	87	75	0,9	34	5
B271Z05260HPG	–	5,260	.2071	–	–	143	102	89	1,0	36	6
B271Z05410HPG	–	5,410	.2130	–	3	143	102	89	1,0	36	6
B271Z05500HPG	B271Z05500HPS	5,500	.2165	–	–	143	102	89	1,0	36	6
B271Z05558HPG	–	5,558	.2188	7/32	–	143	102	89	1,0	36	6
B271Z05800HPG	–	5,800	.2283	–	–	143	103	89	1,1	36	6
B271Z06000HPG	B271Z06000HPS	6,000	.2362	–	–	143	104	90	1,1	36	6
B271Z06200HPG	B271Z06200HPS	6,200	.2441	–	–	162	118	103	1,1	38	7
B271Z06350HPG	B271Z06350HPS	6,350	.2500	1/4	E	162	119	104	1,2	38	7
B271Z06500HPG	B271Z06500HPS	6,500	.2559	–	–	162	119	104	1,2	38	7

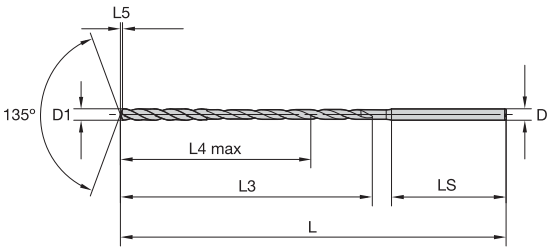
(continued)

(B271Z_HPG/HPS • 15 x D continued)



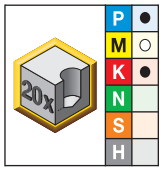


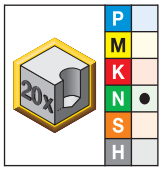
KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B271Z06528HPG	**–**	6,528	.2570	–	F	162	119	104	1,2	38	7
B271Z06746HPG	**B271Z06746HPS**	6,746	.2656	17/64	–	162	120	104	1,2	38	7
B271Z06909HPG	**–**	6,909	.2720	–	I	162	121	105	1,3	38	7
B271Z07000HPG	**B271Z07000HPS**	7,000	.2756	–	–	162	121	105	1,3	38	7
B271Z07145HPG	**B271Z07145HPS**	7,145	.2813	9/32	–	181	135	118	1,3	40	8
B271Z07500HPG	**B271Z07500HPS**	7,500	.2953	–	–	181	136	119	1,4	40	8
B271Z07541HPG	**–**	7,541	.2969	19/64	–	181	136	119	1,4	40	8
B271Z07938HPG	**–**	7,938	.3125	5/16	–	181	138	120	1,5	40	8
B271Z08000HPG	**B271Z08000HPS**	8,000	.3150	–	–	181	138	120	1,5	40	8
B271Z08334HPG	**–**	8,334	.3281	21/64	–	200	153	134	1,5	42	9
B271Z08433HPG	**–**	8,433	.3320	–	Q	200	153	134	1,6	42	9
B271Z08500HPG	**B271Z08500HPS**	8,500	.3346	–	–	200	153	134	1,6	42	9
B271Z08733HPG	**B271Z08733HPS**	8,733	.3438	11/32	–	200	154	134	1,6	42	9
B271Z09000HPG	**B271Z09000HPS**	9,000	.3543	–	–	200	155	135	1,7	42	9
B271Z09100HPG	**–**	9,100	.3583	–	–	219	169	148	1,7	44	10
B271Z09500HPG	**B271Z09500HPS**	9,500	.3740	–	–	219	170	149	1,8	44	10
B271Z09525HPG	**B271Z09525HPS**	9,525	.3750	3/8	–	219	170	149	1,8	44	10
B271Z09750HPG	**–**	9,750	.3839	–	–	219	171	149	1,8	44	10
B271Z10000HPG	**B271Z10000HPS**	10,000	.3937	–	–	219	172	150	1,8	44	10
B271Z10200HPG	**B271Z10200HPS**	10,200	.4016	–	–	238	186	163	1,9	46	11
B271Z10500HPG	**B271Z10500HPS**	10,500	.4134	–	–	238	187	164	1,9	46	11
B271Z10720HPG	**B271Z10720HPS**	10,720	.4220	–	–	238	188	165	2,0	46	11
B271Z11000HPG	**B271Z11000HPS**	11,000	.4331	–	–	238	189	165	2,0	46	11
B271Z11500HPG	**B271Z11500HPS**	11,500	.4528	–	–	257	204	179	2,1	48	12
B271Z12000HPG	**B271Z12000HPS**	12,000	.4724	–	–	257	206	180	2,2	48	12
B271Z12500HPG	**B271Z12500HPS**	12,500	.4921	–	–	276	221	194	2,3	50	13
B271Z12700HPG	**B271Z12700HPS**	12,700	.5000	1/2	–	276	222	195	2,3	50	13
B271Z13000HPG	**B271Z13000HPS**	13,000	.5118	–	–	276	223	195	2,4	50	13
B271Z13100HPG	**B271Z13100HPS**	13,100	.5157	–	–	295	237	208	2,4	52	14
B271Z13500HPG	**B271Z13500HPS**	13,500	.5315	–	–	295	238	209	2,5	52	14
B271Z14000HPG	**B271Z14000HPS**	14,000	.5512	–	–	295	240	210	2,6	52	14
B271Z14290HPG	**B271Z14290HPS**	14,290	.5626	–	–	314	255	224	2,6	54	15
B271Z14500HPG	**B271Z14500HPS**	14,500	.5709	–	–	314	255	224	2,7	54	15
B271Z15000HPG	**B271Z15000HPS**	15,000	.5906	–	–	314	257	225	2,8	54	15
B271Z15500HPG	**B271Z15500HPS**	15,500	.6102	–	–	333	272	239	2,9	56	16
B271Z15870HPG	**B271Z15870HPS**	15,870	.6248	–	–	333	273	240	2,9	56	16
B271Z16000HPG	**B271Z16000HPS**	16,000	.6299	–	–	333	274	240	3,0	56	16



NEW!

B272Z_HPG/HPS • 20 x D



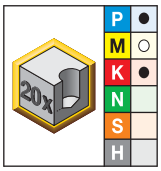


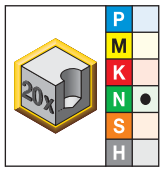
● first choice
○ alternate choice

KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B272Z02383KMG	B272Z02383KMS	2,383	.0938	3/32	–	101	63	56	0,4	30	3
B272Z02400KMG	B272Z02400KMS	2,400	.0945	–	–	101	63	56	0,4	30	3
B272Z02439KMG	B272Z02439KMS	2,439	.0960	–	41	101	63	56	0,5	30	3
B272Z02489KMG	B272Z02489KMS	2,489	.0980	–	40	101	63	56	0,5	30	3
B272Z02500KMG	B272Z02500KMS	2,500	.0984	–	–	101	63	56	0,5	30	3
B272Z02578KMG	B272Z02578KMS	2,578	.1015	–	38	101	64	57	0,5	30	3
B272Z02600KMG	B272Z02600KMS	2,600	.1024	–	–	101	64	57	0,5	30	3
B272Z02642KMG	B272Z02642KMS	2,642	.1040	–	37	101	65	58	0,5	30	3
B272Z02705KMG	B272Z02705KMS	2,705	.1065	–	36	101	65	58	0,5	30	3
B272Z02779KMG	B272Z02779KMS	2,779	.1094	7/64	–	101	66	59	0,5	30	3
B272Z02800KMG	B272Z02800KMS	2,800	.1102	–	–	101	66	59	0,5	30	3
B272Z02820KMG	B272Z02820KMS	2,820	.1110	–	34	101	66	59	0,5	30	3
B272Z02870KMG	B272Z02870KMS	2,870	.1130	–	33	101	66	59	0,5	30	3
B272Z02900KMG	B272Z02900KMS	2,900	.1142	–	–	101	67	60	0,5	30	3
B272Z02947KMG	B272Z02947KMS	2,947	.1160	–	32	101	67	60	0,5	30	3
B272Z03000HPG	B272Z03000HPS	3,000	.1181	–	–	101	67	60	0,6	30	3
B272Z03175HPG	B272Z03175HPS	3,175	.1250	1/8	–	125	83	74	0,6	32	4
–	B272Z03300HPS	3,300	.1299	–	–	125	84	75	0,6	32	4
B272Z03500HPG	B272Z03500HPS	3,500	.1378	–	–	125	86	77	0,6	32	4
B272Z03970HPG	B272Z03970HPS	3,970	.1563	5/32	–	125	89	79	0,7	32	4
B272Z04000HPG	B272Z04000HPS	4,000	.1575	–	–	125	90	80	0,7	32	4
B272Z04500HPG	B272Z04500HPS	4,500	.1772	–	–	149	108	97	0,8	34	5
B272Z04623HPG	–	4,623	.1820	–	14	149	109	98	0,9	34	5
B272Z04763HPG	B272Z04763HPS	4,763	.1875	3/16	–	149	110	99	0,9	34	5
B272Z05000HPG	B272Z05000HPS	5,000	.1969	–	–	149	112	100	0,9	34	5
B272Z05260HPG	–	5,260	.2071	–	–	173	128	115	1,0	36	6
B272Z05410HPG	–	5,410	.2130	–	3	173	129	116	1,0	36	6
B272Z05500HPG	B272Z05500HPS	5,500	.2165	–	–	173	130	117	1,0	36	6
B272Z05558HPG	–	5,558	.2188	7/32	–	173	130	117	1,0	36	6
B272Z05800HPG	–	5,800	.2283	–	–	173	132	118	1,1	36	6
B272Z06000HPG	B272Z06000HPS	6,000	.2362	–	–	173	134	120	1,1	36	6
B272Z06200HPG	B272Z06200HPS	6,200	.2441	–	–	197	149	134	1,1	38	7
B272Z06350HPG	B272Z06350HPS	6,350	.2500	1/4	E	197	151	136	1,2	38	7
B272Z06500HPG	B272Z06500HPS	6,500	.2559	–	–	197	152	137	1,2	38	7
B272Z06528HPG	–	6,528	.2570	–	F	197	152	137	1,2	38	7
B272Z06746HPG	B272Z06746HPS	6,746	.2656	17/64	–	197	154	138	1,2	38	7
B272Z06909HPG	–	6,909	.2720	–	I	197	155	139	1,3	38	7
B272Z07000HPG	B272Z07000HPS	7,000	.2756	–	–	197	156	140	1,3	38	7
B272Z07145HPG	B272Z07145HPS	7,145	.2813	9/32	–	221	171	154	1,3	40	8
B272Z07500HPG	B272Z07500HPS	7,500	.2953	–	–	221	174	157	1,4	40	8
B272Z07541HPG	–	7,541	.2969	19/64	–	221	174	157	1,4	40	8
B272Z07938HPG	–	7,938	.3125	5/16	–	221	177	159	1,5	40	8

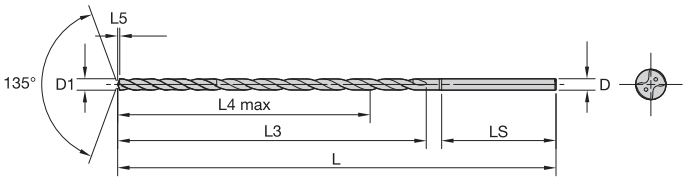
(continued)

(B272Z_HPG/HPS • 20 x D continued)



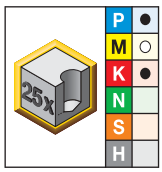


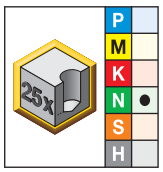
KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B272Z08000HPG	B272Z08000HPS	8,000	.3150	–	–	221	178	160	1,5	40	8
B272Z08334HPG	–	8,334	.3281	21/64	–	245	194	175	1,5	42	9
B272Z08433HPG	–	8,433	.3320	–	Q	245	195	176	1,6	42	9
B272Z08500HPG	B272Z08500HPS	8,500	.3346	–	–	245	196	177	1,6	42	9
B272Z08733HPG	B272Z08733HPS	8,733	.3438	11/32	–	245	198	178	1,6	42	9
B272Z09000HPG	B272Z09000HPS	9,000	.3543	–	–	245	200	180	1,7	42	9
B272Z09100HPG	–	9,100	.3583	–	–	269	215	194	1,7	44	10
B272Z09500HPG	–	9,500	.3740	–	–	269	218	197	1,8	44	10
B272Z09525HPG	B272Z09525HPS	9,525	.3750	3/8	–	269	218	197	1,8	44	10
B272Z09750HPG	B272Z09750HPS	9,750	.3839	–	–	269	220	198	1,8	44	10
B272Z10000HPG	B272Z10000HPS	10,000	.3937	–	–	269	222	200	1,8	44	10
B272Z10200HPG	B272Z10200HPS	10,200	.4016	–	–	293	237	214	1,9	46	11
B272Z10500HPG	B272Z10500HPS	10,500	.4134	–	–	293	240	217	1,9	46	11
B272Z10720HPG	B272Z10720HPS	10,720	.4220	–	–	293	242	219	2,0	46	11
B272Z11000HPG	B272Z11000HPS	11,000	.4331	–	–	293	244	220	2,0	46	11
B272Z11500HPG	B272Z11500HPS	11,500	.4528	–	–	317	262	237	2,1	48	12
B272Z12000HPG	B272Z12000HPS	12,000	.4724	–	–	317	266	240	2,2	48	12
B272Z12500HPG	B272Z12500HPS	12,500	.4921	–	–	341	284	257	2,3	50	13
B272Z12700HPG	B272Z12700HPS	12,700	.5000	1/2	–	341	285	258	2,3	50	13
B272Z13000HPG	B272Z13000HPS	13,000	.5118	–	–	341	288	260	2,4	50	13
B272Z13100HPG	B272Z13100HPS	13,100	.5157	–	–	365	302	273	2,4	52	14
B272Z13500HPG	B272Z13500HPS	13,500	.5315	–	–	365	306	277	2,5	52	14
B272Z14000HPG	B272Z14000HPS	14,000	.5512	–	–	365	310	280	2,6	52	14
B272Z14290HPG	B272Z14290HPS	14,290	.5626	–	–	389	326	295	2,6	54	15
B272Z14500HPG	B272Z14500HPS	14,500	.5709	–	–	389	328	297	2,7	54	15
B272Z15000HPG	B272Z15000HPS	15,000	.5906	–	–	389	332	300	2,8	54	15
B272Z15500HPG	B272Z15500HPS	15,500	.6102	–	–	413	350	317	2,9	56	16
B272Z15870HPG	B272Z15870HPS	15,870	.6248	–	–	413	353	320	2,9	56	16
B272Z16000HPG	B272Z16000HPS	16,000	.6299	–	–	413	354	320	3,0	56	16



NEW!

B273Z_HPG/HPS • 25 x D



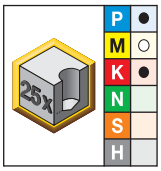


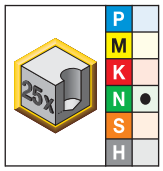
● first choice
○ alternate choice

KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B273Z02383KMG	B273Z02383KMS	2,383	.0938	3/32	–	116	74	67	0,4	30	3
B273Z02400KMG	B273Z02400KMS	2,400	.0945	–	–	116	75	68	0,4	30	3
B273Z02439KMG	B273Z02439KMS	2,439	.0960	–	41	116	75	68	0,5	30	3
B273Z02489KMG	B273Z02489KMS	2,489	.0980	–	40	116	76	69	0,5	30	3
B273Z02500KMG	B273Z02500KMS	2,500	.0984	–	–	116	76	69	0,5	30	3
B273Z02578KMG	B273Z02578KMS	2,578	.1015	–	38	116	77	70	0,5	30	3
B273Z02600KMG	B273Z02600KMS	2,600	.1024	–	–	116	77	70	0,5	30	3
B273Z02642KMG	B273Z02642KMS	2,642	.1040	–	37	116	78	71	0,5	30	3
B273Z02705KMG	B273Z02705KMS	2,705	.1065	–	36	116	79	72	0,5	30	3
B273Z02779KMG	B273Z02779KMS	2,779	.1094	7/64	–	116	80	73	0,5	30	3
B273Z02800KMG	B273Z02800KMS	2,800	.1102	–	–	116	80	73	0,5	30	3
B273Z02820KMG	B273Z02820KMS	2,820	.1110	–	34	116	80	73	0,5	30	3
B273Z02870KMG	B273Z02870KMS	2,870	.1130	–	33	116	81	74	0,5	30	3
B273Z02900KMG	B273Z02900KMS	2,900	.1142	–	–	116	81	74	0,5	30	3
B273Z02947KMG	B273Z02947KMS	2,947	.1160	–	32	116	82	75	0,5	30	3
B273Z03000HPG	B273Z03000HPS	3,000	.1181	–	–	116	82	75	0,6	30	3
B273Z03175HPG	B273Z03175HPS	3,175	.1250	1/8	–	145	99	90	0,6	32	4
B273Z03500HPG	B273Z03500HPS	3,500	.1378	–	–	145	103	94	0,6	32	4
B273Z04000HPG	B273Z04000HPS	4,000	.1575	–	–	145	110	100	0,7	32	4
B273Z04500HPG	B273Z04500HPS	4,500	.1772	–	–	174	130	119	0,8	34	5
B273Z05000HPG	B273Z05000HPS	5,000	.1969	–	–	174	137	125	0,9	34	5
B273Z05500HPG	B273Z05500HPS	5,500	.2165	–	–	203	157	144	1,0	36	6
B273Z06000HPG	B273Z06000HPS	6,000	.2362	–	–	203	164	150	1,1	36	6
B273Z06350HPG	B273Z06350HPS	6,350	.2500	1/4	E	232	182	167	1,2	38	7
B273Z06500HPG	B273Z06500HPS	6,500	.2559	–	–	232	184	169	1,2	38	7
B273Z06746HPG	B273Z06746HPS	6,746	.2656	17/64	–	232	187	171	1,2	38	7
B273Z07000HPG	B273Z07000HPS	7,000	.2756	–	–	232	191	175	1,3	38	7
B273Z08000HPG	B273Z08000HPS	8,000	.3150	–	–	261	218	200	1,5	40	8
B273Z08500HPG	B273Z08500HPS	8,500	.3346	–	–	290	238	219	1,6	42	9
B273Z08733HPG	B273Z08733HPS	8,733	.3438	11/32	–	290	241	221	1,6	42	9
B273Z09000HPG	B273Z09000HPS	9,000	.3543	–	–	290	245	225	1,7	42	9
B273Z09100HPG	–	9,100	.3583	–	–	319	260	239	1,7	44	10
B273Z09525HPG	B273Z09525HPS	9,525	.3750	3/8	–	319	266	245	1,8	44	10
B273Z10000HPG	B273Z10000HPS	10,000	.3937	–	–	319	272	250	1,8	44	10

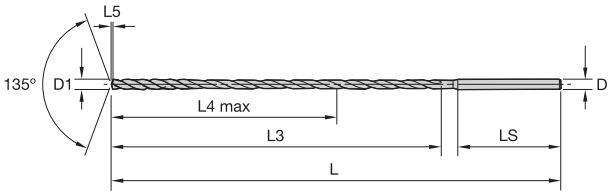
(continued)

(B273Z_HPG/HPS • 25 x D continued)



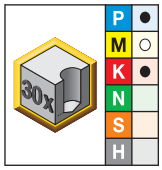


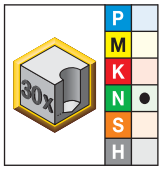
KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B273Z10200HPG	B273Z10200HPS	10,200	.4016	–	–	348	288	265	1,9	46	11
B273Z10500HPG	B273Z10500HPS	10,500	.4134	–	–	348	292	269	1,9	46	11
B273Z10720HPG	B273Z10720HPS	10,720	.4220	–	–	348	295	272	2,0	46	11
B273Z11000HPG	B273Z11000HPS	11,000	.4331	–	–	348	299	275	2,0	46	11
B273Z11500HPG	B273Z11500HPS	11,500	.4528	–	–	377	319	294	2,1	48	12
B273Z12000HPG	B273Z12000HPS	12,000	.4724	–	–	377	326	300	2,2	48	12
B273Z12500HPG	B273Z12500HPS	12,500	.4921	–	–	406	346	319	2,3	50	13
B273Z12700HPG	B273Z12700HPS	12,700	.5000	1/2	–	406	349	322	2,3	50	13
B273Z13000HPG	B273Z13000HPS	13,000	.5118	–	–	406	353	325	2,4	50	13
B273Z13100HPG	B273Z13100HPS	13,100	.5157	–	–	435	368	339	2,4	52	14
B273Z13500HPG	B273Z13500HPS	13,500	.5315	–	–	435	373	344	2,5	52	14
B273Z14000HPG	B273Z14000HPS	14,000	.5512	–	–	435	380	350	2,6	52	14
B273Z14290HPG	B273Z14290HPS	14,290	.5626	–	–	464	397	366	2,6	54	15
B273Z14500HPG	B273Z14500HPS	14,500	.5709	–	–	464	400	369	2,7	54	15
B273Z15000HPG	B273Z15000HPS	15,000	.5906	–	–	464	407	375	2,8	54	15



NEW!

B274Z_HPG/HPS • 30 x D



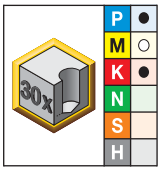


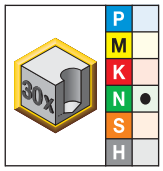
● first choice
○ alternate choice

KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B274Z02383KMG	B274Z02383KMS	2,383	.0938	3/32	–	131	86	79	0,4	30	3
B274Z02400KMG	B274Z02400KMS	2,400	.0945	–	–	131	87	80	0,4	30	3
B274Z02439KMG	B274Z02439KMS	2,439	.0960	–	41	131	87	80	0,5	30	3
B274Z02489KMG	B274Z02489KMS	2,489	.0980	–	40	131	88	81	0,5	30	3
B274Z02500KMG	B274Z02500KMS	2,500	.0984	–	–	131	88	81	0,5	30	3
B274Z02578KMG	B274Z02578KMS	2,578	.1015	–	38	131	90	83	0,5	30	3
B274Z02600KMG	B274Z02600KMS	2,600	.1024	–	–	131	90	83	0,5	30	3
B274Z02642KMG	B274Z02642KMS	2,642	.1040	–	37	131	91	84	0,5	30	3
B274Z02705KMG	B274Z02705KMS	2,705	.1065	–	36	131	92	85	0,5	30	3
B274Z02779KMG	B274Z02779KMS	2,779	.1094	7/64	–	131	94	87	0,5	30	3
B274Z02800KMG	B274Z02800KMS	2,800	.1102	–	–	131	94	87	0,5	30	3
B274Z02820KMG	B274Z02820KMS	2,820	.1110	–	34	131	94	87	0,5	30	3
B274Z02870KMG	B274Z02870KMS	2,870	.1130	–	33	131	95	88	0,5	30	3
B274Z02900KMG	B274Z02900KMS	2,900	.1142	–	–	131	96	89	0,5	30	3
B274Z02947KMG	B274Z02947KMS	2,947	.1160	–	32	131	97	90	0,5	30	3
B274Z03000HPG	B274Z03000HPS	3,000	.1181	–	–	131	97	90	0,6	30	3
B274Z03175HPG	B274Z03175HPS	3,175	.1250	1/8	–	165	115	106	0,6	32	4
B274Z03500HPG	B274Z03500HPS	3,500	.1378	–	–	165	121	112	0,6	32	4
B274Z03970HPG	–	3,970	.1563	5/32	–	165	129	119	0,7	32	4
B274Z04000HPG	B274Z04000HPS	4,000	.1575	–	–	165	130	120	0,7	32	4
B274Z04300HPG	–	4,300	.1693	–	–	199	149	138	0,8	34	5
B274Z04500HPG	B274Z04500HPS	4,500	.1772	–	–	199	153	142	0,8	34	5
B274Z04763HPG	–	4,763	.1875	3/16	–	199	157	146	0,9	34	5
B274Z05000HPG	B274Z05000HPS	5,000	.1969	–	–	199	162	150	0,9	34	5
B274Z05500HPG	B274Z05500HPS	5,500	.2165	–	–	233	185	172	1,0	36	6
B274Z06000HPG	B274Z06000HPS	6,000	.2362	–	–	233	194	180	1,1	36	6
B274Z06350HPG	B274Z06350HPS	6,350	.2500	1/4	E	267	214	199	1,2	38	7
B274Z06500HPG	B274Z06500HPS	6,500	.2559	–	–	267	217	202	1,2	38	7
–	B274Z06746HPS	6,746	.2656	17/64	–	267	221	205	1,2	38	7
B274Z06800HPG	–	6,800	.2677	–	–	267	222	206	1,3	38	7
B274Z07000HPG	B274Z07000HPS	7,000	.2756	–	–	267	226	210	1,3	38	7
B274Z07938HPG	–	7,938	.3125	5/16	–	301	257	239	1,5	40	8

(continued)

(B274Z_HPG/HPS • 30 x D continued)





KC7425	KN25	D1 diameter mm	in	fraction	wire size	L	L3	L4 max	L5	LS	D
B274Z08000HPG	B274Z08000HPS	8,000	.3150	–	–	301	258	240	1,5	40	8
B274Z08334HPG	–	8,334	.3281	21/64	–	335	278	259	1,5	42	9
B274Z08500HPG	B274Z08500HPS	8,500	.3346	–	–	335	281	262	1,6	42	9
–	B274Z08733HPS	8,733	.3438	11/32	–	335	285	265	1,6	42	9
B274Z09000HPG	B274Z09000HPS	9,000	.3543	–	–	335	290	270	1,7	42	9
B274Z09100HPG	–	9,100	.3583	–	–	369	306	285	1,7	44	10
B274Z09525HPG	B274Z09525HPS	9,525	.3750	3/8	–	369	313	292	1,8	44	10
B274Z10000HPG	B274Z10000HPS	10,000	.3937	–	–	369	322	300	1,8	44	10
B274Z10200HPG	B274Z10200HPS	10,200	.4016	–	–	403	339	316	1,9	46	11
B274Z10500HPG	B274Z10500HPS	10,500	.4134	–	–	403	345	322	1,9	46	11
B274Z10720HPG	B274Z10720HPS	10,720	.4220	–	–	403	349	326	2,0	46	11
B274Z11000HPG	B274Z11000HPS	11,000	.4331	–	–	403	354	330	2,0	46	11
B274Z11500HPG	–	11,500	.4528	–	–	437	377	363	2,1	48	12
–	B274Z11500HPS	11,500	.4528	–	–	437	377	352	2,1	48	12
B274Z12000HPG	B274Z12000HPS	12,000	.4724	–	–	437	386	360	2,2	48	12
B274Z12500HPG	B274Z12500HPS	12,500	.4921	–	–	471	409	382	2,3	50	13
B274Z12700HPG	B274Z12700HPS	12,700	.5000	1/2	–	471	412	385	2,3	50	13
B274Z13000HPG	B274Z13000HPS	13,000	.5118	–	–	471	418	390	2,4	50	13

Tolerance • Metric

nominal size range	D1 HPG tolerance h7	D1HPS tolerance h8	D tolerance h6
1–3	0,000/-0,010	0,000/-0,014	0,000/-0,006
>3–6	0,000/-0,012	0,000/-0,018	0,000/-0,008
>6–10	0,000/-0,015	0,000/-0,022	0,000/-0,009
>10–18	0,000/-0,018	0,000/-0,027	0,000/-0,011

The B27_ deep-hole drill series offers an increase of up to 100% in metal removal rates (MRR) compared to competitive gun and HSS drills. It also enables up to 20–30% increased MRR compared to competitive solid carbide products. This MRR increase means bottom-line savings to customers in throughput, machine time, and personnel hours.

Increased Drill Head
Reduces contact with hole wall.

135° HP Point Geometry
Excellent centring ability.

Four-Margin Design
Stability increases tool life.

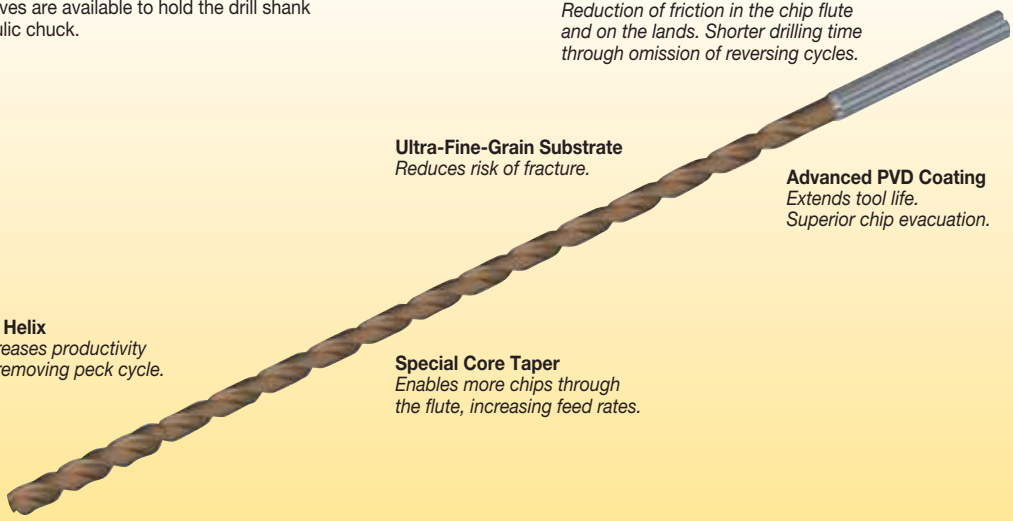
To achieve the best tool performance, we recommend using the deep-hole drill with a hydraulic chuck.

Reduction sleeves are available to hold the drill shank with the hydraulic chuck.

Unique New Polished Surface
Reduction of friction in the chip flute and on the lands. Shorter drilling time through omission of reversing cycles.

Ultra-Fine-Grain Substrate
Reduces risk of fracture.

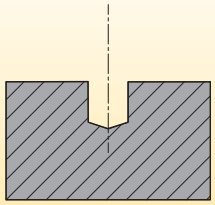
Advanced PVD Coating
Extends tool life.
Superior chip evacuation.



30° Helix
Increases productivity by removing peck cycle.

Special Core Taper
Enables more chips through the flute, increasing feed rates.

	12mm hydraulic reducer sleeve		20mm hydraulic reducer sleeve		25mm hydraulic reducer sleeve		32mm hydraulic reducer sleeve		.500" hydraulic reducer sleeve		.750" hydraulic reducer sleeve	
D1	order number	catalogue number	order number	catalogue number	order number	catalogue number	order number	catalogue number	order number	catalogue number	order number	catalogue number
3	3026450	12MHC030M	3026648	20MHC030M	3026662	25MHC030M	–	–	2248993	50HC030M	2248995	75HC030M
4	3026451	12MHC040M	3026649	20MHC040M	3026663	25MHC040M	–	–	1606050	50HC040M	2248996	75HC040M
5	3026452	12MHC050M	3026650	20MHC050M	3026664	25MHC050M	–	–	2248994	50HC050M	2248997	75HC050M
6	3026643	12MHC060M	3026651	20MHC060M	3026665	25MHC060M	3026675	32MHC060M	1606061	50HC060M	1093271	75HC060M
7	3026644	12MHC070M	3026652	20MHC070M	3026666	25MHC070M	3026676	32MHC070M	–	–	–	–
8	3026645	12MHC080M	3026653	20MHC080M	3026667	25MHC080M	3026677	32MHC080M	1606062	50HC080M	1093272	75HC080M
9	3026646	12MHC090M	3026654	20MHC090M	3026668	25MHC090M	3026678	32MHC090M	–	–	–	–
10	3026647	12MHC100M	3026655	20MHC100M	3026669	25MHC100M	3026679	32MHC100M	1606064	50HC100M	1093273	75HC100M
11	–	–	3026656	20MHC110M	–	–	3026680	32MHC110M	–	–	–	–
12	–	–	3026657	20MHC120M	3026670	25MHC120M	3026681	32MHC120M	–	–	1093524	75HC120M
13	–	–	3026658	20MHC130M	–	–	3026682	32MHC130M	–	–	–	–
14	–	–	3026659	20MHC140M	3026671	25MHC140M	3026683	32MHC140M	–	–	1093525	75HC140M
15	–	–	3026660	20MHC150M	–	–	3026684	32MHC150M	–	–	–	–
16	–	–	3026661	20MHC160M	3026672	25MHC160M	3026685	32MHC160M	–	–	1093526	75HC160M

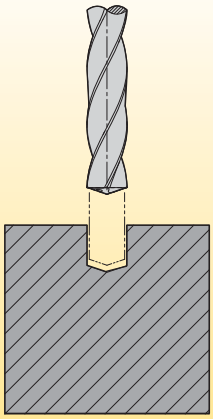


1) Pilot/Pre-Drill Hole

- Drill: B976A… KC7315™ or another drill with a 140° point angle.
- Depth of pilot: minimum 2 x D.
- Drill Ø = nominal Ø up to nominal +0,010mm (+.0004").
- Apply catalogue recommended speeds and feeds.

Recommendations:

- Use only a conical (B976A) or split-point drill to pilot (do not use an SE-HP drill).
- Use a hydraulic chuck to achieve minimum tool runout.
- Be sure the machine tool and setup are rigid.
- Check the pilot drill for wear. Excessive wear can lead to premature wear on the B27_ cutting edge and possibly catastrophic failure.



2) Feed B27_ into Pilot Hole:

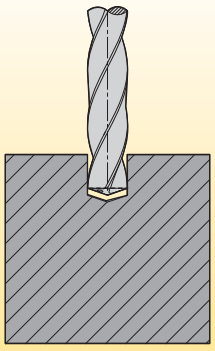
- Drill: B27_
- 1.000 RPM and recommended feed rate, no rapid traverse.
- Depth: 0,25–0,30mm (.010–.012") above the bottom of pilot hole.

Recommendations:

The coolant channels of the B27_ are smaller than typical Kennametal drills. Be sure that a steady supply of coolant is delivered through the coolant channels to the cutting edges. If coolant supply is not steady or is unequal through both channels, check:

1. Coolant filtering system.
2. Sealing of adaptor/spindle.
3. Chips blocking the coolant hole on the drill shank.

NOTE: Reduce cutting speed to minimise imbalances in machine spindle/adaptor. On MQL applications, make sure that the coolant is directly supplied from the chuck into the back end of the drill shank.



3) Drill Hole:

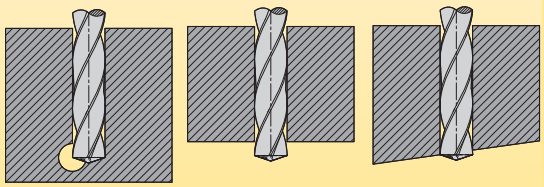
Cutting Parameters: start recommended speed and feed rate at 0,25–0,30mm (.010–.012") from the bottom of the pilot hole.

Recommendations:

DO NOT PECK OR DWELL up to 30 x D!

With long-chipping steel materials, it may be necessary to increase feed rate by 10–20% to provide optimal chip control. For long-chipping aluminium materials, it may be necessary to decrease feed rate and increase speed.

Reduce feed rate on angled exits and cross holes by 50–60%.



NOTE: Feed recommendations are usually higher than with conventional solid carbide drills.

4) Drill Retraction:

Cutting Parameters: 50 RPM and feed rate 2 m/min (40mm/rev or 1.6 IPR).

NOTE: Reduce cutting speed to minimise imbalances in machine spindle/adaptor.

Deep-Hole Drills • B27_HPG Series • Grade KC7425™ • Through Coolant for Drill Diameters 3–16mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0
P	1	70	**80**	90	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54
	2	70	**80**	90	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54
	3	60	**75**	90	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54
	4	60	**70**	80	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54
M	1	40	**50**	60	mm/r	0,05 - 0,09	0,07- 0,12	0,09 - 0,14	0,10 - 0,15	0,11 - 0,16	0,12 - 0,17	0,13 - 0,18	0,14 - 0,19
	2	30	**40**	50	mm/r	0,04 - 0,08	0,06 - 0,10	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,16	0,12 - 0,17	0,13 - 0,18
	3	30	**40**	50	mm/r	0,04 - 0,08	0,06 - 0,10	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,16	0,12 - 0,17	0,13 - 0,18
K	1	60	**80**	100	mm/r	0,15 - 0,19	0,17 - 0,20	0,19 - 0,26	0,24 - 0,32	0,27 - 0,40	0,32 - 0,45	0,38 - 0,52	0,45 - 0,59
	2	60	**70**	80	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54
	3	40	**70**	100	mm/r	0,15 - 0,18	0,16 - 0,19	0,18 - 0,25	0,22 - 0,30	0,25 - 0,37	0,30 - 0,42	0,35 - 0,48	0,40 - 0,54

Deep-Hole Drills • B27_HPS Series • Grade KN25™ • Through Coolant for Drill Diameters 3–16mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0
N	1	120	**200**	300	mm/r	0,12 - 0,17	0,13 - 0,18	0,15 - 0,24	0,19 - 0,29	0,26 - 0,35	0,31 - 0,40	0,35 - 0,45	0,41 - 0,51
	2	120	**170**	300	mm/r	0,13 - 0,18	0,14 - 0,19	0,16 - 0,25	0,20 - 0,30	0,28 - 0,37	0,33 - 0,42	0,38 - 0,48	0,44 - 0,54
	3	100	**150**	300	mm/r	0,13 - 0,18	0,14 - 0,19	0,16 - 0,25	0,20 - 0,30	0,28 - 0,37	0,33 - 0,42	0,38 - 0,48	0,44 - 0,54
	5	80	**200**	300	mm/r	0,03 - 0,05	0,03 - 0,06	0,03 - 0,06	0,04 - 0,06	0,05 - 0,07	0,05 - 0,08	0,05 - 0,08	0,06 - 0,09

HP Drills with Through Coolant for High-Temperature Alloys

Primary Application

B28_ Series Solid Carbide Drills offer a material-specific design and grade for machining high-temperature-resistant alloys such as titanium alloys and nickel-based alloys in aerospace applications. This drill minimises subsurface deformation.

Features and Benefits

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.

Straight Cutting Edge

- Optimised chip formation with less stress and heat generation.
- Rigid wedge at the cutting corner to withstand high thermal and mechanical stress.

Unique Flute Design

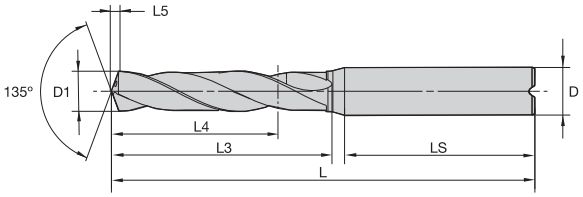
- Drastically improved chip evacuation.

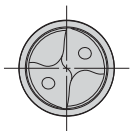
K715™ Grade

- Specified, uncoated 9% cobalt fine-grain carbide.
- The uncoated grade helps to prevent built-up edge in drilling aluminium and high-temp alloys.

Customisation

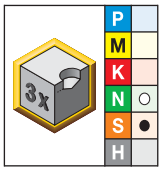
- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.

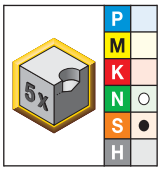




For information on L, L3, and L4 max, see the Solid Carbide foldout table.

B284/B285 • ~3 x D/~5 x D





● first choice
○ alternate choice

short • K715	long • K715	D1 diameter mm	in	fraction	wire size	L5	LS	D
B284A04000	–	4,000	.1575	–	–	0,7	36	6
B284A04200	–	4,200	.1654	–	–	0,8	36	6
B284A04500	–	4,500	.1772	–	–	0,8	36	6
B284A05000	**B285A05000**	5,000	.1969	–	–	0,9	36	6
B284A05100	–	5,100	.2008	–	–	0,9	36	6
B284A05500	**B285A05500**	5,500	.2165	–	–	1,0	36	6
–	**B285A05900**	5,900	.2323	–	–	1,1	36	6
B284A06000	**B285A06000**	6,000	.2362	–	–	1,1	36	6
–	**B285A06350**	6,350	.2500	1/4	E	1,2	36	8
B284A06800	–	6,800	.2677	–	–	1,3	36	8
B284A07000	–	7,000	.2756	–	–	1,3	36	8
B284A07500	–	7,500	.2953	–	–	1,4	36	8
–	**B285A08000**	8,000	.3150	–	–	1,5	36	8
B284A08500	–	8,500	.3346	–	–	1,6	40	10
B284A08800	–	8,800	.3465	–	–	1,6	40	10
–	**B285A09540**	9,540	.3756	–	–	1,8	40	10
–	**B285A10000**	10,000	.3937	–	–	1,8	40	10
–	**B285A10500**	10,500	.4134	–	–	1,9	45	12
B284A11700	–	11,700	.4606	–	–	2,2	45	12
–	**B285A12000**	12,000	.4724	–	–	2,2	45	12
B284A15500	–	15,500	.6102	–	–	2,9	48	16
B284A25000	–	25,000	.9843	–	–	4,6	56	25

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Drills • B28_Series • Grade K715™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	120	**200**	400	mm/r	0,13 - 0,19	0,14 - 0,20	0,17 - 0,26	0,21 - 0,32	0,27 - 0,37	0,33 - 0,42	0,37 - 0,47	0,43 - 0,54
	2	120	**170**	400	mm/r	0,14 - 0,20	0,15 - 0,22	0,17 - 0,29	0,22 - 0,35	0,29 - 0,42	0,34 - 0,48	0,39 - 0,54	0,45 - 0,61
	3	100	**150**	400	mm/r	0,13 - 0,18	0,14 - 0,19	0,16 - 0,25	0,20 - 0,30	0,28 - 0,37	0,33 - 0,42	0,38 - 0,48	0,44 - 0,54
	5	80	**200**	300	mm/r	0,03 - 0,05	0,03 - 0,06	0,03 - 0,06	0,04 - 0,06	0,05 - 0,07	0,05 - 0,08	0,05 - 0,08	0,06 - 0,09
S	1	20	**25**	30	mm/r	0,03 - 0,05	0,04 - 0,06	0,06 - 0,09	0,08 - 0,12	0,10 - 0,14	0,11 - 0,16	0,14 - 0,19	0,16 - 0,23
	2	10	**15**	20	mm/r	0,03 - 0,04	0,04 - 0,05	0,06 - 0,08	0,08 - 0,10	0,10 - 0,12	0,11 - 0,13	0,12 - 0,16	0,14 - 0,18
	4	20	**35**	50	mm/r	0,03 - 0,04	0,04 - 0,05	0,06 - 0,08	0,08 - 0,10	0,11 - 0,13	0,13 - 0,15	0,14 - 0,18	0,16 - 0,21

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KENNAMETAL

Y-TECH™ Drills with Through Coolant for Difficult-to-Machine Materials

Primary Application

The B29_YPL Series Solid Carbide Drills are specifically engineered to drill stainless steel, high-temp alloys, and difficult-to-machine materials.

Y-TECH drills deliver best-in-class hole quality and longest tool life in these difficult-to-machine workpiece materials. Operate these drills with standard through coolant or MQL.

Features and Benefits

YPL Drill-Point Design

- Ensures good centring and chip formation.
- No jamming of chips and enables easy reconditioning.

Uneven Flute-to-Flute Angle

- Unbalanced forces by design eliminate chipping on margin lands.

Three-Margin Lands

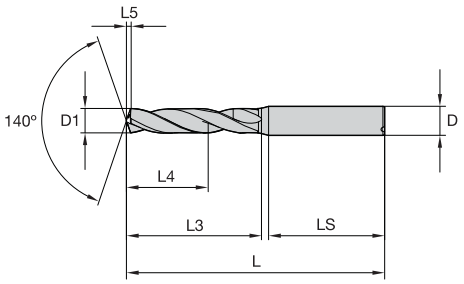
- Reduce pendulum motion by directing forces towards third margin, which results in superior hole accuracy (cylindricity, constant diameter, hole straightness).

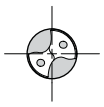
KC7315™ Grade

- A multilayer, TiAlN-based coating with high hot hardness enables higher cutting speeds and outstanding wear resistance.
- Optimised surface finish of the tool ensures chip evacuation in high-speed drilling and MQL applications.

Customisation

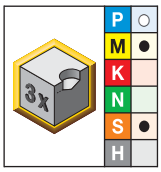
- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.
- Using Kennametal Slim Line Hydraulic Chucks together with standard B29_YPL is recommended if workpiece contours need to be bypassed.

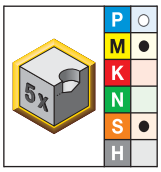




For information on L, L3, and L4 max, see the Solid Carbide foldout table.

B291/B292_YPL • ~3 x D/~5 x D



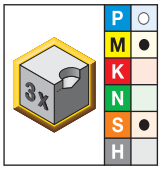


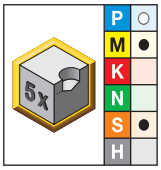
● first choice
○ alternate choice

short • KC7315	long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
B291A03000YPL	B292A03000YPL	3,000	.1181	–	–	0,6	36	6
B291A03100YPL	B292A03100YPL	3,100	.1220	–	–	0,6	36	6
B291A03175YPL	B292A03175YPL	3,175	.1250	1/8	–	0,6	36	6
B291A03200YPL	B292A03200YPL	3,200	.1260	–	–	0,6	36	6
B291A03300YPL	B292A03300YPL	3,300	.1299	–	–	0,7	36	6
B291A03400YPL	B292A03400YPL	3,400	.1339	–	–	0,7	36	6
B291A03454YPL	B292A03454YPL	3,454	.1360	–	29	0,7	36	6
B291A03500YPL	B292A03500YPL	3,500	.1378	–	–	0,7	36	6
B291A03600YPL	B292A03600YPL	3,600	.1417	–	–	0,7	36	6
B291A03700YPL	B292A03700YPL	3,700	.1457	–	–	0,7	36	6
B291A03800YPL	B292A03800YPL	3,800	.1496	–	–	0,8	36	6
B291A03900YPL	B292A03900YPL	3,900	.1535	–	–	0,8	36	6
B291A03970YPL	B292A03970YPL	3,970	.1563	5/32	–	0,8	36	6
B291A04000YPL	B292A04000YPL	4,000	.1575	–	–	0,8	36	6
B291A04100YPL	B292A04100YPL	4,100	.1614	–	–	0,8	36	6
–	B292A04200YPL	4,200	.1654	–	–	0,8	36	6
B291A04300YPL	B292A04300YPL	4,300	.1693	–	–	0,8	36	6
B291A04400YPL	–	4,400	.1732	–	–	0,9	36	6
B291A04500YPL	B292A04500YPL	4,500	.1772	–	–	0,9	36	6
–	B292A04700YPL	4,700	.1850	–	13	0,9	36	6
B291A04763YPL	B292A04763YPL	4,763	.1875	3/16	–	0,9	36	6
B291A04800YPL	B292A04800YPL	4,800	.1890	–	12	0,9	36	6
B291A04851YPL	B292A04851YPL	4,851	.1910	–	11	0,9	36	6
B291A04900YPL	–	4,900	.1929	–	–	0,9	36	6
B291A04915YPL	B292A04915YPL	4,915	.1935	–	10	1,0	36	6
B291A05000YPL	B292A05000YPL	5,000	.1969	–	–	1,0	36	6
B291A05100YPL	B292A05100YPL	5,100	.2008	–	–	1,0	36	6
B291A05200YPL	B292A05200YPL	5,200	.2047	–	–	1,0	36	6
B291A05410YPL	B292A05410YPL	5,410	.2130	–	3	1,1	36	6
B291A05500YPL	B292A05500YPL	5,500	.2165	–	–	1,1	36	6
–	B292A05558YPL	5,558	.2188	7/32	–	1,1	36	6
B291A05600YPL	B292A05600YPL	5,600	.2205	–	–	1,1	36	6
–	B292A05800YPL	5,800	.2283	–	–	1,1	36	6
B291A05900YPL	–	5,900	.2323	–	–	1,1	36	6
B291A06000YPL	B292A06000YPL	6,000	.2362	–	–	1,2	36	6
B291A06200YPL	B292A06200YPL	6,200	.2441	–	–	1,2	36	8
B291A06350YPL	B292A06350YPL	6,350	.2500	1/4	E	1,2	36	8
B291A06500YPL	B292A06500YPL	6,500	.2559	–	–	1,3	36	8
–	B292A06528YPL	6,528	.2570	–	F	1,3	36	8
–	B292A06600YPL	6,600	.2598	–	–	1,3	36	8

(continued)

(B291/B292_YPL • ~3 x D/~5 x D continued)

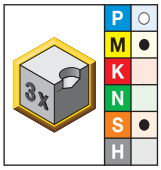


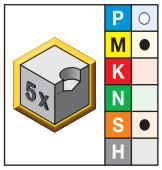


short • KC7315	long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B292A06746YPL	6,746	.2656	17/64	–	1,3	36	8
B291A06747YPL	–	6,747	.2656	17/64	–	1,3	36	8
B291A06800YPL	B292A06800YPL	6,800	.2677	–	–	1,3	36	8
–	B292A06900YPL	6,900	.2717	–	–	1,3	36	8
B291A07000YPL	B292A07000YPL	7,000	.2756	–	–	1,4	36	8
–	B292A07100YPL	7,100	.2795	–	–	1,4	36	8
B291A07144YPL	–	7,144	.2813	9/32	–	1,4	36	8
–	B292A07145YPL	7,145	.2813	9/32	–	1,4	36	8
B291A07200YPL	B292A07200YPL	7,200	.2835	–	–	1,4	36	8
–	B292A07400YPL	7,400	.2913	–	–	1,4	36	8
B291A07500YPL	B292A07500YPL	7,500	.2953	–	–	1,4	36	8
–	B292A07600YPL	7,600	.2992	–	–	1,5	36	8
–	B292A07900YPL	7,900	.3110	–	–	1,5	36	8
B291A07938YPL	B292A07938YPL	7,938	.3125	5/16	–	1,5	36	8
B291A08000YPL	B292A08000YPL	8,000	.3150	–	–	1,5	36	8
–	B292A08100YPL	8,100	.3189	–	–	1,6	40	10
–	B292A08200YPL	8,200	.3228	–	–	1,6	40	10
B291A08334YPL	B292A08334YPL	8,334	.3281	21/64	–	1,6	40	10
–	B292A08433YPL	8,433	.3320	–	Q	1,6	40	10
B291A08500YPL	B292A08500YPL	8,500	.3346	–	–	1,6	40	10
B291A08600YPL	B292A08600YPL	8,600	.3386	–	–	1,7	40	10
B291A08733YPL	B292A08733YPL	8,733	.3438	11/32	–	1,7	40	10
B291A08800YPL	B292A08800YPL	8,800	.3465	–	–	1,7	40	10
B291A08900YPL	B292A08900YPL	8,900	.3504	–	–	1,7	40	10
B291A09000YPL	B292A09000YPL	9,000	.3543	–	–	1,7	40	10
B291A09129YPL	–	9,129	.3594	23/64	–	1,8	40	10
–	B292A09130YPL	9,130	.3594	23/64	–	1,8	40	10
B291A09200YPL	B292A09200YPL	9,200	.3622	–	–	1,8	40	10
B291A09300YPL	–	9,300	.3661	–	–	1,8	40	10
–	B292A09347YPL	9,347	.3680	–	U	1,8	40	10
B291A09500YPL	B292A09500YPL	9,500	.3740	–	–	1,8	40	10
B291A09525YPL	B292A09525YPL	9,525	.3750	3/8	–	1,8	40	10
–	B292A09600YPL	9,600	.3780	–	–	1,8	40	10
B291A09700YPL	B292A09700YPL	9,700	.3819	–	–	1,9	40	10
B291A09800YPL	B292A09800YPL	9,800	.3858	–	–	1,9	40	10
B291A10000YPL	B292A10000YPL	10,000	.3937	–	–	1,9	40	10
–	B292A10100YPL	10,100	.3976	–	–	1,9	45	12
B291A10200YPL	B292A10200YPL	10,200	.4016	–	–	2,0	45	12
B291A10320YPL	B292A10320YPL	10,320	.4063	13/32	–	2,0	45	12
B291A10500YPL	B292A10500YPL	10,500	.4134	–	–	2,0	45	12
B291A10600YPL	–	10,600	.4173	–	–	2,0	45	12
B291A10716YPL	B292A10716YPL	10,716	.4219	27/64	–	2,0	45	12
B291A11000YPL	B292A11000YPL	11,000	.4331	–	–	2,1	45	12
–	B292A11112YPL	11,112	.4375	7/16	–	2,1	45	12
B291A11113YPL	–	11,113	.4375	7/16	–	2,1	45	12
B291A11500YPL	B292A11500YPL	11,500	.4528	–	–	2,2	45	12
B291A11509YPL	B292A11509YPL	11,509	.4531	29/64	–	2,2	45	12
B291A11800YPL	–	11,800	.4646	–	–	2,2	45	12
B291A11908YPL	B292A11908YPL	11,908	.4688	15/32	–	2,3	45	12
B291A12000YPL	B292A12000YPL	12,000	.4724	–	–	2,3	45	12

(continued)

(B291/B292_YPL • ~3 x D/~5 x D continued)





short • KC7315	long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
B291A12300YPL	–	12,300	.4843	–	–	2,3	45	14
–	B292A12304YPL	12,304	.4844	31/64	–	2,3	45	14
B291A12500YPL	B292A12500YPL	12,500	.4921	–	–	2,4	45	14
B291A12700YPL	B292A12700YPL	12,700	.5000	1/2	–	2,4	45	14
B291A12900YPL	–	12,900	.5079	–	–	2,5	45	14
B291A13000YPL	B292A13000YPL	13,000	.5118	–	–	2,5	45	14
–	B292A13500YPL	13,500	.5315	–	–	2,6	45	14
–	B292A13650YPL	13,650	.5374	–	–	2,6	45	14
B291A13800YPL	–	13,800	.5433	–	–	2,6	45	14
–	B292A13900YPL	13,900	.5472	–	–	2,6	45	14
B291A14000YPL	B292A14000YPL	14,000	.5512	–	–	2,7	45	14
–	B292A14200YPL	14,200	.5591	–	–	2,7	48	16
B291A14288YPL	B292A14288YPL	14,288	.5625	9/16	–	2,7	48	16
B291A14500YPL	B292A14500YPL	14,500	.5709	–	–	2,8	48	16
B291A14900YPL	–	14,900	.5866	–	–	2,8	48	16
B291A15000YPL	B292A15000YPL	15,000	.5906	–	–	2,8	48	16
–	B292A15500YPL	15,500	.6102	–	–	2,9	48	16
–	B292A15600YPL	15,600	.6142	–	–	3,0	48	16
B291A15800YPL	–	15,800	.6220	–	–	3,0	48	16
B291A15875YPL	B292A15875YPL	15,875	.6250	5/8	–	3,0	48	16
B291A16000YPL	B292A16000YPL	16,000	.6299	–	–	3,0	48	16
B291A16100YPL	B292A16100YPL	16,100	.6339	–	–	3,1	48	18
–	B292A16500YPL	16,500	.6496	–	–	3,1	48	18
B291A17000YPL	B292A17000YPL	17,000	.6693	–	–	3,2	48	18
B291A17463YPL	B292A17463YPL	17,463	.6875	11/16	–	3,3	48	18
B291A17500YPL	B292A17500YPL	17,500	.6890	–	–	3,3	48	18
B291A17900YPL	–	17,900	.7047	–	–	3,4	48	18
B291A18000YPL	B292A18000YPL	18,000	.7087	–	–	3,4	48	18
–	B292A18500YPL	18,500	.7283	–	–	3,5	50	20
–	B292A19000YPL	19,000	.7480	–	–	3,6	50	20
B291A19050YPL	B292A19050YPL	19,050	.7500	3/4	–	3,6	50	20
–	B292A19100YPL	19,100	.7520	–	–	3,6	50	20
–	B292A19446YPL	19,446	.7656	49/64	–	3,7	50	20
–	B292A19500YPL	19,500	.7677	–	–	3,7	50	20
B291A19800YPL	–	19,800	.7795	–	–	3,7	50	20
–	B292A20000YPL	20,000	.7874	–	–	3,8	50	20
–	B292A20500YPL	20,500	.8071	–	–	3,9	50	20
–	B292A21000YPL	21,000	.8268	–	–	4,0	50	20

NOTE: YPL drills are designed specifically for high-temp alloys, duplex stainless steels, and other difficult-to-machine materials.

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

Y-TECH™ Drill • B29_YPL Series • Grade KC7315™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	5	45	**65**	80	mm/r	0,04 - 0,08	0,06 - 0,09	0,07 - 0,12	0,09 - 0,16	0,11 - 0,19	0,13 - 0,21	0,15 - 0,26	0,18 - 0,30
M	1	40	**50**	60	mm/r	0,07 - 0,11	0,08 - 0,12	0,13 - 0,17	0,14 - 0,21	0,14 - 0,21	0,17 - 0,23	0,19 - 0,25	0,22 - 0,27
	2	40	**50**	80	mm/r	0,07 - 0,11	0,07 - 0,12	0,08 - 0,17	0,13 - 0,21	0,14 - 0,22	0,17 - 0,28	0,19 - 0,32	0,22 - 0,34
	3	40	**50**	70	mm/r	0,04 - 0,06	0,04 - 0,07	0,04 - 0,07	0,05 - 0,08	0,06 - 0,09	0,06 - 0,10	0,06 - 0,10	0,07 - 0,11
S	1	15	**20**	30	mm/r	0,06 - 0,08	0,06 - 0,08	0,07 - 0,10	0,10 - 0,13	0,11 - 0,14	0,12 - 0,16	0,14 - 0,19	0,17 - 0,22
	2	20	**10**	30	mm/r	0,05 - 0,07	0,05 - 0,07	0,06 - 0,08	0,08 - 0,11	0,09 - 0,12	0,10 - 0,13	0,12 - 0,16	0,14 - 0,18
	3	25	**30**	50	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,08	0,05 - 0,10	0,05 - 0,10	0,05 - 0,10	0,07 - 0,11	0,08 - 0,12
	4	30	**25**	50	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,08	0,05 - 0,10	0,05 - 0,10	0,05 - 0,10	0,07 - 0,11	0,08 - 0,12

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TX Drills with Through Coolant for Close Tolerance Holes

Primary Application

B411 Solid Carbide Drills have an X-shaped, free-cutting 130° point design and are designed for grey cast iron, nodular iron, and non-ferrous and aluminium alloy materials. Best suited for high-quality, close tolerance holes that require a very good surface finish.

Features and Benefits

Two Cutting Edges with Straight Flutes

- Precise shape of the hole even if used as platform for complex step drills.
- Can run into cored holes.

X-Shaped Drill Point

- Excellent centring capabilities.

Four-Margin Land Design

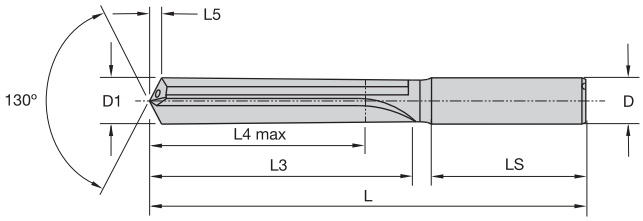
- Second set of cutting margin lands improves the surface quality.
- Achieve tight diameter tolerances.
- Can run through cross holes and exit on inclined surfaces.

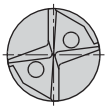
Wear-Resistant Carbide KF1™ Grade

- Long tool life in abrasive materials, such as cast iron and aluminium die cast alloys.
- The uncoated grade KF1 helps to prevent built-up edge in drilling aluminium.

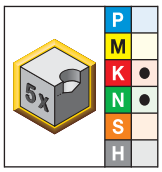
Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.
- Coated KC7205™ grade delivers high wear resistance with very high diameter accuracy.





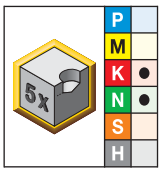
B411 • ~5 x D



● first choice
○ alternate choice

KF1	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B411A03200	3,200	.1260	–	–	66	23	0,7	36	6
B411A03300	3,300	.1299	–	–	66	23	0,8	36	6
B411A03800	3,800	.1496	–	–	74	29	0,9	36	6
B411A04000	4,000	.1575	–	–	74	29	0,9	36	6
B411A04200	4,200	.1654	–	–	74	29	1,0	36	6
B411A04500	4,500	.1772	–	–	74	29	1,0	36	6
B411A04600	4,600	.1811	–	–	74	29	1,1	36	6
B411A04650	4,650	.1831	–	–	74	29	1,1	36	6
B411A04800	4,800	.1890	–	12	82	35	1,1	36	6
B411A04900	4,900	.1929	–	–	82	35	1,1	36	6
B411A05000	5,000	.1969	–	–	82	35	1,2	36	6
B411A05100	5,100	.2008	–	–	82	35	1,2	36	6
B411A05200	5,200	.2047	–	–	82	35	1,2	36	6
B411A05500	5,500	.2165	–	–	82	35	1,3	36	6
B411A05550	5,550	.2185	–	–	82	35	1,3	36	6
B411A05800	5,800	.2283	–	–	82	35	1,4	36	6
B411A06000	6,000	.2362	–	–	82	35	1,4	36	6
B411A06300	6,300	.2480	–	–	91	43	1,5	36	8
B411A06400	6,400	.2520	–	–	91	43	1,5	36	8
B411A06500	6,500	.2559	–	–	91	43	1,5	36	8
B411A06600	6,600	.2598	–	–	91	43	1,5	36	8
B411A06800	6,800	.2677	–	–	91	43	1,6	36	8
B411A07000	7,000	.2756	–	–	91	43	1,6	36	8
B411A07400	7,400	.2913	–	–	91	43	1,7	36	8
B411A07500	7,500	.2953	–	–	91	43	1,7	36	8
B411A07800	7,800	.3071	–	–	91	43	1,8	36	8
B411A08000	8,000	.3150	–	–	91	43	1,9	36	8
B411A08400	8,400	.3307	–	–	103	49	2,0	40	10
B411A08500	8,500	.3346	–	–	103	49	2,0	40	10
B411A09000	9,000	.3543	–	–	103	49	2,1	40	10
B411A09300	9,300	.3661	–	–	103	49	2,2	40	10
B411A09500	9,500	.3740	–	–	103	49	2,2	40	10
B411A09800	9,800	.3858	–	–	103	49	2,3	40	10
B411A10000	10,000	.3937	–	–	103	49	2,3	40	10
B411A10200	10,200	.4016	–	–	118	56	2,4	45	12
B411A10500	10,500	.4134	–	–	118	56	2,4	45	12
B411A11000	11,000	.4331	–	–	118	56	2,6	45	12
B411A11200	11,200	.4409	–	–	118	56	2,6	45	12
B411A11500	11,500	.4528	–	–	118	56	2,7	45	12
B411A11800	11,800	.4646	–	–	118	56	2,8	45	12

(continued)



KF1	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B411A12000	12,000	.4724	–	–	118	56	2,8	45	12
B411A12500	12,500	.4921	–	–	124	60	2,9	45	14
B411A13000	13,000	.5118	–	–	124	60	3,0	45	14
B411A13500	13,500	.5315	–	–	124	60	3,1	45	14
B411A13800	13,800	.5433	–	–	124	60	3,2	45	14
B411A14000	14,000	.5512	–	–	124	60	3,3	45	14
B411A14500	14,500	.5709	–	–	133	63	3,4	48	16
B411A15000	15,000	.5906	–	–	133	63	3,5	48	16
B411A15500	15,500	.6102	–	–	133	63	3,6	48	16
B411A16000	16,000	.6299	–	–	133	63	3,7	48	16
B411A16500	16,500	.6496	–	–	143	71	3,8	48	18
B411A17000	17,000	.6693	–	–	143	71	4,0	48	18
B411A17500	17,500	.6890	–	–	143	71	4,1	48	18
B411A18000	18,000	.7087	–	–	143	71	4,2	48	18
B411A19000	19,000	.7480	–	–	153	77	4,4	50	20
B411A19500	19,500	.7677	–	–	153	77	4,5	50	20
B411A20000	20,000	.7874	–	–	153	77	4,7	50	20
B411A21000	21,000	.8268	–	–	167	85	4,9	50	20
B411A22000	22,000	.8661	–	–	167	85	5,1	50	20
B411A23000	23,000	.9055	–	–	184	98	5,4	56	25
B411A24000	24,000	.9449	–	–	184	98	5,6	56	25
B411A25000	25,000	.9843	–	–	184	98	5,8	56	25

Tolerance • Metric

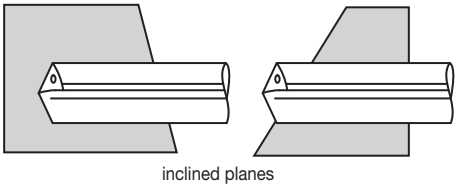
nominal size range	D1 tolerance k6	D tolerance h6
>3–6	0,001/0,009	0,000/-0,008
>6–10	0,001/0,010	0,000/-0,009
>10–18	0,001/0,012	0,000/-0,011
>18–25,4	0,002/0,015	0,000/-0,013

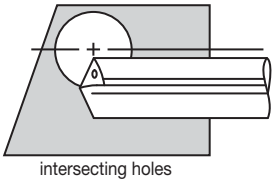
TX Drills • B411 Series • Grade KF1™ • Through Coolant for Drill Diameters 3–20mm

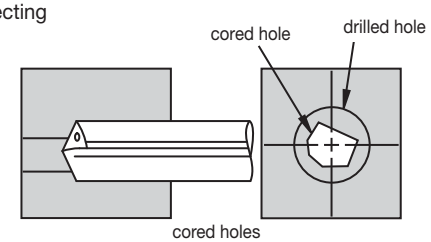
Material Group		Cutting Speed – vc Range – m/min min	Starting Value	max	Metric Recommended Feed Rate (f) by Diameter	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,4
K	1	115	**60**	140	mm/r	0,11 - 0,20	0,12 - 0,24	0,15 - 0,28	0,18 - 0,33	0,20 - 0,38	0,23 - 0,44	0,30 - 0,53	0,34 - 0,65	0,40 - 0,76
N	1	100	**250**	450	mm/r	0,16 - 0,25	0,19 - 0,29	0,23 - 0,35	0,27 - 0,42	0,31 - 0,50	0,36 - 0,57	0,44 - 0,69	0,52 - 0,82	0,62 - 0,96
N	2	200	**100**	300	mm/r	0,15 - 0,23	0,17 - 0,28	0,21 - 0,34	0,25 - 0,39	0,30 - 0,46	0,34 - 0,54	0,42 - 0,67	0,52 - 0,82	0,61 - 0,96
N	5	100	**170**	250	mm/r	0,16 - 0,28	0,15 - 0,32	0,19 - 0,36	0,23 - 0,40	0,25 - 0,44	0,28 - 0,48	0,32 - 0,56	0,35 - 0,63	0,42 - 0,72
S	4	20	**40**	50	mm/r	0,04 - 0,07	0,04 - 0,07	0,06 - 0,09	0,08 - 0,10	0,10 - 0,14	0,13 - 0,18	0,18 - 0,26	0,22 - 0,32	0,27 - 0,38

TX Drill Applications

The excellent stability of the TX drill enables it to be used for drilling through inclined planes, intersecting holes, and cored holes:


inclined planes


intersecting holes



cored holes

SPF Drills for Composite (CFRP) Materials

Primary Application

B53_ Series Solid Carbide Drills offer a material-specific design and grade to machine carbon fibre-reinforced polymer (CFRP) composite materials by minimising delamination and increasing tool life.

Features and Benefits

SPF Drill-Point Design

- Special 90° point angle increases centring capability.
- Low thrust and improved hole quality.

Unique Geometry

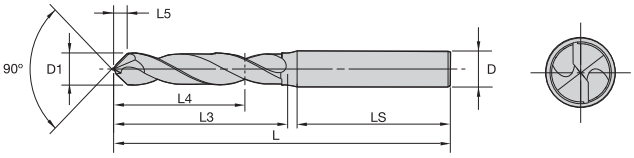
- Combination of point design, substrate, and coating provides longer tool life and requires substantially less cutting force.

KDF400™ Grade

- CVD multilayer diamond coating provides more wear resistance and reduced friction, increasing tool life and improving chip flow.

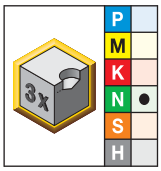
Customisation

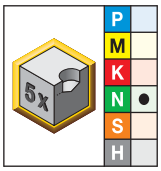
- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.



For information on L, L3, and L4 max, see the Solid Carbide foldout table.

B531/B532_SPF • ~3 x D/~5 x D • Metric





● first choice
○ alternate choice

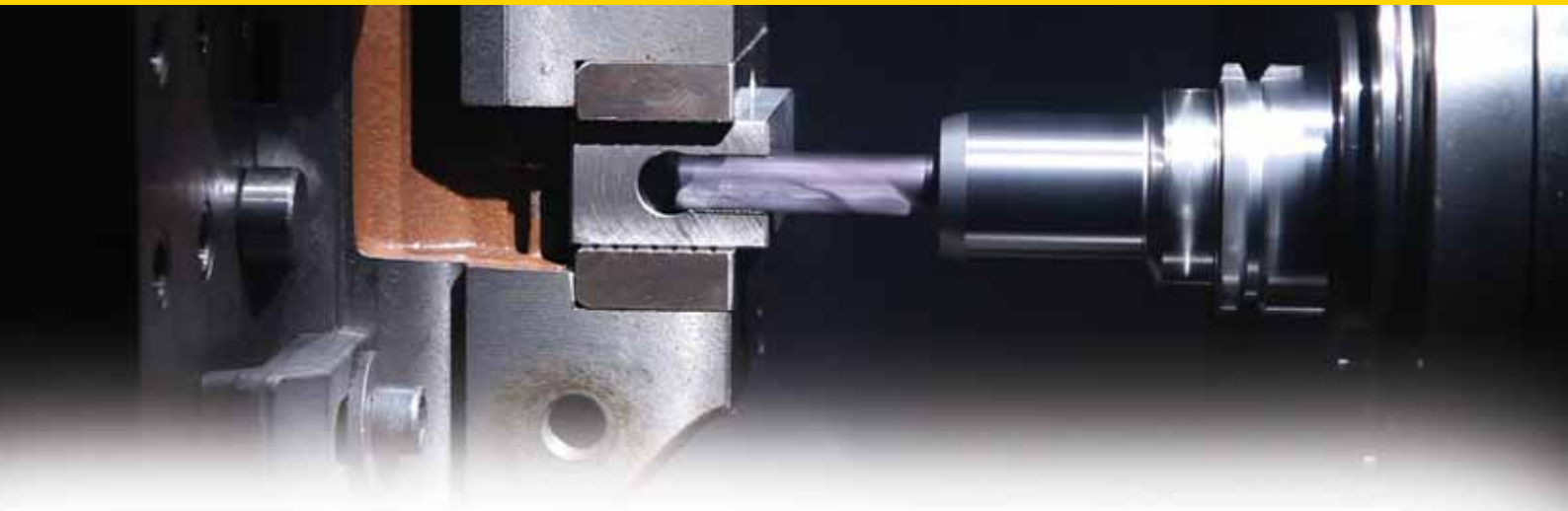
short • KDF400	long • KDF400	D1 diameter mm	in	fraction	wire size	L5	LS	D
B531A03200SPF	B532A03200SPF	3,200	.1260	–	–	1,5	36	6
B531A03300SPF	B532A03300SPF	3,300	.1299	–	–	1,5	36	6
B531A03600SPF	B532A03600SPF	3,600	.1417	–	–	1,6	36	6
B531A04000SPF	B532A04000SPF	4,000	.1575	–	–	1,8	36	6
B531A04366SPF	B532A04366SPF	4,366	.1719	11/64	–	2,0	36	6
B531A04851SPF	B532A04851SPF	4,851	.1910	–	11	2,2	36	6
B531A04864SPF	B532A04864SPF	4,864	.1915	–	–	2,2	36	6
B531A05100SPF	B532A05100SPF	5,100	.2008	–	–	2,3	36	6
B531A05200SPF	B532A05200SPF	5,200	.2047	–	–	2,4	36	6
B531A06000SPF	B532A06000SPF	6,000	.2362	–	–	2,7	36	6
B531A06375SPF	B532A06375SPF	6,375	.2510	–	–	2,9	36	8
B531A06400SPF	B532A06400SPF	6,400	.2520	–	–	2,9	36	8
B531A06500SPF	B532A06500SPF	6,500	.2559	–	–	3,0	36	8
–	B532A06700SPF	6,700	.2638	–	–	3,0	36	8
–	B532A07200SPF	7,200	.2835	–	–	3,3	36	8
B531A07938SPF	B532A07938SPF	7,938	.3125	5/16	–	3,6	36	8
B531A08153SPF	B532A08153SPF	8,153	.3210	–	–	3,7	40	10
B531A09550SPF	B532A09550SPF	9,550	.3760	–	–	4,3	40	10
B531A09563SPF	B532A09563SPF	9,563	.3765	–	–	4,3	40	10
B531A11125SPF	B532A11125SPF	11,125	.4380	–	–	5,1	45	12
B531A12725SPF	B532A12725SPF	12,725	.5010	–	–	5,8	45	14

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

SPF Drills • B53_ Series • Grade KDF400™ • Dry Applications for Drill Diameters 3–12mm

Material Group		Cutting Speed – vc Range – m/min min	Starting Value	max	Metric Recommended Feed Rate (f) by Diameter		3,0	4,0	6,0	8,0	10,0	12,0
N	6	90	120	150	mm/r		0,03 - 0,20	0,03 - 0,20	0,03 - 0,20	0,03 - 0,20	0,03 - 0,20	0,03 - 0,20



FB Drills with Through Coolant for Flat-Bottom Applications

Primary Application

B707_FB Series Solid Carbide Drills are productivity tools that combine two operations in one:

1) Eliminate the 180° end mill in flat-bottom drilling or when preparing an inclined or curved surface for drilling.
2) After full cylindrical engagement, the drill runs at normal solid carbide drilling parameters.

The B707_FBS Series with the new uncoated KN15™ grade now offers the same advantages for drilling in non-ferrous materials, such as aluminium, copper, and brass. The B707_FBL Series is designed for applications in stainless steel and high-temperature alloys.

Features and Benefits

Unique FB Drill-Point Design

- Two effective cutting edges over centre enable high feed rates.
- Creates a true flat-bottom hole from O.D. to centre.
- Four-margin lands improve hole straightness and roundness providing good alignment even in cross holes.

Straight Cutting Edge

- Guarantees a true 180° hole ground.
- Rake angle correction improves chip control.

KC7315™ Grade on B702_FBG and _FBL

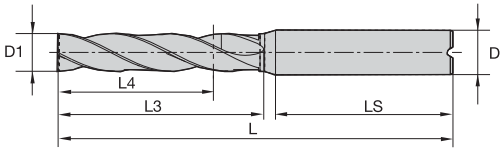
- Enables high drill-like penetration rates and superior tool life.

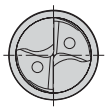
KN15 Grade on B707_FBS

- The uncoated grade prevents built-up edge reducing the risk of fracture.
- The highly polished surfaces ensure superior chip evacuation even when low-pressure coolant or MQL is applied.

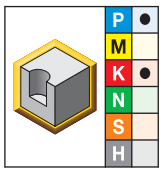
Customisation

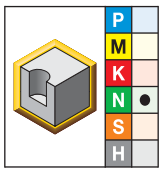
- Intermediate diameters available as semi-standards.
- Length variations available as semi-standard:
  B706_ 1,5 x D
  B708_ 5 x D
  B709_ 8 x D
- Other length variations and step drills are available as engineered solutions.

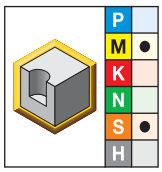




B707_FBG/FBS/FBL • ~3 x D





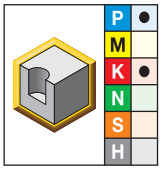


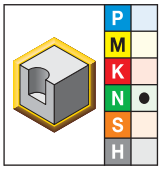
● first choice
○ alternate choice

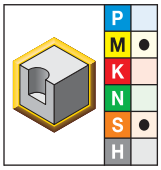
B707A-FBG • KC7315	B707A-FBS • KN15	B707A-FBL • KC7315	D1 diameter mm	in	fraction	wire size	L4 max	L3	L	LS	D
B707A03000FBG	B707A03000FBS	B707A03000FBL	3,000	.1181	–	–	14	20	62	36	6
B707A03175FBG	B707A03175FBS	B707A03175FBL	3,175	.1250	1/8	–	14	20	62	36	6
B707A03500FBG	B707A03500FBS	B707A03500FBL	3,500	.1378	–	–	14	20	62	36	6
B707A03970FBG	–	–	3,970	.1563	5/32	–	17	24	66	36	6
B707A04000FBG	B707A04000FBS	B707A04000FBL	4,000	.1575	–	–	17	24	66	36	6
B707A04200FBG	–	–	4,200	.1654	–	–	17	24	66	36	6
B707A04400FBG	B707A04400FBS	B707A04400FBL	4,400	.1732	–	–	17	24	66	36	6
B707A04500FBG	B707A04500FBS	B707A04500FBL	4,500	.1772	–	–	17	24	66	36	6
B707A04763FBG	–	–	4,763	.1875	3/16	–	20	28	66	36	6
B707A04800FBG	B707A04800FBS	B707A04800FBL	4,800	.1890	–	12	20	28	66	36	6
B707A04900FBG	–	–	4,900	.1929	–	–	20	28	66	36	6
B707A05000FBG	B707A05000FBS	B707A05000FBL	5,000	.1969	–	–	20	28	66	36	6
B707A05560FBG	B707A05560FBS	B707A05560FBL	5,560	.2189	–	–	20	28	66	36	6
B707A05900FBG	B707A05900FBS	B707A05900FBL	5,900	.2323	–	–	20	28	66	36	6
B707A06000FBG	B707A06000FBS	B707A06000FBL	6,000	.2362	–	–	20	28	66	36	6
B707A06350FBG	B707A06350FBS	B707A06350FBL	6,350	.2500	1/4	E	24	34	79	36	8
B707A06500FBG	B707A06500FBS	B707A06500FBL	6,500	.2559	–	–	24	34	79	36	8
B707A06800FBG	B707A06800FBS	B707A06800FBL	6,800	.2677	–	–	24	34	79	36	8
B707A07000FBG	B707A07000FBS	B707A07000FBL	7,000	.2756	–	–	24	34	79	36	8
B707A07145FBG	–	–	7,145	.2813	9/32	–	29	41	79	36	8
B707A07500FBG	B707A07500FBS	B707A07500FBL	7,500	.2953	–	–	29	41	79	36	8
B707A07800FBG	–	–	7,800	.3071	–	–	29	41	79	36	8
B707A07938FBG	B707A07938FBS	B707A07938FBL	7,938	.3125	5/16	–	29	41	79	36	8
B707A08000FBG	B707A08000FBS	B707A08000FBL	8,000	.3150	–	–	29	41	79	36	8
B707A08334FBG	–	–	8,334	.3281	21/64	–	35	47	89	40	10
B707A08500FBG	B707A08500FBS	B707A08500FBL	8,500	.3346	–	–	35	47	89	40	10
B707A08800FBG	B707A08800FBS	B707A08800FBL	8,800	.3465	–	–	35	47	89	40	10
B707A09000FBG	B707A09000FBS	B707A09000FBL	9,000	.3543	–	–	35	47	89	40	10
B707A09129FBG	–	–	9,129	.3594	23/64	–	35	47	89	40	10
B707A09500FBG	B707A09500FBS	B707A09500FBL	9,500	.3740	–	–	35	47	89	40	10
B707A09525FBG	B707A09525FBS	B707A09525FBL	9,525	.3750	3/8	–	35	47	89	40	10
B707A10000FBG	B707A10000FBS	B707A10000FBL	10,000	.3937	–	–	35	47	89	40	10
B707A10320FBG	B707A10320FBS	B707A10320FBL	10,320	.4063	13/32	–	40	55	102	45	12
B707A10500FBG	B707A10500FBS	B707A10500FBL	10,500	.4134	–	–	40	55	102	45	12

(continued)

(B707_FBG/FBS/FBL • ~3 x D continued)







B707A-FBG • KC7315	B707A-FBS • KN15	B707A-FBL • KC7315	D1 diameter mm	in	fraction	wire size	L4 max	L3	L	LS	D
B707A10600FBG	–	–	10,600	.4173	–	–	40	55	102	45	12
B707A11000FBG	B707A11000FBS	B707A11000FBL	11,000	.4331	–	–	40	55	102	45	12
B707A11111FBG	B707A11111FBS	B707A11111FBL	11,111	.4374	–	–	40	55	102	45	12
B707A11509FBG	B707A11509FBS	B707A11509FBL	11,509	.4531	29/64	–	40	55	102	45	12
B707A11570FBG	B707A11570FBS	B707A11570FBL	11,570	.4555	–	–	40	55	102	45	12
B707A11700FBG	B707A11700FBS	B707A11700FBL	11,700	.4606	–	–	40	55	102	45	12
B707A11800FBG	B707A11800FBS	B707A11800FBL	11,800	.4646	–	–	40	55	102	45	12
B707A11908FBG	–	–	11,908	.4688	15/32	–	40	55	102	45	12
B707A12000FBG	B707A12000FBS	B707A12000FBL	12,000	.4724	–	–	40	55	102	45	12
B707A12100FBG	B707A12100FBS	B707A12100FBL	12,100	.4764	–	–	43	60	107	45	14
B707A12500FBG	B707A12500FBS	B707A12500FBL	12,500	.4921	–	–	43	60	107	45	14
B707A12700FBG	B707A12700FBS	B707A12700FBL	12,700	.5000	1/2	–	43	60	107	45	14
B707A12800FBG	B707A12800FBS	B707A12800FBL	12,800	.5039	–	–	43	60	107	45	14
B707A13000FBG	B707A13000FBS	B707A13000FBL	13,000	.5118	–	–	43	60	107	45	14
B707A13500FBG	B707A13500FBS	B707A13500FBL	13,500	.5315	–	–	43	60	107	45	14
B707A14000FBG	B707A14000FBS	B707A14000FBL	14,000	.5512	–	–	43	60	107	45	14
B707A14288FBG	B707A14288FBS	B707A14288FBL	14,288	.5625	9/16	–	45	65	115	48	16
B707A14500FBG	B707A14500FBS	B707A14500FBL	14,500	.5709	–	–	45	65	115	48	16
B707A15000FBG	B707A15000FBS	B707A15000FBL	15,000	.5906	–	–	45	65	115	48	16
B707A15250FBG	B707A15250FBS	B707A15250FBL	15,250	.6004	–	–	45	65	115	48	16
B707A15500FBG	B707A15500FBS	B707A15500FBL	15,500	.6102	–	–	45	65	115	48	16
B707A15875FBG	B707A15875FBS	B707A15875FBL	15,875	.6250	5/8	–	45	65	115	48	16
B707A16000FBG	B707A16000FBS	B707A16000FBL	16,000	.6299	–	–	45	65	115	48	16
B707A16500FBG	B707A16500FBS	B707A16500FBL	16,500	.6496	–	–	51	73	123	48	18
B707A17000FBG	B707A17000FBS	B707A17000FBL	17,000	.6693	–	–	51	73	123	48	18
B707A17463FBG	–	–	17,463	.6875	11/16	–	51	73	123	48	18
B707A17500FBG	B707A17500FBS	B707A17500FBL	17,500	.6890	–	–	51	73	123	48	18
B707A18000FBG	B707A18000FBS	B707A18000FBL	18,000	.7087	–	–	51	73	123	48	18
B707A18500FBG	–	–	18,500	.7283	–	–	55	79	131	50	20
B707A19000FBG	B707A19000FBS	B707A19000FBL	19,000	.7480	–	–	55	79	131	50	20
B707A19050FBG	B707A19050FBS	B707A19050FBL	19,050	.7500	3/4	–	55	79	131	50	20
B707A20000FBG	B707A20000FBS	B707A20000FBL	20,000	.7874	–	–	55	79	131	50	20
B707A21000FBG	B707A21000FBS	B707A21000FBL	21,000	.8268	–	–	60	86	141	50	20

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

Flat-Bottom Drills • B707_FBG Series • Grade KC7315™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	100	**133**	170	mm/r	0,07 - 0,16	0,12 - 0,20	0,10 - 0,23	0,13 - 0,29	0,21 - 0,33	0,17 - 0,37	0,19 - 0,44	0,22 - 0,49
	2	130	**150**	180	mm/r	0,07 - 0,13	0,10 - 0,16	0,16 - 0,19	0,13 - 0,23	0,18 - 0,27	0,17 - 0,30	0,19 - 0,35	0,22 - 0,39
	3	80	**106**	130	mm/r	0,09 - 0,16	0,13 - 0,20	0,13 - 0,23	0,16 - 0,24	0,20 - 0,31	0,21 - 0,37	0,25 - 0,44	0,28 - 0,46
	4	70	**98**	130	mm/r	0,08 - 0,16	0,12 - 0,19	0,11 - 0,22	0,14 - 0,27	0,21 - 0,31	0,18 - 0,35	0,21 - 0,41	0,24 - 0,46
	6	70	**98**	130	mm/r	0,07 - 0,12	0,10 - 0,14	0,10 - 0,16	0,12 - 0,20	0,16 - 0,23	0,16 - 0,26	0,18 - 0,31	0,21 - 0,34
K	1	70	**85**	100	mm/r	0,09 - 0,17	0,13 - 0,21	0,12 - 0,25	0,15 - 0,31	0,23 - 0,35	0,20 - 0,39	0,23 - 0,46	0,26 - 0,52
	2	100	**113**	130	mm/r	0,09 - 0,15	0,12 - 0,18	0,12 - 0,21	0,15 - 0,26	0,21 - 0,30	0,20 - 0,33	0,23 - 0,39	0,26 - 0,44
	3	70	**105**	140	mm/r	0,07 - 0,13	0,10 - 0,16	0,11 - 0,19	0,13 - 0,23	0,18 - 0,27	0,17 - 0,30	0,20 - 0,35	0,22 - 0,37

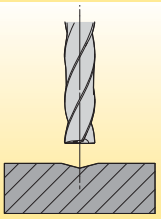
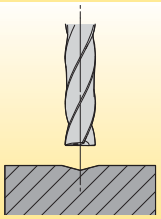
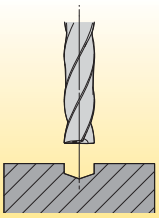
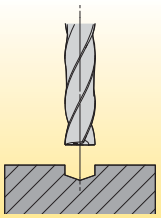
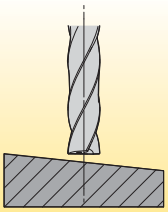
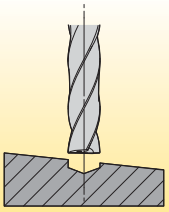
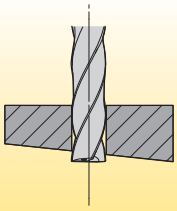
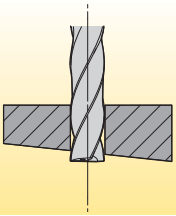
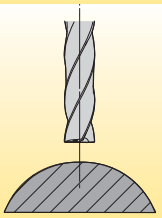
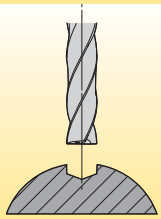
Flat-Bottom Drills • B707_FBL Series • Grade KC7315 • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	45	**65**	60	mm/r	0,04 – 0,08	0,05 – 0,09	0,06 – 0,12	0,09 – 0,15	0,10 – 0,16	0,12 – 0,20	0,14 – 0,23	0,16 – 0,24
M	1	40	**50**	60	mm/r	0,04 – 0,08	0,05 – 0,09	0,06 – 0,12	0,09 – 0,15	0,10 – 0,16	0,12 – 0,20	0,14 – 0,23	0,16 – 0,24
	2	40	**50**	80	mm/r	0,06 – 0,11	0,07 – 0,11	0,08 – 0,16	0,12 – 0,20	0,13 – 0,21	0,16 – 0,27	0,18 – 0,31	0,21 – 0,33
	3	40	**55**	70	mm/r	0,03 – 0,04	0,03 – 0,05	0,04 – 0,06	0,04 – 0,07	0,05 – 0,08	0,06 – 0,10	0,07 – 0,11	0,08 – 0,12
S	1	20	**25**	30	mm/r	0,06 – 0,08	0,06 – 0,08	0,07 – 0,10	0,10 – 0,13	0,11 – 0,14	0,12 – 0,16	0,14 – 0,19	0,17 – 0,22
	2	10	**20**	30	mm/r	0,05 – 0,07	0,05 – 0,07	0,06 – 0,08	0,08 – 0,11	0,09 – 0,12	0,10 – 0,13	0,12 – 0,16	0,14 – 0,18
	3	30	**25**	50	mm/r	0,03 – 0,05	0,03 – 0,05	0,04 – 0,08	0,05 – 0,10	0,05 – 0,10	0,05 – 0,10	0,07 – 0,11	0,08 – 0,12
	4	30	**25**	50	mm/r	0,03 – 0,05	0,03 – 0,05	0,04 – 0,08	0,05 – 0,10	0,05 – 0,10	0,05 – 0,10	0,07 – 0,11	0,08 – 0,12

Flat-Bottom Drills • B707_FBS Series • Grade KN15™ • Through Coolant for Drill Diameters 3–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	120	**260**	400	mm/r	0,07 – 0,11	0,08 – 0,12	0,13 – 0,17	0,14 – 0,21	0,15 – 0,22	0,17 – 0,23	0,19 – 0,25	0,22 – 0,27
	2	120	**250**	280	mm/r	0,08 – 0,12	0,08 – 0,13	0,09 - 0,19	0,14 – 0,23	0,15 – 0,24	0,19 – 0,31	0,21 – 0,35	0,24 – 0,37
	3	100	**200**	260	mm/r	0,08 – 0,13	0,08 – 0,14	0,09 – 0,20	0,15 – 0,24	0,16 – 0,26	0,20 – 0,33	0,22 – 0,37	0,26 – 0,40
	5	60	**150**	200	mm/r	0,03 – 0,05	0,03 – 0,06	0,03 – 0,06	0,04 – 0,06	0,05 – 0,07	0,05 – 0,08	0,05 – 0,08	0,06 – 0,09

The B707_FBG drill eliminates the traditional two-step process to create a flat-bottom hole using a drill and an end mill and can perform the operation 25%–40% faster. It also eliminates the two-step process of using an end mill to pre-machine a flat on the workpiece material for inclined surfaces.

Workpiece Application	B707A..FBG Standard Length	B708/B709A...FBG Custom Long Length
• Tapped hole with lead chamfer larger than FBG diameter.	 No feed reduction.	 50% feed reduction.
• Nominal diameter pilot required.	 Rough or hardened surfaces. No feed reduction.	 Pilot on all surfaces. No feed reduction.
• >6° angled entrances.	 Reduce feed by 30% until full diameter, or use pilot.	 Pilot with short FBG on all surfaces. No feed reduction.
• Angled exits.	 30% feed reduction.	 30% feed reduction.
• Round surfaces.	 Reduce feed by 30% until full diameter, or use pilot.	 Pilot with short FBG on all surfaces. No feed reduction.

HP Beyond™ Step Drills with Through Coolant for Steel and Iron

Primary Application

Most tapped holes require a chamfer. The B731_HP and B732_HP Step Drills offer a one-pass solution in steels and irons in traditional tap sizes to reduce cycle time and increase productivity. An extensive range of step drills are available to cover Kennametal's taps products.

Features and Benefits

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.

Unique Flute Design

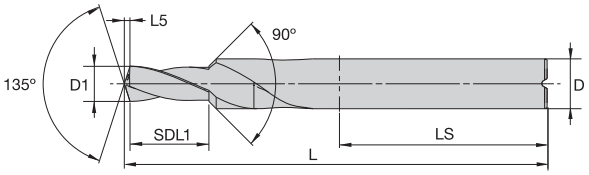
- Drastically improved chip evacuation.
- Better hole surface quality.

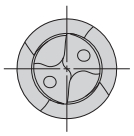
KCPK15™ Beyond Grade

- The grade is a multilayer, TiAlN-based coating with high hot hardness. High cutting speeds enable usage in MQL applications.
- The highly polished surface ensures superior chip evacuation even when low-pressure coolant is applied.
- Improves average metal removal rate and tool life by 10–20%.

Customisation

- Intermediate diameters available as semi-standards.
- Using Kennametal Slim Line Hydraulic Chucks is recommended if workpiece contours need bypassed.

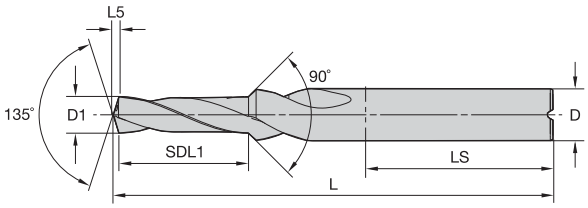


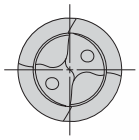


B731_HP • Short

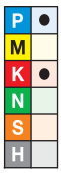
● first choice
○ alternate choice

short • KCPK15	D1 diameter mm	D1 diameter in	L	SDL1	L5	LS	D
B731A03734HP	3,734	.1470	66	10	0,7	36	6
B731A04200HP	4,200	.1654	66	12	0,8	36	6
B731A04496HP	4,496	.1770	79	13	0,9	36	8
B731A05000HP	5,000	.1969	79	13	0,9	36	8
B731A05106HP	5,106	.2010	79	15	1,0	36	8
B731A05410HP	5,410	.2130	79	16	1,0	36	8
B731A06528HP	6,528	.2570	89	17	1,2	40	10
B731A06800HP	6,800	.2677	89	16	1,3	40	10
B731A06909HP	6,909	.2720	89	18	1,3	40	10
B731A07938HP	7,938	.3125	89	19	1,5	45	12
B731A08433HP	8,433	.3320	102	21	1,6	45	12
B731A08500HP	8,500	.3346	102	19	1,6	45	12
B731A09921HP	9,921	.3906	107	23	1,9	45	14
B731A10200HP	10,200	.4016	107	22	1,9	45	14
B731A10500HP	10,500	.4134	107	22	2,0	45	14
B731A10716HP	10,716	.4219	107	27	2,0	45	14
B731A12000HP	12,000	.4724	115	27	2,2	48	16
B731A12304HP	12,304	.4844	115	28	2,3	48	16
B731A12500HP	12,500	.4921	115	27	2,3	48	16
B731A13096HP	13,096	.5156	115	31	2,4	48	16
B731A13495HP	13,495	.5313	123	32	2,5	48	18
B731A14000HP	14,000	.5512	123	29	2,6	48	18
B731A16670HP	16,670	.6563	131	38	3,1	50	20
B731A17463HP	17,463	.6875	131	40	3,2	50	20
B731A19446HP	19,446	.7656	153	43	3,6	56	25





B732_HP • Long



● first choice
○ alternate choice

long • KCPK15	D1 diameter mm	D1 diameter in	L	SDL1	L5	LS	D
B732A03734HP	3,734	.1470	66	16	0,7	36	6
B732A04200HP	4,200	.1654	66	17	0,8	36	6
B732A04496HP	4,496	.1770	79	17	0,9	36	8
B732A05000HP	5,000	.1969	79	20	0,9	36	8
B732A05106HP	5,106	.2010	79	20	1,0	36	8
B732A05410HP	5,410	.2130	79	21	1,0	36	8
B732A06528HP	6,528	.2570	89	24	1,2	40	10
B732A06800HP	6,800	.2677	89	25	1,3	40	10
B732A06909HP	6,909	.2720	89	25	1,3	40	10
B732A07938HP	7,938	.3125	102	27	1,5	45	12
B732A08433HP	8,433	.3320	102	29	1,6	45	12
B732A08500HP	8,500	.3346	102	30	1,6	45	12
B732A09921HP	9,921	.3906	107	33	1,9	45	14
B732A10200HP	10,200	.4016	107	35	1,9	45	14
B732A10500HP	10,500	.4134	107	35	2,0	45	14
B732A10716HP	10,716	.4219	107	37	2,0	45	14
B732A12000HP	12,000	.4724	115	40	2,2	48	16
B732A12304HP	12,304	.4844	115	41	2,3	48	16
B732A12500HP	12,500	.4921	115	40	2,3	48	16
B732A13096HP	13,096	.5156	123	44	2,4	48	16
B732A13495HP	13,495	.5313	123	45	2,5	48	18
B732A14000HP	14,000	.5512	123	43	2,6	48	18
B732A16670HP	16,670	.6563	141	55	3,1	50	20
B732A17463HP	17,463	.6875	141	58	3,2	50	20
B732A19446HP	19,446	.7656	184	76	3,6	56	25

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

HP Step Drills • B73_HP Series • Grade KCPK15™ • Through Coolant for Drill Diameters 3–16mm

Material Group		Cutting Speed – vc Range – m/min				Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	140	**220**	240	mm/r	0,07 - 0,17	0,09 - 0,21	0,11 - 0,24	0,14 - 0,30	0,16 - 0,35	0,18 - 0,39	0,20 - 0,46	0,24 - 0,50
	2	180	**210**	240	mm/r	0,07 - 0,14	0,09 - 0,17	0,11 - 0,20	0,14 - 0,24	0,16 - 0,28	0,18 - 0,32	0,20 - 0,37	0,24 - 0,43
	3	120	**150**	180	mm/r	0,09 - 0,17	0,12 - 0,21	0,14 - 0,24	0,17 - 0,30	0,20 - 0,35	0,22 - 0,39	0,26 - 0,46	0,29 - 0,50
	4	100	**140**	180	mm/r	0,08 - 0,17	0,11 - 0,20	0,12 - 0,23	0,15 - 0,28	0,17 - 0,33	0,19 - 0,37	0,22 - 0,43	0,25 - 0,45
	6	140	**100**	180	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,17	0,13 - 0,21	0,15 - 0,24	0,17 - 0,27	0,19 - 0,33	0,21 - 0,36
K	1	140	**160**	180	mm/r	0,09 - 0,18	0,12 - 0,22	0,13 - 0,26	0,16 - 0,33	0,19 - 0,37	0,21 - 0,41	0,24 - 0,48	0,27 - 0,51
	2	100	**150**	200	mm/r	0,09 - 0,16	0,12 - 0,19	0,13 - 0,22	0,16 - 0,27	0,19 - 0,32	0,21 - 0,35	0,24 - 0,41	0,27- 0,45
	3	100	**140**	180	mm/r	0,07 - 0,14	0,09 - 0,17	0,12 - 0,20	0,14 - 0,24	0,16 - 0,28	0,18 - 0,32	0,21 - 0,37	0,24 - 0,39

Looking for a product that's not shown in this catalogue?
Check the Kennametal website!

Online product catalogue available 24/7

Visit **http://www.kennametal.com/holemaking/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, drilling, and tooling systems applications.

Kenna Universal™ Drills

Primary Application

Kenna Universal Drills (B96_B97_Series) are engineered to deliver superior performance in steel, cast iron, and stainless steel applications making it ideal for small- and medium-sized shops. The universal application profile reduces tool change times and the number of drills in inventory. Covering a large spectrum of off-the-shelf diameters and a broad range of applications makes Kenna Universal Drills an excellent alternative to other high-performance products.

The new B976Z series is available from 2,383–3mm (.0938-.1181") making it the first standard offering in less than 3mm. This extended diameter offering covers all common tap drill sizes, including an expanded selection of wire, fractional, and letter sizes.

Use as Pilot Drill

- Ideal point angle and tolerance make the Kenna Universal Drill the preferred pilot drill for B27_ Series Solid Carbide Deep-Hole Drills.

Features and Benefits

Kenna Universal Drill-Point Design

- Low thrust. Works well on a variety of machines.
- Excellent centring capabilities.
- Easy to regrind.

Four-Margin Land Design

- Improves hole straightness and roundness.
- Provides good alignment and stability in tough drilling applications — even when drilling through cross holes.

KC7315™ Grade

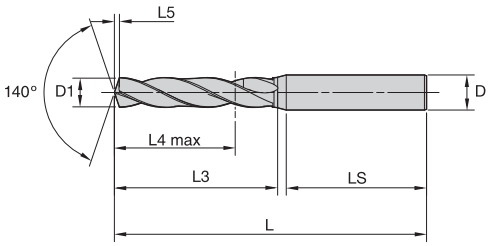
- A multilayer, TiAlN-based coating with high hot hardness enables 30% higher cutting speeds and constant tool life.
- Surface finish ensures chip evacuation when drilling deep holes.

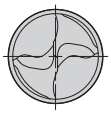
Customisation

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.

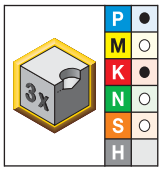
F-Shank

- For standard line items with F-shank, please refer to the e-catalogue on www.kennametal.com.





B966 • ~3 x D

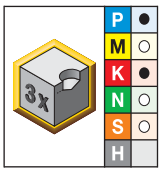


● first choice
○ alternate choice

short • KC7315	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B966A03000	3,000	.1181	–	–	62	14	0,5	36	6
B966A03100	3,100	.1220	–	–	62	14	0,5	36	6
B966A03200	3,200	.1260	–	–	62	14	0,5	36	6
B966A03300	3,300	.1299	–	–	62	14	0,5	36	6
B966A03400	3,400	.1339	–	–	62	14	0,6	36	6
B966A03500	3,500	.1378	–	–	62	14	0,6	36	6
B966A03600	3,600	.1417	–	–	62	14	0,6	36	6
B966A03700	3,700	.1457	–	–	62	14	0,6	36	6
B966A03800	3,800	.1496	–	–	66	17	0,6	36	6
B966A03900	3,900	.1535	–	–	66	17	0,6	36	6
B966A04000	4,000	.1575	–	–	66	17	0,7	36	6
B966A04100	4,100	.1614	–	–	66	17	0,7	36	6
B966A04200	4,200	.1654	–	–	66	17	0,7	36	6
B966A04300	4,300	.1693	–	–	66	17	0,7	36	6
B966A04400	4,400	.1732	–	–	66	17	0,7	36	6
B966A04500	4,500	.1772	–	–	66	17	0,7	36	6
B966A04600	4,600	.1811	–	–	66	17	0,8	36	6
B966A04700	4,700	.1850	–	13	66	17	0,8	36	6
B966A04800	4,800	.1890	–	12	66	20	0,8	36	6
B966A04900	4,900	.1929	–	–	66	20	0,8	36	6
B966A05000	5,000	.1969	–	–	66	20	0,8	36	6
B966A05100	5,100	.2008	–	–	66	20	0,8	36	6
B966A05200	5,200	.2047	–	–	66	20	0,9	36	6
B966A05300	5,300	.2087	–	–	66	20	0,9	36	6
B966A05400	5,400	.2126	–	–	66	20	0,9	36	6
B966A05500	5,500	.2165	–	–	66	20	0,9	36	6
B966A05600	5,600	.2205	–	–	66	20	0,9	36	6
B966A05700	5,700	.2244	–	–	66	20	1,0	36	6
B966A05800	5,800	.2283	–	–	66	20	1,0	36	6
B966A05900	5,900	.2323	–	–	66	20	1,0	36	6
B966A06000	6,000	.2362	–	–	66	20	1,0	36	6
B966A06100	6,100	.2402	–	–	79	24	1,0	36	8
B966A06200	6,200	.2441	–	–	79	24	1,0	36	8
B966A06300	6,300	.2480	–	–	79	24	1,1	36	8
B966A06400	6,400	.2520	–	–	79	24	1,1	36	8
B966A06500	6,500	.2559	–	–	79	24	1,1	36	8

(continued)

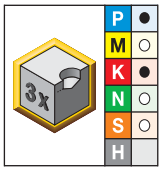
(B966 • ~3 x D continued)



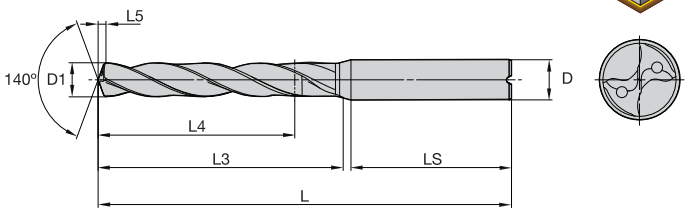
short • KC7315	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B966A06600	6,600	.2598	–	–	79	24	1,1	36	8
B966A06700	6,700	.2638	–	–	79	24	1,1	36	8
B966A06800	6,800	.2677	–	–	79	24	1,1	36	8
B966A06900	6,900	.2717	–	–	79	24	1,2	36	8
B966A07000	7,000	.2756	–	–	79	24	1,2	36	8
B966A07100	7,100	.2795	–	–	79	29	1,2	36	8
B966A07200	7,200	.2835	–	–	79	29	1,2	36	8
B966A07300	7,300	.2874	–	–	79	29	1,2	36	8
B966A07400	7,400	.2913	–	–	79	29	1,3	36	8
B966A07500	7,500	.2953	–	–	79	29	1,3	36	8
B966A07600	7,600	.2992	–	–	79	29	1,3	36	8
B966A07700	7,700	.3031	–	–	79	29	1,3	36	8
B966A07800	7,800	.3071	–	–	79	29	1,3	36	8
B966A07900	7,900	.3110	–	–	79	29	1,3	36	8
B966A08000	8,000	.3150	–	–	79	29	1,4	36	8
B966A08100	8,100	.3189	–	–	89	35	1,4	40	10
B966A08200	8,200	.3228	–	–	89	35	1,4	40	10
B966A08300	8,300	.3268	–	–	89	35	1,4	40	10
B966A08400	8,400	.3307	–	–	89	35	1,4	40	10
B966A08500	8,500	.3346	–	–	89	35	1,4	40	10
B966A08600	8,600	.3386	–	–	89	35	1,5	40	10
B966A08700	8,700	.3425	–	–	89	35	1,5	40	10
B966A08800	8,800	.3465	–	–	89	35	1,5	40	10
B966A08900	8,900	.3504	–	–	89	35	1,5	40	10
B966A09000	9,000	.3543	–	–	89	35	1,5	40	10
B966A09100	9,100	.3583	–	–	89	35	1,5	40	10
B966A09200	9,200	.3622	–	–	89	35	1,6	40	10
B966A09300	9,300	.3661	–	–	89	35	1,6	40	10
B966A09400	9,400	.3701	–	–	89	35	1,6	40	10
B966A09500	9,500	.3740	–	–	89	35	1,6	40	10
B966A09600	9,600	.3780	–	–	89	35	1,6	40	10
B966A09700	9,700	.3819	–	–	89	35	1,7	40	10
B966A09800	9,800	.3858	–	–	89	35	1,7	40	10
B966A09900	9,900	.3898	–	–	89	35	1,7	40	10
B966A10000	10,000	.3937	–	–	89	35	1,7	40	10
B966A10100	10,100	.3976	–	–	102	40	1,7	45	12
B966A10200	10,200	.4016	–	–	102	40	1,7	45	12
B966A10300	10,300	.4055	–	–	102	40	1,8	45	12
B966A10400	10,400	.4094	–	–	102	40	1,8	45	12
B966A10500	10,500	.4134	–	–	102	40	1,8	45	12
B966A10600	10,600	.4173	–	–	102	40	1,8	45	12
B966A10700	10,700	.4213	–	–	102	40	1,8	45	12
B966A10800	10,800	.4252	–	–	102	40	1,8	45	12
B966A10900	10,900	.4291	–	–	102	40	1,9	45	12
B966A11000	11,000	.4331	–	–	102	40	1,9	45	12
B966A11100	11,100	.4370	–	–	102	40	1,9	45	12
B966A11200	11,200	.4409	–	–	102	40	1,9	45	12
B966A11300	11,300	.4449	–	–	102	40	1,9	45	12

(continued)

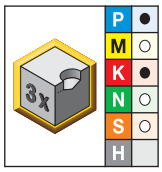
(B966 • ~3 x D continued)

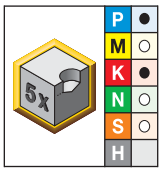


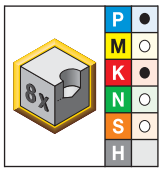
short • KC7315	D1 diameter mm	in	fraction	wire size	L	L4 max	L5	LS	D
B966A11400	11,400	.4488	–	–	102	40	2,0	45	12
B966A11500	11,500	.4528	–	–	102	40	2,0	45	12
B966A11600	11,600	.4567	–	–	102	40	2,0	45	12
B966A11700	11,700	.4606	–	–	102	40	2,0	45	12
B966A11800	11,800	.4646	–	–	102	40	2,0	45	12
B966A11900	11,900	.4685	–	–	102	40	2,0	45	12
B966A12000	12,000	.4724	–	–	102	40	2,1	45	12
B966A12100	12,100	.4764	–	–	107	43	2,1	45	14
B966A12200	12,200	.4803	–	–	107	43	2,1	45	14
B966A12300	12,300	.4843	–	–	107	43	2,1	45	14
B966A12400	12,400	.4882	–	–	107	43	2,1	45	14
B966A12500	12,500	.4921	–	–	107	43	2,1	45	14
B966A12600	12,600	.4961	–	–	107	43	2,2	45	14
B966A12700	12,700	.5000	1/2	–	107	43	2,2	45	14
B966A12800	12,800	.5039	–	–	107	43	2,2	45	14
B966A12900	12,900	.5079	–	–	107	43	2,2	45	14
B966A13000	13,000	.5118	–	–	107	43	2,2	45	14
B966A13100	13,100	.5157	–	–	107	43	2,3	45	14
B966A13200	13,200	.5197	–	–	107	43	2,3	45	14
B966A13300	13,300	.5236	–	–	107	43	2,3	45	14
B966A13500	13,500	.5315	–	–	107	43	2,3	45	14
B966A13700	13,700	.5394	–	–	107	43	2,4	45	14
B966A14000	14,000	.5512	–	–	107	43	2,4	45	14
B966A14200	14,200	.5591	–	–	115	45	2,5	48	16
B966A14300	14,300	.5630	–	–	115	45	2,5	48	16
B966A14500	14,500	.5709	–	–	115	45	2,5	48	16
B966A14700	14,700	.5787	–	–	115	45	2,5	48	16
B966A14800	14,800	.5827	–	–	115	45	2,6	48	16
B966A15000	15,000	.5906	–	–	115	45	2,6	48	16
B966A15500	15,500	.6102	–	–	115	45	2,7	48	16
B966A15700	15,700	.6181	–	–	115	45	2,7	48	16
B966A16000	16,000	.6299	–	–	115	45	2,8	48	16
B966A16500	16,500	.6496	–	–	123	51	2,9	48	18
B966A17000	17,000	.6693	–	–	123	51	2,9	48	18
B966A17500	17,500	.6890	–	–	123	51	3,0	48	18
B966A18000	18,000	.7087	–	–	123	51	3,1	48	18
B966A20000	20,000	.7874	–	–	131	55	3,5	50	20



B976/B977/B978 • ~3 x D/~5 x D/~8 x D





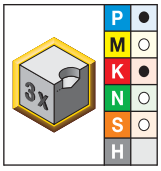


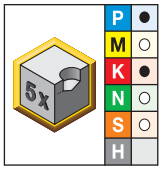
● first choice
○ alternate choice

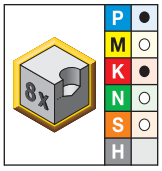
short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
B976Z02383	–	–	2,383	.0938	3/32	–	0,4	28	3
B976Z02400	–	–	2,400	.0945	–	–	0,4	28	3
B976Z02439	–	–	2,439	.0960	–	41	0,4	28	3
B976Z02489	–	–	2,489	.0980	–	40	0,4	28	3
B976Z02500	–	–	2,500	.0984	–	–	0,4	28	3
B976Z02578	–	–	2,578	.1015	–	38	0,4	28	3
B976Z02600	–	–	2,600	.1024	–	–	0,4	28	3
B976Z02642	–	–	2,642	.1040	–	37	0,4	28	3
B976Z02705	–	–	2,705	.1065	–	36	0,4	28	3
B976Z02779	–	–	2,779	.1094	7/64	–	0,4	28	3
B976Z02800	–	–	2,800	.1102	–	–	0,5	28	3
B976Z02820	–	–	2,820	.1110	–	34	0,5	28	3
B976Z02870	–	–	2,870	.1130	–	33	0,5	28	3
B976Z02900	–	–	2,900	.1142	–	–	0,5	28	3
B976Z02947	–	–	2,947	.1160	–	32	0,5	28	3
B976A03000	B977A03000	–	3,000	.1181	–	–	0,5	36	6
–	–	B978A03000	3,000	.1181	–	–	0,6	36	6
B976A03100	B977A03100	–	3,100	.1220	–	–	0,5	36	6
B976A03175	B977A03175	–	3,175	.1250	1/8	–	0,5	36	6
B976A03180	–	–	3,180	.1252	–	–	0,5	36	6
B976A03200	B977A03200	–	3,200	.1260	–	–	0,5	36	6
–	B977A03250	–	3,250	.1280	–	–	0,5	36	6
B976A03300	B977A03300	–	3,300	.1299	–	–	0,5	36	6
–	B977A03400	–	3,400	.1339	–	–	0,6	36	6
B976A03454	B977A03454	–	3,454	.1360	–	29	0,6	36	6
B976A03500	B977A03500	–	3,500	.1378	–	–	0,6	36	6
B976A03600	B977A03600	–	3,600	.1417	–	–	0,6	36	6
B976A03700	B977A03700	–	3,700	.1457	–	–	0,6	36	6
B976A03734	B977A03734	–	3,734	.1470	–	26	0,6	36	6
B976A03797	B977A03797	–	3,797	.1495	–	25	0,6	36	6
B976A03800	B977A03800	–	3,800	.1496	–	–	0,6	36	6
–	B977A03900	–	3,900	.1535	–	–	0,6	36	6
B976A03970	B977A03970	–	3,970	.1563	5/32	–	0,7	36	6
–	–	B978A03970	3,970	.1563	5/32	–	0,8	36	6
B976A04000	B977A04000	–	4,000	.1575	–	–	0,7	36	6
–	–	B978A04000	4,000	.1575	–	–	0,8	36	6
B976A04039	B977A04039	–	4,039	.1590	–	21	0,7	36	6
–	B977A04100	–	4,100	.1614	–	–	0,7	36	6
B976A04200	B977A04200	–	4,200	.1654	–	–	0,7	36	6
–	–	B978A04200	4,200	.1654	–	–	0,9	36	6
B976A04300	B977A04300	–	4,300	.1693	–	–	0,7	36	6
B976A04366	B977A04366	–	4,366	.1719	11/64	–	0,7	36	6

(continued)

(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)



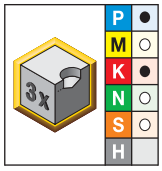


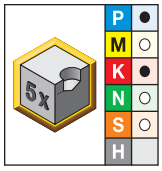


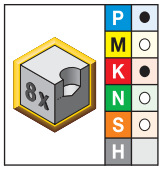
short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	B977A04400	–	4,400	.1732	–	–	0,7	36	6
B976A04496	B977A04496	–	4,496	.1770	–	16	0,7	36	6
B976A04500	B977A04500	–	4,500	.1772	–	–	0,7	36	6
–	–	B978A04500	4,500	.1772	–	–	0,9	36	6
–	B977A04580	–	4,580	.1803	–	15	0,8	36	6
B976A04600	B977A04600	–	4,600	.1811	–	–	0,8	36	6
B976A04620	–	–	4,620	.1819	–	–	0,8	36	6
–	B977A04623	–	4,623	.1820	–	14	0,8	36	6
–	B977A04650	–	4,650	.1831	–	–	0,8	36	6
B976A04700	B977A04700	–	4,700	.1850	–	13	0,8	36	6
B976A04763	B977A04763	–	4,763	.1875	3/16	–	0,8	36	6
–	–	B978A04763	4,763	.1875	3/16	–	1,0	36	6
B976A04800	B977A04800	–	4,800	.1890	–	12	0,8	36	6
B976A04900	B977A04900	–	4,900	.1929	–	–	0,8	36	6
B976A05000	B977A05000	–	5,000	.1969	–	–	0,8	36	6
–	–	B978A05000	5,000	.1969	–	–	1,0	36	6
B976A05100	B977A05100	–	5,100	.2008	–	–	0,8	36	6
–	–	B978A05100	5,100	.2008	–	–	1,1	36	6
B976A05106	B977A05106	–	5,106	.2010	–	7	0,8	36	6
B976A05200	B977A05200	–	5,200	.2047	–	–	0,9	36	6
–	–	B978A05200	5,200	.2047	–	–	1,1	36	6
B976A05250	–	–	5,250	.2067	–	–	0,9	36	6
B976A05300	B977A05300	–	5,300	.2087	–	–	0,9	36	6
–	–	B978A05300	5,300	.2087	–	–	1,1	36	6
B976A05400	B977A05400	–	5,400	.2126	–	–	0,9	36	6
B976A05410	B977A05410	–	5,410	.2130	–	3	0,9	36	6
B976A05500	B977A05500	–	5,500	.2165	–	–	0,9	36	6
–	–	B978A05500	5,500	.2165	–	–	1,1	36	6
B976A05558	B977A05558	–	5,558	.2188	7/32	–	0,9	36	6
–	–	B978A05558	5,558	.2188	7/32	–	1,2	36	6
B976A05575	–	–	5,575	.2195	–	–	0,9	36	6
B976A05600	B977A05600	–	5,600	.2205	–	–	0,9	36	6
B976A05700	B977A05700	–	5,700	.2244	–	–	1,0	36	6
–	–	B978A05700	5,700	.2244	–	–	1,2	36	6
B976A05791	B977A05791	–	5,791	.2280	–	1	1,0	36	6
B976A05800	B977A05800	–	5,800	.2283	–	–	1,0	36	6
–	B977A05900	–	5,900	.2323	–	–	1,0	36	6
B976A05944	B977A05944	–	5,944	.2340	–	A	1,0	36	6
B976A06000	B977A06000	–	6,000	.2362	–	–	1,0	36	6
–	–	B978A06000	6,000	.2362	–	–	1,2	36	6
–	B977A06100	–	6,100	.2402	–	–	1,0	36	8
–	–	B978A06100	6,100	.2402	–	–	1,3	36	8
B976A06200	B977A06200	–	6,200	.2441	–	–	1,0	36	8
–	–	B978A06200	6,200	.2441	–	–	1,3	36	8
–	B977A06300	–	6,300	.2480	–	–	1,1	36	8
–	–	B978A06300	6,300	.2480	–	–	1,3	36	8
B976A06350	B977A06350	–	6,350	.2500	1/4	E	1,1	36	8
–	–	B978A06350	6,350	.2500	1/4	E	1,3	36	8
–	B977A06400	–	6,400	.2520	–	–	1,1	36	8
–	–	B978A06400	6,400	.2520	–	–	1,3	36	8
B976A06500	B977A06500	–	6,500	.2559	–	–	1,1	36	8
–	–	B978A06500	6,500	.2559	–	–	1,4	36	8

(continued)

(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)



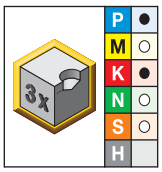


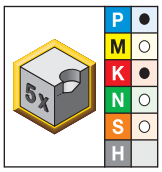


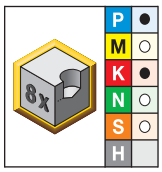
short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
B976A06528	B977A06528	–	6,528	.2570	–	F	1,1	36	8
B976A06530	–	–	6,530	.2571	–	–	1,1	36	8
B976A06600	B977A06600	–	6,600	.2598	–	–	1,1	36	8
–	–	B978A06600	6,600	.2598	–	–	1,4	36	8
B976A06700	B977A06700	–	6,700	.2638	–	–	1,1	36	8
–	–	B978A06700	6,700	.2638	–	–	1,4	36	8
B976A06746	–	–	6,746	.2656	17/64	–	1,1	36	8
–	–	B978A06746	6,746	.2656	17/64	–	1,4	36	8
B976A06750	–	–	6,750	.2657	–	–	1,1	36	8
B976A06800	B977A06800	–	6,800	.2677	–	–	1,1	36	8
–	–	B978A06800	6,800	.2677	–	–	1,4	36	8
–	B977A06900	–	6,900	.2717	–	–	1,2	36	8
B976A06909	B977A06909	–	6,909	.2720	–	I	1,2	36	8
B976A07000	B977A07000	–	7,000	.2756	–	–	1,2	36	8
–	–	B978A07000	7,000	.2756	–	–	1,5	36	8
–	B977A07100	–	7,100	.2795	–	–	1,2	36	8
B976A07145	B977A07145	–	7,145	.2813	9/32	–	1,2	36	8
–	–	B978A07145	7,145	.2813	9/32	–	1,5	36	8
B976A07200	B977A07200	–	7,200	.2835	–	–	1,2	36	8
–	B977A07300	–	7,300	.2874	–	–	1,2	36	8
B976A07366	B977A07366	–	7,366	.2900	–	L	1,2	36	8
B976A07400	B977A07400	–	7,400	.2913	–	–	1,3	36	8
B976A07500	B977A07500	–	7,500	.2953	–	–	1,3	36	8
–	–	B978A07500	7,500	.2953	–	–	1,6	36	8
B976A07541	B977A07541	–	7,541	.2969	19/64	–	1,3	36	8
–	–	B978A07541	7,541	.2969	19/64	–	1,6	36	8
–	B977A07600	–	7,600	.2992	–	–	1,3	36	8
–	B977A07700	–	7,700	.3031	–	–	1,3	36	8
–	–	B978A07700	7,700	.3031	–	–	1,6	36	8
B976A07800	B977A07800	–	7,800	.3071	–	–	1,3	36	8
–	–	B978A07800	7,800	.3071	–	–	1,6	36	8
B976A07900	B977A07900	–	7,900	.3110	–	–	1,3	36	8
B976A07938	B977A07938	–	7,938	.3125	5/16	–	1,3	36	8
–	–	B978A07938	7,938	.3125	5/16	–	1,7	36	8
B976A08000	B977A08000	–	8,000	.3150	–	–	1,4	36	8
–	–	B978A08000	8,000	.3150	–	–	1,7	36	8
B976A08100	B977A08100	–	8,100	.3189	–	–	1,4	40	10
–	–	B978A08100	8,100	.3189	–	–	1,7	40	10
B976A08200	B977A08200	–	8,200	.3228	–	–	1,4	40	10
B976A08300	B977A08300	–	8,300	.3268	–	–	1,4	40	10
B976A08334	B977A08334	–	8,334	.3281	21/64	–	1,4	40	10
–	–	B978A08334	8,334	.3281	21/64	–	1,8	40	10
–	B977A08400	–	8,400	.3307	–	–	1,4	40	10
B976A08430	–	–	8,430	.3319	–	–	1,4	40	10
B976A08433	B977A08433	–	8,433	.3320	–	Q	1,4	40	10
B976A08500	B977A08500	–	8,500	.3346	–	–	1,4	40	10
–	–	B978A08500	8,500	.3346	–	–	1,8	40	10
B976A08600	B977A08600	–	8,600	.3386	–	–	1,5	40	10
–	–	B978A08600	8,600	.3386	–	–	1,8	40	10
B976A08700	B977A08700	–	8,700	.3425	–	–	1,5	40	10
–	–	B978A08700	8,700	.3425	–	–	1,8	40	10
B976A08733	B977A08733	–	8,733	.3438	11/32	–	1,5	40	10

(continued)

(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)



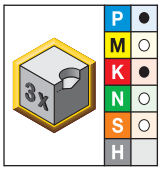
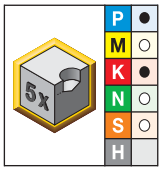
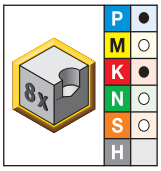




short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	–	**B978A08733**	8,733	.3438	11/32	–	1,8	40	10
B976A08800	**B977A08800**	–	8,800	.3465	–	–	1,5	40	10
–	–	**B978A08800**	8,800	.3465	–	–	1,9	40	10
B976A08839	**B977A08839**	–	8,839	.3480	–	S	1,5	40	10
–	**B977A08900**	–	8,900	.3504	–	–	1,5	40	10
B976A09000	**B977A09000**	–	9,000	.3543	–	–	1,5	40	10
–	–	**B978A09000**	9,000	.3543	–	–	1,9	40	10
B976A09093	**B977A09093**	–	9,093	.3580	–	T	1,5	40	10
B976A09100	**B977A09100**	–	9,100	.3583	–	–	1,5	40	10
–	–	**B978A09100**	9,100	.3583	–	–	1,9	40	10
B976A09129	**B977A09129**	–	9,129	.3594	23/64	–	1,6	40	10
–	–	**B978A09129**	9,129	.3594	23/64	–	1,9	40	10
B976A09200	**B977A09200**	–	9,200	.3622	–	–	1,6	40	10
B976A09300	**B977A09300**	–	9,300	.3661	–	–	1,6	40	10
–	**B977A09347**	–	9,347	.3680	–	U	1,6	40	10
B976A09400	**B977A09400**	–	9,400	.3701	–	–	1,6	40	10
B976A09500	**B977A09500**	–	9,500	.3740	–	–	1,6	40	10
–	–	**B978A09500**	9,500	.3740	–	–	2,0	40	10
B976A09525	**B977A09525**	–	9,525	.3750	3/8	–	1,6	40	10
–	–	**B978A09525**	9,525	.3750	3/8	–	2,0	40	10
B976A09600	**B977A09600**	–	9,600	.3780	–	–	1,6	40	10
B976A09700	**B977A09700**	–	9,700	.3819	–	–	1,7	40	10
–	–	**B978A09700**	9,700	.3819	–	–	2,0	40	10
–	**B977A09703**	–	9,703	.3820	–	–	1,7	40	10
–	**B977A09746**	–	9,746	.3837	–	–	1,7	40	10
B976A09750	–	–	9,750	.3839	–	–	1,7	40	10
B976A09800	**B977A09800**	–	9,800	.3858	–	–	1,7	40	10
–	–	**B978A09800**	9,800	.3858	–	–	2,1	40	10
–	**B977A09900**	–	9,900	.3898	–	–	1,7	40	10
–	–	**B978A09900**	9,900	.3898	–	–	2,1	40	10
B976A09921	**B977A09921**	–	9,921	.3906	25/64	–	1,7	40	10
–	–	**B978A09921**	9,921	.3906	25/64	–	2,1	40	10
B976A10000	**B977A10000**	–	10,000	.3937	–	–	1,7	40	10
–	–	**B978A10000**	10,000	.3937	–	–	2,1	40	10
–	**B977A10100**	–	10,100	.3976	–	–	1,7	45	12
–	–	**B978A10100**	10,100	.3976	–	–	2,1	45	12
B976A10200	**B977A10200**	–	10,200	.4016	–	–	1,7	45	12
–	–	**B978A10200**	10,200	.4016	–	–	2,2	45	12
B976A10262	**B977A10262**	–	10,262	.4040	–	Y	1,8	45	12
–	**B977A10300**	–	10,300	.4055	–	–	1,8	45	12
–	–	**B978A10300**	10,300	.4055	–	–	2,2	45	12
B976A10320	**B977A10320**	–	10,320	.4063	13/32	–	1,8	45	12
–	–	**B978A10320**	10,320	.4063	13/32	–	2,2	45	12
–	**B977A10400**	–	10,400	.4094	–	–	1,8	45	12
B976A10500	**B977A10500**	–	10,500	.4134	–	–	1,8	45	12
–	–	**B978A10500**	10,500	.4134	–	–	2,2	45	12
–	**B977A10600**	–	10,600	.4173	–	–	1,8	45	12
B976A10700	**B977A10700**	–	10,700	.4213	–	–	1,8	45	12
B976A10716	**B977A10716**	–	10,716	.4219	27/64	–	1,8	45	12
–	–	**B978A10716**	10,716	.4219	27/64	–	2,3	45	12
B976A10800	**B977A10800**	–	10,800	.4252	–	–	1,8	45	12
–	–	**B978A10800**	10,800	.4252	–	–	2,3	45	12
–	**B977A10900**	–	10,900	.4291	–	–	1,9	45	12
B976A11000	**B977A11000**	–	11,000	.4331	–	–	1,9	45	12

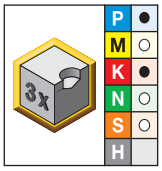
(continued)

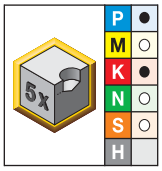
(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)

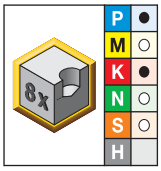
			D1 diameter						
short • KC7315	long • KC7315	extra long • KC7315	mm	in	fraction	wire size	L5	LS	D
–	–	B978A11000	11,000	.4331	–	–	2,3	45	12
–	B977A11100	–	11,100	.4370	–	–	1,9	45	12
B976A11113	B977A11113	–	11,113	.4375	7/16	–	1,9	45	12
–	–	B978A11113	11,113	.4375	7/16	–	2,4	45	12
B976A11200	B977A11200	–	11,200	.4409	–	–	1,9	45	12
–	–	B978A11200	11,200	.4409	–	–	2,4	45	12
B976A11300	B977A11300	–	11,300	.4449	–	–	1,9	45	12
–	–	B978A11300	11,300	.4449	–	–	2,4	45	12
–	B977A11400	–	11,400	.4488	–	–	2,0	45	12
–	–	B978A11400	11,400	.4488	–	–	2,4	45	12
B976A11500	B977A11500	–	11,500	.4528	–	–	2,0	45	12
–	–	B978A11500	11,500	.4528	–	–	2,4	45	12
B976A11509	B977A11509	–	11,509	.4531	29/64	–	2,0	45	12
–	–	B978A11509	11,509	.4531	29/64	–	2,4	45	12
–	B977A11600	–	11,600	.4567	–	–	2,0	45	12
B976A11700	B977A11700	–	11,700	.4606	–	–	2,0	45	12
–	–	B978A11700	11,700	.4606	–	–	2,5	45	12
–	B977A11800	–	11,800	.4646	–	–	2,0	45	12
–	–	B978A11800	11,800	.4646	–	–	2,5	45	12
–	B977A11900	–	11,900	.4685	–	–	2,0	45	12
B976A11908	B977A11908	–	11,908	.4688	15/32	–	2,0	45	12
–	–	B978A11908	11,908	.4688	15/32	–	2,5	45	12
B976A12000	B977A12000	–	12,000	.4724	–	–	2,1	45	12
–	–	B978A12000	12,000	.4724	–	–	2,5	45	12
–	B977A12100	–	12,100	.4764	–	–	2,1	45	14
–	B977A12200	–	12,200	.4803	–	–	2,1	45	14
B976A12300	B977A12300	–	12,300	.4843	–	–	2,1	45	14
B976A12304	B977A12304	–	12,304	.4844	31/64	–	2,1	45	14
–	–	B978A12304	12,304	.4844	31/64	–	2,6	45	14
–	B977A12400	–	12,400	.4882	–	–	2,1	45	14
B976A12500	B977A12500	–	12,500	.4921	–	–	2,1	45	14
–	–	B978A12500	12,500	.4921	–	–	2,7	45	14
–	B977A12600	–	12,600	.4961	–	–	2,2	45	14
B976A12700	B977A12700	–	12,700	.5000	1/2	–	2,2	45	14
–	–	B978A12700	12,700	.5000	1/2	–	2,7	45	14
B976A12800	B977A12800	–	12,800	.5039	–	–	2,2	45	14
–	–	B978A12800	12,800	.5039	–	–	2,7	45	14
–	B977A12900	–	12,900	.5079	–	–	2,2	45	14
–	B977A12903	–	12,903	.5080	–	–	2,2	45	14
B976A13000	B977A13000	–	13,000	.5118	–	–	2,2	45	14
–	–	B978A13000	13,000	.5118	–	–	2,8	45	14
–	B977A13096	–	13,096	.5156	33/64	–	2,3	45	14
–	B977A13100	–	13,100	.5157	–	–	2,3	45	14
B976A13300	B977A13300	–	13,300	.5236	–	–	2,3	45	14
B976A13495	B977A13495	–	13,495	.5313	17/32	–	2,3	45	14
B976A13500	B977A13500	–	13,500	.5315	–	–	2,3	45	14
–	–	B978A13500	13,500	.5315	–	–	2,9	45	14
B976A13700	B977A13700	–	13,700	.5394	–	–	2,4	45	14
–	B977A13800	–	13,800	.5433	–	–	2,4	45	14
B976A14000	B977A14000	–	14,000	.5512	–	–	2,4	45	14
–	–	B978A14000	14,000	.5512	–	–	3,0	45	14
B976A14100	–	–	14,100	.5551	–	–	2,4	48	16
B976A14200	B977A14200	–	14,200	.5591	–	–	2,5	48	16
B976A14288	B977A14288	–	14,288	.5625	9/16	–	2,5	48	16

(continued)

(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)



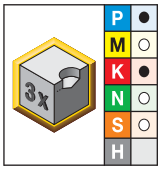


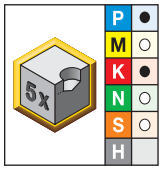


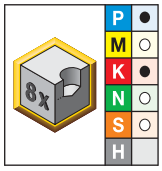
short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	–	**B978A14288**	14,288	.5625	9/16	–	3,0	48	16
B976A14500	**B977A14500**	–	14,500	.5709	–	–	2,5	48	16
–	–	**B978A14500**	14,500	.5709	–	–	3,1	48	16
–	**B977A14600**	–	14,600	.5748	–	–	2,5	48	16
B976A14700	**B977A14700**	–	14,700	.5787	–	–	2,5	48	16
–	**B977A14900**	–	14,900	.5866	–	–	2,6	48	16
B976A15000	**B977A15000**	–	15,000	.5906	–	–	2,6	48	16
–	–	**B978A15000**	15,000	.5906	–	–	3,2	48	16
–	**B977A15100**	–	15,100	.5945	–	–	2,6	48	16
–	–	**B978A15100**	15,100	.5945	–	–	3,2	48	16
–	–	**B978A15200**	15,200	.5984	–	–	3,2	48	16
–	–	**B978A15300**	15,300	.6024	–	–	3,3	48	16
B976A15500	**B977A15500**	–	15,500	.6102	–	–	2,7	48	16
–	–	**B978A15500**	15,500	.6102	–	–	3,3	48	16
–	**B977A15700**	–	15,700	.6181	–	–	2,7	48	16
–	**B977A15800**	–	15,800	.6220	–	–	2,7	48	16
–	–	**B978A15800**	15,800	.6220	–	–	3,4	48	16
B976A15875	**B977A15875**	–	15,875	.6250	5/8	–	2,7	48	16
–	–	**B978A15875**	15,875	.6250	5/8	–	3,4	48	16
–	**B977A15900**	–	15,900	.6260	–	–	2,8	48	16
B976A16000	**B977A16000**	–	16,000	.6299	–	–	2,8	48	16
–	–	**B978A16000**	16,000	.6299	–	–	3,4	48	16
–	**B977A16078**	–	16,078	.6330	–	–	2,8	48	18
–	–	**B978A16078**	16,078	.6330	–	–	3,4	48	18
–	**B977A16200**	–	16,200	.6378	–	–	2,8	48	18
–	–	**B978A16200**	16,200	.6378	–	–	3,5	48	18
–	**B977A16400**	–	16,400	.6457	–	–	2,8	48	18
B976A16500	**B977A16500**	–	16,500	.6496	–	–	2,9	48	18
–	–	**B978A16500**	16,500	.6496	–	–	3,5	48	18
–	**B977A16600**	–	16,600	.6535	–	–	2,9	48	18
–	**B977A16667**	–	16,667	.6562	–	–	2,9	48	18
B976A16670	**B977A16670**	–	16,670	.6563	21/32	–	2,9	48	18
–	**B977A16700**	–	16,700	.6575	–	–	2,9	48	18
B976A16800	–	–	16,800	.6614	–	–	2,9	48	18
B976A17000	**B977A17000**	–	17,000	.6693	–	–	2,9	48	18
–	–	**B978A17000**	17,000	.6693	–	–	3,6	48	18
B976A17100	–	–	17,100	.6732	–	–	3,0	48	18
B976A17463	**B977A17463**	–	17,463	.6875	11/16	–	3,0	48	18
–	–	**B978A17463**	17,463	.6875	11/16	–	3,7	48	18
B976A17500	**B977A17500**	–	17,500	.6890	–	–	3,0	48	18
–	–	**B978A17500**	17,500	.6890	–	–	3,7	48	18
–	**B977A17700**	–	17,700	.6969	–	–	3,1	48	18
B976A18000	**B977A18000**	–	18,000	.7087	–	–	3,1	48	18
–		**B978A18000**	18,000	.7087	–	–	3,9	48	18
–	**B977A18400**	–	18,400	.7244	–	–	3,2	50	20
–	**B977A18500**	–	18,500	.7283	–	–	3,2	50	20

(continued)

(B976/B977/B978 • ~3 x D/~5 x D/~8 x D continued)







short • KC7315	long • KC7315	extra long • KC7315	D1 diameter mm	in	fraction	wire size	L5	LS	D
–	–	**B978A18500**	18,500	.7283	–	–	4,0	50	20
–	**B977A18600**	–	18,600	.7323	–	–	3,2	50	20
–	**B977A18800**	–	18,800	.7402	–	–	3,3	50	20
B976A19000	**B977A19000**	–	19,000	.7480	–	–	3,3	50	20
–	–	**B978A19000**	19,000	.7480	–	–	4,1	50	20
B976A19050	**B977A19050**	–	19,050	.7500	3/4	–	3,3	50	20
–	–	**B978A19050**	19,050	.7500	3/4	–	4,1	50	20
–	**B977A19200**	–	19,200	.7559	–	–	3,3	50	20
–	**B977A19253**	–	19,253	.7580	–	–	3,3	50	20
–	–	**B978A19253**	19,253	.7580	–	–	4,1	50	20
–	**B977A19446**	–	19,446	.7656	49/64	–	3,4	50	20
B976A19500	**B977A19500**	–	19,500	.7677	–	–	3,4	50	20
B976A19700	**B977A19700**	–	19,700	.7756	–	–	3,4	50	20
–	–	**B978A19800**	19,800	.7795	–	–	4,2	50	20
B976A19840	**B977A19840**	–	19,840	.7811	–	–	3,5	50	20
–	–	**B978A19840**	19,840	.7811	–	–	4,3	50	20
B976A20000	**B977A20000**	–	20,000	.7874	–	–	3,5	50	20
–	–	**B978A20000**	20,000	.7874	–	–	4,3	50	20

NOTE: The point angle on B978 Series is 132°.

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3–6	0,004/0,016	0,000/-0,008
>6–10	0,006/0,021	0,000/-0,009
>10–18	0,007/0,025	0,000/-0,011
>18–25,4	0,008/0,029	0,000/-0,013

Solid Carbide Drills

Kenna Universal™ Drills • B97_Series • Grade KC7315™ • Through Coolant for Drill Diameters 2–20mm

Material Group		Cutting Speed — vc Range — m/min min	Starting Value	max		Metric Recommended Feed Rate (f) by Diameter 2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	70	**100**	140	mm/r	0,05 - 0,12	0,07 - 0,14	0,08 - 0,16	0,11 - 0,22	0,13 - 0,26	0,15 - 0,31	0,18 - 0,35	0,22 - 0,42	0,28 - 0,54
	2	90	**120**	140	mm/r	0,05 - 0,12	0,07 - 0,14	0,08 - 0,16	0,12 - 0,22	0,14 - 0,26	0,17 - 0,31	0,20 - 0,35	0,24 - 0,42	0,31 - 0,53
	3	60	**80**	100	mm/r	0,06 - 0,13	0,08 - 0,15	0,09 - 0,17	0,13 - 0,23	0,15 - 0,28	0,19 - 0,33	0,22 - 0,38	0,26 - 0,47	0,34 - 0,59
	4	50	**80**	100	mm/r	0,06 - 0,13	0,07 - 0,15	0,08 - 0,17	0,12 - 0,23	0,14 - 0,28	0,17 - 0,33	0,19 - 0,38	0,23 - 0,47	0,29 - 0,59
	6	40	**50**	70	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,14	0,10 - 0,18	0,13 - 0,22	0,14 - 0,24	0,18 - 0,32	0,23 - 0,41
M	1	50	**20**	40	mm/r	0,03 - 0,06	0,04 - 0,07	0,05 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
	2	30	**50**	50	mm/r	0,03 - 0,07	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,14	0,10 - 0,16	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
	3	20	**55**	40	mm/r	0,03 - 0,06	0,04 - 0,07	0,05 - 0,09	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,16 - 0,20
K	1	80	**120**	170	mm/r	0,09 - 0,17	0,11 - 0,22	0,12 - 0,24	0,16 - 0,31	0,20 - 0,38	0,23 - 0,44	0,25 - 0,49	0,31 - 0,60	0,38 - 0,74
	2	80	**110**	140	mm/r	0,11 - 0,15	0,12 - 0,16	0,13 - 0,19	0,16 - 0,25	0,20 - 0,31	0,23 - 0,36	0,25 - 0,40	0,31 - 0,48	0,38 - 0,60
	3	80	**100**	130	mm/r	0,07 - 0,15	0,08 - 0,17	0,09 - 0,19	0,12 - 0,25	0,14 - 0,30	0,17 - 0,35	0,19 - 0,40	0,24 - 0,48	0,30 - 0,60
N	1	90	**230**	315	mm/r	0,06 - 0,13	0,08 - 0,14	0,10 - 0,16	0,12 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,48
	2	90	**225**	270	mm/r	0,06 - 0,12	0,08 - 0,16	0,10 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,44	0,32 - 0,52
	3	90	**180**	270	mm/r	0,11 - 0,14	0,12 - 0,14	0,13 - 0,16	0,14 - 0,20	0,16 - 0,24	0,20 - 0,28	0,24 - 0,32	0,28 - 0,40	0,32 - 0,44
	5	90	**135**	180	mm/r	0,06 - 0,12	0,08 - 0,16	0,01 - 0,20	0,12 - 0,24	0,16 - 0,28	0,20 - 0,32	0,24 - 0,36	0,28 - 0,40	0,32 - 0,48
S	1	10	**25**	30	mm/r	0,02 - 0,05	0,03 - 0,06	0,04 - 0,08	0,06 - 0,10	0,08 - 0,12	0,09 - 0,13	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18
	2	10	**20**	25	mm/r	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16
	3	10	**25**	30	mm/r	0,02 - 0,03	0,02 - 0,04	0,02 - 0,05	0,04 - 0,07	0,06 - 0,09	0,07 - 0,10	0,08 - 0,11	0,09 - 0,13	0,10 - 0,15
	4	10	**25**	40	mm/r	0,02 - 0,03	0,02 - 0,04	0,03 - 0,06	0,05 - 0,08	0,07 - 0,10	0,08 - 0,11	0,09 - 0,12	0,10 - 0,14	0,11 - 0,16

Carbide Recycling

Help preserve and protect our planet!

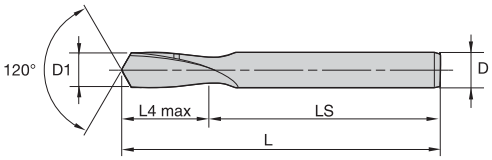
It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

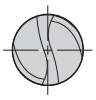
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

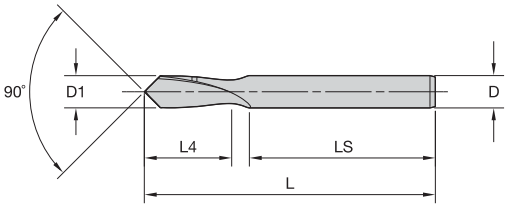




B501 • Z-Shank

● first choice
○ alternate choice

B501 • K10	D1 diameter mm	in	fraction	wire size	L	L4 max	LS	D
B501Z06000	6,000	.2362	–	–	54	9	33	6
B501Z10000	10,000	.3937	–	–	66	12	45	10
B501Z12000	12,000	.4724	–	–	73	14	52	12



B505

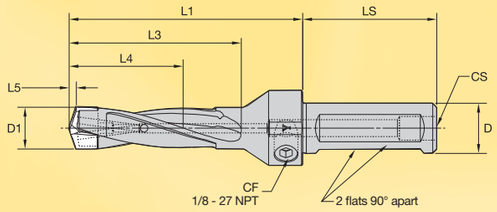
● first choice
○ alternate choice

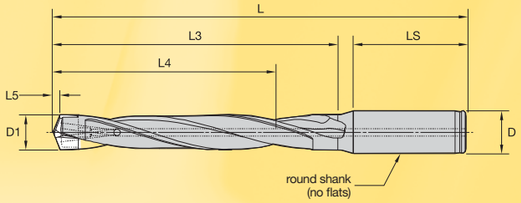
B505 • K10	D1 diameter mm	in	fraction	wire size	L	L4 max	LS	D
B505Z06000	6,000	.2362	–	–	54	9	33	6
B505Z08000	8,000	.3150	–	–	58	11	37	8
B505Z10000	10,000	.3937	–	–	66	12	45	10
B505Z12000	12,000	.4724	–	–	73	14	52	12
B505Z16000	16,000	.6299	–	–	82	16	61	16
B505Z20000	20,000	.7874	–	–	92	18	71	20

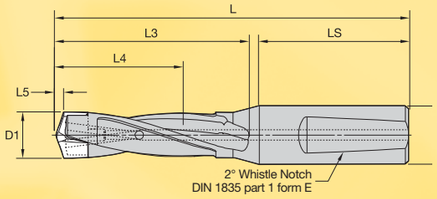
Tolerance • Metric

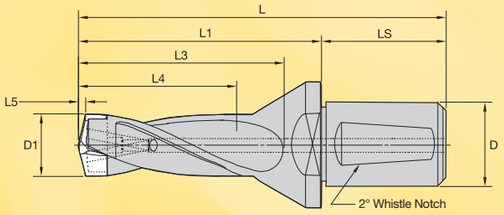
D1	tolerance h8	D	tolerance h6
>3–6	0,000/-0,018	6	0,000/-0,008
>6–10	0,000/-0,022	8–10	0,000/-0,009
>10–18	0,000/-0,027	12–18	0,000/-0,011
>18–21	0,000/-0,033	20	0,000/-0,013

Modular Drills • Dimension Tables









Dimensions for KSEM™ Modular Drills • Inch

Flanged Shank • Inch

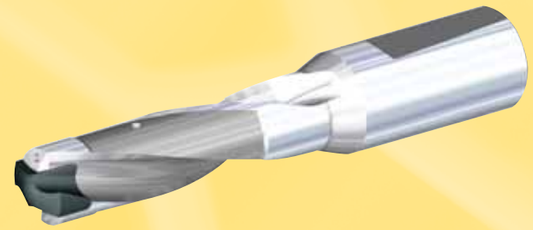
D1 mm	D1 in	5 x D L1	L4 max	wrench	8 x D L1	L4 max	wrench
12,700	.5000	3.94	2.50	170.294	–	–	–
12,929	.5090	4.00	2.55	170.294	–	–	–
13,106	.5160	4.00	2.58	170.294	–	–	–
13,487	.5310	4.13	2.66	170.294	–	–	–
13,894	.5470	4.13	2.73	170.289	–	–	–
14,300	.5630	4.25	2.81	170.289	–	–	–
14,681	.5780	4.31	2.89	170.289	–	–	–
15,088	.5940	4.38	2.97	170.289	–	–	–
15,469	.6090	4.5	3.05	170.289	–	–	–
15,875	.6250	4.75	3.15	170.270	6.25	5.00	170.271
17,463	.6875	5.25	3.54	170.270	7.00	5.50	170.271
19,050	.7500	5.88	3.94	170.271	7.50	6.00	170.281
19,050	.7500	6.00	3.94	170.271	7.50	6.00	170.281
20,637	.8125	6.25	4.33	170.273	8.00	6.50	170.282
20,638	.8125	6.25	4.33	170.273	–	–	170.282
22,225	.8750	6.63	4.72	170.273	8.50	7.00	170.282
22,225	.8750	6.75	4.72	170.273	8.50	7.00	170.282
23,813	.9375	6.63	4.72	170.273	9.13	7.50	170.282
24,606	.9688	7.13	5.12	170.275	–	–	–
25,003	.9844	7.13	5.12	170.275	9.50	7.88	170.283
25,400	1.0000	7.25	5.12	170.275	9.63	8.00	170.283
25,400	1.0000	7.25	5.12	170.275	9.63	8.00	170.283
26,988	1.0625	7.63	5.51	170.275	10.25	8.50	170.283
28,575	1.1250	8.13	5.91	170.277	10.75	9.00	170.284
30,163	1.1875	8.50	6.30	170.277	11.38	9.50	170.284
31,750	1.2500	8.50	6.30	170.277	11.88	10.00	170.284
31,750	1.2500	8.75	6.30	170.277	11.88	10.00	170.284

Round Shank • Inch

D1 mm	D1 in	7 x D L	L4 max	wrench	10 x D L	L4 max	wrench
12,70	.5000	5.63	3.50	170.295	7.75	5.00	170.296
12,70	.5000	6.13	3.50	170.295	–	–	–
12,93	.5090	6.25	3.56	170.295	7.88	5.09	170.296
13,10	.5160	6.25	3.61	170.295	8.00	5.16	170.296
13,49	.5310	6.38	3.72	170.295	8.13	5.31	170.296
13,89	.5470	6.50	3.83	170.290	8.25	5.47	170.291
14,29	.5630	6.63	3.94	170.290	8.38	5.63	170.291
14,68	.5780	6.75	4.05	170.290	8.50	5.78	170.291
15,08	.5940	6.88	4.16	170.290	8.75	5.94	170.291
15,48	.6090	7.00	4.27	170.290	8.88	6.09	170.291
15,88	.6250	7.38	4.41	170.270	9.00	6.25	170.281
16,10	.6335	8.00	4.59	170.271	9.13	6.34	170.281
16,67	.6563	8.00	4.96	170.271	9.38	6.56	170.281
17,46	.6875	8.00	4.96	170.271	9.75	6.88	170.281
18,25	.7188	8.88	5.51	170.271	10.25	7.19	170.281
19,05	.7500	8.88	5.51	170.271	10.50	7.50	170.281
19,05	.7500	9.88	5.51	170.281	11.50	7.50	170.281
19,28	.7585	8.88	5.51	170.271	–	–	–
19,28	.7585	–	–	–	11.50	7.59	170.281
19,85	.7813	9.88	5.51	170.281	11.75	7.81	170.281
20.64	.8125	10.25	6.06	170.273	12.13	8.13	170.282
21,43	.8438	10.25	6.06	170.273	12.50	8.44	170.282
22,23	.8750	10.88	6.61	170.282	12.75	8.75	170.282
22,23	.8750	11.13	6.61	170.282	–	–	–
22.45	.8835	10.88	6.61	170.282	12.88	8.84	170.282
23,02	.9063	10.88	6.61	170.282	13.13	9.06	170.282
23,81	.9375	10.88	6.61	170.282	13.44	9.38	170.282
24,61	.9688	11.63	7.17	170.275	13.88	9.69	170.283
25,00	.9844	11.63	7.17	170.283	14.00	9.84	170.283
25,40	1.0000	11.63	7.17	170.283	14.13	10.00	170.283
25,40	1.0000	11.88	7.17	170.283	14.38	10.00	170.283
25,68	1.0105	12.25	7.08	170.283	14.50	10.11	170.283
26,20	1.0313	12.50	7.72	170.283	14.75	10.31	170.283
26,99	1.0625	12.50	7.72	170.283	15.13	10.63	170.283
27,78	1.0938	12.50	7.72	170.283	15.50	10.94	170.283
28,58	1.1250	13.13	8.27	170.284	15.75	11.25	170.284
29,37	1.1563	13.13	8.27	170.284	16.13	11.56	170.284
30,16	1.1875	13.75	8.82	170.284	16.50	11.88	170.284
30,96	1.2188	13.75	8.82	170.284	16.88	12.19	170.284
31,75	1.2500	13.75	8.82	170.284	17.13	12.50	170.284
31,75	1.2500	14.25	8.82	170.284	17.63	12.50	170.284

Round Shank • Inch

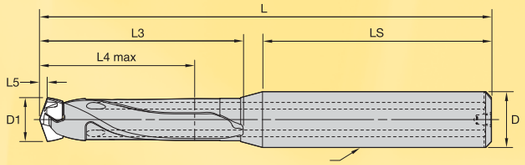
D1 mm	D1 in	3 x D L	L4 max	wrench	5 x D L	L4 max	wrench
12,700	.5000	–	–	170.294	4.63	2.50	170.294
12,700	.5000	4.13	1.50	170.294	5.13	2.50	170.294
12,929	.5090	4.25	1.53	170.294	5.25	2.55	170.294
13,106	.5160	–	–	170.294	5.25	2.58	170.294
13,487	.5310	4.25	1.59	170.294	5.38	2.66	170.294
13,894	.5470	4.38	1.64	170.289	5.44	2.73	170.289
14,300	.5630	4.38	1.69	170.289	5.50	2.81	170.289
14,681	.5780	4.50	1.73	170.289	5.63	2.89	170.289
15,088	.5940	4.50	1.78	170.289	5.75	2.97	170.289
15,469	.6090	4.63	1.83	170.289	5.88	3.05	170.289
15,875	.6250	4.63	1.88	170.270	6.00	3.15	170.270
16,091	.6335	–	–	170.270	6.50	3.54	170.270
16,104	.6340	4.75	1.90	170.270	–	–	170.270
16,281	.6410	4.75	1.92	170.270	6.50	3.54	170.270
16,662	.6560	4.88	1.97	170.270	–	–	170.270
16,669	.6563	–	–	170.270	6.50	3.54	170.270
17,069	.6720	4.88	2.02	170.270	6.50	3.54	170.270
17,463	.6875	4.88	2.06	170.270	6.50	3.54	170.270
17,856	.7030	5.00	2.11	170.270	6.50	3.54	170.270
18,256	.7188	–	–	170.270	7.25	3.94	170.270
18,263	.7190	5.00	2.16	170.270	–	–	170.270
18,644	.7340	5.13	2.20	170.270	7.25	3.94	170.270
19,050	.7500	6.13	2.25	170.270	8.25	3.94	170.271
19,050	.7500	5.13	2.25	170.270	7.25	3.94	170.270
19,279	.7585	5.25	2.28	170.270	7.25	3.94	170.270
19,456	.7660	6.25	2.30	170.270	8.25	3.94	170.271
19,845	.7813	6.25	2.34	170.270	8.13	3.94	170.271
19,837	.7810	–	–	–	–	–	170.271
20,244	.7970	6.38	2.39	170.272	8.50	4.33	170.272
20,638	.8125	6.38	2.44	170.272	8.50	4.33	170.272
21,431	.8438	–	–	170.272	8.50	4.33	170.272
21,438	.8440	6.50	2.53	170.272	–	–	170.272
21,829	.8590	6.63	2.58	170.272	8.50	4.33	170.272
21,819	.8590	–	–	170.272	–	–	170.272
22,225	.8750	6.88	2.63	170.272	9.00	4.72	170.273
22,225	.8750	6.63	2.63	170.272	9.25	4.72	170.273
22,454	.8835	6.75	2.65	170.272	9.00	4.72	170.273
22,454	.8840	–	–	170.272	–	–	170.273
23,012	.9060	6.75	2.72	170.272	–	–	170.273
23,019	.9063	–	–	170.272	9.00	4.72	170.273
23,419	.9220	6.88	2.77	170.272	9.00	4.72	170.273
23,813	.9375	6.88	2.81	170.272	9.00	4.72	170.273
24,606	.9688	–	–	170.272	9.50	5.12	170.274
24,613	.9690	7.00	2.91	170.274	–	–	170.274
25,003	.9844	7.13	2.95	170.274	9.50	5.12	170.274
25,400	1.0000	7.13	3.00	170.274	9.75	5.12	170.274
25,400	1.0000	–	–	170.274	9.50	5.12	170.274
25,679	1.0105	–	–	170.274	10.00	5.06	170.274
25,679	1.0110	7.50	3.03	170.274	–	–	–
26,187	1.0310	7.50	3.09	170.274	–	–	–
26,195	1.0313	–	–	170.274	10.25	5.51	170.275
26,594	1.0470	–	–	170.274	10.25	5.51	170.275
26,988	1.0625	7.63	3.19	170.274	10.25	5.51	170.275
27,781	1.0938	–	–	170.274	10.25	5.51	170.275
28,169	1.1090	7.88	3.33	170.274	10.75	5.91	170.276
28,575	1.1250	7.88	3.38	170.276	10.75	5.91	170.276
29,362	1.1560	8.00	3.47	170.276	–	–	–
29,370	1.1563	–	–	170.276	10.75	5.91	170.276
29,769	1.1720	8.13	3.52	170.276	10.75	5.91	170.276
30,163	1.1875	8.13	3.56	170.276	11.25	6.30	170.277
30,556	1.2030	–	–	170.276	11.25	6.30	170.277
30,958	1.2188	–	–	170.276	11.25	6.30	170.277
30,963	1.2190	8.25	3.66	170.276	–	–	–
31,750	1.2500	8.38	3.75	170.276	11.75	6.30	170.277
31,750	1.2500	8.88	3.75	170.276	11.25	6.30	170.277
32,537	1.2810	9.00	3.84	170.276	12.50	6.41	170.277
32,941	1.2970	–	–	170.276	12.50	6.48	170.277
32,944	1.2970	9.13	3.89	170.276	–	–	–
33,350	1.3130	9.13	3.94	170.276	12.50	6.56	170.277
33,731	1.3280	9.25	3.98	170.276	–	–	–
33,734	1.3280	–	–	170.276	12.50	6.64	170.277
34,138	1.3440	–	–	170.276	13.00	6.72	170.277
34,925	1.3750	9.38	4.13	170.276	13.00	6.87	170.277
35,712	1.4060	9.50	4.22	170.276	13.00	7.03	170.277
36,119	1.4220	–	–	170.276	13.50	7.11	170.277
36,513	1.4380	–	–	170.276	13.50	7.19	170.277
36,525	1.4380	9.63	4.31	170.276	–	–	–
37,313	1.4690	–	–	170.276	13.50	7.34	170.277
38,100	1.5000	9.88	4.50	170.276	13.50	7.50	170.277
38,456	1.5140	10.00	4.54	170.276	13.50	7.57	170.277

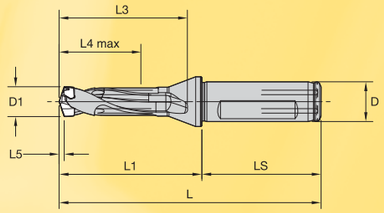


Dimensions for KSEM™ Modular Drills • Metric

D1 mm	D1 inch	WN/WD Shank Metric 3 x D L	L1	L4 max	wrench	5 x D L	L1	L4 max	wrench	WN Shank Metric 7 x D L	L4 max	wrench	10 x D L	L4 max	wrench
12,50	.4921	111	–	42	170.294	139	–	70	170.294	167	98	170.295	195	125	170.296
13,00	.5118	111	–	42	170.294	139	–	70	170.294	167	98	170.295	200	130	170.296
13,50	.5315	111	–	42	170.294	139	–	70	170.294	167	98	170.295	205	135	170.296
13,51	.5319	111	–	42	170.289	139	–	70	170.289	167	98	170.290	205	135	170.291
14,00	.5512	111	–	42	170.289	139	–	70	170.289	167	98	170.290	210	140	170.291
14,50	.5709	122	–	48	170.289	154	–	80	170.289	186	112	170.290	220	145	170.291
14,51	.5713	122	–	48	170.289	154	–	80	170.289	186	112	170.290	220	145	170.291
15,00	.5906	122	–	48	170.289	154	–	80	170.289	186	112	170.290	225	150	170.291
15,50	.6102	122	–	48	170.289	154	–	80	170.289	186	112	170.290	230	155	170.291
16,00	.6299	122	–	48	170.270	154	–	80	170.270	186	112	170.270	234	160	170.271
16,50	.6496	130	–	54	170.270	166	–	90	170.270	202	126	170.271	241	165	170.281
17,00	.6693	130	–	54	170.270	166	–	90	170.270	202	126	170.271	246	170	170.281
17,50	.6890	130	–	54	170.270	166	–	90	170.270	202	126	170.271	251	175	170.281
18,00	.7087	130	–	54	170.270	166	–	90	170.270	202	126	170.271	256	180	170.281
18,01	.7091	–	–	–	–	184	–	100	170.270	–	–	170.271	269	185	170.281
18,50	.7283	144	–	60	170.270	184	–	100	170.270	224	140	170.271	269	185	170.281
19,00	.7480	144	–	60	170.270	184	–	100	170.270	224	140	170.271	274	190	170.281
19,50	.7677	144	–	60	170.270	184	–	100	170.270	224	140	170.271	279	195	170.281
20,00	.7874	153	–	60	170.272	197	–	100	170.272	241	140	170.273	297	200	170.282
20,50	.8071	153	–	66	170.272	197	–	110	170.272	241	154	170.273	297	205	170.282
21,00	.8268	153	–	66	170.272	197	–	110	170.272	241	154	170.273	297	210	170.282
21,50	.8465	153	–	66	170.272	197	–	110	170.272	241	154	170.273	307	215	170.282
22,00	.8661	153	–	66	170.272	197	–	110	170.272	241	154	170.273	307	220	170.282
22,01	.8665	–	–	–	–	209	–	120	170.272	–	–	170.273	319	225	170.282
22,50	.8858	161	–	72	170.272	209	–	120	170.272	257	168	170.273	319	225	170.282
23,00	.9055	161	–	72	170.272	209	–	120	170.272	257	168	170.273	319	230	170.282
23,50	.9252	161	–	72	170.272	209	–	120	170.272	257	168	170.273	329	235	170.282
24,00	.9449	161	–	72	170.272	209	–	120	170.272	257	168	170.273	329	240	170.282
24,01	.9453	–	–	–	–	226	–	130	170.274	–	–	–	346	245	170.283
24,50	.9646	174	–	78	170.274	226	–	130	170.274	278	182	170.275	346	245	170.283
25,00	.9843	174	–	78	170.274	226	–	130	170.274	278	182	170.275	346	250	170.283
25,50	10.039	174	–	78	170.274	226	–	130	170.274	278	182	170.275	356	255	170.283
26,00	10.236	174	–	78	170.274	226	–	130	170.274	278	182	170.275	356	260	170.283
26,01	10.240	–	–	–	–	238	–	140	170.274	–	–	170.275	363	265	170.283
26,50	10.433	182	–	84	170,274	238	–	140	170.274	294	196	170.275	363	265	170.283
27,00	10.630	182	–	84	170.274	238	–	140	170.274	294	196	170.275	368	270	170.283
27,50	10.827	182	–	84	170.274	238	–	140	170.274	294	196	170.275	378	275	170.283
28,00	11.024	182	–	84	170.274	238	–	140	170.274	294	196	170.275	378	280	170.283
28,02	11.028	–	–	–	–	250	–	150	170.276	–	–	–	390	285	170.284
28,50	11.220	190	–	90	170.276	250	–	150	170.276	310	210	170.277	390	285	170.284
29,00	11.417	190	–	90	170.276	250	–	150	170.276	310	210	170.277	390	290	170.284
29,50	11.614	190	–	90	170.276	250	–	150	170.276	310	210	170.277	400	295	170.284
30,00	11.811	190	–	90	170.276	250	–	150	170.276	310	210	170.277	400	300	170.284
30,01	11.815	–	–	–	–	264	–	160	170.276	–	–	170.277	414	305	170.284
30,50	12.008	200	–	96	170.276	264	–	160	170.276	328	224	170.277	–	–	–
31,00	12.205	200	–	96	170.276	264	–	160	170.276	328	224	170.277	414	310	170.284
31,50	12.402	200	–	96	170.276	264	–	160	170.276	328	224	170.277	–	–	–
32,00	12.598	200	–	96	170.276	264	–	160	170.276	328	224	170.277	424	320	170.284
32,01	12.602	220	159	99	170.276	293	225	165	170.277	–	–	–	–	–	–
33,00	12.992	227	159	99	170.276	293	225	165	170.277	–	–	–	–	–	–
34,00	13.386	225	157	102	170.276	293	225	170	170.277	–	–	–	–	–	–
35,00	13.780	235	167	105	170.276	305	237	175	170.277	–	–	–	–	–	–
36,00	14.173	233	165	108	170.276	305	237	180	170.277	–	–	–	–	–	–
36,01	14.177	237	176	111	170.276	318	250	185	170.277	–	–	–	–	–	–
37,00	14.567	244	176	111	170.276	318	250	185	170.277	–	–	–	–	–	–
38,00	14.961	242	174	114	170.276	318	250	190	170.277	–	–	–	–	–	–
39,00	15.354	252	184	117	170.276	330	262	195	170.277	–	–	–	–	–	–
40,00	15.748	250	182	120	170.276	330	262	200	170.277	–	–	–	–	–	–

Modular Drills • Dimension Tables





Dimensions for KenTIP™ Modular Drills • Round Shank • Metric

D1 mm	D1 max	seat	L5	LS	round D	1,5 x D L	L4 max	3 x D L	L4 max	5 x D L	L4 max	8 x D L	L4 max	wrench
8,000	8,490	F	1.4	41	10	67	13	79	26	97	43	123	68	170,306
8,500	8,990	G	1.5	41	10	68	14	81	27	100	45	127	72	170,306
9,000	9,490	H	1.6	41	10	69	14	83	29	103	48	132	76	170,306
9,500	9,990	I	1.6	41	10	70	15	85	30	107	50	137	80	170,306
10.000	10.490	J	1.7	46	12	77	16	92	32	115	53	147	84	170,307
10.500	10.990	K	1.8	46	12	78	17	94	33	118	55	151	88	170,307
11.000	11.490	L	1.9	46	12	79	17	96	35	121	58	156	92	170,307
11.500	11.990	M	2.0	46	12	80	18	98	36	124	60	160	96	170,307
12.000	12.490	N	2.1	46	14	83	19	101	38	127	63	165	100	170,308
12.500	12.990	O	2.2	46	14	84	20	103	39	130	65	169	104	170,308
13.000	13.490	P	2.2	46	14	85	20	105	41	133	68	174	108	170,308
13.500	13.990	Q	2.3	46	14	86	21	107	42	137	70	179	112	170,308
14.000	14.490	R	2.4	49	16	91	22	112	44	143	73	187	116	170,309
14.500	14.990	S	2.5	49	16	92	23	114	45	146	75	191	120	170,309
15.000	15.990	T	2.6	49	16	94	24	118	48	152	80	200	128	170,309
16.000	16.990	U	2.8	49	18	97	26	122	51	158	85	209	136	170,309
17.000	17.990	V	2.9	49	18	100	27	127	54	165	90	219	144	170,314
18.000	18.990	W	3.1	51	20	105	29	133	57	173	95	230	152	170,314
19.000	19.990	X	3.3	51	20	107	30	137	60	179	100	239	160	170,314
20.000	20.990	Y	3.4	57	25	116	32	147	63	191	105	254	168	170,314
21.000	21.990	Z	3.6	56	25	118	33	151	66	198	110	264	176	170,314
22.000	22.990	ZA	3.8	56	25	122	35	156	69	204	115	273	184	170,314
23.000	23.990	ZB	4.0	56	25	124	36	160	72	210	120	282	192	170,314
24.000	24.990	ZC	4.1	56	25	127	38	164	75	216	125	291	200	170,314
25.000	25.990	ZD	4.3	60	32	133	39	172	78	227	130	305	208	170,314
26.000	26.990	ZE	4.5	60	32	138	41	178	81	232	135	315	216	170,314
27.000	27.990	ZE	4.7	61	32	139	42	181	84	239	140	323	224	170,314

Dimensions for KenTIP Modular Drills • Flanged Shank • Metric

D1 mm	D1 max	seat	L5	LS	flanged D	1,5 x D L	L4 max	3 x D L	L4 max	5 x D L	L4 max	8 x D L	L4 max	wrench
8,000	8,490	F	1.4	41	12	73	13	79	26	104	43	129	68	170,306
8,500	8,990	G	1.5	41	12	74	14	81	27	107	45	134	72	170,306
9,000	9,490	H	1.6	41	12	76	14	83	29	110	48	138	76	170,306
9,500	9,990	I	1.6	41	12	77	15	85	30	114	50	144	80	170,306
10.000	10.490	J	1.7	46	16	81	16	92	32	120	53	151	84	170,307
10.500	10.990	K	1.8	46	16	82	17	94	33	123	55	156	88	170,307
11.000	11.490	L	1.9	46	16	84	17	96	35	126	58	160	92	170,307
11.500	11.990	M	2.0	46	16	85	18	98	36	129	60	165	96	170,307
12.000	12.490	N	2.1	46	16	87	19	101	38	132	63	169	100	170,308
12.500	12.990	O	2.2	46	16	88	20	103	39	135	65	174	104	170,308
13.000	13.490	P	2.2	46	16	90	20	105	41	138	68	178	108	170,308
13.500	13.990	Q	2.3	46	16	91	21	107	42	142	70	184	112	170,308
14.000	14.490	R	2.4	49	16	92	22	112	44	145	73	188	116	170,309
14.500	14.990	S	2.5	49	16	93	23	114	45	148	75	193	120	170,309
15.000	15.990	T	2.6	49	20	98	24	118	48	156	80	204	128	170,309
16.000	16.990	U	2.8	49	20	100	26	122	51	162	85	213	136	170,309
17.000	17.990	V	2.9	49	20	104	27	127	54	169	90	223	144	170,314
18.000	18.990	W	3.1	51	25	112	29	133	57	181	95	238	152	170,314
19.000	19.990	X	3.3	51	25	115	30	137	60	187	100	247	160	170,314
20.000	20.990	Y	3.4	57	25	117	32	147	63	193	105	256	168	170,314
21.000	21.990	Z	3.6	56	25	120	33	151	66	200	110	266	176	170,314
22.000	22.990	ZA	3.8	56	25	123	35	156	69	206	115	275	184	170,314
23.000	23.990	ZB	4.0	56	25	126	36	160	72	212	120	284	192	170,314
24.000	24.990	ZC	4.1	56	25	128	38	164	75	218	125	293	200	170,314
25.000	25.990	ZD	4.3	60	25	131	39	172	78	225	130	303	208	170,314
26.000	26.990	ZE	4.5	60	25	135	41	178	81	230	135	313	216	170,314
27.000	27.990	ZE	4.7	61	25	137	42	181	84	237	140	321	224	170,314

Dimensions for KenTIP Modular Drills • Round Shank • Inch

D1 in	D1 max	seat	L5	LS	round D	3 x D L	L4 max	5 x D L	L4 max	8 x D L	L4 max	wrench
.3125	.3343	F	.054	1.59	.3750	3.13	1.00	3.88	1.67	4.88	2.68	170,306
.3346	.3539	G	.058	1.59	.3750	3.25	1.06	4.00	1.77	5.13	2.83	170,306
.3543	.3736	H	.062	1.59	.3750	3.38	1.12	4.13	1.87	5.25	2.99	170,306
.3740	.3933	I	.065	1.59	.3750	3.38	1.18	4.38	1.97	5.38	3.15	170,306
.3740	.3933	I	.065	1.67	.4375	3.38	1.18	4.25	1.97	5.38	3.15	170,306
.3937	.4130	J	.068	1.67	.4375	3.63	1.24	4.63	2.07	5.75	3.31	170,307
.4134	.4327	K	.073	1.67	.4375	3.75	1.30	4.75	2.16	6.00	3.46	170,307
.4331	.4524	L	.075	1.67	.4375	3.88	1.36	4.88	2.26	6.25	3.62	170,307
.4528	.4720	M	.078	1.79	.5000	3.88	1.42	5.00	2.36	6.50	3.78	170,307
.4724	.4917	N	.084	1.79	.5000	4.00	1.48	5.00	2.46	6.75	3.94	170,308
.4921	.5114	O	.086	1.79	.5000	4.13	1.54	5.13	2.56	7.00	4.09	170,308
.4921	.5114	O	.086	1.79	.5625	4.13	1.54	5.13	2.56	7.00	4.09	170,308
.5118	.5311	P	.089	1.79	.5625	4.25	1.60	5.25	2.66	7.13	4.25	170,308
.5315	.5508	Q	.094	1.79	.5625	4.25	1.65	5.50	2.75	7.25	4.41	170,308
.5512	.5705	R	.097	1.79	.5625	4.50	1.71	5.75	2.85	7.38	4.57	170,309
.5709	.5902	S	.100	1.91	.6250	4.50	1.77	5.75	2.95	7.50	4.72	170,309
.5906	.6295	T	.102	1.91	.6250	4.75	1.89	6.00	3.15	7.75	5.04	170,309
.6299	.6689	U	.109	1.91	.6875	4.88	2.01	6.25	3.34	8.00	5.36	170,309
.6693	.7083	V	.120	1.91	.6875	5.00	2.12	6.50	3.54	8.75	5.67	170,314
.7087	.7476	W	.120	2.00	.7500	5.25	2.24	6.88	3.74	9.25	5.98	170,314
.7480	.7870	X	.130	2.00	.7500	5.50	2.36	7.13	3.94	9.63	6.30	170,314
.7874	.8264	Y	.140	2.00	.8125	5.75	2.48	7.50	4.13	10.00	6.61	170,314
.8270	.8660	Z	.143	2.07	.8750	5.88	2.60	7.63	4.33	10.25	6.93	170,314
.8660	.9055	ZA	.149	2.07	.8750	6.00	2.72	7.88	4.53	10.63	7.24	170,314
.9060	.9450	ZB	.156	2.15	.9375	6.25	2.83	8.25	4.72	11.13	7.56	170,314
.9450	.9840	ZC	.163	3.00	1.0000	7.25	2.95	9.38	4.92	12.25	7.87	170,314
.9840	1.0236	ZD	.170	3.00	1.0000	7.38	3.07	9.63	5.12	12.63	8.19	170,314
1.0236	1.1020	ZE	.177	3.25	1.2500	7.86	3.19	9.99	5.32	13.25	8.50	170,314
1.0630	1.1020	ZE	.185	3.25	1.2500	7.98	3.31	10.18	5.51	13.57	8.82	170,314

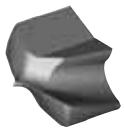
Modular Drills

Tool Selection Guide H2–H3

KenTip H4–H14

KSEM H15–H34

KSEM PLUS H36–H47

modular drills with internal coolant channel		grade/series	standard* ● first choice ○ alternate choice P	M	K	N	S	H	hole tolerance	standard range diameter range D1 mm min–max	D1 inch min–max	drilling depth L/D1
KenTIP™ with front clamping mechanism												
	KenTIP inserts	**KCP15 HP**	●		○				IT9–IT11	7,94–27,99	.3125–1.1020	
		KC7410 HPC			●					7,94–27,99	.3125–1.1020	
		KC7410 HPCCL			●					7,94–26,19	.3125–1.0310	
		KC7320 HPL		●						7,94–27,99	.3125–1.1020	
	chamfering inserts	**KC7014 FAS-GD**	○	○	○	●	○			12,50–36,01	.4921–1.4177	
		KC7215 FAS GD	●	○	●	○	●					
	KenTIP bodies									7,94≤Ø<9,50	.3125≤Ø<.3740	max 1.5–8 x D
										9,50≤Ø<11,00	.3740≤Ø<.4331	
										11,00≤Ø<12,50	.4331≤Ø<.4921	
										12,50≤Ø<14,00	.4921≤Ø<.5512	
										14,00≤Ø<15,50	.5512≤Ø<.6102	
										15,50≤Ø<16,50	.6102≤Ø<.6496	
										16,50≤Ø<20,50	.6496≤Ø<.8071	
										20,50≤Ø<21,00	.8071≤Ø<.8268	
										21,00≤Ø<27,99	.8268≤Ø<1.1020	
KSEM™ for extended length and drilling diameters												
	**KSEM inserts**	**KC7235 HP**	●		○				IT9–IT11	12,50–40,00	.4921–1.5748	
		KC7315 HP/HPG	●		○					12,50–40,00	.4921–1.5748	
		KC7410 HPL			●					12,50–40,00	.4921–1.5748	
		KC7410 HPCCL			●					12,50–32,00	.4921–1.2598	
		KC7320 HPL		●						12,50–40,00	.4921–1.5748	
		KC7135 PC	●		●					12,50–40,00	.4921–1.5748	
	chamfering inserts	**KC7015 TPGX-GD**		●		○				12,50–40,00	.4921–1.5748	
		KC7140 TPGX-GD	●	○	○	●	○					
		KC7315 TPGX-GD	○	○	●	○	●					
	KSEM bodies	**WN**								12.50≤Ø<16.50	.4921≤ Ø<.6496	1–10 x D
										16.50≤Ø<20.00	.6496≤ Ø<.7874	
										20.00≤Ø≤32,00	.7874≤ Ø≤1.2598	
		WD								32,00<Ø≤40,00	1.2598< Ø≤1.5748	1–5 x D
		WN chamfer								12.50≤Ø<16.50	.4921≤ Ø<.6496	1 x D
										16.50≤Ø<20.00	.6496≤ Ø<.7874	
										20.00≤Ø≤32,00	.7874< Ø≤1.2598	
		WD chamfer								32,00<Ø≤40,00	1.2598< Ø<1.5748	1 x D
KSEM PLUS™ for largest drilling depths and diameters												
	heads	**A1 (regular)**							IT9–IT11	28,00–70,00	1.1020–2.7559	
		B1 (guided)							IT9–IT11	**B1 head available in 2012**		
	KSEM PLUS inserts	**KC7315 HPG**	●	●	○	○	○			14,00 - 34,00 *PDD reference only*		
		KC7410 HPC			●							
	DFR™ inserts	**KC7315 DFR-GD**	●	○	○	○	●			(28,00–31,00)	(1.1020–1.2210)	
		KC7140 DFR-LD	●	●	○	○	○					
		KC7225 DFR-MD	○	○	●	●	○					
	DFT™ inserts	**KC7315 DFT-HP**	●	●	●	○	○			(31,75–70,00)	(1.2500–2.7560)	
		KC7140 DFT-MD	●	●	○	○	○					
this is a sample picture, actual appearance can differ from picture shown	**DFC inserts for B1 heads only**	**KCU40 DFC- HP**	●	○	○	●	●			(28,00–70,00)	(1.1020–2.7560)	
		KCU25 DFC- HP	○	○	●	○	○					
		KC7140 DFC-MD	●	●	○	○	○					
	guiding pads for B1 heads only	**KCU 40 DPT**	●	●	●	●	●			**B1 head available in 2012**		
	KSEM PLUS bodies	**WD**							IT9–IT11	31,75≤Ø<40,00	1.2500≤Ø<2.7560	3–10 x D
										40,00≤Ø≤70,00	1.5748≤Ø≤2.5590	3–10 x D
		SSF							IT9–IT11	31,75≤Ø<40,00	1.2500–1.5748	3–10 x D
										40,00≤Ø≤70,00	1.5748–2.5590	3–10 x D

* Apart from our standard drills, we can offer you a wide variety of special coating solutions and edge preparations to fulfill all your needs. If a specific drill is not suitable for your workpiece material, please contact our **Engineered Solutions Department**.

■ Standard Product
□ Engineered Solutions

engineered solution range diameter range D1 metric min–max	D1 inch min–max	max drilling depth	coolant	drilling	inclined exit	stacked plates	flat bottom	counter-sinking	counter-boring	cross hole	2 flute 2 margin cooled	2 flute 4 margin cooled	corner chamfer	plain shank ≤H6	Whistle Notch™ 2°	WD shank	flat shank	SSF shank	KM™ shank	HSK shank	page(s)
7,94–27,99	.3125–1.1020	–		■	□	■	□				■	□	□								H6
		–		■	□	■	□				■	□	■								
		–		■	■	■	□				□	■	■								
		–		■	□	■	□				□	□	□								
12,50–36,01	.4921–1.4177	–						■													H10
		–						■													
7,94≤Ø<9,50	.3125≤Ø<.3740	12 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	H12
9,50≤Ø<11,00	.3740≤Ø<.4331	13 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
11,00≤Ø<12,50	.5424≤Ø<.4921	14 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
12,50≤Ø<14,00	.4921≤Ø<.5512	15 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
14,00≤Ø<15,00	.5512≤Ø<.6102	16 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
15,50≤Ø<16,50	.6102≤Ø<.6496	17 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
16,50≤Ø<20,50	.6496≤Ø<.8070	18 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
20,50≤Ø<21,00	.8070≤Ø<.8267	20 x D	■	■	■	■		□**	□					■	□	□	■	□	□	□	
21,00≤Ø<27,99	.8267≤Ø<1.1010	500,0mm	■	■	■	■		□**	□					■	□	□	■	□	□	□	
12,50–40,00	.4921–1.5748	–		■	■	■	□				■/□	■/□	□								H16
		–		■	■	■	□				■/□	■/□	□								
		–		■	■	■	□				■/□	■/□	■								
		–																			
		–		■	■	■	□				■	□	□								
		–		■	■	■	□				■/□	■/□	□								
12,50–40,00	.4921–1.5748	–						■													H27
		–						■													
		–						■													
12.50≤Ø<16.50	.4921≤Ø<.6496	15 x D	■	■	■	■	□	□	□					□	■	□	□	□	□	□	H23
16.50≤Ø<20.00	.6496≤Ø<.7874	18 x D	■	■	■	■	□	□	□					□	■	□	□	□	□	□	
20.00≤Ø≤32,00	.7874≤Ø≤1.2598	20 x D	■	■	■	■	□	□	□					□	■	□	□	□	□	□	
32,00<Ø≤40,00	1.2598<Ø≤1.5748	20 x D (max 750mm)	■	■	■	■	□	□	□					□	□	■	□	□	□	□	
12.50≤Ø<16.50	.4921≤Ø<.6496	1 x D	■	■	■	■	□	■	□					□	■	□	□	□	□	□	
16.50≤Ø<20.00	.6496≤Ø<.7874		■	■	■	■	□	■	□					□	■	□	□	□	□	□	
20.00≤Ø≤32,00	.7874≤Ø≤1.2598		■	■	■	■	□	■	□					□	■	□	□	□	□	□	
32,00<Ø≤40,00	1.2598<Ø≤1.5748	1 x D	■	■	■	■	□	■	□					□	□	■	□	□	□	□	
28,00–70,00	1.1020–2.7560	–	■	■	■	■	□														H40
B1 head available in 2012		–	■	■	■	■	□			■											
14,00–34,00 *PDD reference only*		–		■	■	■	□				■/□	■/□	□								H42
		–		■	■	■	□				■/□	■/□	□								
28,00≤Ø≤31,75	1.1020≤Ø≤1.2500	–		■	■	■	□				■/□	■/□	□								H43
		–		■	■	■	□				■/□	■/□	□								
		–		■	■	■	□				■/□	■/□	□								
31,75<Ø≤70,00	1.2500<Ø≤2.7560	–		■	■	■	□				■/□	■/□	□								
		–		■	■	■	□				■/□	■/□	□								
28,00<Ø≤70,00	1.1020<Ø≤2.7560	–		■	■	■	□			■	■/□	■/□	□								–
70,00<Ø≤127,00	2.7560<Ø≤5.0000	–		■	■	■	□			■	■/□	■/□	□								
diameters >70mm available in 2012		–																			
B1 head available in 2012		–		■	■	■	□			■											
31,75≤Ø<40,00	1.2500≤Ø<2.7560	3–20x (max 750mm)	■	■	■	■		□	□							■	□	□	□	□	H38
40,00≤Ø≤70,00	1.5748≤Ø≤2.5590		■	■	■	■			□							■	□	□	□	□	
70,00≤Ø≤127,00	2.7559≤Ø≤5.0000	3–8 x D						□													
diameters >70mm available in 2012			■	■	■	■		□	□										□	□	
31,75≤Ø<40,00	1.2500≤Ø<2.7560	3–20x (max 750mm)	■	■	■	■		□	□								□	■	□	□	
40,00≤Ø≤70,00	1.5748≤Ø≤2.5590																				
70,0≤Ø≤127,00	2.7559≤Ø≤5.0000	3–8 x D	■	■	■	■		□	□										□	□	
diameters >70mm available in 2012																					

** Alternative chamfering solutions are available in combination with SEFAS™ or BF; see page I1.
Please use this table for orientation purposes only. Detailed information on available products (inserts, toolholders, etc.) can be found on the indicated pages of this catalogue.

KenTIP™ Modular Drill System

Primary Application

The KenTIP Modular Drill System offers performance levels commonly achieved with solid carbide drills. The patented locking system enables inserts to be changed inside the machine tool. Use KenTIP in steel, cast iron, ductile iron, and stainless steel applications.

KenTIP Modular Drills are available up to diameter 27,99mm (1.1020"). With the new diameter extensions of KSEM PLUS™ down to 28mm, we offer modular drilling solutions with a front clamping mechanism from diameter 8–70mm. The user can change the drilling inserts in the machine without taking the body off, saving setup time and manufacturing costs.

Introducing the all new KenTIP inserts made of KCP15™ grade especially developed to provide longer tool life for steel applications.

Features and Benefits

Improved Interface

- Stronger pocket seats on all inserts and bodies.
- Longer tip and body life in unstable conditions, especially side loads.
- All new tips and bodies are interchangeable with previous versions.

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.
- **NEW** HPC(M) for cast iron applications.
- **NEW** HPL(M) for stainless steel applications.

Easy Insert Change

- Locking method requires no screws or clamps.
- Insert blades can be changed with a simple provided tool and does not require drill body removal from the machine or holder.

Disposable

- No reconditioning costs.
- Consistent performance.
- Eliminates number of tools waiting for reconditioning, providing significant cost savings.

Tailored Grades and Geometries

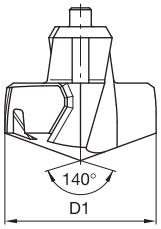
- KCP15 grade has a new PVD coating enabling longer tool life in all steel applications.
- KC7320™ grade has an AlTiN-based PVD coating for the demands of drilling stainless steels.
- KC7410™ grade contains multiple layers of PVD coating offering outstanding wear resistance for the drilling of cast irons. The geometry prevents breakout when drilling through holes.
  - KTIP_HPC inserts are designed for grey cast and low-strength ductile irons (K1).
  - KTIP_HPCL_ inserts are ideal for low- and medium-strength CGI and ductile irons and high-strength ductile and austempered ductile iron (K2, K3).

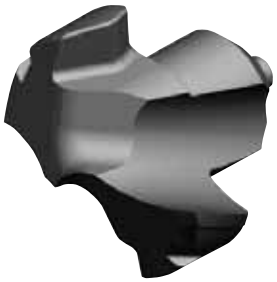
Drill Body Portfolio

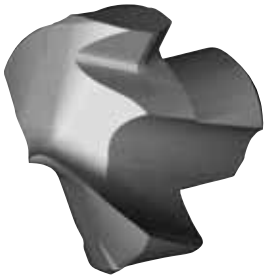
- Standard 3, 5, and 8 x D tool bodies with round and flanged shank available, inch and metric.
- NEW! Standard 1,5 x D bodies available, especially for piloting operations.
- For the latest product list, please refer to the e-catalogue at www.kennametal.com.

Customisation

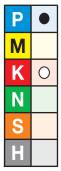
- Intermediate diameters available as semi-standards.
- Close tolerance tips available for precision holes.
- Chamfering insert pockets available.
- Multiple steps possible.



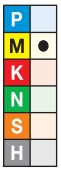




KTIP Inserts



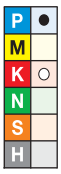
NEW!

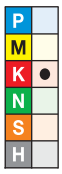


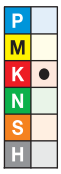
KCP15	KC7410	KC7410	KC7320	D1 mm	D1 in	seat size
KTIP0794HPM	KTIP0794HPCM	KTIP0794HPCCLM	KTIP0794HPLM	7,938	.3125	F
KTIP0800HPM	KTIP0800HPCM	KTIP0800HPCCLM	KTIP0800HPLM	8,000	.3150	F
KTIP0810HPM	KTIP0810HPCM	KTIP0810HPCCLM	KTIP0810HPLM	8,100	.3189	F
KTIP0816HPM	–	–	KTIP0816HPLM	8,164	.3214	F
KTIP0820HPM	KTIP0820HPCM	KTIP0820HPCCLM	KTIP0820HPLM	8,204	.3230	F
KTIP0830HPM	KTIP0830HPCM	KTIP0830HPCCLM	KTIP0830HPLM	8,300	.3268	F
KTIP0833HPM	KTIP0833HPCM	KTIP0833HPCCLM	KTIP0833HPLM	8,334	.3281	F
KTIP0840HPM	KTIP0840HPCM	KTIP0840HPCCLM	KTIP0840HPLM	8,400	.3307	F
KTIP0843HPM	–	–	–	8,433	.3320	F
KTIP0850HPM	KTIP0850HPCM	KTIP0850HPCCLM	KTIP0850HPLM	8,500	.3346	G
KTIP0860HPM	KTIP0860HPCM	KTIP0860HPCCLM	KTIP0860HPLM	8,600	.3386	G
KTIP0861HPM	–	–	–	8,611	.3390	G
KTIP0870HPM	KTIP0870HPCM	KTIP0870HPCCLM	KTIP0870HPLM	8,700	.3425	G
KTIP0873HPM	KTIP0873HPCM	KTIP0873HPCCLM	–	8,733	.3438	G
KTIP0880HPM	KTIP0880HPCM	KTIP0880HPCCLM	KTIP0880HPLM	8,800	.3465	G
KTIP0884HPM	–	–	–	8,839	.3480	G
KTIP0890HPM	KTIP0890HPCM	KTIP0890HPCCLM	KTIP0890HPLM	8,900	.3504	G
KTIP0900HPM	KTIP0900HPCM	KTIP0900HPCCLM	KTIP0900HPLM	9,000	.3543	H
KTIP0909HPM	–	–	–	9,093	.3580	H
KTIP0910HPM	KTIP0910HPCM	–	KTIP0910HPLM	9,100	.3583	H
KTIP0913HPM	KTIP0913HPCM	KTIP0913HPCCLM	–	9,129	.3594	H
KTIP0920HPM	KTIP0920HPCM	KTIP0920HPCCLM	KTIP0920HPLM	9,200	.3622	H
KTIP0930HPM	KTIP0930HPCM	KTIP0930HPCCLM	KTIP0930HPLM	9,300	.3661	H
KTIP0935HPM	–	–	–	9,347	.3680	H
KTIP0940HPM	KTIP0940HPCM	KTIP0940HPCCLM	KTIP0940HPLM	9,400	.3701	H
KTIP0950HPM	KTIP0950HPCM	KTIP0950HPCCLM	KTIP0950HPLM	9,500	.3740	I
KTIP0953HPM	KTIP0953HPCM	KTIP0953HPCCLM	–	9,525	.3750	I
KTIP0956HPM	KTIP0956HPCM	KTIP0956HPCCLM	KTIP0956HPLM	9,558	.3763	I
KTIP0958HPM	–	–	KTIP0958HPLM	9,576	.3770	I
KTIP0960HPM	KTIP0960HPCM	KTIP0960HPCCLM	KTIP0960HPLM	9,600	.3780	I
KTIP0970HPM	KTIP0970HPCM	KTIP0970HPCCLM	KTIP0970HPLM	9,703	.3820	I
KTIP0980HPM	KTIP0980HPCM	KTIP0980HPCCLM	KTIP0980HPLM	9,804	.3860	I
KTIP0990HPM	KTIP0990HPCM	KTIP0990HPCCLM	KTIP0990HPLM	9,900	.3898	I
KTIP0992HPM	KTIP0992HPCM	KTIP0992HPCCLM	–	9,921	.3906	I
KTIP1000HPM	KTIP1000HPCM	KTIP1000HPCCLM	KTIP1000HPLM	10,000	.3937	J
KTIP1002HPM	KTIP1002HPCM	–	KTIP1002HPLM	10,023	.3946	J
KTIP1008HPM	–	–	–	10,084	.3970	J
KTIP1010HPM	KTIP1010HPCM	KTIP1010HPCCLM	KTIP1010HPLM	10,100	.3976	J
KTIP1020HPM	KTIP1020HPCM	KTIP1020HPCCLM	KTIP1020HPLM	10,200	.4016	J
KTIP1026HPM	KTIP1026HPCM	KTIP1026HPCCLM	–	10,262	.4040	J

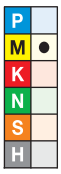
(continued)

(KTIP Inserts continued)





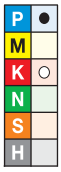


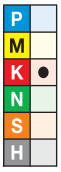


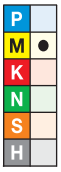
KCP15	KC7410	KC7410	KC7320	D1 mm	D1 in	seat size
KTIP1030HPM	KTIP1030HPCM	KTIP1030HPCCLM	KTIP1030HPLM	10,300	.4055	J
KTIP1032HPM	KTIP1032HPCM	KTIP1032HPCCLM	KTIP1032HPLM	10,320	.4063	J
KTIP1040HPM	KTIP1040HPCM	–	KTIP1040HPLM	10,400	.4094	J
KTIP1049HPM	KTIP1049HPCM	KTIP1049HPCCLM	–	10,490	.4130	J
KTIP1050HPM	KTIP1050HPCM	KTIP1050HPCCLM	KTIP1050HPLM	10,500	.4134	K
KTIP1060HPM	KTIP1060HPCM	–	KTIP1060HPLM	10,600	.4173	K
KTIP1070HPM	KTIP1070HPCM	KTIP1070HPCCLM	KTIP1070HPLM	10,700	.4213	K
KTIP1072HPM	KTIP1072HPCM	KTIP1072HPCCLM	–	10,716	.4219	K
KTIP1080HPM	KTIP1080HPCM	KTIP1080HPCCLM	KTIP1080HPLM	10,800	.4252	K
KTIP1090HPM	KTIP1090HPCM	KTIP1090HPCCLM	KTIP1090HPLM	10,900	.4291	K
KTIP1100HPM	KTIP1100HPCM	KTIP1100HPCCLM	KTIP1100HPLM	11,000	.4331	L
KTIP1110HPM	KTIP1110HPCM	–	KTIP1110HPLM	11,100	.4370	L
KTIP1111HPM	KTIP1111HPCM	–	KTIP1111HPLM	11,113	.4375	L
KTIP1120HPM	KTIP1120HPCM	KTIP1120HPCCLM	KTIP1120HPLM	11,200	.4409	L
KTIP1130HPM	KTIP1130HPCM	KTIP1130HPCCLM	–	11,300	.4449	L
KTIP1140HPM	KTIP1140HPCM	KTIP1140HPCCLM	KTIP1140HPLM	11,400	.4488	L
KTIP1150HPM	KTIP1150HPCM	KTIP1150HPCCLM	KTIP1150HPLM	11,500	.4528	M
KTIP1151HPM	KTIP1151HPCM	KTIP1151HPCCLM	–	11,509	.4531	M
KTIP1160HPM	KTIP1160HPCM	KTIP1160HPCCLM	KTIP1160HPLM	11,600	.4567	M
KTIP1161HPM	–	–	KTIP1161HPLM	11,610	.4571	M
KTIP1170HPM	KTIP1170HPCM	KTIP1170HPCCLM	–	11,700	.4606	M
KTIP1180HPM	KTIP1180HPCM	KTIP1180HPCCLM	KTIP1180HPLM	11,800	.4646	M
KTIP1190HPM	KTIP1190HPCM	KTIP1190HPCCLM	KTIP1190HPLM	11,900	.4685	M
KTIP1191HPM	KTIP1191HPCM	KTIP1191HPCCLM	KTIP1191HPLM	11,908	.4688	M
KTIP1200HPM	KTIP1200HPCM	KTIP1200HPCCLM	KTIP1200HPLM	12,000	.4724	N
KTIP1210HPM	KTIP1210HPCM	KTIP1210HPCCLM	KTIP1210HPLM	12,100	.4764	N
KTIP1220HPM	KTIP1220HPCM	KTIP1220HPCCLM	KTIP1220HPLM	12,200	.4803	N
KTIP1230HPM	KTIP1230HPCM	–	KTIP1230HPLM	12,304	.4844	N
KTIP1240HPM	KTIP1240HPCM	KTIP1240HPCCLM	–	12,400	.4882	N
KTIP1247HPM	–	–	–	12,474	.4911	N
KTIP1250HPM	KTIP1250HPCM	KTIP1250HPCCLM	KTIP1250HPLM	12,500	.4921	O
KTIP1260HPM	KTIP1260HPCM	KTIP1260HPCCLM	–	12,600	.4961	O
KTIP1270HPM	KTIP1270HPCM	KTIP1270HPCCLM	KTIP1270HPLM	12,700	.5000	O
KTIP1280HPM	KTIP1280HPCM	KTIP1280HPCCLM	KTIP1280HPLM	12,800	.5039	O
KTIP1290HPM	KTIP1290HPCM	KTIP1290HPCCLM	KTIP1290HPLM	12,903	.5080	O
KTIP1300HPM	KTIP1300HPCM	KTIP1300HPCCLM	KTIP1300HPLM	13,000	.5118	P
KTIP1310HPM	KTIP1310HPCM	KTIP1310HPCCLM	KTIP1310HPLM	13,096	.5156	P
KTIP1320HPM	KTIP1320HPCM	KTIP1320HPCCLM	KTIP1320HPLM	13,200	.5197	P
KTIP1330HPM	KTIP1330HPCM	KTIP1330HPCCLM	–	13,300	.5236	P
KTIP1340HPM	KTIP1340HPCM	KTIP1340HPCCLM	–	13,400	.5276	P
KTIP1349HPM	KTIP1349HPCM	KTIP1349HPCCLM	KTIP1349HPLM	13,494	.5313	P
KTIP1350HPM	KTIP1350HPCM	KTIP1350HPCCLM	KTIP1350HPLM	13,500	.5315	Q
KTIP1360HPM	KTIP1360HPCM	KTIP1360HPCCLM	–	13,600	.5354	Q
KTIP1370HPM	KTIP1370HPCM	KTIP1370HPCCLM	–	13,700	.5394	Q
KTIP1380HPM	KTIP1380HPCM	KTIP1380HPCCLM	KTIP1380HPLM	13,800	.5433	Q
KTIP1389HPM	KTIP1389HPCM	KTIP1389HPCCLM	KTIP1389HPLM	13,891	.5469	Q
KTIP1390HPM	–	–	KTIP1390HPLM	13,896	.5471	Q
KTIP1400HPM	KTIP1400HPCM	KTIP1400HPCCLM	KTIP1400HPLM	14,000	.5512	R
KTIP1410HPM	KTIP1410HPCM	KTIP1410HPCCLM	KTIP1410HPLM	14,100	.5551	R
KTIP1420HPM	KTIP1420HPCM	KTIP1420HPCCLM	KTIP1420HPLM	14,200	.5591	R
KTIP1429HPM	KTIP1429HPCM	KTIP1429HPCCLM	KTIP1429HPLM	14,288	.5625	R
KTIP1430HPM	KTIP1430HPCM	KTIP1430HPCCLM	KTIP1430HPLM	14,300	.5630	R

(continued)

(KTIP Inserts continued)



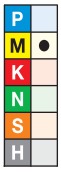




KCP15	KC7410	KC7410	KC7320	D1 mm	D1 in	seat size
KTIP1440HPM	KTIP1440HPCM	KTIP1440HPCCLM	KTIP1440HPLM	14,400	.5669	R
KTIP1450HPM	KTIP1450HPCM	KTIP1450HPCCLM	KTIP1450HPLM	14,500	.5709	S
KTIP1460HPM	KTIP1460HPCM	KTIP1460HPCCLM	–	14,600	.5748	S
KTIP1467HPM	–	–	KTIP1467HPLM	14,666	.5774	S
KTIP1468HPM	KTIP1468HPCM	KTIP1468HPCCLM	KTIP1468HPLM	14,684	.5781	S
KTIP1470HPM	KTIP1470HPCM	KTIP1470HPCCLM	–	14,700	.5787	S
KTIP1480HPM	KTIP1480HPCM	KTIP1480HPCCLM	KTIP1480HPLM	14,800	.5827	S
KTIP1490HPM	–	–	–	14,900	.5866	S
KTIP1500HPM	KTIP1500HPCM	KTIP1500HPCCLM	KTIP1500HPLM	15,000	.5906	T
KTIP1508HPM	KTIP1508HPCM	KTIP1508HPCCLM	–	15,083	.5938	T
KTIP1510HPM	KTIP1510HPCM	KTIP1510HPCCLM	KTIP1510HPLM	15,100	.5945	T
KTIP1520HPM	KTIP1520HPCM	–	KTIP1520HPLM	15,200	.5984	T
KTIP1530HPM	KTIP1530HPCM	KTIP1530HPCCLM	–	15,300	.6024	T
KTIP1540HPM	KTIP1540HPCM	KTIP1540HPCCLM	–	15,400	.6063	T
KTIP1548HPM	–	–	–	15,479	.6094	T
KTIP1550HPM	KTIP1550HPCM	KTIP1550HPCCLM	KTIP1550HPLM	15,500	.6102	T
KTIP1560HPM	KTIP1560HPCM	KTIP1560HPCCLM	–	15,600	.6142	T
KTIP1570HPM	KTIP1570HPCM	KTIP1570HPCCLM	–	15,700	.6181	T
KTIP1580HPM	KTIP1580HPCM	KTIP1580HPCCLM	–	15,800	.6220	T
KTIP1588HPM	KTIP1588HPCM	KTIP1588HPCCLM	KTIP1588HPLM	15,875	.6250	T
KTIP1600HPM	KTIP1600HPCM	KTIP1600HPCCLM	KTIP1600HPLM	16,000	.6299	U
KTIP1603HPM	–	–	–	16,027	.6310	U
KTIP1608HPM	KTIP1608HPCM	KTIP1608HPCCLM	KTIP1608HPLM	16,078	.6330	U
KTIP1610HPM	KTIP1610HPCM	KTIP1610HPCCLM	KTIP1610HPLM	16,100	.6339	U
KTIP1620HPM	KTIP1620HPCM	KTIP1620HPCCLM	–	16,200	.6378	U
KTIP1627HPM	–	–	–	16,271	.6406	U
KTIP1630HPM	KTIP1630HPCM	KTIP1630HPCCLM	–	16,300	.6417	U
KTIP1640HPM	KTIP1640HPCM	KTIP1640HPCCLM	–	16,400	.6457	U
KTIP1650HPM	KTIP1650HPCM	KTIP1650HPCCLM	KTIP1650HPLM	16,500	.6496	U
KTIP1660HPM	KTIP1660HPCM	KTIP1660HPCCLM	–	16,600	.6535	U
KTIP1667HPM	KTIP1667HPCM	KTIP1667HPCCLM	KTIP1667HPLM	16,670	.6563	U
KTIP1670HPM	KTIP1670HPCM	KTIP1670HPCCLM	–	16,700	.6575	U
KTIP1680HPM	KTIP1680HPCM	KTIP1680HPCCLM	–	16,800	.6614	U
KTIP1687HPM	–	–	–	16,873	.6643	U
KTIP1690HPM	KTIP1690HPCM	KTIP1690HPCCLM	–	16,900	.6654	U
KTIP1700HPM	KTIP1700HPCM	KTIP1700HPCCLM	KTIP1700HPLM	17,000	.6693	V
KTIP1707HPM	–	–	–	17,066	.6719	V
KTIP1710HPM	KTIP1710HPCM	KTIP1710HPCCLM	–	17,100	.6732	V
KTIP1720HPM	KTIP1720HPCM	–	–	17,200	.6772	V
KTIP1730HPM	KTIP1730HPCM	KTIP1730HPCCLM	–	17,300	.6811	V
KTIP1740HPM	–	–	–	17,400	.6850	V
KTIP1748HPM	–	–	KTIP1748HPLM	17,463	.6875	V
KTIP1750HPM	KTIP1750HPCM	KTIP1750HPCCLM	KTIP1750HPLM	17,500	.6890	V
KTIP1760HPM	KTIP1760HPCM	KTIP1760HPCCLM	–	17,600	.6929	V
KTIP1770HPM	KTIP1770HPCM	–	KTIP1770HPLM	17,700	.6969	V
KTIP1780HPM	KTIP1780HPCM	KTIP1780HPCCLM	–	17,800	.7008	V
KTIP1786HPM	–	–	–	17,859	.7031	V
KTIP1790HPM	–	–	–	17,900	.7047	V
KTIP1800HPM	KTIP1800HPCM	KTIP1800HPCCLM	KTIP1800HPLM	18,000	.7087	W
KTIP1810HPM	KTIP1810HPCM	KTIP1810HPCCLM	–	18,100	.7126	W
KTIP1820HPM	–	–	–	18,200	.7165	W
KTIP1826HPM	–	–	–	18,258	.7188	W

(continued)

(KTIP Inserts continued)



KCP15	KC7410	KC7410	KC7320	D1 mm	D1 in	seat size
KTIP1830HPM	–	–	–	18,300	.7205	W
KTIP1840HPM	–	–	KTIP1840HPLM	18,400	.7244	W
KTIP1850HPM	KTIP1850HPCM	KTIP1850HPCCLM	KTIP1850HPLM	18,500	.7283	W
KTIP1860HPM	–	–	–	18,600	.7323	W
KTIP1865HPM	–	–	KTIP1865HPLM	18,654	.7344	W
KTIP1870HPM	–	–	–	18,700	.7362	W
KTIP1880HPM	KTIP1880HPCM	KTIP1880HPCCLM	–	18,800	.7402	W
KTIP1890HPM	KTIP1890HPCM	KTIP1890HPCCLM	–	18,900	.7441	W
KTIP1900HPM	KTIP1900HPCM	KTIP1900HPCCLM	KTIP1900HPLM	19,000	.7480	X
KTIP1905HPM	KTIP1905HPCM	KTIP1905HPCCLM	KTIP1905HPLM	19,050	.7500	X
KTIP1910HPM	–	–	KTIP1910HPLM	19,100	.7520	X
KTIP1920HPM	KTIP1920HPCM	KTIP1920HPCCLM	KTIP1920HPLM	19,200	.7559	X
KTIP1923HPM	–	–	KTIP1923HPLM	19,228	.7570	X
KTIP1925HPM	–	–	KTIP1925HPLM	19,253	.7580	X
KTIP1928HPM	–	–	KTIP1928HPLM	19,279	.7590	X
KTIP1930HPM	–	–	–	19,300	.7598	X
KTIP1935HPM	–	–	KTIP1935HPLM	19,350	.7620	X
KTIP1940HPM	–	–	–	19,400	.7638	X
KTIP1946HPM	–	–	KTIP1946HPLM	19,446	.7656	X
KTIP1950HPM	KTIP1950HPCM	KTIP1950HPCCLM	KTIP1950HPLM	19,500	.7677	X
KTIP1960HPM	KTIP1960HPCM	KTIP1960HPCCLM	–	19,600	.7717	X
KTIP1970HPM	KTIP1970HPCM	KTIP1970HPCCLM	–	19,700	.7756	X
KTIP1980HPM	KTIP1980HPCM	KTIP1980HPCCLM	–	19,800	.7795	X
KTIP1984HPM	–	–	KTIP1985HPLM	19,844	.7813	X
KTIP1990HPM	–	–	–	19,900	.7835	X
KTIP2000HPM	KTIP2000HPCM	KTIP2000HPCCLM	KTIP2000HPLM	20,000	.7874	Y
KTIP2010HPM	KTIP2010HPCM	KTIP2010HPCCLM	–	20,100	.7913	Y
KTIP2020HPM	–	–	–	20,200	.7953	Y
KTIP2024HPM	–	–	KTIP2024HPLM	20,241	.7969	Y
KTIP2030HPM	KTIP2030HPCM	KTIP2030HPCCLM	–	20,300	.7992	Y
KTIP2040HPM	–	–	–	20,400	.8031	Y
KTIP2050HPM	KTIP2050HPCM	KTIP2050HPCCLM	KTIP2050HPLM	20,500	.8071	Y
KTIP2060HPM	KTIP2060HPCM	KTIP2060HPCCLM	–	20,600	.8110	Y
KTIP2064HPM	–	–	KTIP2064HPLM	20,638	.8125	Y
KTIP2070HPM	–	–	–	20,700	.8150	Y
KTIP2080HPM	–	–	–	20,800	.8189	Y
KTIP2090HPM	–	–	–	20,900	.8228	Y
KTIP2099HPM	KTIP2099HPCM	KTIP2099HPCCLM	KTIP2099HPLM	20,990	.8264	Y
KTIP2100HPM	KTIP2100HPCM	–	KTIP2100HPLM	21,000	.8268	Z
KTIP2143HPM	KTIP2143HPCM	–	–	21,432	.8438	Z
–	–	–	KTIP2143HPLM	21,438	.8440	Z
KTIP2150HPM	KTIP2150HPCM	–	KTIP2150HPLM	21,500	.8465	Z
KTIP2200HPM	KTIP2200HPCM	–	KTIP2200HPLM	22,000	.8661	ZA
KTIP2223HPM	KTIP2223HPCM	–	KTIP2223HPLM	22,225	.8750	ZA
KTIP2244HPM	KTIP2244HPCM	–	KTIP2244HPLM	22,454	.8840	ZA
KTIP2250HPM	KTIP2250HPCM	–	KTIP2250HPLM	22,500	.8858	ZA
KTIP2300HPM	KTIP2300HPCM	–	KTIP2300HPLM	23,000	.9055	ZB
KTIP2350HPM	KTIP2350HPCM	–	KTIP2350HPLM	23,500	.9252	ZB
KTIP2381HPM	KTIP2381HPCM	–	KTIP2381HPLM	23,813	.9375	ZB
KTIP2400HPM	KTIP2400HPCM	–	KTIP2400HPLM	24,000	.9449	ZC
KTIP2450HPM	KTIP2450HPCM	–	KTIP2450HPLM	24,500	.9646	ZC
KTIP2461HPM	KTIP2461HPCM	–	KTIP2461HPLM	24,608	.9688	ZC

(continued)

(KTIP Inserts continued)

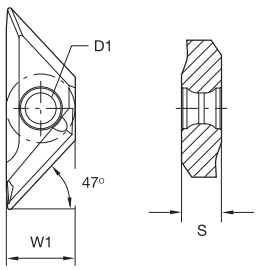
KCP15	KC7410	KC7410	KC7320	D1 mm	D1 in	seat size
KTIP2500HPM	**KTIP2500HPCM**	–	**KTIP2500HPLM**	25,000	.9843	ZD
KTIP2540HPM	**KTIP2540HPCM**	–	**KTIP2540HPLM**	25,400	1.0000	ZD
KTIP2550HPM	**KTIP2550HPCM**	–	**KTIP2550HPLM**	25,500	1.0039	ZD
KTIP2567HPM	**KTIP2567HPCM**	–	**KTIP2567HPLM**	25,679	1.0110	ZD
KTIP2581HPM	**KTIP2581HPCM**	–	**KTIP2581HPLM**	25,806	1.0160	ZD
KTIP2599HPM	**KTIP2599HPCM**	–	**KTIP2599HPLM**	25,990	1.0232	ZD
KTIP2600HPM	**KTIP2600HPCM**	–	–	26,000	1.0236	ZE
KTIP2619HPM	**KTIP2619HPCM**	–	–	26,187	1.0310	ZE
KTIP2650HPM	**KTIP2650HPCM**	–	–	26,500	1.0433	ZE
KTIP2659HPM	**KTIP2659HPCM**	–	–	26,590	1.0469	ZE
KTIP2700HPM	**KTIP2700HPCM**	–	–	27,000	1.0630	ZE
KTIP2750HPM	**KTIP2750HPCM**	–	–	27,500	1.0827	ZE
KTIP2778HPM	**KTIP2778HPCM**	–	–	27,780	1.0938	ZE
KTIP2799HPM	**KTIP2799HPCM**	–	–	27,990	1.1020	ZE

KTIP-HP (M), HPC (M), HPL (M) Geometry
Tolerance

D1 metric	tolerance k8	D1 inch	tolerance k8
8–10	0,000/+0,022	.3125–.3906	.000/+.0009
>10–17	0,000/+0,027	>.3906–.6250	.000/+.0011
>17–18	0,000/+0,027	>.6692–.7090	.000/+.0010
>18–28	0,000/+0,033	>.7090–.8228	.000/+.0013

KenTIP Chamfering Insert

- Drilling and chamfering in one operation.
- No height adjustment required.
- Low setup time.
- Use standard inserts.
- Tool bodies available as engineered solutions.



● first choice
○ alternate choice

P	○	●
M	○	○
K	○	●
N	●	○
S	○	●
H		

FAS-GD Geometry

catalogue number	W1 mm	W1 in	D1 mm	D1 in	S mm	S in	KC7015	KC7215
FAS100302GD	6,35	.250	2,85	.112	3,48	.137	●	●

Modular Drill Carbide Insert Blades • KenTIP™ • HP(M) Geometry • Grade KCP15™ • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric								
					Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	28,0
P	1	90	**130**	180	mm/r	0,12 - 0,21	0,14 - 0,26	0,15 - 0,33	0,18 - 0,41	0,20 - 0,47	0,26 - 0,50	0,27 - 0,51	0,30 - 0,54
	2	110	**150**	190	mm/r	0,12 - 0,25	0,14 - 0,30	0,15 - 0,35	0,18 - 0,38	0,20 - 0,47	0,26 - 0,50	0,27 - 0,51	0,30 - 0,54
	3	50	**80**	110	mm/r	0,12 - 0,29	0,13 - 0,37	0,17 - 0,39	0,22 - 0,48	0,24 - 0,48	0,32 - 0,54	0,32 - 0,54	0,35 - 0,56
	4	50	**80**	110	mm/r	0,12 - 0,29	0,13 - 0,37	0,17 - 0,39	0,18 - 0,48	0,19 - 0,48	0,24 - 0,48	0,35 - 0,46	0,27 - 0,46
K	1	60	**100**	180	mm/r	0,16 - 0,30	0,17 - 0,34	0,18 - 0,37	0,22 - 0,44	0,26 - 0,50	0,33 - 0,62	0,35 - 0,65	0,40 - 0,70
	2	60	**80**	90	mm/r	0,16 - 0,30	0,17 - 0,32	0,18 - 0,35	0,22 - 0,43	0,26 - 0,50	0,33 - 0,62	0,35 - 0,65	0,40 - 0,70
	3	40	**70**	90	mm/r	0,17 - 0,32	0,18 - 0,35	0,19 - 0,38	0,21 - 0,43	0,22 - 0,46	0,24 - 0,50	0,25 - 0,51	0,40 - 0,70

Modular Drill Carbide Insert Blades • KenTIP • HPC(M) Geometry • Grade KC7410™ • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric								
					Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	28,0
K	1	100	**175**	200	mm/r	0,14 - 0,32	0,16 - 0,37	0,19 - 0,43	0,23 - 0,48	0,26 - 0,55	0,30 - 0,61	0,33 - 0,65	0,35 - 0,69
	2	100	**160**	180	mm/r	0,06 - 0,11	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,17	0,13 - 0,20	0,15 - 0,22	0,17 - 0,25
	3	70	**85**	100	mm/r	0,06 - 0,11	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,17	0,13 - 0,20	0,15 - 0,22	0,17 - 0,25

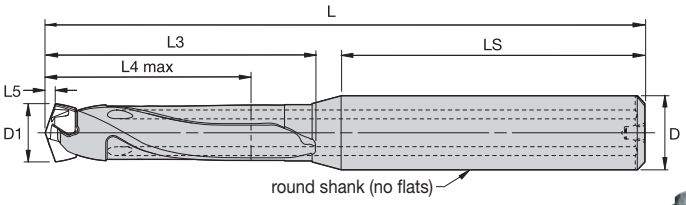
Modular Drill Carbide Insert Blades • KenTIP • HPCCL(M) Classic Line Geometry • Grade KC7410 • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric								
					Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	28,0
K	1	100	**175**	200	mm/r	0,14 - 0,32	0,16 - 0,37	0,19 - 0,43	0,23 - 0,48	0,26 - 0,55	0,30 - 0,61	0,33 - 0,65	0,35 - 0,69
	2	100	**160**	180	mm/r	0,14 - 0,32	0,16 - 0,37	0,19 - 0,43	0,23 - 0,48	0,26 - 0,55	0,30 - 0,61	0,33 - 0,65	0,35 - 0,69
	3	70	**85**	100	mm/r	0,13 - 0,26	0,15 - 0,31	0,17 - 0,35	0,19 - 0,40	0,21 - 0,44	0,28 - 0,51	0,31 - 0,57	0,34 - 0,62

Modular Drill Carbide Insert Blades • KenTIP • HPL(M) Geometry • Grade KC7320™ • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric								
					Recommended Feed Rate (f) by Diameter								
		min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	28,0
M	1	50	**60**	90	mm/r	0,06 - 0,11	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,17	0,13 - 0,20	0,15 - 0,22	0,17 - 0,25
	2	30	**50**	90	mm/r	0,06 - 0,11	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,17	0,13 - 0,20	0,15 - 0,22	0,17 - 0,25
	3	20	**40**	60	mm/r	0,06 - 0,11	0,08 - 0,13	0,09 - 0,14	0,10 - 0,15	0,11 - 0,17	0,13 - 0,20	0,15 - 0,22	0,17 - 0,25

• Tool body shipped with insert wrench.



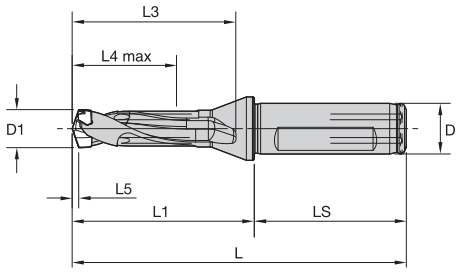
For information on L, L3, and L4 max, see the Modular Drill foldout table.

KenTIP Round Shank • 1,5 x D/3 x D/5 x D/8 x D • Metric

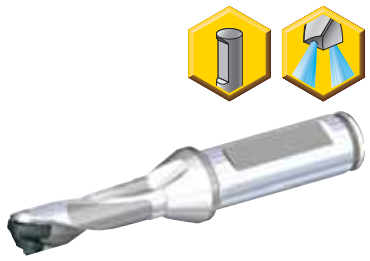
NEW!

1,5x	3x	5x	8x	D1 mm	D1 in	D1 max mm	D1 max in	L5 LS D	seat size	KenTIP wrench
KTIP080R1SS10M	KTIP080R3SS10M	KTIP080R5SS10M	KTIP080R8SS10M	8,000	.3150	8,490	.3343	1,4 41 10	F	170.306
KTIP085R1SS10M	KTIP085R3SS10M	KTIP085R5SS10M	KTIP085R8SS10M	8,500	.3346	8,990	.3539	1,5 41 10	G	170.306
KTIP090R1SS10M	KTIP090R3SS10M	KTIP090R5SS10M	KTIP090R8SS10M	9,000	.3543	9,490	.3736	1,6 41 10	H	170.306
KTIP095R1SS10M	KTIP095R3SS10M	KTIP095R5SS10M	KTIP095R8SS10M	9,500	.3740	9,990	.3933	1,6 41 10	I	170.306
KTIP100R1SS12M	KTIP100R3SS12M	KTIP100R5SS12M	KTIP100R8SS12M	10,000	.3937	10,490	.4130	1,7 46 12	J	170.307
KTIP105R1SS12M	KTIP105R3SS12M	KTIP105R5SS12M	KTIP105R8SS12M	10,500	.4134	10,990	.4327	1,8 46 12	K	170.307
KTIP110R1SS12M	KTIP110R3SS12M	KTIP110R5SS12M	KTIP110R8SS12M	11,000	.4331	11,490	.4524	1,9 46 12	L	170.307
KTIP115R1SS12M	KTIP115R3SS12M	KTIP115R5SS12M	KTIP115R8SS12M	11,500	.4528	11,990	.4720	2,0 46 12	M	170.307
KTIP120R1SS14M	KTIP120R3SS14M	KTIP120R5SS14M	KTIP120R8SS14M	12,000	.4724	12,490	.4917	2,1 46 14	N	170.308
KTIP125R1SS14M	KTIP125R3SS14M	KTIP125R5SS14M	KTIP125R8SS14M	12,500	.4921	12,990	.5114	2,2 46 14	O	170.308
KTIP130R1SS14M	KTIP130R3SS14M	KTIP130R5SS14M	KTIP130R8SS14M	13,000	.5118	13,490	.5311	2,2 46 14	P	170.308
KTIP135R1SS14M	KTIP135R3SS14M	KTIP135R5SS14M	KTIP135R8SS14M	13,500	.5315	13,990	.5508	2,3 46 14	Q	170.308
KTIP140R1SS16M	KTIP140R3SS16M	KTIP140R5SS16M	KTIP140R8SS16M	14,000	.5512	14,490	.5705	2,4 49 16	R	170.309
KTIP145R1SS16M	KTIP145R3SS16M	KTIP145R5SS16M	KTIP145R8SS16M	14,500	.5709	14,990	.5902	2,5 49 16	S	170.309
KTIP150R1SS16M	KTIP150R3SS16M	KTIP150R5SS16M	KTIP150R8SS16M	15,000	.5906	15,990	.6295	2,6 49 16	T	170.309
KTIP160R1SS18M	KTIP160R3SS18M	KTIP160R5SS18M	KTIP160R8SS18M	16,000	.6299	16,990	.6689	2,8 49 18	U	170.309
KTIP170R1SS18M	KTIP170R3SS18M	KTIP170R5SS18M	KTIP170R8SS18M	17,000	.6693	17,990	.7083	2,9 49 18	V	170.314
KTIP180R1SS20M	KTIP180R3SS20M	KTIP180R5SS20M	KTIP180R8SS20M	18,000	.7087	18,990	.7476	3,1 51 20	W	170.314
KTIP190R1SS20M	KTIP190R3SS20M	KTIP190R5SS20M	KTIP190R8SS20M	19,000	.7480	19,990	.7870	3,3 51 20	X	170.314
KTIP200R1SS25M	KTIP200R3SS25M	KTIP200R5SS25M	KTIP200R8SS25M	20,000	.7874	20,990	.8264	3,5 57 25	Y	170.314
KTIP210R1SS25M	KTIP210R3SS25M	KTIP210R5SS25M	KTIP210R8SS25M	21,000	.8268	21,990	.8657	3,6 57 25	Z	170.314
KTIP220R1SS25M	KTIP220R3SS25M	KTIP220R5SS25M	KTIP220R8SS25M	22,000	.8661	22,990	.9051	3,8 57 25	ZA	170.314
KTIP230R1SS25M	KTIP230R3SS25M	KTIP230R5SS25M	KTIP230R8SS25M	23,000	.9055	23,990	.9445	4,0 57 25	ZB	170.314
KTIP240R1SS25M	KTIP240R3SS25M	KTIP240R5SS25M	KTIP240R8SS25M	24,000	.9449	24,990	.9839	4,1 57 25	ZC	170.314
KTIP250R1SS32M	KTIP250R3SS32M	KTIP250R5SS32M	KTIP250R8SS32M	25,000	.9843	25,990	1.0232	4,3 61 32	ZD	170.314
KTIP260R1SS32M	KTIP260R3SS32M	KTIP260R5SS32M	KTIP260R8SS32M	26,000	1.0236	26,990	1.0626	4,5 61 32	ZE	170.314
KTIP270R1SS32M	KTIP270R3SS32M	KTIP270R5SS32M	KTIP270R8SS32M	27,000	1.0630	27,990	1.1020	4,7 61 32	ZE	170.314

• Tool body shipped with insert wrench.



For information on L, L3, and L4 max, see the Modular Drill foldout table.



KenTIP Flanged Shank • 1,5 x D/3 x D/5 x D/8 x D • Metric

NEW!

1,5x	3x	5x	8x	D1 mm	D1 in	D1 max mm	D1 max in	L5	LS	D	seat size	KenTIP wrench
KTIP080R1SCF12M	KTIP080R3SCF12M	KTIP080R5SCF12M	KTIP080R8SCF12M	8,000	.3150	8,490	.3343	1,4	45	12	F	170.306
KTIP085R1SCF12M	KTIP085R3SCF12M	KTIP085R5SCF12M	KTIP085R8SCF12M	8,500	.3346	8,990	.3539	1,5	45	12	G	170.306
KTIP090R1SCF12M	KTIP090R3SCF12M	KTIP090R5SCF12M	KTIP090R8SCF12M	9,000	.3543	9,490	.3736	1,6	45	12	H	170.306
KTIP095R1SCF12M	KTIP095R3SCF12M	KTIP095R5SCF12M	KTIP095R8SCF12M	9,500	.3740	9,990	.3933	1,6	45	12	I	170.306
KTIP100R1SCF16M	KTIP100R3SCF16M	KTIP100R5SCF16M	KTIP100R8SCF16M	10,000	.3937	10,490	.4130	1,7	48	16	J	170.307
KTIP105R1SCF16M	KTIP105R3SCF16M	KTIP105R5SCF16M	KTIP105R8SCF16M	10,500	.4134	10,990	.4327	1,8	48	16	K	170.307
KTIP110R1SCF16M	KTIP110R3SCF16M	KTIP110R5SCF16M	KTIP110R8SCF16M	11,000	.4331	11,490	.4524	1,9	48	16	L	170.307
KTIP115R1SCF16M	KTIP115R3SCF16M	KTIP115R5SCF16M	KTIP115R8SCF16M	11,500	.4528	11,990	.4720	2,0	48	16	M	170.307
KTIP120R1SCF16M	KTIP120R3SCF16M	KTIP120R5SCF16M	KTIP120R8SCF16M	12,000	.4724	12,490	.4917	2,1	48	16	N	170.308
KTIP125R1SCF16M	KTIP125R3SCF16M	KTIP125R5SCF16M	KTIP125R8SCF16M	12,500	.4921	12,990	.5114	2,2	48	16	O	170.308
KTIP130R1SCF16M	KTIP130R3SCF16M	KTIP130R5SCF16M	KTIP130R8SCF16M	13,000	.5118	13,490	.5311	2,2	48	16	P	170.308
KTIP135R1SCF16M	KTIP135R3SCF16M	KTIP135R5SCF16M	KTIP135R8SCF16M	13,500	.5315	13,990	.5508	2,3	48	16	Q	170.308
KTIP140R1SCF16M	KTIP140R3SCF16M	KTIP140R5SCF16M	KTIP140R8SCF16M	14,000	.5512	14,490	.5705	2,4	48	16	R	170.309
KTIP145R1SCF16M	KTIP145R3SCF16M	KTIP145R5SCF16M	KTIP145R8SCF16M	14,500	.5709	14,990	.5902	2,5	48	16	S	170.309
KTIP150R1SCF20M	KTIP150R3SCF20M	KTIP150R5SCF20M	KTIP150R8SCF20M	15,000	.5906	15,990	.6295	2,6	50	20	T	170.309
KTIP160R1SCF20M	KTIP160R3SCF20M	KTIP160R5SCF20M	KTIP160R8SCF20M	16,000	.6299	16,990	.6689	2,8	50	20	U	170.309
KTIP170R1SCF20M	KTIP170R3SCF20M	KTIP170R5SCF20M	KTIP170R8SCF20M	17,000	.6693	17,990	.7083	2,9	50	20	V	170.314
KTIP180R1SCF25M	KTIP180R3SCF25M	KTIP180R5SCF25M	KTIP180R8SCF25M	18,000	.7087	18,990	.7476	3,1	56	25	W	170.314
KTIP190R1SCF25M	KTIP190R3SCF25M	KTIP190R5SCF25M	KTIP190R8SCF25M	19,000	.7480	19,990	.7870	3,3	56	25	X	170.314
KTIP200R1SCF25M	KTIP200R3SCF25M	KTIP200R5SCF25M	KTIP200R8SCF25M	20,000	.7874	20,990	.8264	3,5	56	25	Y	170.314
KTIP210R1SCF25M	KTIP210R3SCF25M	KTIP210R5SCF25M	KTIP210R8SCF25M	21,000	.8268	21,990	.8657	3,6	56	25	Z	170.314
KTIP220R1SCF25M	KTIP220R3SCF25M	KTIP220R5SCF25M	KTIP220R8SCF25M	22,000	.8661	22,990	.9051	3,8	56	25	ZA	170.314
KTIP230R1SCF25M	KTIP230R3SCF25M	KTIP230R5SCF25M	KTIP230R8SCF25M	23,000	.9055	23,990	.9445	4,0	56	25	ZB	170.314
KTIP240R1SCF25M	KTIP240R3SCF25M	KTIP240R5SCF25M	KTIP240R8SCF25M	24,000	.9449	24,990	.9839	4,1	56	25	ZC	170.314
KTIP250R1SCF25M	KTIP250R3SCF25M	KTIP250R5SCF25M	KTIP250R8SCF25M	25,000	.9843	25,990	1.0232	4,3	56	25	ZD	170.314
KTIP260R1SCF25M	KTIP260R3SCF25M	KTIP260R5SCF25M	KTIP260R8SCF25M	26,000	1.0236	26,990	1.0626	4,5	56	25	ZE	170.314
KTIP270R1SCF25M	KTIP270R3SCF25M	KTIP270R5SCF25M	KTIP270R8SCF25M	27,000	1.0630	27,990	1.1020	4,7	56	25	ZE	170.314

Mounting the KenTIP Inserts

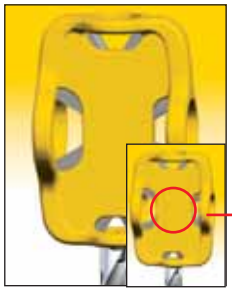
1) Fix drill holder on arbor. For insert exchange, fix arbor on the machine or set on tool presetter.

2) Remove dust using air blast.

3) Put insert into drill holder (use gloves to protect your hands).

4) Turn lightly in a clockwise direction (use gloves to protect your hands).

5) Set the wrench properly.



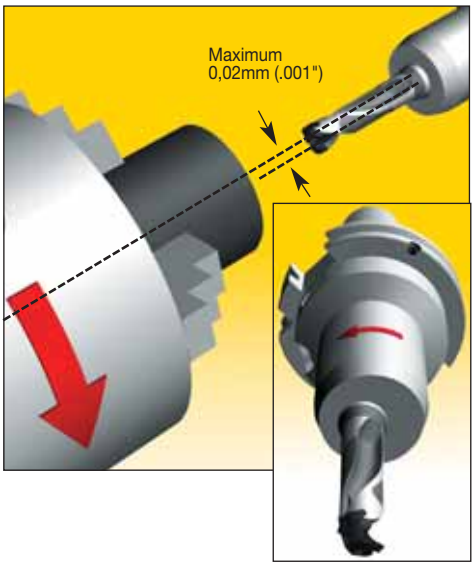
6) Make sure the wrench fits with the insert slot (check size and alignment of wrench and insert slots to avoid injury).

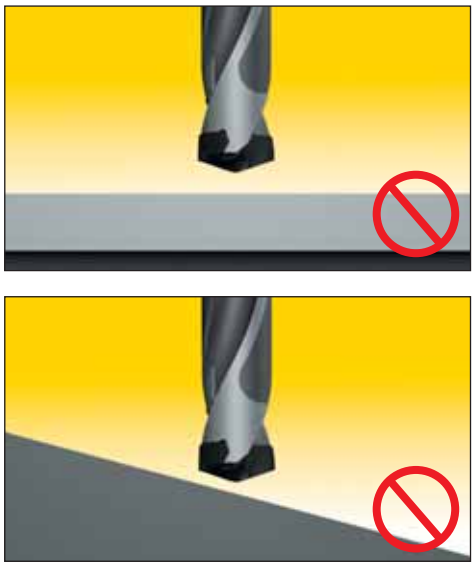
7) Slowly turn the wrench in a clockwise direction.

8) Complete.

Cooling the KenTIP Drill

Note





KSEM™ Modular Drill System

Primary Application

The KSEM Modular Drill System offers extended length and drilling diameters beyond the KenTIP™ Modular Drill System. Hole depths of 10 x D up to 40mm (1.575") drilling diameter are standard. Various grades are available for your most demanding applications. The KSEM Modular Drill System covers a diameter range from 12,5–40mm (.4921–1.5748").

Features and Benefits

HP Drill-Point Design

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.
- HP(M) and HPG(M) for all steel applications.
- **NEW** HPC(M) for cast iron applications.
- **NEW** HPL(M) for stainless steel.

Easy Insert Change

- Robust pocket design requires only a simple wrench for blade removal.
- Selection of grades/geometries available.

Strength of Design

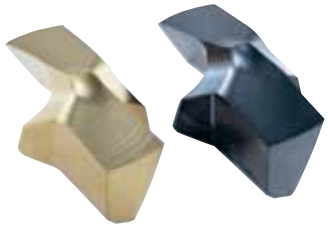
- Accelerated feed rates offer increased productivity.
- Four-wall pocket provides insert stability.
- All geometries except HPL(M) can be reconditioned by Kennametal for added economy.
- Through coolant standard for improved tool life, hole finish, and chip removal.

Tailored Grades and Geometries

- KC7315™ grade is a TiAlN-based PVD grade offering superior performance in all steel applications.
- KC7320™ grade has an AlTiN-based PVD coating developed for the demands of drilling stainless steels.
- KC7410™ grade contains multiple layers of PVD coating offering superior wear resistance when drilling cast irons. The geometry prevents breakout when drilling through holes.
  - KTIP_HPC inserts are designed for grey cast and low-strength ductile irons (K1).
  - KTIP_HPCCL_ inserts are ideal for low- and medium-strength CGI and ductile irons and high-strength ductile and austempered ductile iron (K2, K3).
  - For KSEM_HPCCL_ line items, please refer to the e-catalogue at www.kennametal.com.

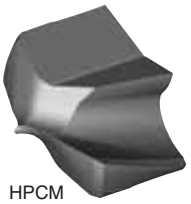
Customisation

- Intermediate diameters available as semi-standards.
- Chamfering insert pockets available.
- Multiple steps possible.

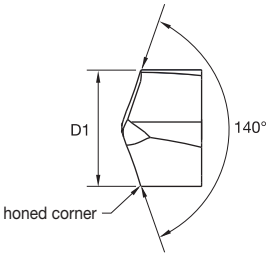


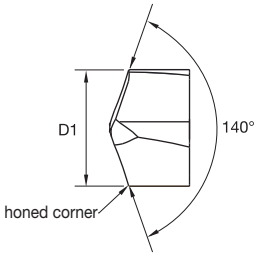
HP/HPG

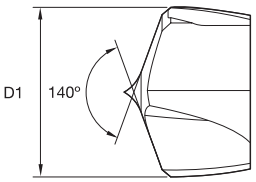
HPL

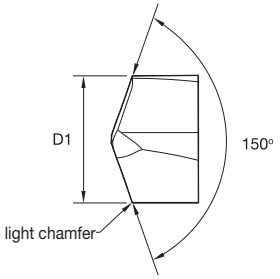

HPCM

PCM

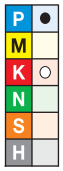


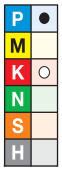


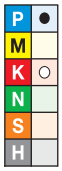


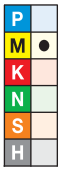


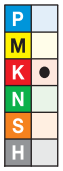
KSEM Inserts

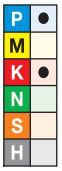










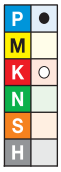
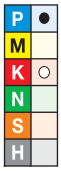
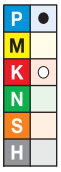


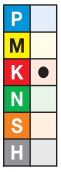
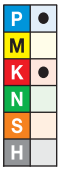
● first choice
○ alternate choice

KC7235	KC7315	KC7315	KC7320	KC7410	KC7135	D1 mm	D1 in	seat size
KSEM1250HPM	KSEM1250HPM	KSEM1250HPGM	KSEM1250HPLM	KSEM1250HPCM	KSEM1250PCM	12,500	.4921	C
KSEM1260HPM	KSEM1260HPM	KSEM1260HPGM	KSEM1260HPLM	–	KSEM1260PCM	12,600	.4961	C
KSEM1270HPM	KSEM1270HPM	KSEM1270HPGM	KSEM1270HPLM	KSEM1270HPCM	–	12,700	.5000	C
KSEM1280HPM	KSEM1280HPM	KSEM1280HPGM	KSEM1280HPLM	–	KSEM1280PCM	12,800	.5039	C
KSEM1293HPM	KSEM1293HPM	KSEM1293HPGM	KSEM1293HPLM	KSEM1293HPCM	–	12,930	.5090	C
KSEM1300HPM	KSEM1300HPM	KSEM1300HPGM	KSEM1300HPLM	KSEM1300HPCM	KSEM1300PCM	13,000	.5118	C
KSEM1310HPM	KSEM1310HPM	KSEM1310HPGM	KSEM1311HPLM	KSEM1310HPCM	–	13,100	.5160	C
–	KSEM1320HPM	KSEM1320HPGM	–	–	–	13,200	.5197	C
KSEM1350HPM	KSEM1350HPM	KSEM1350HPGM	KSEM1350HPLM	KSEM1350HPCM	KSEM1350PCM	13,500	.5310	C
KSEM1360HPM	KSEM1360HPM	KSEM1360HPGM	KSEM1360HPLM	–	–	13,600	.5354	B
KSEM1370HPM	KSEM1370HPM	KSEM1370HPGM	–	–	–	13,700	.5394	B
KSEM1380HPM	KSEM1380HPM	KSEM1380HPGM	KSEM1380HPLM	–	KSEM1380PCM	13,800	.5433	B
KSEM1389HPM	KSEM1389HPM	KSEM1389HPGM	KSEM1389HPLM	KSEM1389HPCM		13,890	.5470	B
KSEM1400HPM	KSEM1400HPM	KSEM1400HPGM	KSEM1400HPLM	KSEM1400HPCM	KSEM1400PCM	14,000	.5512	B
KSEM1410HPM	KSEM1410HPM	KSEM1410HPGM	KSEM1410HPLM	–	KSEM1410PCM	14,100	.5551	B
–	–	–	KSEM1415HPLM	–	–	14,150	.5571	B
KSEM1420HPM	KSEM1420HPM	KSEM1420HPGM	KSEM1420HPLM	–	–	14,200	.5591	B
KSEM1429HPM	KSEM1429HPM	KSEM1429HPGM	KSEM1429HPLM	KSEM1429HPCM	–	14,290	.5630	B
–	KSEM1440HPM	KSEM1440HPGM	–	–	–	14,400	.5669	B
KSEM1450HPM	KSEM1450HPM	KSEM1450HPGM	KSEM1450HPLM	KSEM1450HPCM	KSEM1450PCM	14,500	.5709	B
–	KSEM1460HPM	KSEM1460HPGM	KSEM1460HPLM	–	KSEM1460PCM	14,600	.5748	A
KSEM1468HPM	KSEM1468HPM	KSEM1468HPGM	KSEM1468HPLM	KSEM1468HPCM	–	14,680	.5780	A
KSEM1480HPM	KSEM1480HPM	KSEM1480HPGM	KSEM1480HPLM		KSEM1480PCM	14,800	.5827	A
KSEM1500HPM	KSEM1500HPM	KSEM1500HPGM	KSEM1500HPLM	KSEM1500HPCM	KSEM1500PCM	15,000	.5906	A
KSEM1508HPM	KSEM1508HPM	KSEM1508HPGM	KSEM1508HPLM	–	–	15,080	.5940	A
KSEM1530HPM	KSEM1530HPM	KSEM1530HPGM	–	–	–	15,300	.6024	A
–	KSEM1548HPM	KSEM1548HPGM	KSEM1548HPLM	KSEM1548HPCM	–	15,480	.6090	A
KSEM1550HPM	KSEM1550HPM	KSEM1550HPGM	KSEM1550HPLM	KSEM1550HPCM	KSEM1550PCM	15,500	.6102	A
KSEM1560HPM	KSEM1560HPM	KSEM1560HPGM	KSEM1560HPLM	–	KSEM1560PCM	15,600	.6142	A
–	KSEM1570HPM	KSEM1570HPGM	–	–	–	15,700	.6181	A
KSEM1580HPM	KSEM1580HPM	KSEM1580HPGM	–	–	KSEM1580PCM	15,800	.6220	A
KSEM1588HPM	KSEM1588HPM	KSEM1588HPGM	KSEM1588HPLM	KSEM1588HPCM	–	15,880	.6250	1
KSEM1600HPM	KSEM1600HPM	KSEM1600HPGM	KSEM1600HPLM	KSEM1600HPCM	KSEM1600PCM	16,000	.6299	1
–	–	–	KSEM1610HPLM	–	–	16,100	.6339	1
KSEM1609HPM	KSEM1609HPM	KSEM1609HPGM	KSEM1609HPLM	KSEM1609HPCM	–	16,090	.6340	1
–	–	–	KSEM1615HPLM	–	–	16,150	.6358	1

(continued)

(KSEM Inserts continued)

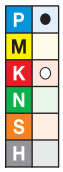
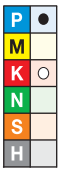
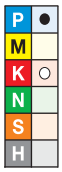
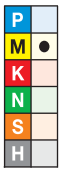




KC7235	KC7315	KC7315	KC7320	KC7410	KC7135	D1 mm	D1 in	seat size
—	KSEM1620HPM	KSEM1620HPGM	KSEM1620HPLM	—	KSEM1620PCM	16,200	.6378	1
KSEM1627HPM	KSEM1627HPM	KSEM1627HPGM	KSEM1627HPLM	KSEM1627HPCM	—	16,270	.6410	1
KSEM1650HPM	KSEM1650HPM	KSEM1650HPGM	KSEM1650HPLM	KSEM1650HPCM	KSEM1650PCM	16,500	.6496	1
KSEM1667HPM	KSEM1667HPM	KSEM1667HPGM	KSEM1667HPLM	KSEM1667HPCM	—	16,670	.6560	1
KSEM1700HPM	KSEM1700HPM	KSEM1700HPGM	KSEM1700HPLM	KSEM1700HPCM	KSEM1700PCM	17,000	.6693	1
KSEM1707HPM	KSEM1707HPM	KSEM1707HPGM	KSEM1707HPLM	KSEM1707HPCM	—	17,070	.6720	1
KSEM1746HPM	KSEM1746HPM	KSEM1746HPGM	KSEM1746HPLM	—	—	17,460	.6875	1
—	—	—	—	KSEM1746HPCM	—	17,460	.6880	1
KSEM1750HPM	KSEM1750HPM	KSEM1750HPGM	KSEM1750HPLM	KSEM1750HPCM	KSEM1750PCM	17,500	.6890	1
—	—	KSEM1770HPGM	—	—	—	17,700	.6969	1
—	—	—	KSEM1775HPLM	—	—	17,750	.6988	1
—	—	—	KSEM1780HPLM	—	—	17,800	.7008	1
KSEM1786HPM	KSEM1786HPM	KSEM1786HPGM	KSEM1786HPLM	—	—	17,860	.7030	1
—	—	—	KSEM1790HPLM	—	—	17,900	.7047	1
KSEM1800HPM	KSEM1800HPM	KSEM1800HPGM	KSEM1800HPLM	KSEM1800HPCM	KSEM1800PCM	18,000	.7087	1
KSEM1826HPM	KSEM1826HPM	KSEM1826HPGM	KSEM1826HPLM	KSEM1826HPCM	—	18,260	.7190	2
—	—	—	KSEM1839HPLM	—	—	18,390	.7240	2
KSEM1850HPM	KSEM1850HPM	KSEM1850HPGM	KSEM1850HPLM	KSEM1850HPCM	KSEM1850PCM	18,500	.7283	2
—	—	—	KSEM1860HPLM	—	—	18,600	.7323	2
KSEM1865HPM	KSEM1865HPM	KSEM1865HPGM	KSEM1865HPLM	—	—	18,650	.7340	2
—	—	—	KSEM1890HPLM	—	—	18,900	.7441	2
KSEM1900HPM	KSEM1900HPM	KSEM1900HPGM	KSEM1900HPLM	KSEM1900HPCM	KSEM1900PCM	19,000	.7480	2
KSEM1905HPM	KSEM1905HPM	KSEM1905HPGM	KSEM1905HPLM	KSEM1905HPCM	—	19,050	.7500	2
—	—	—	KSEM1920HPLM	—	—	19,200	.7559	2
KSEM1923HPM	KSEM1923HPM	—	KSEM1923HPLM	—	—	19,228	.7570	2
—	—	KSEM1925HPGM	KSEM1925HPLM	—	—	19,250	.7579	2
KSEM1927HPM	KSEM1927HPM	KSEM1927HPGM	KSEM1927HPLM	KSEM1927HPCM	—	19,270	.7590	2
—	—	—	KSEM1935HPLM	—	—	19,350	.7618	2
—	—	—	KSEM1936HPLM	—	—	19,360	.7622	2
KSEM1945HPM	KSEM1945HPM	KSEM1945HPGM	KSEM1945HPLM	KSEM1945HPCM	—	19,450	.7660	2
KSEM1950HPM	KSEM1950HPM	KSEM1950HPGM	KSEM1950HPLM	KSEM1950HPCM	KSEM1950PCM	19,500	.7677	2
—	—	KSEM1970HPGM	—	—	—	19,700	.7756	3
KSEM1984HPM	KSEM1984HPM	KSEM1984HPGM	KSEM1984HPLM	KSEM1984HPCM	—	19,840	.7810	2
KSEM2000HPM	KSEM2000HPM	KSEM2000HPGM	KSEM2000HPLM	KSEM2000HPCM	KSEM2000PCM	20,000	.7874	3
—	—	—	KSEM2010HPLM	—	—	20,100	.7913	3
KSEM2024HPM	KSEM2024HPM	KSEM2024HPGM	KSEM2024HPLM	KSEM2024HPCM	—	20,240	.7970	3
—	—	—	KSEM2035HPLM	—	—	20,350	.8012	3
KSEM2050HPM	KSEM2050HPM	KSEM2050HPGM	KSEM2050HPLM	KSEM2050HPCM	KSEM2050PCM	20,500	.8071	3
KSEM2064HPM	KSEM2064HPM	KSEM2064HPGM	KSEM2064HPLM	—	—	20,640	.8125	3
—	—	—	—	KSEM2064HPCM	—	20,640	.8130	3
KSEM2100HPM	KSEM2100HPM	KSEM2100HPGM	KSEM2100HPLM	KSEM2100HPCM	KSEM2100PCM	21,000	.8268	3
—	—	—	KSEM2115HPLM	—	—	21,150	.8327	3
—	—	—	KSEM2133HPLM	—	—	21,330	.8398	3
KSEM2143HPM	KSEM2143HPM	KSEM2143HPGM	KSEM2143HPLM	KSEM2143HPCM	—	21,430	.8440	3
KSEM2150HPM	KSEM2150HPM	KSEM2150HPGM	KSEM2150HPLM	KSEM2150HPCM	KSEM2150PCM	21,500	.8460	3
—	—	KSEM2170HPGM	—	—	—	21,700	.8543	3
KSEM2183HPM	KSEM2183HPM	KSEM2183HPGM	KSEM2183HPLM	—	—	21,830	.8590	3
KSEM2200HPM	KSEM2200HPM	KSEM2200HPGM	KSEM2200HPLM	KSEM2200HPCM	KSEM2200PCM	22,000	.8661	3
KSEM2223HPM	KSEM2223HPM	KSEM2223HPGM	KSEM2223HPLM	KSEM2223HPCM	—	22,230	.8750	4
KSEM2244HPM	KSEM2244HPM	KSEM2244HPGM	KSEM2244HPLM	KSEM2244HPCM	—	22,440	.8840	4

(continued)

(KSEM Inserts continued)

KC7235	KC7315	KC7315	KC7320	KC7410	KC7135	D1 mm	D1 in	seat size
KSEM2250HPM	KSEM2250HPM	KSEM2250HPGM	KSEM2250HPLM	KSEM2250HPCM	KSEM2250PCM	22,500	.8858	4
—	—	—	KSEM2277HPLM	—	—	22,770	.8965	4
KSEM2300HPM	KSEM2300HPM	KSEM2300HPGM	KSEM2300HPLM	KSEM2300HPCM	KSEM2300PCM	23,000	.9055	4
—	—	KSEM2310HPGM	—	—	—	23,100	.9094	4
—	—	KSEM2330HPGM	—	—	—	23,300	.9173	4
KSEM2342HPM	KSEM2342HPM	KSEM2342HPGM	KSEM2342HPLM	KSEM2342HPCM	—	23,420	.9220	4
KSEM2350HPM	KSEM2350HPM	KSEM2350HPGM	KSEM2350HPLM	KSEM2350HPCM	KSEM2350PCM	23,500	.9252	4
KSEM2381HPM	KSEM2381HPM	KSEM2381HPGM	KSEM2381HPLM	—	—	23,810	.9375	4
—	—	—	—	KSEM2381HPCM	—	23,810	.9380	4
KSEM2400HPM	KSEM2400HPM	KSEM2400HPGM	KSEM2400HPLM	KSEM2400HPCM	KSEM2400PCM	24,000	.9449	4
—	—	KSEM2430HPGM	—	—	—	24,300	.9567	5
KSEM2450HPM	KSEM2450HPM	KSEM2450HPGM	KSEM2450HPLM	KSEM2450HPCM	KSEM2450PCM	24,500	.9646	5
KSEM2461HPM	KSEM2461HPM	KSEM2461HPGM	KSEM2461HPLM	KSEM2461HPCM	—	24,610	.9690	5
KSEM2500HPM	KSEM2500HPM	KSEM2500HPGM	KSEM2500HPLM	KSEM2500HPCM	KSEM2500PCM	25,000	.9843	5
—	—	—	KSEM2507HPLM	—	—	25,070	.9870	5
KSEM2540HPM	KSEM2540HPM	KSEM2540HPGM	KSEM2540HPLM	KSEM2540HPCM	—	25,400	1.0000	5
KSEM2550HPM	KSEM2550HPM	KSEM2550HPGM	KSEM2550HPLM	KSEM2550HPCM	KSEM2550PCM	25,500	1.0039	5
—	—	KSEM2560HPGM	KSEM2560HPLM	—	—	25,600	1.0080	5
KSEM2560HPM	KSEM2560HPM	—	—	—	—	25,610	1.0080	5
—	—	—	KSEM2565HPLM	—	—	25,650	1.0098	5
—	—	KSEM2565HPGM	—	—	—	25,654	1.0100	5
KSEM2567HPM	KSEM2567HPM	KSEM2567HPGM	KSEM2567HPLM	KSEM2567HPCM	—	25,670	1.0110	5
KSEM2581HPM	—	—	—	—	—	25,806	1.0160	5
KSEM2600HPM	KSEM2600HPM	KSEM2600HPGM	KSEM2600HPLM	KSEM2600HPCM	KSEM2600PCM	26,000	1.0236	5
KSEM2619HPM	KSEM2619HPM	KSEM2619HPGM	KSEM2619HPLM	KSEM2619HPCM	—	26,190	1.0310	6
KSEM2650HPM	KSEM2650HPM	KSEM2650HPGM	KSEM2650HPLM	KSEM2650HPCM	KSEM2650PCM	26,500	1.0433	6
KSEM2659HPM	KSEM2659HPM	KSEM2659HPGM	KSEM2659HPLM	KSEM2659HPCM	—	26,590	1.0470	6
—	—	—	KSEM2670HPLM	—	—	26,700	1.0512	6
—	—	—	KSEM2581HPLM	—	—	25,810	1.0610	5
KSEM2700HPM	KSEM2700HPM	KSEM2700HPGM	KSEM2700HPLM	KSEM2700HPCM	KSEM2700PCM	27,000	1.0630	6
KSEM2750HPM	KSEM2750HPM	KSEM2750HPGM	KSEM2750HPLM	KSEM2750HPCM	—	27,500	1.0827	6
KSEM2778HPM	KSEM2778HPM	KSEM2778HPGM	KSEM2779HPLM	KSEM2778HPCM	—	27,780	1.0940	6
KSEM2800HPM	KSEM2800HPM	KSEM2800HPGM	KSEM2800HPLM	KSEM2800HPCM	KSEM2800PCM	28,000	1.1024	6
—	—	—	KSEM2810HPLM	—	—	28,100	1.1063	7
KSEM2818HPM	KSEM2818HPM	KSEM2818HPGM	KSEM2817HPLM	KSEM2818HPCM	—	28,180	1.1090	7
KSEM2850HPM	KSEM2850HPM	KSEM2850HPGM	KSEM2850HPLM	KSEM2850HPCM	KSEM2850PCM	28,500	1.1220	7
KSEM2858HPM	KSEM2858HPM	KSEM2858HPGM	KSEM2858HPLM	KSEM2858HPCM	—	28,580	1.1250	7
KSEM2900HPM	KSEM2900HPM	KSEM2900HPGM	KSEM2900HPLM	KSEM2900HPCM	KSEM2900PCM	29,000	1.1417	7
KSEM2937HPM	KSEM2937HPM	KSEM2937HPGM	KSEM2937HPLM	KSEM2937HPCM	—	29,730	1.1560	7
KSEM2950HPM	KSEM2950HPM	KSEM2950HPGM	KSEM2950HPLM	KSEM2950HPCM	KSEM2950PCM	29,500	1.1614	7
KSEM2977HPM	KSEM2977HPM	KSEM2977HPGM	KSEM2977HPLM	KSEM2977HPCM	—	29,770	1.1720	7
KSEM3000HPM	KSEM3000HPM	KSEM3000HPGM	KSEM3000HPLM	KSEM3000HPCM	KSEM3000PCM	30,000	1.1811	7
KSEM3016HPM	KSEM3016HPM	KSEM3016HPGM	KSEM3016HPLM	—	—	30,160	1.1875	8
—	—	—	—	KSEM3016HPCM	—	30,160	1.1880	8
KSEM3050HPM	KSEM3050HPM	KSEM3050HPGM	KSEM3050HPLM	KSEM3050HPCM	KSEM3050PCM	30,500	1.2008	8
—	—	KSEM3056HPGM	—	—	—	30,560	1.2030	8
KSEM3096HPM	KSEM3096HPM	KSEM3096HPGM	—	—	—	30,960	1.2190	8
KSEM3100HPM	KSEM3100HPM	KSEM3100HPGM	KSEM3100HPLM	KSEM3100HPCM	KSEM3100PCM	31,000	1.2200	8
KSEM3150HPM	KSEM3150HPM	KSEM3150HPGM	KSEM3150HPLM	—	KSEM3150PCM	31,500	1.2402	8
KSEM3175HPM	KSEM3175HPM	KSEM3175HPGM	KSEM3175HPLM	KSEM3175HPCM	—	31,750	1.2500	8

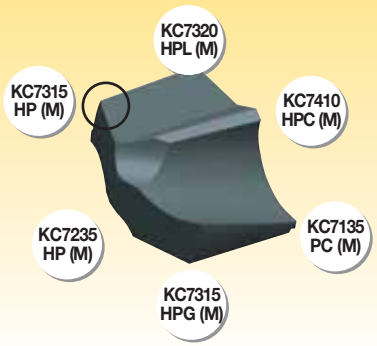
(continued)

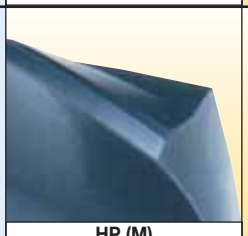
(KSEM Inserts continued)

KC7235	KC7315	KC7315	KC7320	KC7410	KC7135	D1 mm	D1 in	seat size
KSEM3200HPM	KSEM3200HPM	KSEM3200HPGM	KSEM3200HPLM	KSEM3200HPCM	KSEM3200PCM	32,000	1.2598	8
KSEM3250HPM	KSEM3250HPM	KSEM3250HPGM	—	—	—	32,500	1.2795	9
KSEM3254HPM	KSEM3254HPM	KSEM3254HPGM	KSEM3254HPLM	—	—	32,540	1.2810	9
—	KSEM3294HPM	KSEM3294HPGM	—	—	—	32,940	1.2970	9
KSEM3300HPM	KSEM3300HPM	KSEM3300HPGM	KSEM3300HPLM	—	—	33,000	1.2992	9
KSEM3334HPM	KSEM3334HPM	KSEM3334HPGM	—	—	—	33,340	1.3130	9
—	—	—	KSEM3335HPLM	—	—	33,400	1.3130	9
KSEM3350HPM	—	KSEM3350HPGM	—	—	—	33,500	1.3189	9
—	—	KSEM3373HPGM	—	—	—	33,730	1.3280	9
KSEM3400HPM	KSEM3400HPM	KSEM3400HPGM	KSEM3400HPLM	—	—	34,000	1.3386	9
—	KSEM3413HPM	KSEM3413HPGM	—	—	—	34,130	1.3440	9
KSEM3450HPM	KSEM3450HPM	KSEM3450HPGM	—	—	—	34,500	1.3583	9
KSEM3493HPM	KSEM3493HPM	KSEM3493HPGM	KSEM3493HPLM	—	—	34,930	1.3750	9
KSEM3500HPM	KSEM3500HPM	KSEM3500HPGM	KSEM3500HPLM	—	—	35,000	1.3780	9
—	KSEM3550HPM	KSEM3550HPGM	—	—	—	35,500	1.3976	9
KSEM3572HPM	KSEM3572HPM	KSEM3572HPGM	KSEM3571HPLM	—	—	35,720	1.4060	9
KSEM3600HPM	KSEM3600HPM	KSEM3600HPGM	KSEM3600HPLM	—	—	36,000	1.4173	9
—	—	KSEM3612HPGM	—	—	—	36,120	1.4220	10
—	—	KSEM3650HPGM	—	—	—	36,500	1.4375	10
KSEM3651HPM	—	KSEM3651HPGM	—	—	—	36,510	1.4375	10
KSEM3700HPM	KSEM3700HPM	KSEM3700HPGM	KSEM3700HPLM	—	—	37,000	1.4567	10
KSEM3731HPM	—	KSEM3731HPGM	—	—	—	37,310	1.4690	10
KSEM3750HPM	KSEM3750HPM	KSEM3750HPGM	KSEM3750HPLM	—	—	37,500	1.4764	10
KSEM3800HPM	KSEM3800HPM	KSEM3800HPGM	KSEM3800HPLM	—	—	38,000	1.4961	10
KSEM3810HPM	KSEM3810HPM	KSEM3810HPGM	KSEM3810HPLM	—	—	38,100	1.5000	10
KSEM3846HPM	—	KSEM3846HPGM	KSEM3846HPLM	—	—	38,460	1.5140	10
—	KSEM3850HPM	KSEM3850HPGM	—	—	—	38,500	1.5157	10
KSEM3900HPM	KSEM3900HPM	KSEM3900HPGM	KSEM3900HPLM	—	—	39,000	1.5354	10
—	KSEM3950HPM	KSEM3950HPGM	KSEM3950HPLM	—	—	39,500	1.5551	10
KSEM4000HPM	KSEM4000HPM	KSEM4000HPGM	KSEM4000HPLM	—	KSEM4000PCM	40,000	1.5748	10

Tolerance HP/HPG/HPL/HPC • Metric		Tolerance PC • Metric	
D1 metric	tolerance h8	D1 metric	tolerance k7
12,5–18	+0,000/-0,027	12,5–18	+0,001/+ 0,019
>18–30	+0,000/-0,033	>18–30	+0,002/+ 0,023
>30–40	+0,000/-0,039	>30–40	+0,002/+ 0,027

For reconditioning information pls contact our Customer Application Support or visit www.kennametal.com



grade	geometry	composition and application	ISO class
KC7320	HPL (M)	PVD high Al content TiAlN-coated universal fine-grain grade: • Excellent oxidation stability and adjusted toughness. • High level of wear resistance. • Used for modular drilling of austenitic stainless steel.	M20
KC7410	HPC (M)	PVD high multilayer AlCr-based coating over fine-grain carbide: • Newly developed unique coating. • Extraordinary wear resistance in drilling of cast iron materials. • High hot hardness enables elevated speeds.	K15
KC7135	PC (M)	PVD-TiCN-TiN-coated carbide: • Highly wear-resistant grade. • For universal application in steel, stainless steel, and irons. • Specifically used for KSEM PCM precentring inserts.	P40 K35
KC7315	HPG (M)	PVD-TiAlN-coated universal fine-grain grade: • Highest level of wear resistance for higher cutting speeds. • More efficient than PVD-TiN grades. • First choice for alloyed and high-alloy steel as well as cast iron. • Latest geometry for low thrust and highest speed and feed rates; up to 7 x D no precentring required.	K20 M15 P30
KC7235	HP (M)	PVD-TiAlN-coated fine-grain carbide: • Tough substrate. • Highly wear-resistant coating. • Suitable for machining steel even in difficult conditions.	K35 M30 P40
KC7315	 HP (M)	PVD-TiAlN-coated universal fine-grain grade: • Highest level of wear resistance for higher cutting speeds. • More efficient than PVD-TiN grades. • First choice for alloyed and high-alloy steel as well as cast iron. • Latest geometry for low thrust and highest speed and feed rates; up to 7 x D no precentring required.	K20 M15 P30

Modular Drill Carbide Insert Blades • KSEM™ • HP(M) Geometry • Grade KC7235™ • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	100	110	120	mm/r	0,15 - 0,31	0,17 - 0,36	0,19 - 0,41	0,25 - 0,53	0,29 - 0,60	0,33 - 0,69
	2	80	95	110	mm/r	0,15 - 0,31	0,17 - 0,36	0,19 - 0,41	0,25 - 0,53	0,29 - 0,60	0,33 - 0,69
	3	65	70	80	mm/r	0,15 - 0,31	0,17 - 0,36	0,19 - 0,41	0,25 - 0,53	0,29 - 0,60	0,33 - 0,69

Modular Drill Carbide Insert Blades • KSEM • HP(M) Geometry • Grade KC7315™ • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	70	90	110	mm/r	0,15 - 0,31	0,17 - 0,36	0,19 - 0,41	0,25 - 0,53	0,29 - 0,60	0,33 - 0,69
	2	80	100	120	mm/r	0,15 - 0,31	0,17 - 0,36	0,19 - 0,41	0,25 - 0,53	0,29 - 0,60	0,33 - 0,69
	3	65	75	80	mm/r	0,15 - 0,28	0,17 - 0,31	0,19 - 0,36	0,25 - 0,46	0,23 - 0,53	0,33 - 0,60
	4	50	65	75	mm/r	0,12 - 0,28	0,14 - 0,31	0,16 - 0,36	0,20 - 0,46	0,23 - 0,53	0,30 - 0,60
	5	45	50	65	mm/r	0,09 - 0,15	0,11 - 0,18	0,12 - 0,21	0,15 -0,25	0,17 - 0,29	0,20 - 0,33
	6	45	50	65	mm/r	0,12 - 0,23	0,14 - 0,26	0,16 - 0,29	0,20 -0,38	0,23 -0,43	0,26 - 0,54

Modular Drill Carbide Insert Blades • KSEM• HPG(M) Geometry • Grade KC7315 • Through Coolant

Material Group		Cutting Speed — vc Range — m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
P	1	75	110	140	mm/r	0,15 - 0,34	0,17 - 0,40	0,19 - 0,45	0,25 - 0,58	0,29 - 0,66	0,33 - 0,76
	2	90	120	150	mm/r	0,15 - 0,34	0,17 - 0,40	0,19 - 0,45	0,25 - 0,58	0,29 - 0,66	0,33 - 0,76
	3	50	75	100	mm/r	0,15 - 0,28	0,17 - 0,34	0,19 - 0,40	0,25 - 0,51	0,29 - 0,58	0,33 - 0,66
	4	55	75	95	mm/r	0,12 - 0,31	0,14 - 0,34	0,16 - 0,40	0,20 - 0,51	0,23 - 0,58	0,26 - 0,66
	5	50	65	80	mm/r	0,09 - 0,17	0,11 - 0,20	0,12 - 0,23	0,15 - 0,28	0,17 - 0,32	0,20 - 0,36
	6	50	65	80	mm/r	0,12 - 0,25	0,14 - 0,29	0,16 - 0,32	0,20 - 0,42	0,23 - 0,47	0,26 - 0,54
K	1	90	135	175	mm/r	0,17 - 0,35	0,21 - 0,42	0,25 - 0,48	0,31 - 0,59	0,37 - 0,70	0,43 - 0,81
	2	90	110	125	mm/r	0,17 - 0,33	0,21 - 0,41	0,25 - 0,48	0,31 - 0,59	0,37 - 0,70	0,43 - 0,81
	3	40	95	125	mm/r	0,18 - 0,36	0,20 - 0,41	0,21 - 0,44	0,23 - 0,48	0,25 - 0,53	0,27 - 0,57

Modular Drill Carbide Insert Blades • KSEM™ • HPC(M) Geometry • Grade KC7410™ • Through Coolant

Material Group		Cutting Speed – vc Range – m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
K	1	100	**175**	200	mm/r	0,17 - 0,35	0,21 - 0,42	0,25 - 0,48	0,31 - 0,59	0,37 - 0,70	0,43 - 0,81
	2	100	**160**	180	mm/r	0,09 - 0,14	0,11 - 0,17	0,13 - 0,20	0,16 -0,25	0,18 - 0,28	0,21 - 0,31
	3	70	**85**	100	mm/r	0,09 - 0,14	0,11 - 0,17	0,13 - 0,20	0,16 -0,25	0,18 - 0,28	0,21 - 0,31

Modular Drill Carbide Insert Blades • KSEM • HPCL(M) Geometry • Grade KC7410 • Through Coolant

Material Group		Cutting Speed – vc Range – m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
K	1	100	**175**	200	mm/r	0,17 - 0,35	0,21 - 0,42	0,25 - 0,48	0,31 - 0,59	0,37 - 0,70	0,43 - 0,81
	2	100	**160**	180	mm/r	0,17 - 0,33	0,21 - 0,41	0,25 - 0,48	0,31 - 0,59	0,37 - 0,70	0,43 - 0,81
	3	70	**85**	100	mm/r	0,18 - 0,36	0,20 - 0,41	0,21 - 0,44	0,23 - 0,48	0,25 - 0,53	0,27 - 0,57

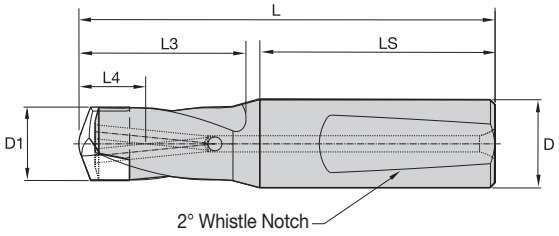
Modular Drill Carbide Insert Blades • KSEM • HPL(M) Geometry • Grade KC7320™ • Through Coolant

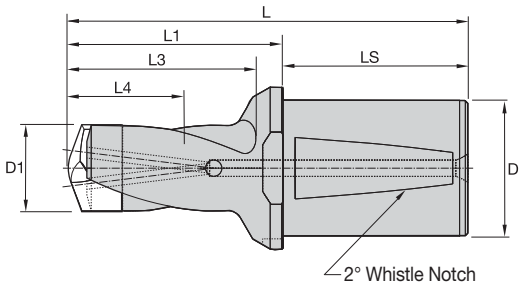
Material Group		Cutting Speed – vc Range – m/min			Metric						
					Recommended Feed Rate (f) by Diameter						
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0
M	1	30	**60**	90	mm/r	0,09 - 0,14	0,11 - 0,17	0,13 - 0,20	0,16 -0,25	0,18 - 0,28	0,21 - 0,31
	2	30	**50**	90	mm/r	0,09 - 0,14	0,11 - 0,17	0,13 - 0,20	0,16 -0,25	0,18 - 0,28	0,21 - 0,31
	3	20	**40**	60	mm/r	0,09 - 0,14	0,11 - 0,17	0,13 - 0,20	0,16 -0,25	0,18 - 0,28	0,21 - 0,31

Modular Drill Carbide Insert Blades • KSEM • PC(M) Geometry • Grade KC7135™ • Through Coolant

Material Group		Cutting Speed – vc Range – m/min			Metric					
					Recommended Feed Rate (f) by Diameter					
		min	Starting Value	max		12,5	16,0	20,0	25,4	32,0
P	1	90	**100**	110	mm/r	0,14 - 0,23	0,17 - 0,25	0,19 - 0,29	0,23 - 0,38	0,26 - 0,43
	2	80	**90**	100	mm/r	0,17 - 0,23	0,19 - 0,25	0,22 - 0,29	0,29 - 0,38	0,32 - 0,43
	3	55	**65**	75	mm/r	0,14 - 0,20	0,15 - 0,23	0,17 - 0,25	0,23 - 0,34	0,26 - 0,38
	4	50	**60**	70	mm/r	0,11 - 0,20	0,13 - 0,23	0,14 - 0,25	0,18 - 0,34	0,21 - 0,38
	5	45	**50**	60	mm/r	0,08 - 0,11	0,10 - 0,13	0,11 - 0,14	0,14 - 0,18	0,15 - 0,20
	6	45	**55**	65	mm/r	0,11 - 0,17	0,13 - 0,18	0,14 - 0,20	0,18 - 0,28	0,21 - 0,31
K	1	60	**60**	90	mm/r	0,08 - 0,24	0,09 - 0,28	0,11 - 0,31	0,14 - 0,43	0,15 - 0,48
	2	60	**60**	75	mm/r	0,18 - 0,24	0,21 - 0,28	0,23 - 0,31	0,28 - 0,37	0,32 - 0,42
	3	40	**40**	75	mm/r	0,15 - 0,24	0,18 - 0,26	0,21 - 0,29	0,23 - 0,37	0,25 - 0,42

- Use insert blade diameter within the designated seat size.
- Drill shipped with central lock screw and wrench.
- Order insert blades separately; see pages H16–H19.

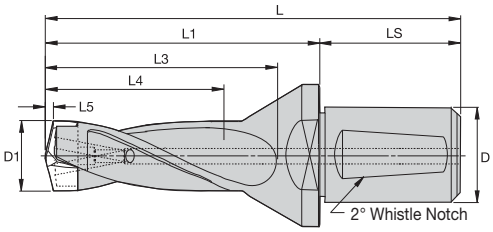


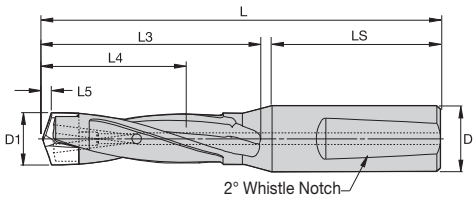


KSEM WN/WD Shank • 1 x D • Metric

	D1		D1 max								seat size	central lock screw	wrench
	mm	in	mm	in	L	L1	L4 max	L5	LS	D			
KSEM125R1WN16M	12,500	.4921	13,500	.5314	78	–	14	2,0	48	16	C	**364.017**	**170.294**
KSEM136R1WN16M	13,510	.5319	14,500	.5708	81	–	15	2,2	48	16	B	**364.016**	**170.289**
KSEM146R1WN20M	14,510	.5713	15,874	.6249	85	–	16	2,3	50	20	A	**364.016**	**170.289**
KSEM160R1WN20M	16,000	.6299	18,000	.7086	88	–	18	2,5	50	20	1	**364.010**	**170.270**
KSEM181R1WN25M	18,010	.7091	19,999	.7873	99	–	20	2,9	56	25	2	**364.010**	**170.270**
KSEM200R1WN25M	20,000	.7874	22,000	.8661	102	–	22	3,2	56	25	3	**364.011**	**170.272**
KSEM221R1WN25M	22,010	.8665	24,000	.9448	107	–	24	3,5	56	25	4	**364.011**	**170.272**
KSEM241R1WN32M	24,010	.9453	26,000	1.0236	115	–	26	3,8	60	32	5	**364.012**	**170.274**
KSEM261R1WN32M	26,010	1.0240	28,000	1.1023	119	–	28	4,0	60	32	6	**364.012**	**170.274**
KSEM281R1WN32M	28,016	1.1028	30,000	1.1811	123	–	30	4,3	60	32	7	**364.013**	**170.276**
KSEM301R1WN32M	30,010	1.1815	32,000	1.2598	127	–	32	4,6	60	32	8	**364.013**	**170.276**
KSEM321R1WD50M	32,010	1.2602	36,000	1.4173	147	79	36	4,9	68	50	9	**364.015**	**170.276**
KSEM361R1WD50M	36,010	1.4177	40,000	1.5748	155	87	40	5,5	68	50	10	**364.015**	**170.276**

- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.
- Order insert blade separately; see pages H16–H19.





for diameters >16mm, DIN 1835 part 1 form E
for diameters <6mm, DIN 6535 — HE

For information on L, L3, and L4 max, see the Modular Drill foldout table.

KSEM WN/WD Shank • 3 x D/5 x D • Metric

3x	5x	D1		D1 max						
		mm	in	mm	in	L5	LS	D	seat size	central lock screw
KSEM125R3WN16M	KSEM125R5WN16M	12,500	.4921	13,000	.5118	2,0	48	16	C	364.017
KSEM130R3WN16M	KSEM130R5WN16M	13,000	.5118	13,500	.5314	2,1	48	16	C	364.017
KSEM135R3WN16M	KSEM135R5WN16M	13,500	.5315	13,500	.5314	2,1	48	16	C	364.017
KSEM136R3WN16M	KSEM136R5WN16M	13,510	.5319	14,000	.5512	2,2	48	16	B	364.016
KSEM140R3WN16M	KSEM140R5WN16M	14,000	.5512	14,500	.5708	2,2	48	16	B	364.016
KSEM145R3WN20M	KSEM145R5WN20M	14,500	.5709	14,500	.5708	2,3	50	20	B	364.016
KSEM146R3WN20M	KSEM146R5WN20M	14,510	.5713	15,000	.5906	2,3	50	20	A	364.016
KSEM150R3WN20M	KSEM150R5WN20M	15,000	.5906	15,500	.6102	2,4	50	20	A	364.016
KSEM155R3WN20M	KSEM155R5WN20M	15,500	.6102	15,874	.6249	2,5	50	20	A	364.016
KSEM160R3WN20M	KSEM160R5WN20M	16,000	.6299	16,500	.6496	2,5	50	20	1	364.010
KSEM165R3WN20M	KSEM165R5WN20M	16,500	.6496	17,000	.6693	2,6	50	20	1	364.010
KSEM170R3WN20M	KSEM170R5WN20M	17,000	.6693	17,500	.6890	2,7	50	20	1	364.010
KSEM175R3WN20M	KSEM175R5WN20M	17,500	.6890	18,000	.7086	2,8	50	20	1	364.010
KSEM180R3WN20M	KSEM180R5WN20M	18,000	.7087	18,000	.7086	2,9	50	20	1	364.010
–	KSEM181R5WN25M	18,010	.7091	18,500	.7283	2,9	56	25	2	364.010
KSEM185R3WN25M	KSEM185R5WN25M	18,500	.7283	19,000	.7480	2,9	56	25	2	364.010
KSEM190R3WN25M	KSEM190R5WN25M	19,000	.7480	19,500	.7677	3,0	56	25	2	364.010
KSEM195R3WN25M	KSEM195R5WN25M	19,500	.7677	19,999	.7873	3,1	56	25	2	364.010
KSEM200R3WN25M	KSEM200R5WN25M	20,000	.7874	20,500	.8071	3,2	56	25	3	364.011
KSEM205R3WN25M	KSEM205R5WN25M	20,500	.8071	21,000	.8268	3,3	56	25	3	364.011
KSEM210R3WN25M	KSEM210R5WN25M	21,000	.8268	21,500	.8465	3,3	56	25	3	364.011
KSEM215R3WN25M	KSEM215R5WN25M	21,500	.8465	22,000	.8661	3,4	56	25	3	364.011
KSEM220R3WN25M	KSEM220R5WN25M	22,000	.8661	22,000	.8661	3,5	56	25	3	364.011
–	KSEM221R5WN25M	22,010	.8665	22,500	.8858	3,5	56	25	4	364.011
KSEM225R3WN25M	KSEM225R5WN25M	22,500	.8858	23,000	.9055	3,6	56	25	4	364.011
KSEM230R3WN25M	KSEM230R5WN25M	23,000	.9055	23,500	.9252	3,7	56	25	4	364.011
KSEM235R3WN25M	KSEM235R5WN25M	23,500	.9252	24,000	.9448	3,7	56	25	4	364.011
KSEM240R3WN25M	KSEM240R5WN25M	24,000	.9449	24,000	.9448	3,8	56	25	4	364.011
–	KSEM241R5WN32M	24,010	.9453	24,500	.9646	3,8	60	32	5	364.012
KSEM245R3WN32M	KSEM245R5WN32M	24,500	.9646	25,000	.9843	3,9	60	32	5	364.012
KSEM250R3WN32M	KSEM250R5WN32M	25,000	.9843	25,500	1.0039	3,8	60	32	5	364.012
KSEM255R3WN32M	KSEM255R5WN32M	25,500	1.0039	26,000	1.0236	3,9	60	32	5	364.012
KSEM260R3WN32M	KSEM260R5WN32M	26,000	1.0236	26,000	1.0236	4,0	60	32	5	364.012
–	KSEM261R5WN32M	26,010	1.0240	26,500	1.0433	4,0	60	32	6	364.012

(continued)

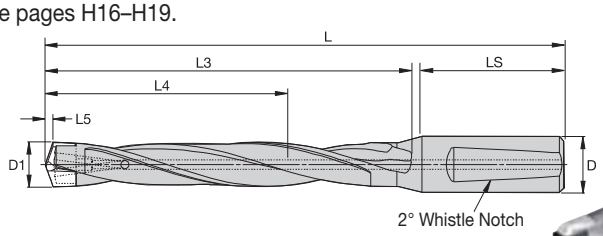
(KSEM WN/WD Shank • 3 x D/5 x D • Metric continued)

		D1		D1 max						
		mm	in	mm	in	L5	LS	D	seat size	central lock screw
KSEM265R3WN32M	KSEM265R5WN32M	26,500	1.0433	27,000	1.0630	4,1	60	32	6	364.012
KSEM270R3WN32M	KSEM270R5WN32M	27,000	1.0630	27,500	1.0827	4,2	60	32	6	364.012
KSEM275R3WN32M	KSEM275R5WN32M	27,500	1.0827	28,000	1.1023	4,2	60	32	6	364.012
KSEM280R3WN32M	KSEM280R5WN32M	28,000	1.1024	28,000	1.1023	4,3	60	32	6	364.012
–	KSEM281R5WN32M	28,016	1.1028	28,500	1.1220	4,3	60	32	7	364.013
KSEM285R3WN32M	KSEM285R5WN32M	28,500	1.1220	29,000	1.1417	4,4	60	32	7	364.013
KSEM290R3WN32M	KSEM290R5WN32M	29,000	1.1417	29,500	1.1614	4,5	60	32	7	364.013
KSEM295R3WN32M	KSEM295R5WN32M	29,500	1.1614	30,000	1.1811	4,5	60	32	7	364.013
KSEM300R3WN32M	KSEM300R5WN32M	30,000	1.1811	30,000	1.1811	4,6	60	32	7	364.013
–	KSEM301R5WN32M	30,010	1.1815	30,500	1.2008	4,6	60	32	8	364.013
KSEM305R3WN32M	KSEM305R5WN32M	30,500	1.2008	31,000	1.2205	4,7	60	32	8	364.013
KSEM310R3WN32M	KSEM310R5WN32M	31,000	1.2205	31,500	1.2402	4,8	60	32	8	364.013
KSEM315R3WN32M	KSEM315R5WN32M	31,500	1.2402	32,000	1.2598	4,8	60	32	8	364.013
KSEM320R3WN32M	KSEM320R5WN32M	32,000	1.2598	32,000	1.2598	4,9	60	32	8	364.013
KSEM321R3WD50M	KSEM321R5WD50M	32,010	1.2602	33,000	1.2992	4,9	68	50	9	364.015
KSEM330R3WD50M	KSEM330R5WD50M	33,000	1.2992	34,000	1.3386	5,1	68	50	9	364.015
KSEM340R3WD50M	KSEM340R5WD50M	34,000	1.3386	35,000	1.3780	5,2	68	50	9	364.015
KSEM350R3WD50M	KSEM350R5WD50M	35,000	1.3780	36,000	1.4173	5,4	68	50	9	364.015
KSEM360R3WD50M	KSEM360R5WD50M	36,000	1.4173	36,000	1.4173	5,5	68	50	9	364.015
KSEM361R3WD50M	KSEM361R5WD50M	36,010	1.4177	37,000	1.4567	5,5	68	50	10	364.015
KSEM370R3WD50M	KSEM370R5WD50M	37,000	1.4567	38,000	1.4961	5,7	68	50	10	364.015
KSEM380R3WD50M	KSEM380R5WD50M	38,000	1.4961	39,000	1.5354	5,8	68	50	10	364.015
KSEM390R3WD50M	KSEM390R5WD50M	39,000	1.5354	40,000	1.5748	6,0	68	50	10	364.015
KSEM400R3WD50M	KSEM400R5WD50M	40,000	1.5748	40,000	1.5748	6,2	68	50	10	364.015

- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.
- Order insert blade separately; see pages H16–H19.

for diameter <16mm DIN 6535 — HE
for diameter >16mm DIN 1835 part 1 form E

For information on L, L3, and L4 max, see the Modular Drill foldout table.



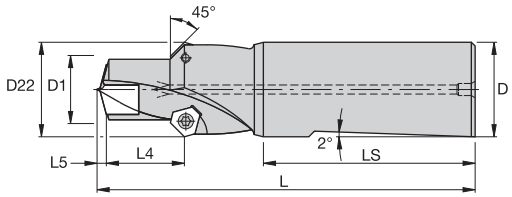
KSEM WN Shank • 7 x D/10 x D • Metric

7x D	10x D	D1 mm	D1 in	D1 max mm	D1 max in	L5	LS	D	seat size	central lock screw
KSEM125R7WN16M	KSEM125R10WN16M	12,500	.4921	13,000	.5118	2,0	48	16	C	364.017
KSEM130R7WN16M	KSEM130R10WN16M	13,000	.5118	13,500	.5314	2,1	48	16	C	364.017
KSEM135R7WN16M	KSEM135R10WN16M	13,500	.5315	13,500	.5314	2,1	48	16	C	364.017
KSEM136R7WN16M	KSEM136R10WN16M	13,510	.5319	14,000	.5512	2,2	48	16	B	364.016
KSEM140R7WN16M	KSEM140R10WN16M	14,000	.5512	14,500	.5708	2,2	48	16	B	364.016
KSEM145R7WN20M	KSEM145R10WN20M	14,500	.5709	14,500	.5708	2,3	50	20	B	364.016
KSEM146R7WN20M	KSEM146R10WN20M	14,510	.5713	15,000	.5906	2,3	50	20	A	364.016
KSEM150R7WN20M	KSEM150R10WN20M	15,000	.5906	15,500	.6102	2,4	50	20	A	364.016
KSEM155R7WN20M	KSEM155R10WN20M	15,500	.6102	15,874	.6249	2,5	50	20	A	364.016
KSEM160R7WN20M	KSEM160R10WN20M	16,000	.6299	16,500	.6496	2,5	50	20	1	364.010
KSEM165R7WN20M	KSEM165R10WN20M	16,500	.6496	17,000	.6693	2,6	50	20	1	364.010
KSEM170R7WN20M	KSEM170R10WN20M	17,000	.6693	17,500	.6890	2,7	50	20	1	364.010
KSEM175R7WN20M	KSEM175R10WN20M	17,500	.6890	18,000	.7086	2,8	50	20	1	364.010
KSEM180R7WN20M	KSEM180R10WN20M	18,000	.7087	18,000	.7086	2,9	50	20	1	364.010
–	KSEM181R10WN25M	18,010	.7091	18,500	.7283	2,9	56	25	2	364.010
KSEM185R7WN25M	KSEM185R10WN25M	18,500	.7283	19,000	.7480	2,9	56	25	2	364.010
KSEM190R7WN25M	KSEM190R10WN25M	19,000	.7480	19,500	.7677	3,0	56	25	2	364.010
KSEM195R7WN25M	KSEM195R10WN25M	19,500	.7677	19,999	.7873	3,1	56	25	2	364.010
KSEM200R7WN25M	KSEM200R10WN25M	20,000	.7874	20,500	.8071	3,2	56	25	3	364.011
KSEM205R7WN25M	KSEM205R10WN25M	20,500	.8071	21,000	.8268	3,3	56	25	3	364.011
KSEM210R7WN25M	KSEM210R10WN25M	21,000	.8268	21,500	.8465	3,3	56	25	3	364.011
KSEM215R7WN25M	KSEM215R10WN25M	21,500	.8465	22,000	.8661	3,4	56	25	3	364.011
KSEM220R7WN25M	KSEM220R10WN25M	22,000	.8661	22,000	.8661	3,5	56	25	3	364.011
–	KSEM221R10WN25M	22,010	.8665	22,500	.8858	3,5	56	25	4	364.011
KSEM225R7WN25M	KSEM225R10WN25M	22,500	.8858	23,000	.9055	3,6	56	25	4	364.011
KSEM230R7WN25M	KSEM230R10WN25M	23,000	.9055	23,500	.9252	3,7	56	25	4	364.011
KSEM235R7WN25M	KSEM235R10WN25M	23,500	.9252	24,000	.9448	3,7	56	25	4	364.011
KSEM240R7WN25M	KSEM240R10WN25M	24,000	.9449	24,000	.9448	3,8	56	25	4	364.011
–	KSEM241R10WN32M	24,010	.9453	24,500	.9646	3,8	60	32	5	364.012
KSEM245R7WN32M	KSEM245R10WN32M	24,500	.9646	25,000	.9843	3,9	60	32	5	364.012
KSEM250R7WN32M	KSEM250R10WN32M	25,000	.9843	25,500	1.0039	3,8	60	32	5	364.012
KSEM255R7WN32M	KSEM255R10WN32M	25,500	1.0039	26,000	1.0236	3,9	60	32	5	364.012
KSEM260R7WN32M	KSEM260R10WN32M	26,000	1.0236	26,000	1.0236	4,0	60	32	5	364.012
–	KSEM261R10WN32M	26,010	1.0240	26,500	1.0433	4,0	60	32	6	364.012
KSEM265R7WN32M	KSEM265R10WN32M	26,500	1.0433	27,000	1.0630	4,1	60	32	6	364.012
KSEM270R7WN32M	KSEM270R10WN32M	27,000	1.0630	27,500	1.0827	4,2	60	32	6	364.012
KSEM275R7WN32M	KSEM275R10WN32M	27,500	1.0827	28,000	1.1023	4,2	60	32	6	364.012
KSEM280R7WN32M	KSEM280R10WN32M	28,000	1.1024	28,000	1.1023	4,3	60	32	6	364.012
–	KSEM281R10WN32M	28,016	1.1028	28,500	1.1220	4,3	60	32	7	364.013
KSEM285R7WN32M	KSEM285R10WN32M	28,500	1.1220	29,000	1.1417	4,4	60	32	7	364.013
KSEM290R7WN32M	KSEM290R10WN32M	29,000	1.1417	29,500	1.1614	4,5	60	32	7	364.013
KSEM295R7WN32M	KSEM295R10WN32M	29,500	1.1614	30,000	1.1811	4,5	60	32	7	364.013
KSEM300R7WN32M	KSEM300R10WN32M	30,000	1.1811	30,000	1.1811	4,6	60	32	7	364.013
–	KSEM301R10WN32M	30,010	1.1815	30,500	1.2008	4,6	60	32	8	364.013
KSEM305R7WN32M	–	30,500	1.2008	31,000	1.2205	4,7	60	32	8	364.013
KSEM310R7WN32M	KSEM310R10WN32M	31,000	1.2205	31,500	1.2402	4,8	60	32	8	364.013
KSEM315R7WN32M	–	31,500	1.2402	32,000	1.2598	4,8	60	32	8	364.013
KSEM320R7WN32M	KSEM320R10WN32M	32,000	1.2598	32,000	1.2598	4,9	60	32	8	364.013

KSEM Chamfering Solutions

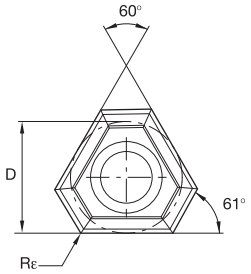
- Drilling and chamfering in one operation.
- No height adjustment required.
- Low setup time.
- Use standard inserts.
- Tool bodies available as standard.

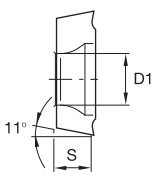
- Use any KSEM insert blade diameter within the designated seat size.
- Drill shipped with central lock screw, insert screw, and wrenches.
- Order insert blades separately; see pages H16–H19.
- Order TPGX chamfering insert separately; see page H27.



KSEM Bodies • WN/WD Shank with Chamfer • 1 x D • Metric

	D1		D1 max										
	mm	in	mm	in	D22	L	L4 max	L5	LS	D	seat size	chamfer insert	central lock screw	wrench
KSEM125R1WN16F45M	12,500	.4921	13,500	.5314	18	107	14	2,0	48,0	16	C	TPGX0902ZPR	**364.017**	**170.051**
KSEM136R1WN16F45M	13,510	.5319	14,500	.5708	19	107	15	2,2	48,0	16	B	TPGX0902ZPR	**364.016**	**170.289**
KSEM146R1WN20F45M	14,510	.5713	15,874	.6249	20	109	16	2,3	50,0	20	A	TPGX0902ZPR	**364.016**	**170.289**
KSEM160R1WN20F45M	16,000	.6299	18,000	.7086	22	110	18	2,5	50,0	20	1	TPGX1102ZPR	**364.010**	**170.270**
KSEM181R1WN25F45M	18,010	.7091	19,999	.7873	25	118	20	2,9	56,0	25	2	TPGX1102ZPR	**364.010**	**170.270**
KSEM200R1WN25F45M	20,000	.7874	22,000	.8661	28	120	22	3,2	56,0	25	3	TPGX1303ZPR	**364.011**	**170.272**
KSEM221R1WN25F45M	22,010	.8665	24,000	.9448	30	123	24	3,5	56,0	25	4	TPGX1303ZPR	**364.011**	**170.272**
KSEM241R1WN32F45M	24,010	.9453	26,000	1.0236	34	129	26	3,8	60,0	32	5	TPGX1603ZPR	**364.012**	**170.055**
KSEM261R1WN32F45M	26,010	1.0240	28,000	1.1023	36	131	28	4,0	60,0	32	6	TPGX1603ZPR	**364.012**	**170.055**
KSEM281R1WN32F45M	28,016	1.1028	30,000	1.1811	38	134	30	4,3	60,0	32	7	TPGX1603ZPR	**364.013**	**170.276**
KSEM301R1WN32F45M	30,010	1.1815	32,000	1.2598	40	136	32	4,6	60,0	32	8	TPGX1603ZPR	**364.013**	**170.276**
KSEM321R1WD50F45M	32,010	1.2602	36,000	1.4173	42	155	36	4,9	68,0	50	9	TPGX1603ZPR	**364.015**	**170.276**
KSEM361R1WD50F45M	36,010	1.4177	40,000	1.5748	46	165	40	5,5	68,0	50	10	TPGX1603ZPR	**364.015**	**170.276**





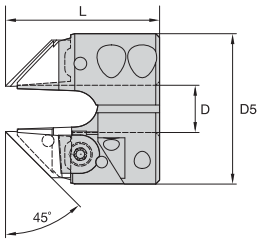
● first choice
○ alternate choice

P		●	○
M	●	○	○
K		○	●
N	○	●	○
S		○	●
H			

TPGX-GD Geometry

	D		S		Rε		D1				
catalogue number	mm	in	mm	in	mm	in	mm	in	KC7015	KC7140	KC7315
TPGX0902ZPRGD	5,56	.219	2,38	.094	0,20	.008	2,50	.098	●	●	●
TPGX1102ZPRGD	6,35	.250	2,38	.094	0,20	.008	2,85	.112	●	●	●
TPGX1303ZPRGD	7,94	.313	3,18	.125	0,20	.008	3,40	.134	●	●	●
TPGX1603ZPRGD	9,52	.375	3,18	.125	0,20	.008	4,40	.173	●	●	●

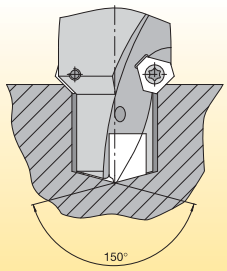
- The NEW chamfering rings for KSEM are available in a diameter range of 12,5–32mm.
- The KSEM SEF ring is double-edged, features a more rigid design to withstand high feed rates, and reduces time-consuming deburring and small chamfer operations.
- Reduce machining time — combine drilling and chamfering in one operation.
- Short-term availability — standard tooling off-the-shelf — KSEM body and inserts, SEF ring, and SEFAS™ inserts.
- Flexibility — adjustable drilling depth.
- For speed and feed recommendations, please refer to catalogue recommendations based on geometry and tool body length of the carrying KSEM tool.
- Small chamfers up to 1mm do not need further feed reduction.
- At deeper chamfers, a feed rate reduction of 50% is highly recommended to avoid vibrations and movement of the ring during operation.
- For inserts, please refer to SEFAS System on page I23, insert 3.42807R021.



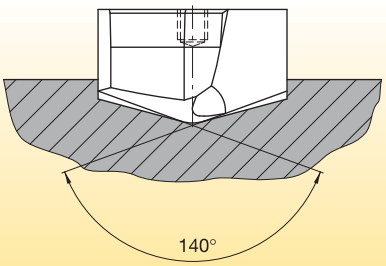
Chamfer Rings

catalogue number	D mm	D in	L mm	L in	D5 mm	D5 in	clamp assy	chip deflector	chip deflector screw	drill clamp screw	socket-head cap screw
KSEM125SEFM	12,5	.4921	40	1.57	39	1.54	**360.551**	**360.660**	**128.508**	**191.726**	**–**
KSEM130SEFM	13,0	.5118	40	1.57	39	1.54	**360.551**	**360.660**	**128.508**	**191.726**	**–**
KSEM135SEFM	13,5	.5315	40	1.57	39	1.54	**360.551**	**360.660**	**128.508**	**191.726**	**–**
KSEM140SEFM	14,0	.5512	40	1.57	40	1.57	**360.551**	**360.661**	**128.508**	**199.123**	**–**
KSEM145SEFM	14,5	.5709	40	1.57	40	1.57	**360.551**	**360.661**	**128.508**	**199.123**	**–**
KSEM150SEFM	15,0	.5906	40	1.57	40	1.57	**360.551**	**360.662**	**128.508**	**199.123**	**–**
KSEM155SEFM	15,5	.6102	40	1.57	40	1.57	**360.551**	**360.662**	**128.508**	**199.123**	**–**
KSEM160SEFM	16,0	.6299	42	1.65	43	1.69	**360.551**	**360.663**	**128.508**	**199.123**	**–**
KSEM165SEFM	16,5	.6496	42	1.65	43	1.69	**360.551**	**360.663**	**128.508**	**199.123**	**–**
KSEM170SEFM	17,0	.6693	42	1.65	43	1.69	**360.551**	**360.663**	**128.508**	**199.123**	**–**
KSEM175SEFM	17,5	.6890	42	1.65	43	1.69	**360.551**	**360.663**	**128.508**	**199.123**	**–**
KSEM180SEFM	18,0	.7087	42	1.65	43	1.69	**360.551**	**360.663**	**128.508**	**199.123**	**–**
KSEM185SEFM	18,5	.7283	42	1.65	43	1.69	**360.551**	**360.664**	**128.508**	**199.123**	**–**
KSEM190SEFM	19,0	.7480	42	1.65	43	1.69	**360.551**	**360.664**	**128.508**	**199.123**	**–**
KSEM195SEFM	19,5	.7677	42	1.65	43	1.69	**360.551**	**360.664**	**128.508**	**199.123**	**–**
KSEM200SEFM	20,0	.7874	48	1.89	50	1.97	**360.551**	**360.665**	**128.510**	**199.123**	**–**
KSEM205SEFM	20,5	.8071	48	1.89	50	1.97	**360.551**	**360.665**	**128.510**	**199.123**	**–**
KSEM210SEFM	21,0	.8268	48	1.89	50	1.97	**360.551**	**360.665**	**128.510**	**199.123**	**–**
KSEM215SEFM	21,5	.8465	48	1.89	50	1.97	**360.551**	**360.665**	**128.510**	**199.123**	**–**
KSEM220SEFM	22,0	.8661	48	1.89	50	1.97	**360.551**	**360.665**	**128.510**	**199.123**	**–**
KSEM225SEFM	22,5	.8858	50	1.97	50	1.97	**360.551**	**360.666**	**128.510**	**–**	**125.516**
KSEM230SEFM	23,0	.9055	50	1.97	50	1.97	**360.551**	**360.666**	**128.510**	**–**	**125.516**
KSEM235SEFM	23,5	.9252	50	1.97	50	1.97	**360.551**	**360.666**	**128.510**	**–**	**125.516**
KSEM240SEFM	24,0	.9449	50	1.97	50	1.97	**360.551**	**360.666**	**128.510**	**–**	**125.516**
KSEM245SEFM	24,5	.9646	54	2.13	55	2.17	**360.551**	**360.667**	**128.510**	**–**	**125.620**
KSEM250SEFM	25,0	.9843	54	2.13	55	2.17	**360.551**	**360.667**	**128.510**	**–**	**125.620**
KSEM255SEFM	25,5	1.0039	54	2.13	55	2.17	**360.551**	**360.667**	**128.510**	**–**	**125.620**
KSEM260SEFM	26,0	1.0236	54	2.13	55	2.17	**360.551**	**360.667**	**128.510**	**–**	**125.620**
KSEM265SEFM	26,5	1.0433	56	2.20	55	2.17	**360.551**	**360.668**	**128.510**	**–**	**125.620**
KSEM270SEFM	27,0	1.0630	56	2.20	55	2.17	**360.551**	**360.668**	**128.510**	**–**	**125.620**
KSEM275SEFM	27,5	1.0827	56	2.20	55	2.17	**360.551**	**360.668**	**128.510**	**–**	**125.620**
KSEM280SEFM	28,0	1.1024	56	2.20	55	2.17	**360.551**	**360.668**	**128.510**	**–**	**125.620**
KSEM285SEFM	28,5	1.1220	61	2.40	60	2.36	**360.551**	**360.669**	**128.510**	**–**	**125.620**
KSEM290SEFM	29,0	1.1417	61	2.40	60	2.36	**360.551**	**360.669**	**128.510**	**–**	**125.620**
KSEM295SEFM	29,5	1.1614	61	2.40	60	2.36	**360.551**	**360.669**	**128.510**	**–**	**125.620**
KSEM300SEFM	30,0	1.1811	61	2.40	60	2.36	**360.551**	**360.669**	**128.510**	**–**	**125.620**
KSEM305SEFM	30,5	1.2008	61	2.40	60	2.36	**360.551**	**360.670**	**128.510**	**–**	**125.620**
KSEM310SEFM	31,0	1.2205	61	2.40	60	2.36	**360.551**	**360.670**	**128.510**	**–**	**125.620**
KSEM315SEFM	31,5	1.2402	61	2.40	60	2.36	**360.551**	**360.670**	**128.510**	**–**	**125.620**
KSEM320SEFM	32,0	1.2598	61	2.40	60	2.36	**360.551**	**360.670**	**128.510**	**–**	**125.620**

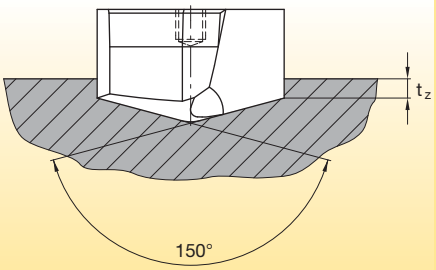
NOTE: Order inserts separately; see the SEFAS System, page I23, insert 3.42807R021.



Centring using PCM inserts



HPM inserts of the follower drill



Precentring with FAS centring tool

Why is precentring necessary?

- Generally speaking, for drilling depths 5x the nominal diameter and above (5 x D).
- In unstable conditions (workpiece and tool clamping).

Why precentre using PCM inserts?

- Soft-cut entry of follower drill due to 150° point angle of the PCM insert.
- No extension of the follower drill in the entry area.
- No breaks at the cutting edges.

What happens if...

...a centre cannot be used for technical reasons?

- Spot drill with normal insert at normal and reduced cutting data (approximately 1/2 vc and approximately 1/2 vf), then continue drilling with regular cutting data without lifting off/stopping.

...there is no suitable PCM cutting insert in the standard range (ø)?

- Manufacture to order using PCM geometry and k7 tolerance.
  or
- Centre using the same cutter insert as for the follower drill but without the cutting edges penetrating the workpiece (spot drill ø approximately 90% of drill ø D1).

...only one tool body is required?

- Enter the workpiece with 50% feed until the cutting edges and the heels have penetrated the hole, then continue drilling without lifting off/stopping using regular cutting data.

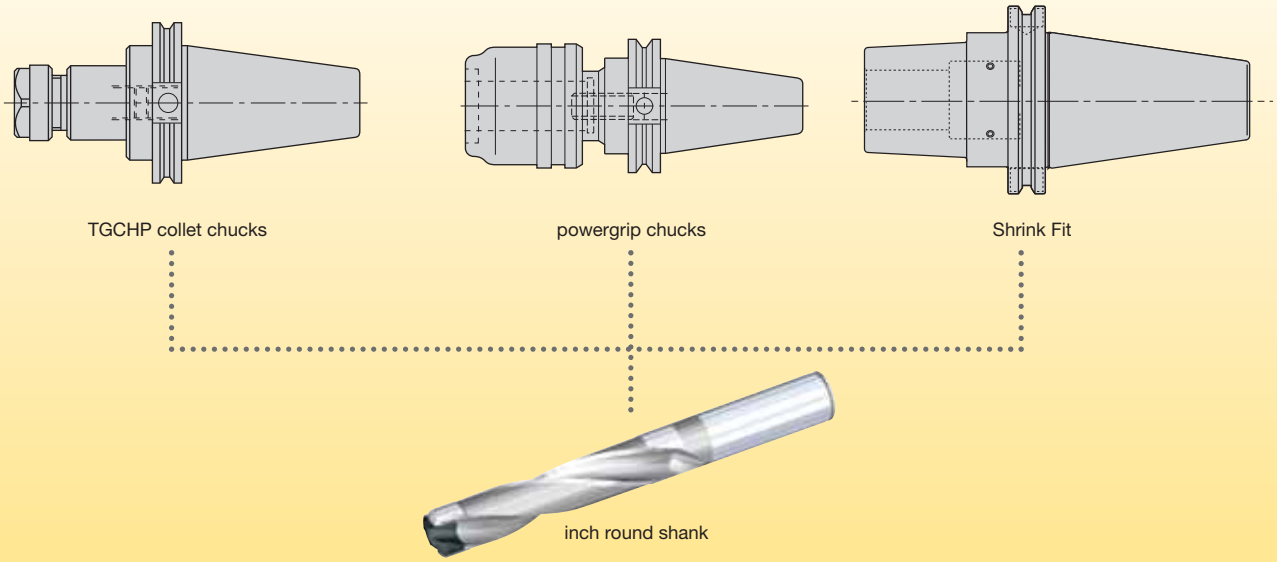
Other problems

Short hole drilling with precentring support tool?

- Up to 1x nominal diameter (1 x D) possible.

Rotating Applications

KSEM inch drills with round shanks (no flats) are specifically designed for rotating applications where the drill rotates and the workpiece remains stationary. The shank to drill-point location of these drills is held to an extremely close tolerance. To maintain accuracy, and get maximum performance from the KSEM drill, use only the approved toolholding method shown below.

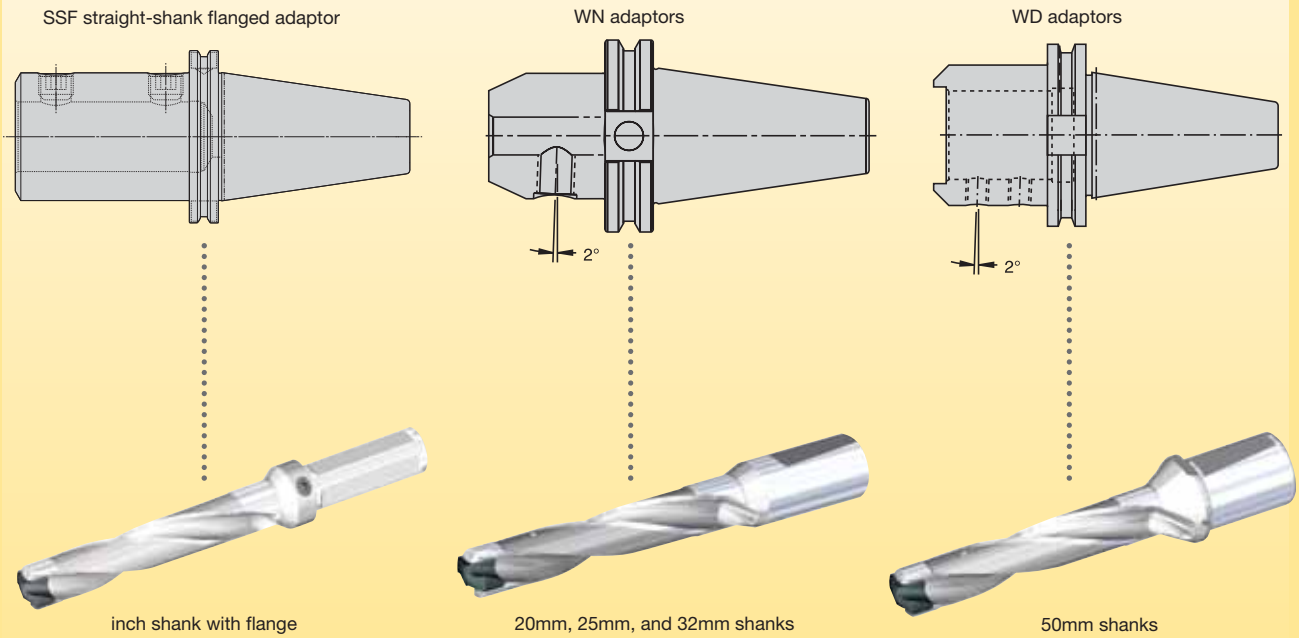


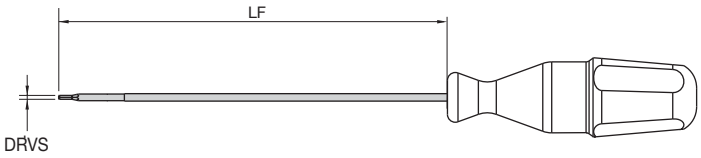
Inch Drill Bodies with Flange

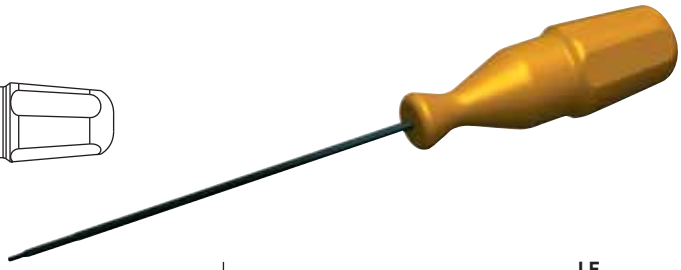
KSEM inch drills with a flange can be used in rotating applications where the drill rotates and the workpiece remains stationary. To maintain accuracy and get maximum performance from the drill, use only the approved toolholding method shown here.

Metric Drill Bodies with a 2° Whistle Notch™

KSEM metric drills come equipped with 2° Whistle Notch shanks. The 20mm, 25mm, and 32mm diameter shanks use WN adaptors. The 50mm shank uses a WD adaptor. Choose the correct adaptor to minimise runout and securely hold the drill.



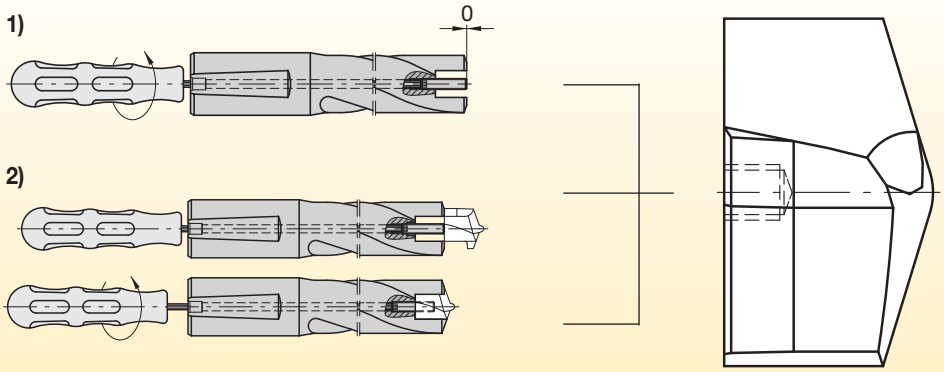




KSEM Spare Wrenches

order number	catalogue number	DRVS	LF mm	LF in
1126021	**170.270**	1.5mm	185,00	7
1126032	**170.271**	1.5mm	225,00	9
1510773	**170.281**	1.5mm	297,00	12
1255899	**170.285**	1.5mm	351,00	14
1126040	**170.272**	2mm	210,00	8
1126049	**170.273**	2mm	260,00	10
1510776	**170.282**	2mm	343,00	14
1255900	**170.286**	2mm	405,00	16
1126066	**170.274**	2.5mm	240,00	9
1126072	**170.275**	2.5mm	295,00	12
1510779	**170.283**	2.5mm	393,00	15
1255901	**170.287**	2.5mm	459,00	18
1126079	**170.276**	3mm	265,00	10
1126088	**170.277**	3mm	330,00	13
1510781	**170.284**	3mm	439,00	17
1255902	**170.288**	3mm	513,00	20
1834819	**170.294**	T5	156,00	6
1836470	**170.295**	T5	188,00	7
1836471	**170.296**	T5	290,00	11
1795811	**170.289**	T6	156,00	6
1795956	**170.290**	T6	188,00	7
1795960	**170.291**	T6	290,00	11

Mounting the Inserts



Inserts (<32mm) without Connector Pin

1) Use the screwdriver to set the threaded pin:
- for inserts up to Ø 32mm, flush with the drill face.
- for inserts bigger Ø 32mm, set 2mm below the drill face.

2) Tighten the insert using the screwdriver to fit securely in the insert seat.

To change the insert, turn the clamping screw anti-clockwise until the insert is released.

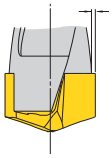
Repair of Damaged Threaded Pin

In the event that the central threaded pin becomes damaged, it can be removed after severing it in the tool body. To do this, drill beneath the insert seat in the tool body. The insert and threaded pin can then be removed. For information regarding the position and diameter of this repair hole, please refer to the manual (sheet **290.001 D/GB**) supplied with the tool body.

NOTE: For inserts without a connector pin, avoid jamming during mounting through precise positioning.

Insert blades may be used, within limits, on different drill bodies. The insert blade must be of the same seat size. Overhang (see Figure 1) must be kept under 0,250mm (.0098") per side. For best drilling performance, rigidity, and efficient chip evacuation, always use the first-choice steel body. Performance may be compromised by using alternatives. In some applications, chips may bind between the drill body and the hole wall — especially when machining long-chipping materials like austenitic stainless steel and low-carbon steel.

(does not apply to stub length drills)



0,250mm (.0098") maximum overhang

Figure 1

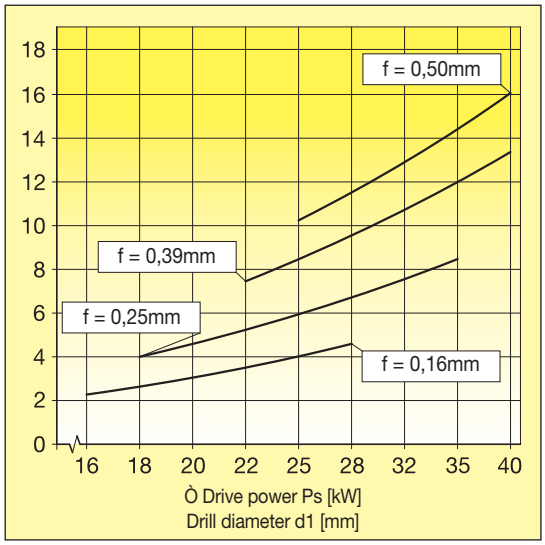
diameter D inch	mm	insert blade	seat size	first choice	alternate body 1	alternate body 2	alternate body 3	alternate body 4
.492	12,50	KSEM1250	C	KSEM125..M	–	–	–	–
.500	12,70	KSEM0500	C	KSEM0500..	KSEM125..M	–	–	–
.509	12,93	KSEM0509	C	KSEM0509..	KSEM0500..	KSEM125..M	–	–
.512	13,00	KSEM1300	C	KSEM130..M	KSEM0509..	KSEM0500..	KSEM125..M	–
.516	13,10	KSEM0516	C	KSEM0516..	KSEM130..M	KSEM0509..	KSEM0500..	–
.531	13,50	KSEM1350	C	KSEM135..M	KSEM0531..	KSEM0516..	KSEM130..M	–
.547	13.89	KSEM0547	B	KSEM0547..	KSEM136..M	–	–	–
.551	14,00	KSEM1400	B	KSEM140..M	KSEM136..M	KSEM0547..	–	–
.563	14,29	KSEM0563	B	KSEM0563..	KSEM140..M	KSEM0547..	–	–
.571	14,50	KSEM1450	B	KSEM145..M	KSEM0563..	KSEM140..M	–	–
.578	14,68	KSEM0578	A	KSEM0578..	KSEM146..M	–	–	–
.591	15,00	KSEM1500	A	KSEM150..M	KSEM146..M	KSEM0578..	–	–
.594	15,08	KSEM0594	A	KSEM0594..	KSEM150..M	KSEM0578..	–	–
.609	15,48	KSEM0609	A	KSEM0609..	KSEM0594..	KSEM150..M	–	–
.610	15,50	KSEM1550	A	KSEM155..M	KSEM0609..	KSEM0594..	KSEM150..M	–
.625	15,88	KSEM0625	1	KSEM0625..	–	–	–	–
.630	16,00	KSEM1600	1	KSEM160..M	KSEM0625..	–	–	–
.634	16,09	KSEM0634	1	KSEM0634..	KSEM160..M	KSEM0625..	–	–
.641	16,27	KSEM0641	1	KSEM0641..	KSEM0634..	KSEM160..M	KSEM0625..	–
.650	16,50	KSEM1650	1	KSEM165..M	KSEM0641..	KSEM0634..	–	–
.656	16,67	KSEM0656	1	KSEM0656..	KSEM165..M	KSEM0641..	–	–
.669	17,00	KSEM1700	1	KSEM170..M	KSEM0656..	KSEM165..M	–	–
.672	17,07	KSEM0672	1	KSEM0672..	KSEM170..M	KSEM0656..	–	–
.688	17,46	KSEM0688	1	KSEM0688..	KSEM0672..	KSEM170..M	–	–
.689	17,50	KSEM1750	1	KSEM175..M	KSEM0688..	KSEM0672..	KSEM170..M	–
.700	17,78	KSEM0700	1	N/A	KSEM175..M	KSEM0688..	–	–
.703	17,86	KSEM0703	1	KSEM0703..	KSEM175..M	KSEM0688..	–	–
.709	18,00	KSEM1800	1	KSEM180..M	KSEM0703..	KSEM175..M	–	–
.719	18,26	KSEM0719	2	KSEM0719..	KSEM181..M	–	–	–
.728	18,50	KSEM1850	2	KSEM185..M	KSEM0719..	KSEM181..M	–	–
.734	18,65	KSEM0734	2	KSEM0734..	KSEM185..M	KSEM0719..	–	–
.748	19,00	KSEM1900	2	KSEM190..M	KSEM0734..	KSEM185..M	–	–
.750	19,05	KSEM0750	2	KSEM0750..	KSEM190..M	KSEM0734..	–	–
.759	19,27	KSEM0759	2	KSEM0759..	KSEM0750..	KSEM190..M	–	–
.766	19,45	KSEM0766	2	KSEM0766..	KSEM0759..	KSEM0750..	KSEM190..M	–
.768	19,50	KSEM1950	2	KSEM195..M	KSEM0766..	KSEM0759..	KSEM0750..	KSEM190..M
.781	19,84	KSEM0781	2	KSEM0781..	KSEM195..M	KSEM0766..	–	–
.787	20,00	KSEM2000	3	KSEM200..M	–	–	–	–
.797	20,24	KSEM0797	3	KSEM0797..	KSEM200..M	–	–	–
.800	20,32	KSEM0800	3	N/A	KSEM0797..	KSEM200..M	–	–
.807	20,50	KSEM2050	3	KSEM205..M	KSEM0797..	KSEM200..M	–	–
.813	20,64	KSEM0813	3	KSEM0813..	KSEM205..M	KSEM0797..	–	–
.827	21,00	KSEM2100	3	KSEM210..M	KSEM0813..	KSEM205..M	–	–
.844	21,43	KSEM0844	3	KSEM0844..	KSEM210..M	–	–	–
.847	21,50	KSEM2150	3	KSEM215..M	KSEM0844..	KSEM210..M	–	–
.859	21,83	KSEM0859	3	KSEM0859..	KSEM215..M	KSEM0844..	–	–
.866	22,00	KSEM2200	3	KSEM220..M	KSEM0859..	KSEM215..M	–	–
.875	22,23	KSEM0875	4	KSEM0875..	KSEM221..M	–	–	–
.884	22,44	KSEM0884	4	KSEM0884..	KSEM0875..	KSEM221..M	–	–
.886	22,50	KSEM2250	4	KSEM225..M	KSEM0884..	KSEM0875..	KSEM221..M	–
.906	23,00	KSEM2300	4	KSEM230..M	KSEM0906..	KSEM225..M	–	–
.922	23,42	KSEM0922	4	KSEM0922..	KSEM230..M	–	–	–
.925	23,50	KSEM2350	4	KSEM235..M	KSEM0922..	KSEM230..M	–	–
.938	23,81	KSEM0938	4	KSEM0938..	KSEM235..M	KSEM0922..	–	–
.945	24,00	KSEM2400	4	KSEM240..M	KSEM0938..	KSEM235..M	–	–

(continued)

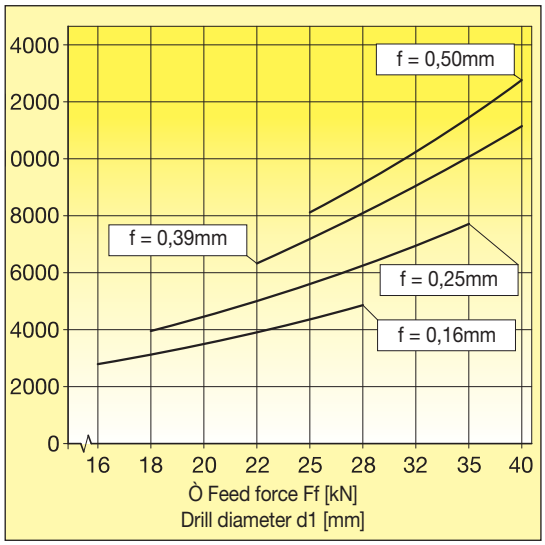
(continued)

diameter D inch	mm	insert blade	seat size	first choice	alternate body 1	alternate body 2	alternate body 3	alternate body 4
.965	24,50	KSEM2450	5	KSEM245..M	KSEM241..M	–	–	–
.969	24,61	KSEM0969	5	KSEM0969..	KSEM245..M	–	–	–
.984	25,00	KSEM2500	5	KSEM250..M	KSEM0984..	KSEM0969..	KSEM245..M	–
1.000	25,40	KSEM1000	5	KSEM1000..	KSEM250..M	–	–	–
1.004	25,50	KSEM2550	5	KSEM255..M	KSEM1000..	KSEM250..M	–	–
1.011	25,67	KSEM1011	5	KSEM1011..	KSEM255..M	–	–	–
1.024	26,00	KSEM2600	5	KSEM260..M	KSEM1011..	KSEM255..M	–	–
1.031	26,19	KSEM1031	6	KSEM1031..	KSEM261..M	–	–	–
1.043	26,50	KSEM2650	6	KSEM265..M	KSEM1031..	KSEM261..M	–	–
1.047	26,59	KSEM1047	6	KSEM1047..	KSEM265..M	KSEM1031..	KSEM261..M	–
1.063	27,00	KSEM2700	6	KSEM270..M	KSEM1063..	KSEM1047..	KSEM265..M	–
1.083	27,50	KSEM2750	6	KSEM275..M	KSEM270..M	KSEM1063..	–	–
1.094	27,78	KSEM1094	6	KSEM1094..	KSEM275..M	–	–	–
1.102	28,00	KSEM2800	6	KSEM280..M	KSEM1094..	KSEM275..M	–	–
1.109	28,18	KSEM1109	7	KSEM1109..	KSEM281..M	–	–	–
1.122	28,50	KSEM2850	7	KSEM285..M	KSEM1109..	KSEM281..M	–	–
1.125	28,58	KSEM1125	7	KSEM1125..	KSEM285..M	KSEM1109..	KSEM281..M	–
1.142	29,00	KSEM2900	7	KSEM290..M	KSEM1125..	KSEM285..M	–	–
1.156	29,37	KSEM1156	7	KSEM1156..	KSEM290..M	–	–	–
1.161	29,50	KSEM2950	7	KSEM295..M	KSEM1156..	KSEM290..M	–	–
1.172	29,77	KSEM1172	7	KSEM1172..	KSEM295..M	KSEM1156..	–	–
1.181	30,00	KSEM3000	7	KSEM300..M	KSEM1172..	KSEM295..M	–	–
1.188	30,16	KSEM1188	8	KSEM1188..	KSEM301..M	–	–	–
1.201	30,50	KSEM3050	8	KSEM305..M	KSEM1188..	KSEM301..M	–	–
1.203	30,56	KSEM1203	8	KSEM1203..	KSEM305..M	KSEM1188..	KSEM301..M	–
1.219	30,96	KSEM1219	8	KSEM1219..	KSEM1203..	KSEM305..M	–	–
1.220	31,00	KSEM3100	8	KSEM310..M	KSEM1219..	KSEM1203..	KSEM305..M	–
1.240	31,50	KSEM3150	8	KSEM315..M	KSEM310..M	–	–	–
1.250	31,75	KSEM1250	8	KSEM1250..	KSEM315..M	–	–	–
1.260	32,00	KSEM3200	8	KSEM320..M	KSEM1250..	KSEM315..M	–	–
1.280	32,50	KSEM3250	9	–	KSEM321..M	–	–	–
1.281	32,54	KSEM1281	9	KSEM1281..	KSEM321..M	–	–	–
1.297	32,94	KSEM1297	9	KSEM1297..	KSEM1281..	–	–	–
1.299	33,00	KSEM3300	9	KSEM330..M	KSEM1297..	KSEM1281..	–	–
1.313	33,34	KSEM1313	9	KSEM1313..	KSEM330..M	KSEM1297..	–	–
1.319	33,50	KSEM3350	9	–		KSEM1313..	KSEM330..M	–
1.328	33,73	KSEM1328	9	KSEM1328..	KSEM1313..	–	–	–
1.339	34,00	KSEM3400	9	KSEM340..M	KSEM1328..	–	–	–
1.344	34,13	KSEM1344	9	KSEM1344..	KSEM340..M	KSEM1328..	–	–
1.358	34,50	KSEM3450	9	–	–	KSEM1344..	KSEM340..M	–
1.375	34,93	KSEM1375	9	KSEM1375..	–	–	–	–
1.378	35,00	KSEM3500	9	KSEM350..M	KSEM1375..	–	–	–
1.398	35,50	KSEM3550	9	–	–	KSEM350..M	–	–
1.406	35,72	KSEM1406	9	KSEM1406..	–	–	–	–
1.417	36,00	KSEM3600	9	KSEM360..M	KSEM1406..	–	–	–
1.422	36,12	KSEM1422	10	KSEM1422..	KSEM361..M	–	–	–
1.437	36,50	KSEM3650	10	–		KSEM1422..	KSEM361..M	–
1.438	36,51	KSEM1438	10	KSEM1438..	KSEM1422..	KSEM361..M	–	v
1.457	37,00	KSEM3700	10	KSEM370..M	KSEM1438..	–	–	–
1.469	37,31	KSEM1469	10	KSEM1469..	KSEM370..M	–	–	–
1.476	37,50	KSEM3750	10	–	–	KSEM1469..	KSEM370..M	–
1.496	38,00	KSEM3800	10	KSEM380..M	–	–	–	–
1.500	38,10	KSEM1500	10	KSEM1500..	KSEM380..M	–	–	–
1.514	38,46	KSEM1514	10	KSEM1514..	KSEM1500..	KSEM380..M	–	–
1.516	38,50	KSEM3850	10	–	–	KSEM1514..	KSEM1500..	KSEM380..M
1.535	39,00	KSEM3900	10	KSEM390..M	–	–	–	–
1.555	39,50	KSEM3950	10	–	–	KSEM390..M	–	–
1.575	40,00	KSEM4000	10	KSEM400..M	–	–	–	–

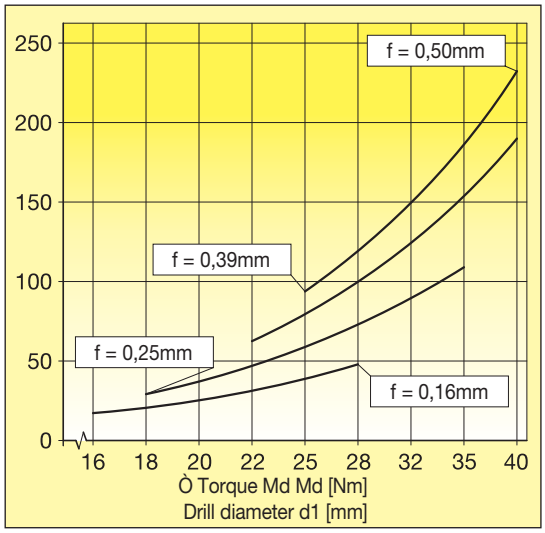
Drive Power (kW)



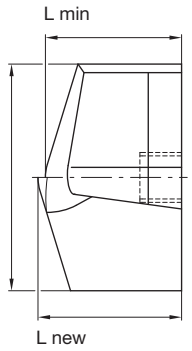
Feed Force (kN)



Torque (Nm)



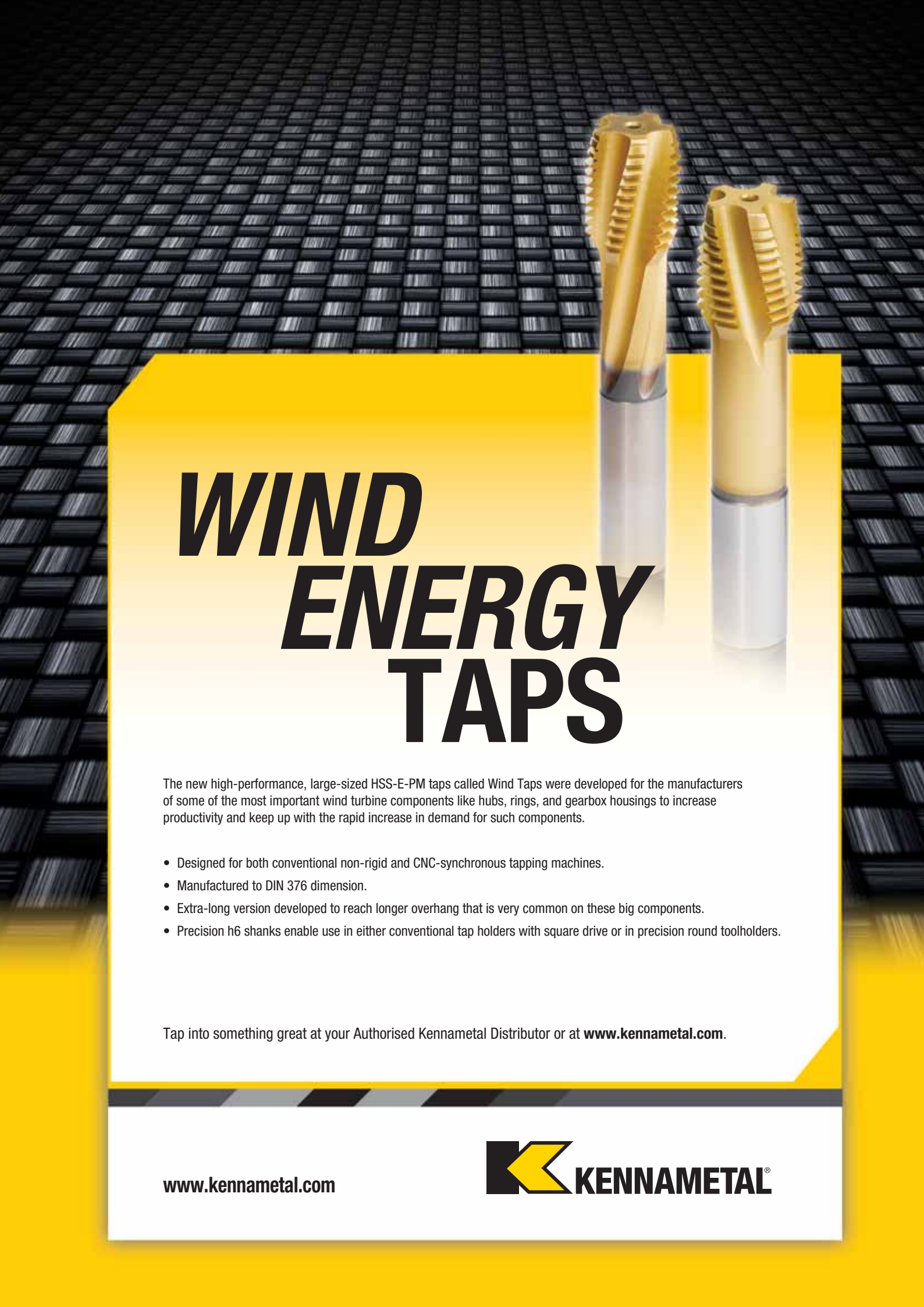
NOTE: The diagrams above are used to determine the drive power, feed force, and torque. They are based on cutting force measurement in tempered steels in Cgr. 6. Tensile strength: Rm = 600 N/mm2. The base cutting speed used is: vc = 80 m/min.



The following coolant pressure is recommended:

relative drilling depth	coolant pressure
1–3 x D	8 bars
5 x D	12 bars
7 x D	20 bars
10 x D	30 bars

insert seat size	diameter range D (mm)	L min (mm)	L new (mm)
C	12,50–13,50	8,5	9,6
B	13,51–14,50	8,9	10,1
A	14,51–15,88	9,4	10,6
1	15,88–18,00	10,3	11,6
2	18,01–19,99	11,2	12,6
3	20,00–22,00	12,1	13,6
4	22,01–24,00	13,0	14,6
5	24,01–26,00	13,9	15,6
6	26,01–28,00	14,8	16,6
7	28,01–30,00	15,7	17,6
8	30,01–32,00	16,6	18,6
9	32,01–36,00	18,4	20,6
10	36,01–40,00	20,2	22,6



WIND ENERGY TAPS

The new high-performance, large-sized HSS-E-PM taps called Wind Taps were developed for the manufacturers of some of the most important wind turbine components like hubs, rings, and gearbox housings to increase productivity and keep up with the rapid increase in demand for such components.

- Designed for both conventional non-rigid and CNC-synchronous tapping machines.
- Manufactured to DIN 376 dimension.
- Extra-long version developed to reach longer overhang that is very common on these big components.
- Precision h6 shanks enable use in either conventional tap holders with square drive or in precision round toolholders.

Tap into something great at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

KSEM PLUS™ Modular Drill System

The KSEM PLUS drill concept is simple but effective. It combines the benefits of the KSEM modular drill (high feeds and length-to-diameter [L/D] ratios) with the benefits of an indexable drill (high speeds and low consumable costs).

Primary Application

The KSEM PLUS modular drill in steel, cast iron, and stainless steel materials replaces HSS or indexable drilling tool solutions in the diameter range of 28–70mm (1.102–2.756") from 3–10 x D. For applications within the energy market (e.g., bearing rings for windmills), this tool delivers vast improvements in productivity and capacity.

Features and Benefits

Replaceable Head with Newly Developed FDS-Interface Coupling

- Quickly and easily replace inserts or drill heads without the need to remove the complete tool body from the machine.
- Save money and reduce tool stock by changing just the drill head and not the complete tool body if the front section wears out.
- Use one tool body for different sizes of drill heads.

Two Effective Cutting Edges

- Higher metal removal rates than indexable drills.
- Up to 100% increased productivity.
- L/D ratio capabilities from 3–10 x D.

KSEM PLUS Centre Insert with HP

- Feed rate capabilities of modular drills.
- Longer life of KSEM PLUS inserts and no chip flow obstruction.
- No precentring at L/D less than 8 x D.

DFT™/DFR™ Outboard Inserts

- Higher speeds than modular drills.
- More stable cutting conditions.
- Improved surface finish and hole diameter accuracy.

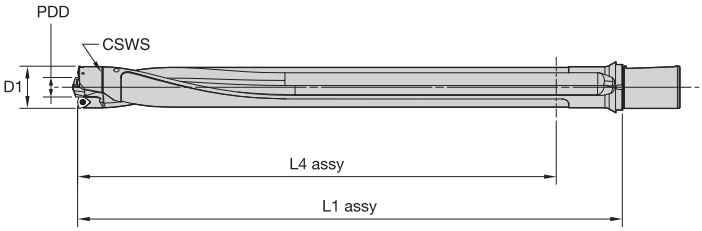
Tailored Grades and Geometries

- KC7315™ grade is a TiAlN-based PVD grade, offering superior performance in all steel applications.
- KC7410™ grade contains multiple layers of PVD coating, offering outstanding wear-resistance when drilling cast irons.
- KC7140™ grade is a TiCN-based PVD grade, offering excellent toughness in unstable conditions and is the first choice in stainless steel.

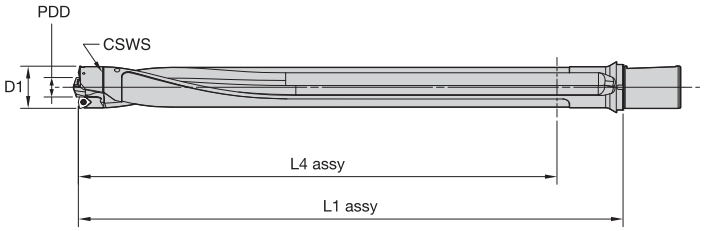
Customisation

- Heads are available in intermediate diameters and up to Ø 76mm available as semi-standards.
- Tool bodies are available with different shank styles and up to 20x drill Ø as long as total length including shank <920mm.
- Heads for reground inserts are available as semi-standards.
- Tool bodies are available with different shank styles.
- B1 style heads with DFC outboard inserts are available for machining stacked plates, cross hole applications, and situations with inclined exits.

*To learn more, **scan here**.*
For instructions on how to scan, please see page xxix.

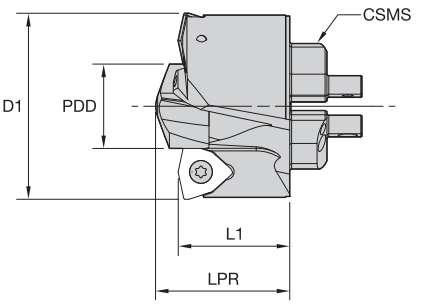


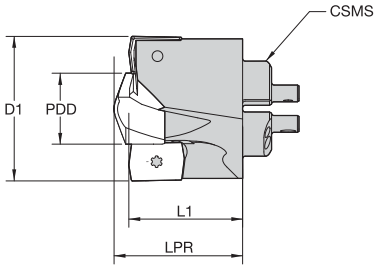
available KSEM PLUS heads				requested insert size reference per head			available tool bodies per CSWS connecting size 3 x D, 5 x D, 8 x D, 10 x D (metric and inch bodies)				
D1 mm	D1 in	KSEM PLUS head order number	KSEM PLUS head ANSI catalogue number	PDD (mm) center insert size reference	outboard gage insert DFR/DFT	CSWS	KSEM PLUS body order number	KSEM PLUS ANSI catalogue number	L/D ratio	L4 assembly (mm)	L1 assembly (mm)
28,00	1.102	**4000408**	**KSEMP2800FDS28A1M**	14,00	DFR040304D28	28	**4000409**	**WD32FDS28128M**	3 x D	93	150
28,58	1.125	**4047811**	**KSEMP1125FDS28A1**	15,00	DFR040304D28		**4051136**	**WD32FDS28190M**	5 x D	155	212
29,00	1.142	**4047812**	**KSEMP2900FDS28A1M**	15,00	DFR040304D28		**4051137**	**WD32FDS28283M**	8 x D	248	305
29,36	1.156	**4047823**	**KSEMP1156FDS28A1**	16,00	DFR040304D28		**4000411**	**WD32FDS28345M**	10 x D	310	367
30,00	1.181	**4047824**	**KSEMP3000FDS28A1M**	16,00	DFR040304D28		**4051138**	**SSF150FDS280502**	3 x D	93	150
30,18	1.188	**4047825**	**KSEMP1188FDS28A1**	17,00	DFR040304D28		**4051139**	**SSF150FDS280746**	5 x D	155	212
30,96	1.219	**4047826**	**KSEMP1219FDS28A1**	17,00	DFR040304D28		**4051140**	**SSF150FDS281112**	8 x D	248	305
31,00	1.221	**4047827**	**KSEMP3100FDS28A1M**	17,00	DFR040304D28		**4051141**	**SSF150FDS281356**	10 x D	310	367
31,75	1.250	**3794916**	**KSEMP1250FDS32A1**	15,00	DFT05T308D32	32	**3950219**	**WD32FDS32146M**	3 x D	105	166
32,00	1.260	**3794291**	**KSEMP3200FDS32A1M**	15,00	DFT05T308D32		**3794428**	**WD32FDS32216M**	5 x D	175	236
33,00	1.299	**3742210**	**KSEMP3300FDS32A1M**	16,00	DFT05T308D33		**3742293**	**WD32FDS32321M**	8 x D	280	341
33,20	1.307	**3793949**	**KSEMP3320FDS32A1M**	16,00	DFT05T308D33		**3794429**	**WD32FDS32391M**	10 x D	350	411
33,35	1.313	**3794917**	**KSEMP1313FDS32A1**	17,00	DFT05T308D33		**3952192**	**SSF150FDS320573**	3 x D	105	166
34,00	1.339	**3794292**	**KSEMP3400FDS32A1M**	17,00	DFT05T308D33		**3794835**	**SSF150FDS320850**	5 x D	175	236
34,93	1.375	**3794918**	**KSEMP1375FDS32A1**	18,00	DFT05T308D33		**3794836**	**SSF150FDS321263**	8 x D	280	341
35,00	1.378	**3794393**	**KSEMP3500FDS32A1M**	18,00	DFT05T308D33		**3794837**	**SSF150FDS321539**	10 x D	350	411
36,00	1.417	**3794394**	**KSEMP3600FDS36A1M**	13,00	DFT06T308D36	36	**3950220**	**WD32FDS36166M**	3 x D	117	186
36,53	1.438	**3794919**	**KSEMP1438FDS36A1**	14,00	DFT06T308D36		**3794430**	**WD32FDS36244M**	5 x D	195	264
37,00	1.457	**3794395**	**KSEMP3700FDS36A1M**	14,00	DFT06T308D36		**3794431**	**WD32FDS36361M**	8 x D	312	381
37,50	1.476	**3794427**	**KSEMP3750FDS36A1M**	15,00	DFT06T308D36		**3794432**	**WD32FDS36439M**	10 x D	390	459
38,00	1.496	**3794396**	**KSEMP3800FDS36A1M**	15,00	DFT06T308D36		**3952343**	**SSF150FDS360652**	3 x D	117	186
38,10	1.500	**3794920**	**KSEMP1500FDS36A1**	15,00	DFT06T308D36		**3794838**	**SSF150FDS360960**	5 x D	195	264
39,00	1.535	**3794397**	**KSEMP3900FDS36A1M**	16,00	DFT06T308D39		**3794839**	**SSF150FDS361421**	8 x D	312	381
39,20	1.543	**3793950**	**KSEMP3920FDS36A1M**	16,00	DFT06T308D39		**3794840**	**SSF150FDS361728**	10 x D	390	459
39,70	1.563	**3794921**	**KSEMP1563FDS36A1**	17,00	DFT06T308D39						
40,00	1.575	**3794398**	**KSEMP4000FDS40A1M**	17,00	DFT06T308D39	40	**3872075**	**WD50FDS40183M**	3 x D	132	208
41,00	1.614	**3794399**	**KSEMP4100FDS40A1M**	18,00	DFT06T308D39		**3794443**	**WD50FDS40271M**	5 x D	220	296
41,28	1.625	**3794922**	**KSEMP1625FDS40A1**	18,00	DFT06T308D39		**3794444**	**WD50FDS40403M**	8 x D	352	428
42,00	1.654	**3794400**	**KSEMP4200FDS40A1M**	19,00	DFT06T308D39		**3794445**	**WD50FDS40491M**	10 x D	440	516
43,00	1.693	**3794401**	**KSEMP4300FDS40A1M**	20,00	DFT06T308D39		**3952344**	**SSF200FDS400721**	3 x D	132	208
44,00	1.732	**3794402**	**KSEMP4400FDS40A1M**	21,00	DFT06T308D44		**3794841**	**SSF200FDS401066**	5 x D	220	296
44,45	1.750	**3794933**	**KSEMP1750FDS40A1**	22,00	DFT06T308D44		**3794842**	**SSF200FDS401586**	8 x D	352	428
							3794843	**SSF200FDS401933**	10 x D	440	516

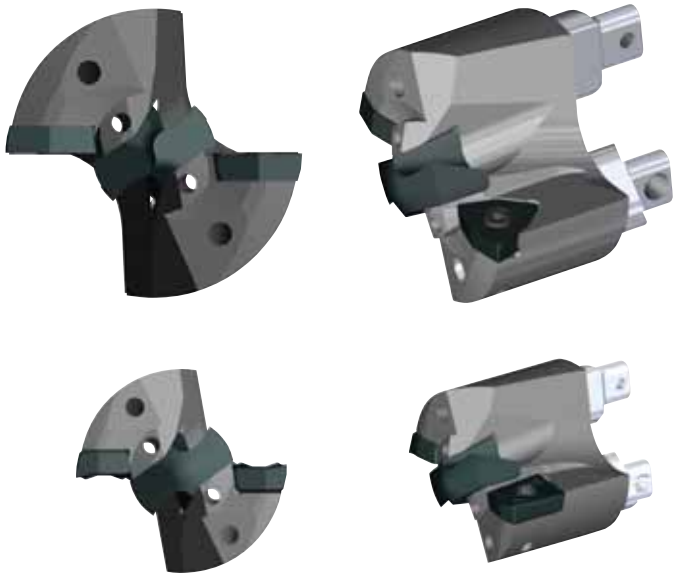


available KSEM PLUS heads			requested insert size reference per head			available tool bodies per CSWS connecting size 3 x D, 5 x D, 8 x D, 10 x D (metric and inch bodies)				
D1 mm in	KSEM PLUS head order number	KSEM PLUS head ANSI catalogue number	PDD (mm) center insert size reference	outboard gage insert DFR/DFT	CSWS	KSEM PLUS body order number	KSEM PLUS ANSI catalogue number	L/D ratio	L4 assembly (mm)	L1 assembly (mm)
					45	**3872709**	**WD50FDS45206M**	3 x D	147	231
45,00 1.772	**3794403**	**KSEMP4500FDS45A1M**	18,00	DFT070408D45		**3794446**	**WD50FDS45304M**	5 x D	245	329
46,00 1.811	**3794404**	**KSEMP4600FDS45A1M**	19,00	DFT070408D45		**3794447**	**WD50FDS45451M**	8 x D	392	476
47,00 1.850	**3794405**	**KSEMP4700FDS45A1M**	20,00	DFT070408D45		**3794448**	**WD50FDS45549M**	10 x D	490	574
47,63 1.875	**3794934**	**KSEMP1875FDS45A1**	21,00	DFT070408D45		**3952345**	**SSF200FDS450809**	3 x D	147	231
48,00 1.890	**3794406**	**KSEMP4800FDS45A1M**	21,00	DFT070408D45		**3794904**	**SSF200FDS451196**	5 x D	245	329
49,00 1.929	**3794407**	**KSEMP4900FDS45A1M**	22,00	DFT070408D45		**3794905**	**SSF200FDS451775**	8 x D	392	476
						3794906	**SSF200FDS452161**	10 x D	490	574
50,00 1.969	**3742211**	**KSEMP5000FDS50A1M**	23,00	DFT070408D50	50	**3950221**	**WD50FDS50228M**	3 x D	165	258
50,80 2.000	**3794935**	**KSEMP2000FDS50A1**	24,00	DFT070408D50		**3794449**	**WD50FDS50338M**	5 x D	275	368
51,00 2.008	**3794408**	**KSEMP5100FDS50A1M**	24,00	DFT070408D50		**3742294**	**WD50FDS50503M**	8 x D	440	533
52,00 2.047	**3794409**	**KSEMP5200FDS50A1M**	25,00	DFT070408D50		**3794450**	**WD50FDS50613M**	10 x D	550	643
53,00 2.087	**3794410**	**KSEMP5300FDS50A1M**	26,00	DFT070408D50		**3952346**	**SSF200FDS500896**	3 x D	165	258
53,98 2.125	**3794936**	**KSEMP2125FDS50A1**	27,00	DFT070408D50		**3794907**	**SSF200FDS501330**	5 x D	275	368
54,00 2.126	**3794411**	**KSEMP5400FDS50A1M**	27,00	DFT070408D50		**3794908**	**SSF200FDS501980**	8 x D	440	533
55,00 2.165	**3794412**	**KSEMP5500FDS50A1M**	28,00	DFT070408D50		**3794908**	**SSF200FDS502413**	10 x D	550	643
56,00 2.205	**3794413**	**KSEMP5600FDS56A1M**	20,00	DFT090508D56	56	**3950222**	**WD50FDS56259M**	3 x D	186	289
57,00 2.244	**3794414**	**KSEMP5700FDS56A1M**	21,00	DFT090508D56		**3794451**	**WD50FDS56383M**	5 x D	310	413
57,15 2.250	**3794937**	**KSEMP2250FDS56A1**	21,00	DFT090508D56		**3794452**	**WD50FDS56569M**	8 x D	496	599
58,00 2.284	**3794415**	**KSEMP5800FDS56A1M**	22,00	DFT090508D56		**3794453**	**WD50FDS56693M**	10 x D	620	723
59,00 2.323	**3794416**	**KSEMP5900FDS56A1M**	23,00	DFT090508D56		**3952347**	**SSF200FDS561020**	3 x D	186	289
60,00 2.362	**3794417**	**KSEMP6000FDS56A1M**	24,00	DFT090508D56		**3794910**	**SSF200FDS561507**	5 x D	310	413
60,33 2.375	**3794938**	**KSEMP2375FDS56A1**	24,00	DFT090508D56		**3794911**	**SSF200FDS562240**	8 x D	496	599
61,00 2.402	**3794418**	**KSEMP6100FDS56A1M**	25,00	DFT090508D56		**3794912**	**SSF200FDS562783**	10 x D	620	723
62,00 2.441	**3794419**	**KSEMP6200FDS56A1M**	26,00	DFT090508D56						
63,00 2.480	**3794420**	**KSEMP6300FDS63A1M**	27,00	DFT090508D63	63					
63,50 2.500	**3794939**	**KSEMP2500FDS63A1**	28,00	DFT090508D63		**3950333**	**WD50FDS63289M**	3 x D	210	325
64,00 2.520	**3794421**	**KSEMP6400FDS63A1M**	28,00	DFT090508D63		**3794454**	**WD50FDS63429M**	5 x D	350	465
65,00 2.559	**3794422**	**KSEMP6500FDS63A1M**	29,00	DFT090508D63		**3794455**	**WD50FDS63639M**	8 x D	560	675
66,00 2.598	**3794423**	**KSEMP6600FDS63A1M**	30,00	DFT090508D63		**3742296**	**WD50FDS63779M**	10 x D	700	815
66,68 2.625	**3794940**	**KSEMP2625FDS63A1**	31,00	DFT090508D63		**3952348**	**SSF200FDS631138**	3 x D	210	325
67,00 2.638	**3794424**	**KSEMP6700FDS63A1M**	31,00	DFT090508D63		**3794913**	**SSF200FDS631688**	5 x D	350	465
68,00 2.677	**3794425**	**KSEMP6800FDS63A1M**	32,00	DFT090508D63		**3794914**	**SSF200FDS632515**	8 x D	560	675
69,00 2.717	**3794426**	**KSEMP6900FDS63A1M**	33,00	DFT090508D63		**3794915**	**SSF200FDS633066**	10 x D	700	815
69,85 2.750	**3794941**	**KSEMP2750FDS63A1**	34,00	DFT090508D63						
70,00 2.756	**3742212**	**KSEMP7000FDS63A1M**	34,00	DFT090508D63						

- To ensure 100% system stability, KSEM™ inserts used for KSEM PLUS should not be reground.
- KSEM PLUS heads are shipped with all insert screws.
- KSEM PLUS heads are shipped with two wrenches: one for the KSEM insert and one to be used for the DFT™/DFR™ inserts as well as for the assembly of the body to the head.
- Order KSEM PLUS shanks using connection coupling size (CSMS) to determine which heads go with each shank.
- PDD in the callout drawing refers to the D1 of the HPGM and HPCM inserts for use with KSEM PLUS.
- Order inserts (KSEM, DFT, and DFR) for KSEM PLUS separately.

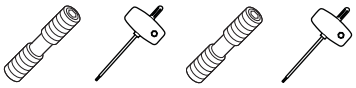






NEW!

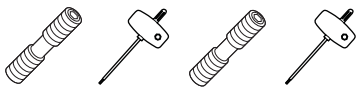
KSEM PLUS Heads 28–70mm



order number	ISO catalogue number	ANSI catalogue number	D1 mm	D1 in	PDD mm	PDD in	LPR mm	LPR in	L1 mm	L1 in	CSMS system size	KSEM insert screw	KSEM wrench	Drill Fix insert screw	Drill Fix wrench
4000408	KSEMP2800FDS28A1M	KSEMP2800FDS28A1M	28,00	1.102	14,00	.5512	24,9	.980	22,0	.866	FDS28	364.016	170.350	192.432	170.352
4047811	KSEMP2858FDS28A1M	KSEMP1125FDS28A1	28,58	1.125	15,00	.5906	25,0	.984	22,0	.866	FDS28	364.016	170.350	192.432	170.352
4047812	KSEMP2900FDS28A1M	KSEMP2900FDS28A1M	29,00	1.142	15,00	.5906	25,0	.984	22,0	.866	FDS28	364.016	170.350	192.432	170.352
4047823	KSEMP2937FDS28A1M	KSEMP1156FDS28A1	29,36	1.156	16,00	.6299	25,2	.992	22,0	.866	FDS28	364.010	170.345	192.432	170.352
4047824	KSEMP3000FDS28A1M	KSEMP3000FDS28A1M	30,00	1.181	16,00	.6299	25,2	.992	22,0	.866	FDS28	364.010	170.345	192.432	170.352
4047825	KSEMP3017FDS28A1M	KSEMP1188FDS28A1	30,18	1.188	17,00	.6693	25,4	1.000	22,0	.866	FDS28	364.010	170.345	192.432	170.352
4047826	KSEMP3096FDS28A1M	KSEMP1219FDS28A1	30,96	1.219	17,00	.6693	25,4	1.000	22,0	.866	FDS28	364.010	170.345	192.432	170.352
4047827	KSEMP3100FDS28A1M	KSEMP3100FDS28A1M	31,00	1.221	17,00	.6693	25,4	1.000	22,0	.866	FDS28	364.010	170.345	192.432	170.352
3794916	KSEMP3175FDS32A1M	KSEMP1250FDS32A1	31,75	1.250	15,00	.5906	23,0	.907	20,0	.787	FDS32	364.016	170.350	191.924	170.353
3794291	KSEMP3200FDS32A1M	KSEMP3200FDS32A1M	32,00	1.260	15,00	.5906	23,0	.907	20,0	.787	FDS32	364.016	170.350	191.924	170.353
3742210	KSEMP3300FDS32A1M	KSEMP3300FDS32A1M	33,00	1.299	16,00	.6299	23,2	.913	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3793949	KSEMP3320FDS32A1M	KSEMP3320FDS32A1M	33,20	1.307	16,00	.6299	23,2	.913	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3794917	KSEMP3334FDS32A1M	KSEMP1313FDS32A1	33,35	1.313	17,00	.6693	23,4	.920	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3794292	KSEMP3400FDS32A1M	KSEMP3400FDS32A1M	34,00	1.339	17,00	.6693	23,4	.920	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3794918	KSEMP3493FDS32A1M	KSEMP1375FDS32A1	34,93	1.375	18,00	.7087	23,6	.928	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3794393	KSEMP3500FDS32A1M	KSEMP3500FDS32A1M	35,00	1.378	18,00	.7087	23,6	.928	20,0	.787	FDS32	364.010	170.345	191.924	170.353
3794394	KSEMP3600FDS36A1M	KSEMP3600FDS36A1M	36,00	1.417	13,00	.5118	22,7	.893	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794919	KSEMP3651FDS36A1M	KSEMP1438FDS36A1	36,53	1.438	14,00	.5512	22,9	.900	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794395	KSEMP3700FDS36A1M	KSEMP3700FDS36A1M	37,00	1.457	14,00	.5512	22,9	.900	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794427	KSEMP3750FDS36A1M	KSEMP3750FDS36A1M	37,50	1.476	15,00	.5906	23,0	.907	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794396	KSEMP3800FDS36A1M	KSEMP3800FDS36A1M	38,00	1.496	15,00	.5906	23,0	.907	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794920	KSEMP3810FDS36A1M	KSEMP1500FDS36A1	38,10	1.500	15,00	.5906	23,0	.907	20,0	.787	FDS36	364.016	170.350	191.916	170.355
3794397	KSEMP3900FDS36A1M	KSEMP3900FDS36A1M	39,00	1.535	16,00	.6299	23,2	.913	20,0	.787	FDS36	364.010	170.345	191.916	170.355
3793950	KSEMP3920FDS36A1M	KSEMP3920FDS36A1M	39,20	1.543	16,00	.6299	23,2	.913	20,0	.787	FDS36	364.010	170.345	191.916	170.355

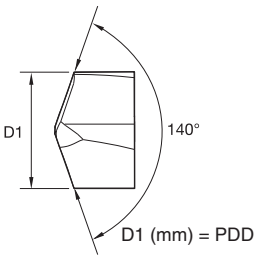
(continued)

(KSEM PLUS Heads 28–70mm continued)

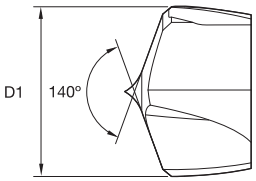


order number	ISO catalogue number	ANSI catalogue number	D1 mm	D1 in	PDD mm	PDD in	LPR mm	LPR in	L1 mm	L1 in	CSMS system size	KSEM insert screw	KSEM wrench	Drill Fix insert screw	Drill Fix wrench
3794921	KSEMP3970FDS36A1M	KSEMP1563FDS36A1	39,70	1.563	17,00	.6693	23,4	.920	20,0	.787	FDS36	364.010	170.345	191.916	170.355
3794398	KSEMP4000FDS40A1M	KSEMP4000FDS40A1M	40,00	1.575	17,00	.6693	28,6	1.125	25,0	.984	FDS40	364.010	170.345	191.916	170.355
3794399	KSEMP4100FDS40A1M	KSEMP4100FDS40A1M	41,00	1.614	18,00	.7087	28,8	1.132	25,0	.984	FDS40	364.010	170.345	191.916	170.355
3794922	KSEMP4128FDS40A1M	KSEMP1625FDS40A1	41,28	1.625	18,00	.7087	28,8	1.132	25,0	.984	FDS40	364.010	170.345	191.916	170.355
3794400	KSEMP4200FDS40A1M	KSEMP4200FDS40A1M	42,00	1.654	19,00	.7480	28,9	1.139	25,0	.984	FDS40	364.010	170.345	191.916	170.355
3794401	KSEMP4300FDS40A1M	KSEMP4300FDS40A1M	43,00	1.693	20,00	.7874	29,1	1.146	25,0	.984	FDS40	364.011	170.346	191.916	170.355
3794402	KSEMP4400FDS40A1M	KSEMP4400FDS40A1M	44,00	1.732	21,00	.8268	29,3	1.153	25,0	.984	FDS40	364.011	170.346	191.916	170.355
3794933	KSEMP4445FDS40A1M	KSEMP1750FDS40A1	44,45	1.750	22,00	.8661	29,5	1.160	25,0	.984	FDS40	364.011	170.346	191.916	170.355
3794403	KSEMP4500FDS45A1M	KSEMP4500FDS45A1M	45,00	1.772	18,00	.7087	28,8	1.132	25,0	.984	FDS45	364.010	170.345	191.698	170.355
3794404	KSEMP4600FDS45A1M	KSEMP4600FDS45A1M	46,00	1.811	19,00	.7480	28,9	1.139	25,0	.984	FDS45	364.010	170.345	191.698	170.355
3794405	KSEMP4700FDS45A1M	KSEMP4700FDS45A1M	47,00	1.850	20,00	.7874	29,1	1.146	25,0	.984	FDS45	364.011	170.346	191.698	170.355
3794934	KSEMP4763FDS45A1M	KSEMP1875FDS45A1	47,63	1.875	21,00	.8268	29,3	1.153	25,0	.984	FDS45	364.011	170.346	191.698	170.355
3794406	KSEMP4800FDS45A1M	KSEMP4800FDS45A1M	48,00	1.890	21,00	.8268	29,3	1.153	25,0	.984	FDS45	364.011	170.346	191.698	170.355
3794407	KSEMP4900FDS45A1M	KSEMP4900FDS45A1M	49,00	1.929	22,00	.8661	29,5	1.160	25,0	.984	FDS45	364.011	170.346	191.698	170.355
3742211	KSEMP5000FDS50A1M	KSEMP5000FDS50A1M	50,00	1.969	23,00	.9055	34,8	1.372	30,0	1.181	FDS50	364.011	170.346	191.698	170.355
3794935	KSEMP5080FDS50A1M	KSEMP2000FDS50A1	50,80	2.000	24,00	.9449	35,0	1.379	30,0	1.181	FDS50	364.011	170.346	191.698	170.355
3794408	KSEMP5100FDS50A1M	KSEMP5100FDS50A1M	51,00	2.008	24,00	.9449	35,0	1.379	30,0	1.181	FDS50	364.011	170.346	191.698	170.355
3794409	KSEMP5200FDS50A1M	KSEMP5200FDS50A1M	52,00	2.047	25,00	.9843	35,2	1.386	30,0	1.181	FDS50	364.012	170.347	191.698	170.355
3794410	KSEMP5300FDS50A1M	KSEMP5300FDS50A1M	53,00	2.087	26,00	1.0236	35,4	1.392	30,0	1.181	FDS50	364.012	170.347	191.698	170.355
3794936	KSEMP5398FDS50A1M	KSEMP2125FDS50A1	53,98	2.125	27,00	1.0630	35,6	1.399	30,0	1.181	FDS50	364.012	170.347	191.698	170.355
3794411	KSEMP5400FDS50A1M	KSEMP5400FDS50A1M	54,00	2.126	27,00	1.0630	35,6	1.399	30,0	1.181	FDS50	364.012	170.347	191.698	170.355
3794412	KSEMP5500FDS50A1M	KSEMP5500FDS50A1M	55,00	2.165	28,00	1.1024	35,7	1.406	30,0	1.181	FDS50	364.012	170.347	191.698	170.355
3794413	KSEMP5600FDS56A1M	KSEMP5600FDS56A1M	56,00	2.205	20,00	.7874	34,3	1.351	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794414	KSEMP5700FDS56A1M	KSEMP5700FDS56A1M	57,00	2.244	21,00	.8268	34,5	1.358	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794937	KSEMP5715FDS56A1M	KSEMP2250FDS56A1	57,15	2.250	21,00	.8268	34,5	1.358	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794415	KSEMP5800FDS56A1M	KSEMP5800FDS56A1M	58,00	2.284	22,00	.8661	34,7	1.365	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794416	KSEMP5900FDS56A1M	KSEMP5900FDS56A1M	59,00	2.323	23,00	.9055	34,8	1.372	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794417	KSEMP6000FDS56A1M	KSEMP6000FDS56A1M	60,00	2.362	24,00	.9449	35,0	1.379	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794938	KSEMP6033FDS56A1M	KSEMP2375FDS56A1	60,33	2.375	24,00	.9449	35,0	1.379	30,0	1.181	FDS56	364.011	170.346	191.726	170.356
3794418	KSEMP6100FDS56A1M	KSEMP6100FDS56A1M	61,00	2.402	25,00	.9843	35,2	1.386	30,0	1.181	FDS56	364.012	170.347	191.726	170.356
3794419	KSEMP6200FDS56A1M	KSEMP6200FDS56A1M	62,00	2.441	26,00	1.0236	35,4	1.392	30,0	1.181	FDS56	364.012	170.347	191.726	170.356
3794420	KSEMP6300FDS63A1M	KSEMP6300FDS63A1M	63,00	2.480	27,00	1.0630	41,8	1.643	36,0	1.417	FDS63	364.012	170.347	191.726	170.356
3794939	KSEMP6350FDS63A1M	KSEMP2500FDS63A1	63,50	2.500	28,00	1.1024	41,9	1.650	36,0	1.417	FDS63	364.012	170.347	191.726	170.356
3794421	KSEMP6400FDS63A1M	KSEMP6400FDS63A1M	64,00	2.520	28,00	1.1024	41,9	1.650	36,0	1.417	FDS63	364.012	170.347	191.726	170.356
3794422	KSEMP6500FDS63A1M	KSEMP6500FDS63A1M	65,00	2.559	29,00	1.1417	42,1	1.657	36,0	1.417	FDS63	364.013	170.348	191.726	170.356
3794423	KSEMP6600FDS63A1M	KSEMP6600FDS63A1M	66,00	2.598	30,00	1.1811	42,3	1.664	36,0	1.417	FDS63	364.013	170.348	191.726	170.356
3794940	KSEMP6668FDS63A1M	KSEMP2625FDS63A1	66,68	2.625	31,00	1.2205	42,5	1.671	36,0	1.417	FDS63	364.013	170.348	191.726	170.356
3794424	KSEMP6700FDS63A1M	KSEMP6700FDS63A1M	67,00	2.638	31,00	1.2205	42,5	1.671	36,0	1.417	FDS63	364.013	170.348	191.726	170.356
3794425	KSEMP6800FDS63A1M	KSEMP6800FDS63A1M	68,00	2.677	32,00	1.2598	42,6	1.678	36,0	1.417	FDS63	364.013	170.348	191.726	170.356
3794426	KSEMP6900FDS63A1M	KSEMP6900FDS63A1M	69,00	2.717	33,00	1.2992	42,8	1.685	36,0	1.417	FDS63	364.015	170.348	191.726	170.356
3794941	KSEMP6985FDS63A1M	KSEMP2750FDS63A1	69,85	2.750	34,00	1.3386	43,0	1.692	36,0	1.417	FDS63	364.015	170.348	191.726	170.356
3742212	KSEMP7000FDS63A1M	KSEMP7000FDS63A1M	70,00	2.756	34,00	1.3386	43,0	1.692	36,0	1.417	FDS63	364.015	170.348	191.726	170.356

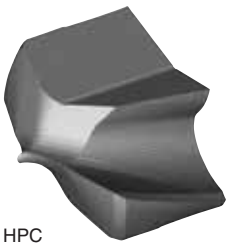
- To ensure 100% system stability, KSEM™ inserts used for KSEM PLUS should not be reground.
- The callout D1 (mm) = PDD. PDD is used in reference to the KSEM PLUS heads.



D1 (mm) = PDD

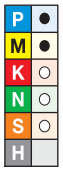


D1 (mm) = PDD


HPC

HPG

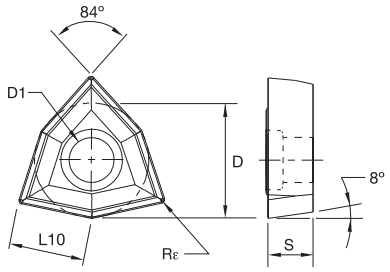
KSEMP Inserts



● first choice
○ alternate choice

HPGM • KC7315	HPCM • KC7410	D1 mm	D1 in	seat size
KSEMP1300HPGM	**KSEM1300HPCM**	13,000	.5118	C
KSEMP1400HPGM	**KSEM1400HPCM**	14,000	.5512	B
KSEMP1500HPGM	**KSEM1500HPCM**	15,000	.5906	A
KSEMP1600HPGM	**KSEM1600HPCM**	16,000	.6299	1
KSEMP1700HPGM	**KSEM1700HPCM**	17,000	.6693	1
KSEMP1800HPGM	**KSEM1800HPCM**	18,000	.7087	1
KSEMP1900HPGM	**KSEM1900HPCM**	19,000	.7480	2
KSEMP2000HPGM	**KSEM2000HPCM**	20,000	.7874	3
KSEMP2100HPGM	**KSEM2100HPCM**	21,000	.8268	3
KSEMP2200HPGM	**KSEM2200HPCM**	22,000	.8661	3
KSEMP2300HPGM	**KSEM2300HPCM**	23,000	.9055	4
KSEMP2400HPGM	**KSEM2400HPCM**	24,000	.9449	4
KSEMP2500HPGM	**KSEM2500HPCM**	25,000	.9843	5
KSEMP2600HPGM	**KSEM2600HPCM**	26,000	1.0236	5
KSEMP2700HPGM	**KSEM2700HPCM**	27,000	1.0630	6
KSEMP2800HPGM	**KSEM2800HPCM**	28,000	1.1024	6
KSEMP2900HPGM	**KSEM2900HPCM**	29,000	1.1417	7
KSEMP3000HPGM	**KSEM3000HPCM**	30,000	1.1811	7
KSEMP3100HPGM	**KSEM3100HPCM**	31,000	1.2205	8
KSEMP3200HPGM	**KSEM3200HPCM**	32,000	1.2598	8
KSEMP3300HPGM	–	33,000	1.2992	9
KSEMP3400HPGM	–	34,000	1.3386	9

Tolerance HPG • Metric		Tolerance HPC • Metric	
D1	**tolerance h8**	**D1**	**tolerance k8**
12,5–18	+0,000/-0,027	12,5–18	+0,027/0,000
>18–30	+0,000/-0,033	>18–30	+0,033/0,000
>30–40	+0,000/-0,039	>30–40	+0,039/0,000



● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	○
H	

DFT-HP

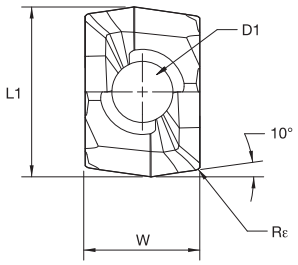
outboard insert size reference (DFT)	order number	catalogue number	L10 mm	L10 in	D mm	D in	D1 mm	D1 in	S mm	S in	Rε mm	Rε in	KC7315
DFT05T308D32	**3648429**	**DFT05T308D32HP**	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	●
DFT05T308D33	**3668995**	**DFT05T308D33HP**	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	●
DFT06T308D36	**3648427**	**DFT06T308D36HP**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT06T308D39	**3668996**	**DFT06T308D39HP**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT06T308D44	**3668997**	**DFT06T308D44HP**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT070408D45	**3648432**	**DFT070408D45HP**	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	●
DFT070408D50	**3668998**	**DFT070408D50HP**	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	●
DFT090508D56	**3648476**	**DFT090508D56HP**	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	●
DFT090508D63	**3668999**	**DFT090508D63HP**	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	●

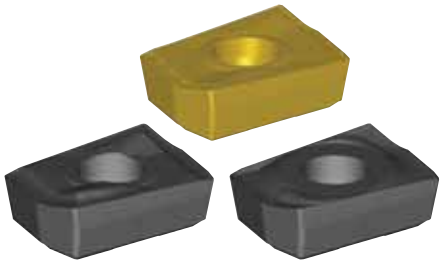
● first choice
○ alternate choice

P	●
M	●
K	○
N	○
S	○
H	

DFT-MD

outboard insert size reference (DFT)	order number	catalogue number	L10 mm	L10 in	D mm	D in	D1 mm	D1 in	S mm	S in	Rε mm	Rε in	KC7140
DFT05T308D32	**3648430**	**DFT05T308D32MD**	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	●
DFT05T308D33	**3669000**	**DFT05T308D33MD**	5,29	.208	8,00	.315	3,40	.134	3,75	.148	0,80	.031	●
DFT06T308D36	**3648428**	**DFT06T308D36MD**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT06T308D39	**3669001**	**DFT06T308D39MD**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT06T308D44	**3669002**	**DFT06T308D44MD**	6,62	.260	10,00	.394	4,40	.173	3,75	.148	0,80	.031	●
DFT070408D45	**3648474**	**DFT070408D45MD**	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	●
DFT070408D50	**3669083**	**DFT070408D50MD**	7,94	.313	12,00	.472	4,40	.173	4,75	.187	0,80	.031	●
DFT090508D56	**3648478**	**DFT090508D56MD**	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	●
DFT090508D63	**3669084**	**DFT090508D63MD**	9,92	.391	15,00	.591	5,50	.217	5,25	.207	0,80	.031	●





● first choice
○ alternate choice

P	●	○	●	
M	●	○	○	
K	○	●	○	
N	○	●	○	
S	○	○	●	
H				

DFR Inserts

catalogue number	L1 mm	L1 in	W mm	W in	D1 mm	D1 in	S mm	S in	Rε mm	Rε in	KC7140	KC7225	KC7315
DFR040304D28GD	10,76	.4236	7,26	.2860	2,85	.1122	3,79	.1492	0,40	.0156			●
DFR040304D28LD	10,76	.4236	7,26	.2860	2,85	.1122	3,78	.1490	0,40	.0156		●	
DFR040304D28MD	10,76	.4236	7,26	.2860	2,85	.1122	3,79	.1490	0,40	.0156	●		

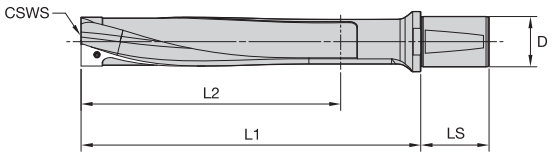
Modular Drill • KSEM PLUS™ • Metric

Material Group		Condition	Cutting Speed – vc Range – m/min			Metric					
							Recommended Feed Rate (f) by Diameter				
			min	Starting Value	max		KSEM 14....17 DFR04... 28,00 - 31,74	KSEM 15....18 DFT05.. 31,75 - 35,99	KSEM 13....22 DFT06... 36,00 - 44,99	KSEM 18....28 DFT07... 45,00 - 55,99	KSEM 20....34 DFT09... 56,00 - 70,00
P	2	S	90	190	230	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,360	0,200 - 0,400	0,200 - 0,450
		U	71	130	170	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,360	0,200 - 0,400	0,200 - 0,450
		I	50	80	110	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
	3	S	90	180	230	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		U	70	120	170	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		I	50	70	106	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
	4	S	90	140	220	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		U	70	110	160	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		I	50	80	110	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
	5	S	90	130	210	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		U	70	100	150	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		I	50	70	100	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
	6	S	70	90	180	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		U	50	75	120	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
		I	40	60	100	mm/r	0,160 - 0,280	0,160 - 0,280	0,200 - 0,320	0,200 - 0,400	0,200 - 0,450
M	1	S	60	110	135	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		U	40	70	90	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		I	30	50	65	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
	2	S	60	100	135	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		U	40	60	90	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		I	30	50	65	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
	3	S	50	90	135	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		U	40	60	90	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
		I	25	40	65	mm/r	0,130 - 0,250	0,130 - 0,250	0,160 - 0,280	0,160 - 0,320	0,200 - 0,360
K	1	S	90	170	230	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		U	60	120	160	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		I	40	70	90	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
	2	S	90	160	220	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		U	60	110	160	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		I	40	70	100	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
	3	S	90	150	210	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		U	60	100	150	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
		I	35	60	90	mm/r	0,180 - 0,300	0,180 - 0,300	0,216 - 0,360	0,240 - 0,420	0,300 - 0,480
N	1	S	150	240	360	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		U	100	160	240	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		I	60	100	160	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
	2	S	150	220	360	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		U	100	150	240	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		I	60	100	160	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
	3	S	150	200	360	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		U	100	140	240	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		I	60	90	160	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
	4	S	110	220	260	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		U	70	140	170	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400
		I	45	90	110	mm/r	0,120 - 0,200	0,120 - 0,200	0,144 - 0,280	0,160 - 0,320	0,200 - 0,400

Insert Recommendation

Material Group	Outboard/ Inboard	Insert Style	Grade
P	O	DFR-GD	KC7315
		DFT-HP	
	I	KSEMP-HPG	
M	O	DFR-MD	KC7315
		DFT-MD	
	I	KSEM-HPG	
K	O	DFR-LD	KC7215
		DFT-HP	KC7315
	I	KSEM-HPC	KC7410
N	O	DFR-GD	KC7315
		DFT-HP	
	I	KSEMP-HPG	

- Order KSEM PLUS heads according to the connection coupling size (CSWS).
- Order KSEM PLUS heads separately; see page H50–H51.
- Wrench will be shipped with KSEM PLUS head.



KSEM PLUS WD Shanks • 3 x D • Metric

catalogue number	CSWS system size	D	L1	L2	LS	clamp screw
WD32FDS28128M	FDS28	32	128	71	58	193.537
WD32FDS32146M	FDS32	32	146	85	58	193.523
WD32FDS36166M	FDS36	32	166	97	58	193.524
WD50FDS40183M	FDS40	50	183	107	68	193.524
WD50FDS45206M	FDS45	50	206	122	68	193.525
WD50FDS50228M	FDS50	50	228	135	68	193.525
WD50FDS56259M	FDS56	50	259	156	68	193.526
WD50FDS63289M	FDS63	50	289	174	68	193.526

KSEM PLUS WD Shanks • 5 x D • Metric

catalogue number	CSWS system size	D	L1	L2	LS	clamp screw
WD32FDS28190M	FDS28	32	190	133	58	193.537
WD32FDS32216M	FDS32	32	216	155	58	193.523
WD32FDS36244M	FDS36	32	244	175	58	193.524
WD50FDS40271M	FDS40	32	271	195	68	193.524
WD50FDS45304M	FDS45	50	304	220	68	193.525
WD50FDS50338M	FDS50	50	338	245	68	193.525
WD50FDS56383M	FDS56	50	383	280	68	193.526
WD50FDS63429M	FDS63	50	429	314	68	193.526

KSEM PLUS WD Shanks • 8 x D • Metric

catalogue number	CSWS system size	D	L1	L2	LS	clamp screw
WD32FDS28283M	FDS28	32	283	226	58	193.537
WD32FDS32321M	FDS32	32	321	260	58	193.523
WD32FDS36361M	FDS36	32	361	292	58	193.524
WD50FDS40403M	FDS40	50	403	327	68	193.524
WD50FDS45451M	FDS45	50	451	367	68	193.525
WD50FDS50503M	FDS50	50	503	410	68	193.525
WD50FDS56569M	FDS56	50	569	466	68	193.526
WD50FDS63639M	FDS63	50	639	524	68	193.526

KSEM PLUS WD Shanks • 10 x D • Metric

catalogue number	CSWS system size	D	L1	L2	LS	clamp screw
WD32FDS28345M	FDS28	32	345	288	58	193.537
WD32FDS32391M	FDS32	32	391	330	58	193.523
WD32FDS36439M	FDS36	32	439	370	58	193.524
WD50FDS40491M	FDS40	50	491	415	68	193.524
WD50FDS45549M	FDS45	50	549	465	68	193.525
WD50FDS50613M	FDS50	50	613	520	68	193.525
WD50FDS56693M	FDS56	50	693	590	68	193.526
WD50FDS63779M	FDS63	50	779	664	68	193.526

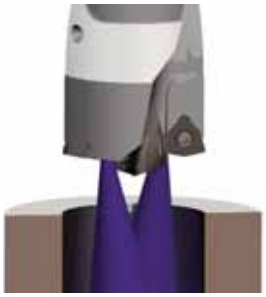
KSEM PLUS™ Application Cautions and Hints

Half cylindrical holes

Cored holes

Hole expansion
on the centre axis

Coolant Recommendations

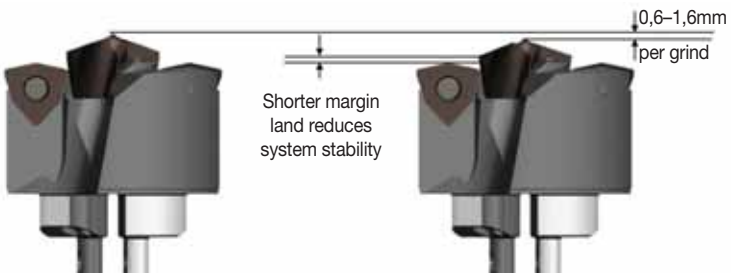


Internal coolant is recommended for optimum chip flow and tool life.

KSEM PLUS Application Cautions and Piloting

Application		L/D<6 x D	L/D<8 x D	L/D>8 x D
	Regular Entrance Exit	Piloting Not Required	Reduce Feed by 50%	KSEM™ Pilot Drill
	Angled Entrance <3°	KSEM Pilot Drill	KSEM Pilot Drill	KSEM Pilot Drill
	Angled and Concave Entrance >3°	Face Mill and KSEM Pilot Drill	Face Mill and KSEM Pilot Drill	Face Mill and KSEM Pilot Drill
	Angled Exit	Regular Entrance Exit	Reduce Feed by 75%	Not Recommended
	Stacked Material	Stacked material requires a custom solution head using S2S inserts.		

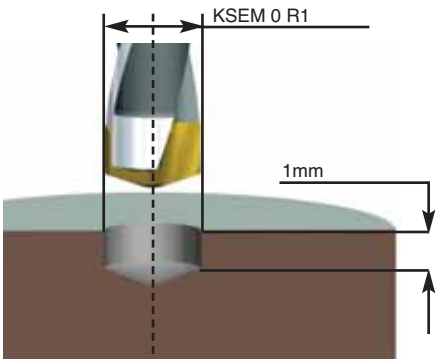
The KSEM PLUS Piloting Insert SHOULD NOT be Reground:



Only new KSEM PLUS inserts will provide consistency and process security of the KSEM PLUS modular drill system.

NOTE: Reground KSEM PLUS inserts can be used in KSEM drills.

Piloting Instructions:



1. KSEM....PCM
   Pilot drill Ø equal KSEMP Ø PDD

2. Drill 1mm deep from full diameter

New KSEM PLUS B1 Head

Discover *New* Dimensions with

KSEM PLUS™ Extensions

KSEM PLUS is the industry benchmark when drilling large diameter applications. With significantly reduced cost per hole, KSEM PLUS now extends its range.

Diameter Extension:

- New generation of large heads featuring diameters above 70mm and up to 127mm in 10 x D*.

Application Extension:

- New KSEM PLUS B1 heads for difficult applications using new DFC inserts and guiding pads.
- Drilling through inclined exits up to 15°.
- Perfect guidance of head when drilling through cross holes with widths up to 50% of drill diameter.
- Works great in stacked materials.
- Standard range of KSEM PLUS B1 heads available from 28–70mm*.

"This is not drilling, this is more like punching! Surfaces and accuracy are fully compliant with our requirements. We have been waiting a long time for such a drill!"
Customer, Germany

*NOTE: Please contact our engineered solution team for available offers.

www.kennametal.com

KENNAMETAL®

Combination Tools

Tool Selection Guide **I2–I3**

BF Combination Drilling System **I5–I17**

B343_HPG drill for BF I6–I8

KenTIP for BF I9–I11

BF Bodies I12

BF Inserts I13–I14

SEFAS Combination Drilling System **I18–I23**

SEFAS Bodies I20–I22

SEFAS Hardware I22

SEFAS Chamfering Inserts I23

		standard							standard range		customised solution range		
		● first choice ○ alternate choice						hole tolerance	diameter range D1 mm min - max	drilling depth L/D1	diameter range D1 mm min - max	drilling depth	
		P	M	K	N	S	H						
	BF with Solid Carbide Drill Combination Tool	●		●	●			IT7-11	3,4–18 (B343 drill)	approx. 3 x D	3,4–22,5	.1–5 x D	
	BF with KenTIP™ Combination Tool	●	●	●				IT7-11	8–18,99	3 x D 4 x D 5 x D	8–25,99	3–5 x D	
	SEFAS™ Combination Tool	●	●	●	●	●		IT7-11	4–20	approx. 3 x D 5 x D 8 x D 12 x D	3,4–25	1–5 x D	

In regard to insert and drill coatings, anything is possible. If a specific insert or drill is not suitable for your workpiece material, please contact our Engineered Solutions Department for an offer about special coatings and edge preparations.

*Except for L/D 5 x D.

[1] Other shank styles available as customised solution.

	■ standard capabilities [1]					■ standard and □ customised solution capabilities									
	coolant														page(s)
	■		■ ■			■			□		■	□		■	I6–I8
	■		■ ■			■			□		■	□		■	I9–I17
	■		■ ■		■	■			□		■			■	I20–I23

Combination Tools

Combination Drilling Tools are customisable using standard components and combine centring, drilling, and countersinking into a single operation, increasing productivity by reducing cycle time and tool changes.

Both the BF and SEFAS™ combination systems provide high flexibility to adapt the tool to varying hole geometries and provide full through-coolant capabilities.

BF Combination Drilling System

- Drilling, chamfering, and countersinking in one tool.
- Uses solid carbide and modular KenTIP™ drills.
- Covered drill diameter range 3,4–18mm.
- A specific range of drill diameters can be applied for each drill body based upon drill shank size.
- Highly flexible system:
  - Chamfer insert with different angles.
  - Insert design enables for special geometrical shapes.
  - Inserts can be easily interchanged.

SEFAS™ Combination Drilling System

- High-performance, self-centring drill and chamfer in one tool.
- Drill diameter range 4–18mm.
- Uses standard solid carbide drills in HP and TX styles as well as modular KenTIP drills.
- 90° and 82° angles available for chamfer inserts.
- Various shanks can be used with metric and inch diameter drills.

NOTE: TF drills may be used with one insert in limited applications.
Consult your Kennametal Sales Representative for more information.

BF Combination Drilling System

Primary Application

Combines centring, drilling, and countersinking into a single operation, increasing productivity by reducing cycle time and number of tool changes. The modular design provides flexibility to adapt the tool to varying hole geometries in small- and medium-lot-size manufacturing.

With its slim design and full-through-coolant capabilities, the BF combination system can be used even for deeper holes, critical materials, and with restricted workspace.

Features and Benefits

Productivity

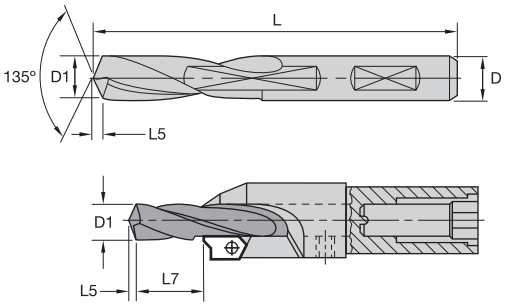
- Reduce the number of tool changes and your cycle time by combining drilling and countersinking into one operation.
- Use high-performance solid carbide drills and KenTIP™ drill bodies to achieve high speeds and feeds.
- Avoid the need for reconditioning by using KenTIP blades.

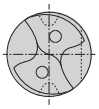
Versatility

- Choose between solid carbide drills and KenTIP drill bodies.
- Various grades and insert styles.
- Benefit from the modular system when adjusting the drill length or insert style to manufacture different geometries.

Customisation

- Length variations available as engineered solutions.
- TX drills for aluminium are available as engineered solutions.
- BF inserts can be customised to almost any required geometry.





B343_HPG

● first choice
○ alternate choice

KC7315	D1	D	L	L7 min	L7 max	L5
B343S03175HPG	3,18	4,00	55,0	1,0	10,0	0,6
B343S03400HPG	3,40	4,00	55,0	1,0	10,0	0,6
B343S03500HPG	3,50	4,00	55,0	1,6	10,6	0,6
B343S03797HPG	3,80	4,00	55,0	3,3	12,3	0,7
B343S03800HPG	3,80	4,00	55,0	3,3	12,3	0,7
B343S03970HPG	3,97	4,00	55,0	4,2	13,2	0,7
B343S04000HPG	4,00	4,00	55,0	4,4	13,4	0,7
B343S04100HPG	4,10	5,00	62,0	3,7	13,7	0,8
B343S04200HPG	4,20	5,00	62,0	4,2	14,2	0,8
B343S04300HPG	4,30	5,00	62,0	4,7	14,7	0,8
B343S04500HPG	4,50	5,00	62,0	5,6	15,6	0,8
B343S04600HPG	4,60	5,00	62,0	5,8	15,8	0,8
B343S04623HPG	4,62	5,00	62,0	5,9	15,9	0,9
B343S04763HPG	4,76	5,00	62,0	6,6	16,6	0,9
B343S04900HPG	4,90	5,00	62,0	7,2	17,2	0,9
B343S05000HPG	5,00	5,00	62,0	7,6	17,6	0,9
B343S05100HPG	5,10	6,00	66,0	6,8	17,8	0,9
B343S05200HPG	5,20	6,00	66,0	7,2	18,2	1,0
B343S05300HPG	5,30	6,00	66,0	7,6	18,6	1,0
B343S05400HPG	5,40	6,00	66,0	8,0	19,0	1,0
B343S05410HPG	5,41	6,00	66,0	8,0	19,0	1,0
B343S05500HPG	5,50	6,00	66,0	8,4	19,4	1,0
B343S05550HPG	5,55	6,00	66,0	8,3	19,3	1,0
B343S05558HPG	5,56	6,00	66,0	8,4	19,4	1,0
B343S05600HPG	5,60	6,00	66,0	8,5	19,5	1,0
B343S05800HPG	5,80	6,00	66,0	9,3	20,3	1,1
B343S06000HPG	6,00	6,00	66,0	10,0	21,0	1,1
B343S06100HPG	6,10	7,00	74,0	9,1	21,1	1,1
B343S06200HPG	6,20	7,00	74,0	9,5	21,5	1,1
B343S06300HPG	6,30	7,00	74,0	9,8	21,8	1,2
B343S06350HPG	6,35	7,00	74,0	10,0	22,0	1,2
B343S06400HPG	6,40	7,00	74,0	10,2	22,2	1,2
B343S06500HPG	6,50	7,00	74,0	10,5	22,5	1,2
B343S06528HPG	6,53	7,00	74,0	10,6	22,6	1,2
B343S06600HPG	6,60	7,00	74,0	10,9	22,9	1,2
B343S06700HPG	6,70	7,00	74,0	11,2	23,2	1,2

(continued)

(B43_HPG continued)

KC7315	D1	D	L	L7 min	L7 max	L5
B343S06746HPG	6,75	7,00	74,0	11,4	23,4	1,2
B343S06800HPG	6,80	7,00	74,0	11,5	23,5	1,3
B343S06900HPG	6,90	7,00	74,0	11,9	23,9	1,3
B343S06909HPG	6,91	7,00	74,0	11,9	23,9	1,3
B343S07000HPG	7,00	7,00	74,0	12,2	24,2	1,3
B343S07145HPG	7,14	8,00	79,0	11,1	24,1	1,3
B343S07300HPG	7,30	8,00	79,0	11,6	24,6	1,3
B343S07400HPG	7,40	8,00	79,0	11,9	24,9	1,4
B343S07500HPG	7,50	8,00	79,0	12,3	25,3	1,4
B343S07541HPG	7,54	8,00	79,0	12,4	25,4	1,4
B343S07700HPG	7,70	8,00	79,0	12,9	25,9	1,4
B343S07800HPG	7,80	8,00	79,0	13,2	26,2	1,4
B343S07900HPG	7,90	8,00	79,0	13,5	26,5	1,5
B343S07938HPG	7,94	8,00	79,0	13,6	26,6	1,5
B343S08000HPG	8,00	8,00	79,0	13,8	26,8	1,5
B343S08100HPG	8,10	9,00	84,0	12,6	26,6	1,5
B343S08200HPG	8,20	9,00	84,0	12,8	26,8	1,5
B343S08300HPG	8,30	9,00	84,0	13,1	27,1	1,5
B343S08334HPG	8,33	9,00	84,0	13,2	27,2	1,5
B343S08400HPG	8,40	9,00	84,0	13,4	27,4	1,6
B343S08433HPG	8,43	9,00	84,0	13,5	27,5	1,6
B343S08500HPG	8,50	9,00	84,0	13,7	27,7	1,6
B343S08600HPG	8,60	9,00	84,0	14,0	28,0	1,6
B343S08700HPG	8,70	9,00	84,0	14,3	28,3	1,6
B343S08733HPG	8,73	9,00	84,0	14,4	28,4	1,6
B343S08800HPG	8,80	9,00	84,0	14,5	28,5	1,6
B343S08900HPG	8,90	9,00	84,0	14,8	28,8	1,6
B343S09000HPG	9,00	9,00	84,0	15,1	29,1	1,7
B343S09100HPG	9,10	10,00	89,0	14,3	28,8	1,7
B343S09129HPG	9,13	10,00	89,0	14,4	28,9	1,7
B343S09347HPG	9,35	10,00	89,0	15,0	29,5	1,7
B343S09400HPG	9,40	10,00	89,0	15,1	29,6	1,7
B343S09500HPG	9,50	10,00	89,0	15,4	29,9	1,8
B343S09525HPG	9,53	10,00	89,0	15,4	29,9	1,8
B343S09600HPG	9,60	10,00	89,0	15,6	30,1	1,8
B343S09700HPG	9,70	10,00	89,0	15,9	30,4	1,8
B343S09800HPG	9,80	10,00	89,0	16,2	30,7	1,8
B343S09921HPG	9,92	10,00	89,0	16,5	31,0	1,8
B343S10000HPG	10,00	10,00	89,0	16,7	31,2	1,8
B343S10100HPG	10,10	11,00	95,0	15,9	30,9	1,9
B343S10200HPG	10,20	11,00	95,0	16,2	31,2	1,9
B343S10300HPG	10,30	11,00	95,0	16,4	31,4	1,9
B343S10320HPG	10,32	11,00	95,0	16,5	31,5	1,9
B343S10400HPG	10,40	11,00	95,0	16,7	31,7	1,9
B343S10500HPG	10,50	11,00	95,0	16,9	31,9	1,9
B343S10600HPG	10,60	11,00	95,0	17,2	32,2	2,0
B343S10700HPG	10,70	11,00	95,0	17,4	32,4	2,0
B343S10710HPG	10,71	11,00	95,0	17,4	32,4	2,0
B343S10800HPG	10,80	11,00	95,0	17,7	32,7	2,0
B343S11000HPG	11,00	11,00	95,0	18,1	33,1	2,0

(continued)

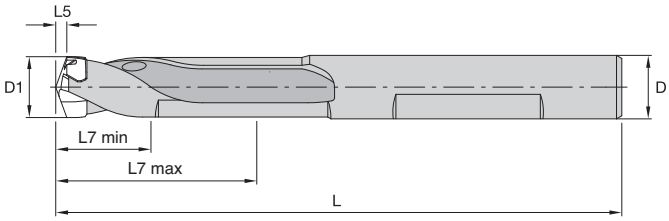
(B43_HPG continued)

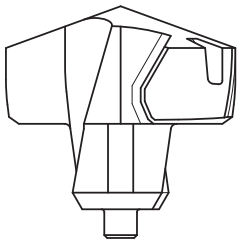
KC7315	D1	D	L	L7 min	L7 max	L5
B343S11100HPG	11,10	12,00	102,0	17,4	32,9	2,0
B343S11110HPG	11,11	12,00	102,0	17,4	32,9	2,1
B343S11200HPG	11,20	12,00	102,0	17,6	33,1	2,1
B343S11300HPG	11,30	12,00	102,0	17,9	33,4	2,1
B343S11500HPG	11,50	12,00	102,0	18,3	33,8	2,1
B343S11508HPG	11,51	12,00	102,0	18,3	33,8	2,1
B343S11700HPG	11,70	12,00	102,0	18,8	34,3	2,2
B343S11800HPG	11,80	12,00	102,0	19,0	34,5	2,2
B343S11900HPG	11,90	12,00	102,0	19,3	34,8	2,2
B343S12000HPG	12,00	12,00	102,0	19,5	35,0	2,2
B343S12200HPG	12,20	13,00	102,0	18,9	34,9	2,3
B343S12300HPG	12,30	13,00	102,0	19,2	35,3	2,3
B343S12500HPG	12,50	13,00	102,0	19,6	35,6	2,3
B343S12700HPG	12,70	13,00	102,0	20,1	36,1	2,3
B343S12800HPG	12,80	13,00	102,0	20,3	36,3	2,4
B343S13000HPG	13,00	13,00	102,0	20,7	36,7	2,4
B343S13096HPG	13,10	14,00	107,0	20,2	36,7	2,4
B343S13100HPG	13,10	14,00	107,0	20,2	36,7	2,4
B343S13200HPG	13,20	14,00	107,0	20,4	36,9	2,4
B343S13500HPG	13,50	14,00	107,0	21,1	37,6	2,5
B343S14000HPG	14,00	14,00	107,0	22,1	38,6	2,6
B343S14100HPG	14,10	15,00	111,0	21,3	38,3	2,6
B343S14200HPG	14,20	15,00	111,0	21,5	38,5	2,6
B343S14280HPG	14,28	15,00	111,0	21,7	38,7	2,6
B343S15000HPG	15,00	15,00	111,0	23,2	40,2	2,8
B343S15500HPG	15,50	16,00	115,0	23,2	40,7	2,9
B343S15870HPG	15,87	16,00	115,0	23,9	41,4	2,9
B343S16000HPG	16,00	16,00	115,0	24,2	41,7	3,0
B343S16500HPG	16,50	17,00	115,0	24,2	42,2	3,0
B343S16670HPG	16,67	17,00	115,0	24,5	42,5	3,1
B343S17000HPG	17,00	17,00	115,0	25,1	43,1	3,1
B343S17460HPG	17,46	18,00	117,0	25,0	43,5	3,2
B343S17500HPG	17,50	18,00	117,0	25,1	43,6	3,2
B343S17700HPG	17,70	18,00	117,0	25,5	44,0	3,3
B343S18000HPG	18,00	18,00	117,0	26,0	44,5	3,3

Tolerance • Metric

D1	tolerance h7	D	tolerance h6
>3–6	0,000/-0,012	6	0,000/-0,008
>6–10	0,000/-0,016	8–10	0,000/-0,009
>10–18	0,000/-0,018	12–18	0,000/-0,011

- Tool body with insert wrench included.
- Order KenTIP blades separately.





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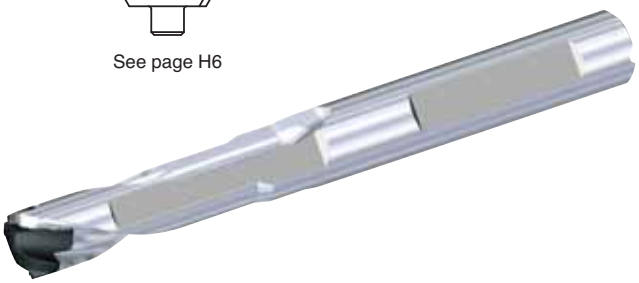
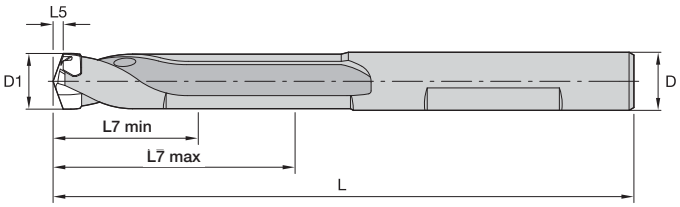
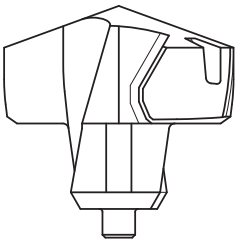


KenTIP • 3 x D • Metric

catalogue number	D1 mm	D1 max mm	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R3BF08M	7,94	8,49	8,0	80,0	11,5	25,5	1,4	F
KTIP080R3BF09M	7,94	8,49	9,0	81,0	11,5	25,5	1,4	F
KTIP085R3BF09M	8,50	8,99	9,0	82,0	12,5	27,0	1,5	G
KTIP090R3BF09M	9,00	9,49	9,0	82,0	13,5	28,5	1,6	H
KTIP090R3BF10M	9,00	9,49	10,0	91,0	13,5	28,5	1,6	H
KTIP095R3BF10M	9,50	9,99	10,0	92,0	15,0	30,0	1,6	I
KTIP100R3BF10M	10,00	10,49	10,0	93,0	16,0	31,5	1,7	J
KTIP100R3BF11M	10,00	10,49	11,0	94,0	16,0	31,5	1,7	J
KTIP105R3BF11M	10,50	10,99	11,0	94,0	17,0	33,0	1,8	K
KTIP110R3BF11M	11,00	11,49	11,0	96,0	18,5	34,5	1,9	L
KTIP110R3BF12M	11,00	11,49	12,0	106,0	18,5	34,5	1,9	L
KTIP115R3BF12M	11,50	11,99	12,0	107,0	19,5	36,0	2,0	M
KTIP120R3BF12M	12,00	12,49	12,0	108,0	20,5	37,5	2,1	N
KTIP120R3BF13M	12,00	12,49	13,0	108,0	20,5	37,5	2,1	N
KTIP125R3BF13M	12,50	12,99	13,0	110,0	22,0	39,0	2,2	O
KTIP130R3BF13M	13,00	13,49	13,0	111,0	23,0	40,5	2,2	P
KTIP130R3BF14M	13,00	13,49	14,0	111,0	23,0	40,5	2,2	P
KTIP135R3BF14M	13,50	13,99	14,0	112,0	24,5	42,0	2,3	Q
KTIP140R3BF14M	14,00	14,49	14,0	113,0	25,5	43,5	2,4	R
KTIP140R3BF15M	14,00	14,49	15,0	118,0	25,5	43,5	2,4	R
KTIP145R3BF15M	14,50	14,99	15,0	118,0	26,5	45,0	2,5	S
KTIP150R3BF15M	15,00	15,99	15,0	121,0	29,0	48,0	2,6	T
KTIP150R3BF16M	15,00	15,99	16,0	121,0	29,0	48,0	2,6	T
KTIP160R3BF16M	16,00	16,99	16,0	123,0	31,5	51,0	2,8	U
KTIP160R3BF17M	16,00	16,99	17,0	124,0	31,5	51,0	2,8	U
KTIP170R3BF17M	17,00	17,99	17,5	127,0	34,0	54,0	2,9	V
KTIP170R3BF18M	17,00	17,99	18,0	127,0	34,0	54,0	2,9	V
KTIP180R3BF18M	18,00	18,99	18,0	130,0	36,5	57,0	3,1	W

- Tool body with insert wrench included.
- Order KenTIP blades separately.





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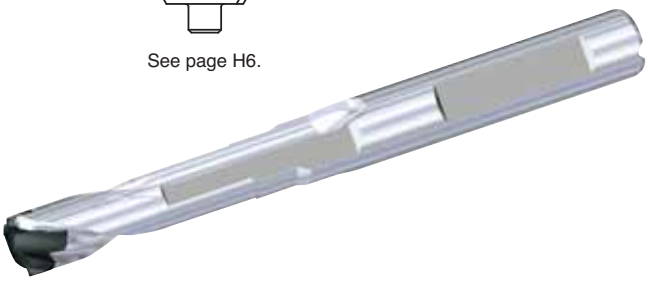
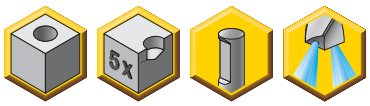
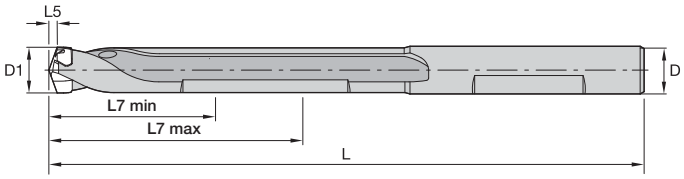


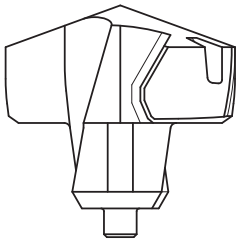
KenTIP • 4 x D • Metric

catalogue number	D1 mm	D1 max mm	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R4BF09M	8,00	8,49	12,0	89,5	20,0	34,0	1,4	F
KTIP085R4BF09M	8,50	8,99	10,0	91,0	21,5	36,0	1,5	G
KTIP090R4BF10M	9,00	9,49	10,0	100,5	23,0	38,0	1,6	H
KTIP095R4BF10M	9,50	9,99	12,0	102,0	25,0	40,0	1,6	I
KTIP100R4BF11M	10,00	10,49	12,0	104,5	26,5	42,0	1,7	J
KTIP105R4BF11M	10,50	10,99	12,0	105,0	28,0	44,0	1,8	K
KTIP110R4BF12M	11,00	11,49	12,0	117,5	30,0	46,0	1,9	L
KTIP115R4BF12M	11,50	11,99	12,0	119,0	31,5	48,0	2,0	M
KTIP120R4BF13M	12,00	12,49	13,0	120,5	33,0	50,0	2,1	N
KTIP125R4BF13M	12,50	12,99	13,0	123,0	35,0	52,0	2,2	O
KTIP130R4BF14M	13,00	13,49	14,0	124,5	36,5	54,0	2,2	P
KTIP135R4BF14M	13,50	13,99	14,0	126,0	38,5	56,0	2,3	Q
KTIP140R4BF15M	14,00	14,49	15,0	132,5	40,0	58,0	2,4	R
KTIP145R4BF15M	14,50	14,99	15,0	133,0	41,5	60,0	2,5	S
KTIP150R4BF16M	15,00	16,00	16,0	137,0	45,0	64,0	2,6	T
KTIP160R4BF17M	16,00	16,99	17,0	141,0	48,5	68,0	2,8	U
KTIP170R4BF18M	17,00	17,99	18,0	145,0	52,0	72,0	2,9	V
KTIP180R4BF18M	18,00	18,99	18,0	149,0	55,5	76,0	3,1	W

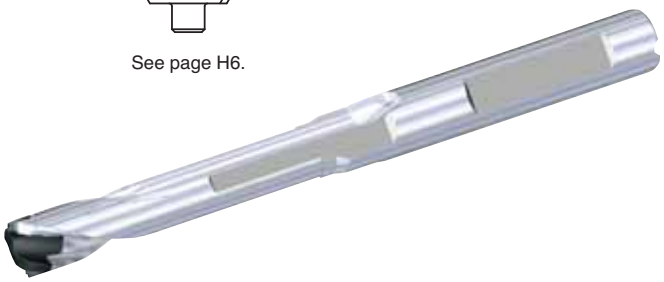
- Tool body with insert wrench included.
- Order KenTIP blades separately.







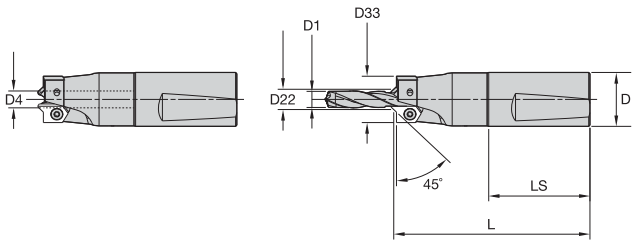
See page H6.



KenTIP • 5 x D • Metric

catalogue number	D1 mm	D1 max mm	D	L	L7 min	L7 max	L5	insert blade seat size
KTIP080R5BF09M	8,00	8,49	12,0	98,0	28,5	42,5	1,4	F
KTIP085R5BF09M	8,50	8,99	9,0	100,0	30,5	45,0	1,5	G
KTIP090R5BF10M	9,00	9,49	12,0	110,0	32,5	47,5	1,6	H
KTIP095R5BF10M	9,50	9,99	12,0	112,0	35,0	50,0	1,6	I
KTIP100R5BF11M	10,00	10,49	10,0	115,0	37,0	52,5	1,7	J
KTIP105R5BF11M	10,50	10,99	12,0	116,0	39,0	55,0	1,8	K
KTIP110R5BF12M	11,00	11,49	12,0	129,0	41,5	57,5	1,9	L
KTIP115R5BF12M	11,50	11,99	12,0	131,0	43,5	60,0	2,0	M
KTIP120R5BF13M	12,00	12,49	13,0	133,0	45,5	62,5	2,1	N
KTIP125R5BF13M	12,50	12,99	13,0	136,0	48,0	65,0	2,2	O
KTIP130R5BF14M	13,00	13,49	14,0	138,0	50,0	67,5	2,2	P
KTIP135R5BF14M	13,50	13,99	14,0	140,0	52,5	70,0	2,3	Q
KTIP140R5BF15M	14,00	14,49	15,0	147,0	54,5	72,5	2,4	R
KTIP145R5BF15M	14,50	14,99	15,0	148,0	56,5	75,0	2,5	S
KTIP150R5BF16M	15,00	16,00	16,0	153,0	61,0	80,0	2,6	T
KTIP160R5BF17M	16,00	16,99	17,0	158,0	65,5	85,0	2,8	U
KTIP170R5BF18M	17,00	17,99	18,0	163,0	70,0	90,0	2,9	V
KTIP180R5BF18M	18,00	18,99	18,0	168,0	74,5	95,0	3,1	W

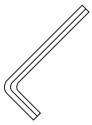
- Drill body shipped with all screws and wrenches.
- Order the inserts and drills separately.
- Drills with shanks up to and including 9,10mm use only one insert.



Round Shank • 2° Whistle Notch™ Shank • Metric

DIN 1835 Form A	DIN 1835 Form E	D1	D1 max	D4	D	D22	D33	L	LS	insert
3.37042R320	**3.37042R820**	3,40	4,000	4,00	20,0	9,0	14,9	85,0	50,0	3.41020..
3.37051R320	**3.37051R820**	4,10	4,500	5,00	20,0	9,5	15,4	85,0	50,0	3.41020..
3.37052R320	**3.37052R820**	4,60	5,000	5,00	20,0	10,0	15,9	85,0	50,0	3.41020..
3.37061R320	**3.37061R820**	5,10	5,500	6,00	20,0	10,5	16,4	85,0	50,0	3.41020..
3.37062R320	**3.37062R820**	5,55	6,000	6,00	20,0	11,0	16,9	85,0	50,0	3.41020..
3.37071R320	**3.37071R820**	6,10	7,000	7,00	20,0	11,5	17,4	95,0	50,0	3.41020..
3.37081R320	**3.37081R820**	7,30	8,000	8,00	20,0	12,6	18,4	95,0	50,0	3.41020..
3.37091R320	**3.37091R820**	8,10	9,000	9,00	20,0	13,6	19,4	95,0	50,0	3.41020..
3.37092R320	**3.37092R820**	8,10	9,000	9,00	20,0	13,7	19,4	97,3	50,0	3.41020..
3.37101R332	**3.37101R832**	9,10	10,000	10,00	32,0	14,7	27,9	115,0	60,0	3.41220..
3.37111R332	**3.37111R832**	10,10	11,000	11,00	32,0	15,7	28,9	115,0	60,0	3.41220..
3.37121R332	**3.37121R832**	11,10	12,000	12,00	32,0	16,7	29,9	125,0	60,0	3.41220..
3.37131R332	**3.37131R832**	12,20	13,000	13,00	32,0	17,7	31,0	125,0	60,0	3.41220..
3.37141R332	**3.37141R832**	13,10	14,000	14,00	32,0	18,2	31,5	125,0	60,0	3.41220..
3.37151R332	**3.37151R832**	14,10	15,000	15,00	32,0	19,3	32,5	125,0	60,0	3.41220..
3.37161R332	**3.37161R832**	15,50	16,000	16,00	32,0	20,3	33,5	125,0	60,0	3.41220..
3.37171R332	**3.37171R832**	16,50	17,000	17,00	32,0	21,3	34,5	125,0	60,0	3.41220..
3.37181R332	**3.37181R832**	17,50	18,000	18,00	32,0	22,3	35,5	125,0	60,0	3.41220..

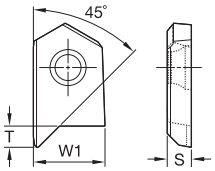
Spare Parts



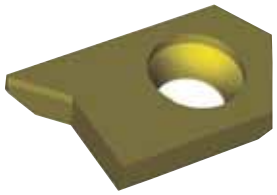
D1	back-up screw	drill clamp screw	hex wrench	insert screw	wrench
3,40	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
4,10	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
4,60	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
5,10	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
5,55	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
6,10	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
7,30	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
8,10	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
8,10	**192.888**	**192.718**	**170.003**	**192.432**	**170.028**
9,10	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
10,10	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
11,10	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
12,20	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
13,10	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
14,10	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
15,50	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
16,50	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**
17,50	**192.889**	**192.720**	**170.005**	**191.725**	**170.025**

NOTE: Dimensions are factored with a 45° insert positioned in insert pocket.

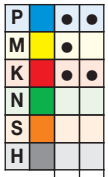
• Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.



3.41...R901

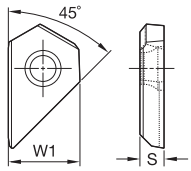


● first choice
○ alternate choice

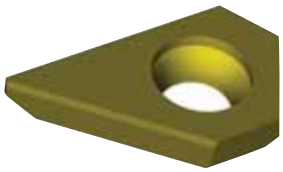


BF Insert R901 • 45° with Spot Face

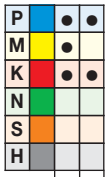
catalogue number	S mm	W1 mm	T mm	CS5	KC7315
3.41020R901	3,00	6,10	2,90	●	●
3.41220R901	3,50	10,10	3,05	●	●



3.41...R902



● first choice
○ alternate choice

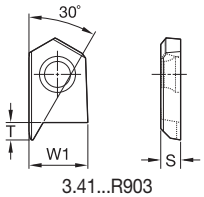


BF Insert R902 • 45°

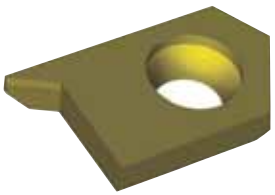
catalogue number	S mm	W1 mm	CS5	KC7315
3.41020R902	3,00	6,10	●	●
3.41220R902	3,50	10,10	●	●

• When using the 60° insert or special insert, the assembled tool should be inspected.

• These insert combinations require that the steel body be altered to provide insert coverage.



3.41...R903

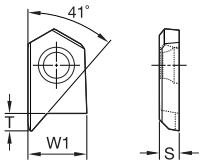


● first choice
○ alternate choice

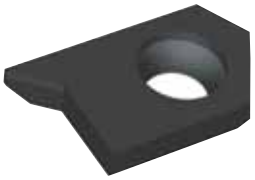
BF Insert R903 • 60° with Spot Face

catalogue number	S mm	W1 mm	T mm	CS5	KC7315
3.41020R903	3,00	6,10	2,90	●	●
3.41220R903	3,50	10,10	3,05	●	●

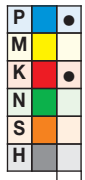
• Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.



3.41...R904

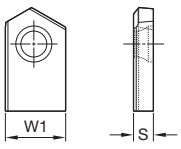


● first choice
○ alternate choice

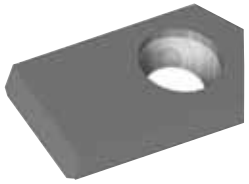


BF Insert R904 • 41° with Spot Face

catalogue number	S mm	W1 mm	T mm	KC7315
3.41020R904	3,00	6,10	2,90	●
3.41220R904	3,50	10,10	3,05	●



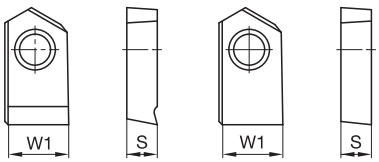
3.41...R900



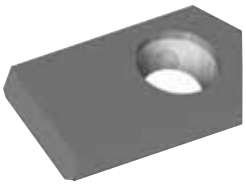
● first choice
○ alternate choice

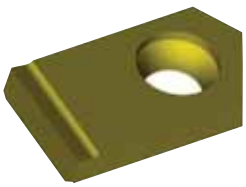
BF Insert R900 • Semi-Finished

catalogue number	S mm	W1 mm	KMF
3.41020R900	3,00	6,10	●
3.41220R900	3,50	10,10	●



3.41...STF 3.41...SF





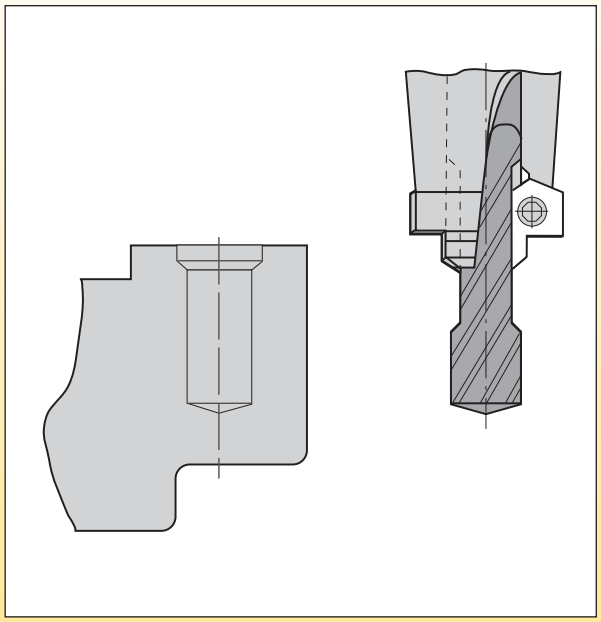
● first choice
○ alternate choice

BF Insert R900 S(T)F • Semi-Finished

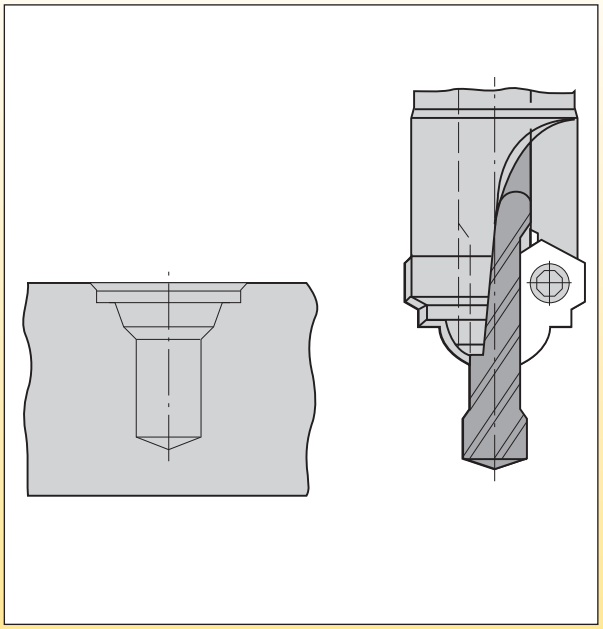
catalogue number	S mm	W1 mm	CS5	KMF
3.41020R900STF	3,00	6,10	●	
3.41220R900SF	3,50	10,10		●
3.41220R900STF	3,50	10,10	●	

Engineered Solutions Available!

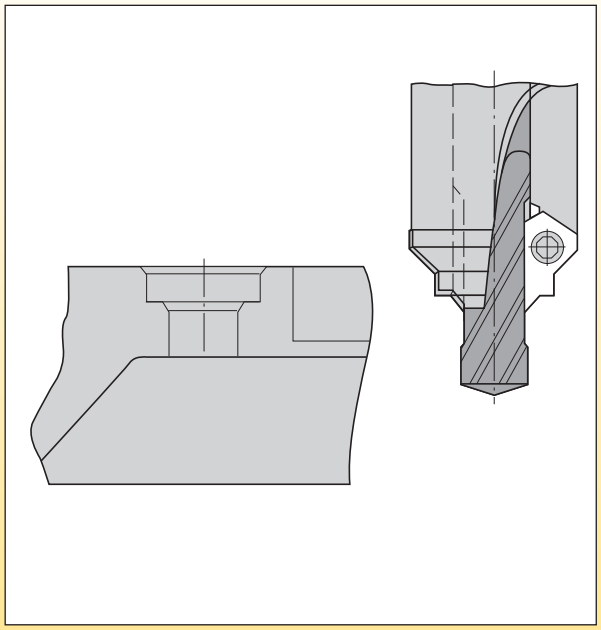
Tapped Hole with Protection Countersinking



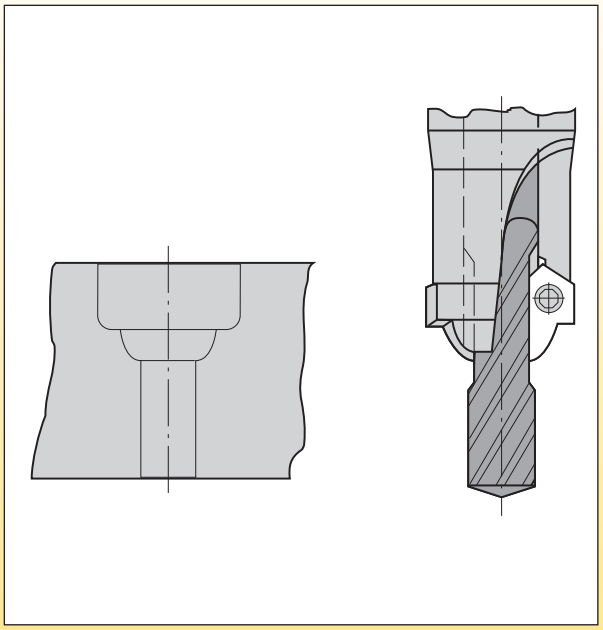
Countersinking for Round Sealing Rings



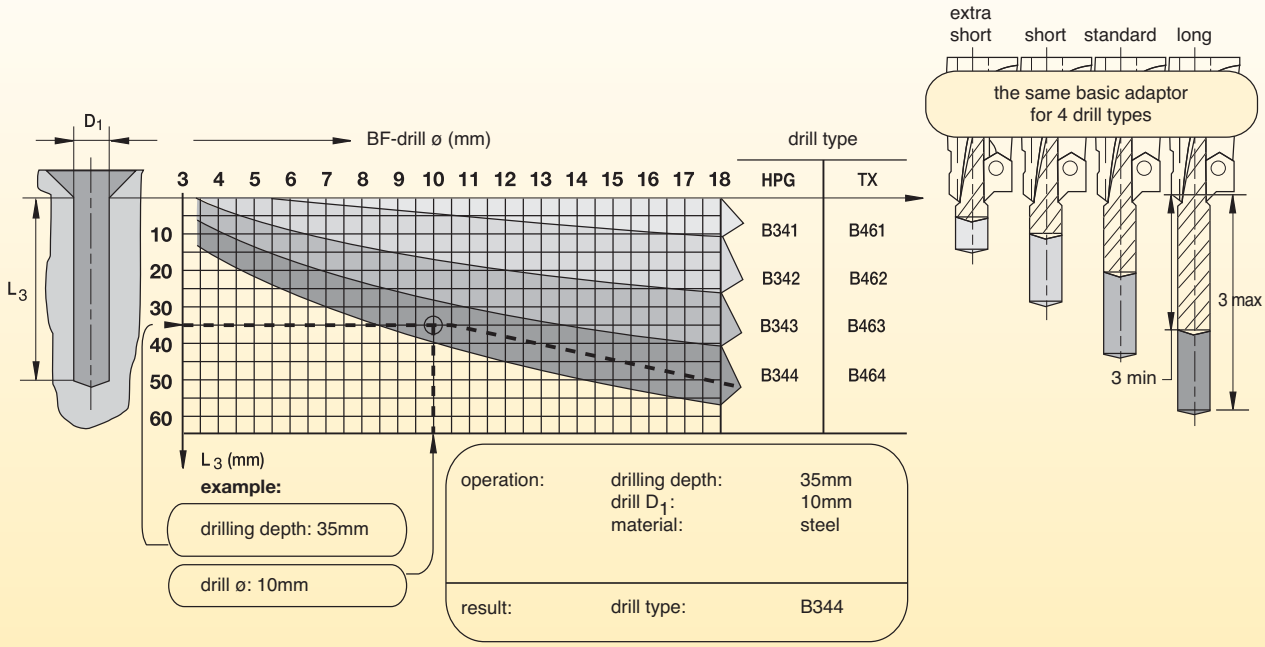
Countersinking for Countersunk Head Screws



Countersinking for Aluminium Rim



Possible Drilling Depths • Semi-Standard Series

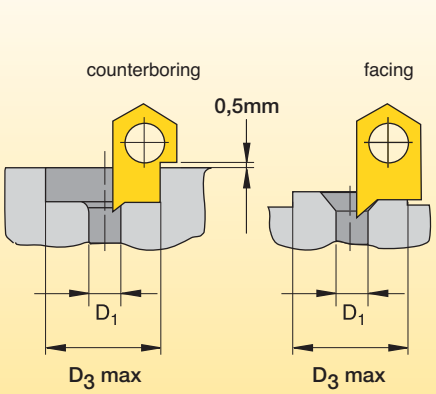


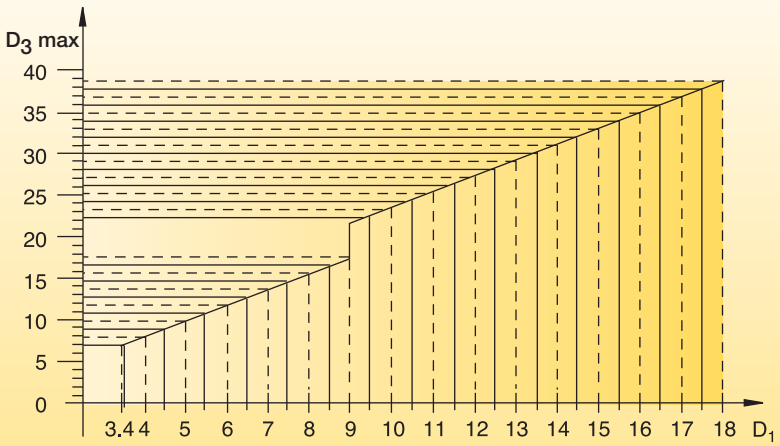
Possible Facing and Counterboring Diameters

90° insert blanks are available to grind special geometry forms for other multiprofile applications. Contact your local Kennametal Representative for special insert profile designs and quoting.

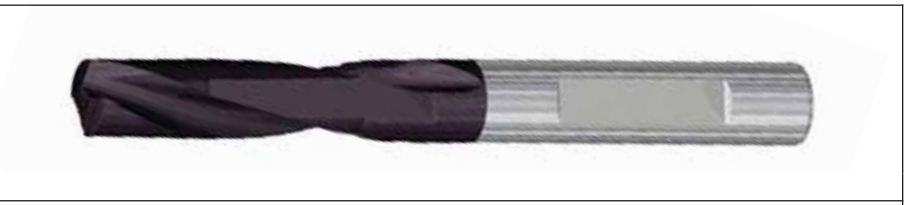
Use the table below to determine the maximum facing or counterboring diameter for a given BF drill diameter. Reference your chosen drill diameter across the bottom axis of the table and then read up and across to the left axis to find the maximum facing or counterboring diameter.

Possible Facing and Countersinking Diameter • Machining Steel





HP Drills • B343HPG Series • Grade KC7315™ • Through Coolant



Material Group		Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate (f) by Diameter							
		min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0
P	1	100	140	180	mm/r	0,07 - 0,16	0,08 - 0,19	0,10 - 0,23	0,13 - 0,29	0,15 - 0,33	0,17 - 0,37	0,19 - 0,44	0,22 - 0,44
	2	90	115	140	mm/r	0,07 - 0,13	0,08 - 0,17	0,10 - 0,19	0,13 - 0,23	0,15 - 0,27	0,17 - 0,30	0,19 - 0,35	0,22 - 0,39
	3	80	100	120	mm/r	0,10 - 0,16	0,11 - 0,19	0,13 - 0,23	0,16 - 0,29	0,19 - 0,33	0,21 - 0,37	0,25 - 0,44	0,28 - 0,49
	4	70	90	110	mm/r	0,08 - 0,16	0,10 - 0,19	0,11 - 0,22	0,12 - 0,25	0,14 - 0,29	0,16 - 0,32	0,21 - 0,41	0,24 - 0,46
	5	70	85	110	mm/r	0,07 - 0,12	0,08 - 0,14	0,10 - 0,16	0,12 - 0,20	0,14 - 0,23	0,16 - 0,26	0,18 - 0,31	0,21 - 0,34
K	1	100	120	140	mm/r	0,09 - 0,17	0,10 - 0,21	0,12 - 0,25	0,15 - 0,31	0,17 - 0,35	0,20 - 0,39	0,23 - 0,46	0,26 - 0,52
	2	80	105	130	mm/r	0,09 - 0,15	0,10 - 0,18	0,12 - 0,21	0,15 - 0,26	0,18 - 0,30	0,20 - 0,33	0,23 - 0,39	0,26 - 0,44
	3	70	85	100	mm/r	0,08 - 0,13	0,10 - 0,15	0,11 - 0,19	0,14 - 0,23	0,16 - 0,26	0,18 - 0,30	0,21 - 0,35	0,23 - 0,39

NOTE: When using BF bodies with KTIP, please refer to the recommended cutting data for KTIP tools on page H11.
Please be aware that the values mentioned are only guidelines.
It is highly recommended to adjust cutting data according to your specific application in order to achieve best drilling results.

SEFAS™ Combination Drilling System

Primary Application

Combines centring, drilling, and chamfering into a single operation, increasing productivity by reducing cycle time and number of tool changes.

These productivity gains can be achieved by still using standard solid carbide or KenTIP™ drills. The system provides full through coolant capabilities.

Features and Benefits

Productivity

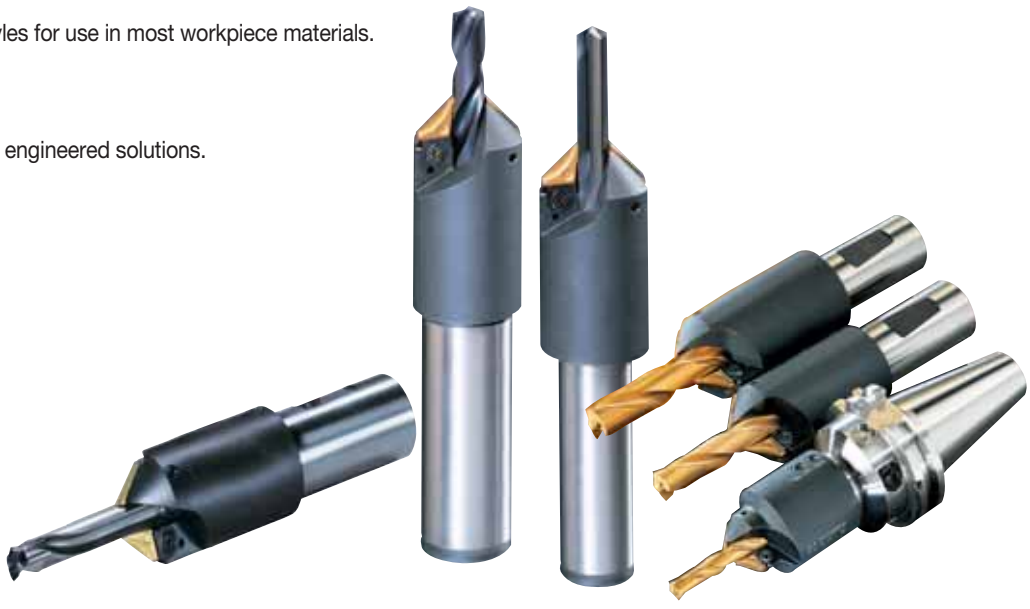
- Reduce the number of tool changes and your cycle time by combining drilling and countersinking into one operation.
- Achieve highest metal removal rates by applying a HP-style drill.
- Reduce your inventory and avoid reconditioning by using KenTIP blades.
- Easily change tool within the machine by applying KenTIP.

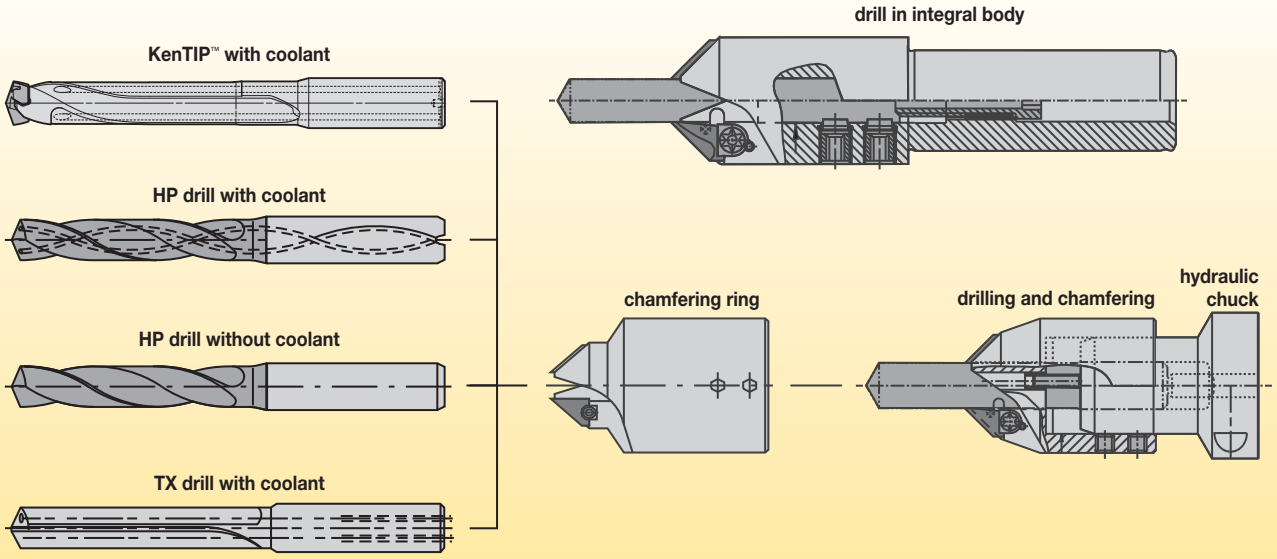
Versatility

- Any style of standard HP drill can be used, achieving highest metal removal rates.
- Use TX drills to achieve excellent hole quality and tool life in non-ferrous materials.
- For increased accuracy and tool life, use the Kennametal hydraulic chuck recommended for cylindrical tool shanks.
- Benefit from various insert styles for use in most workpiece materials.

Customisation

- Length variations available as engineered solutions.

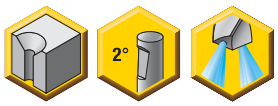


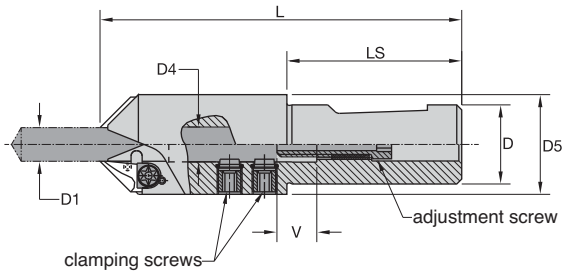


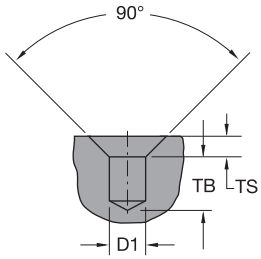
The SEFAS combination drilling system may be used in most workpiece materials. The design and flexibility of the system can be used with a wide variety of solid carbide drills.

Three types of SEFAS chamfering tools are offered: (1) integral bodies with a compact design that provides additional workpiece and work-holding clearance; (2) chamfering rings that may be mounted to Kennametal hydraulic chucks for optimal drill performance and increased productivity; and (3) high-performance HSK bodies for new machine spindles and high-output applications.

- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Two chamfer inserts required per body.



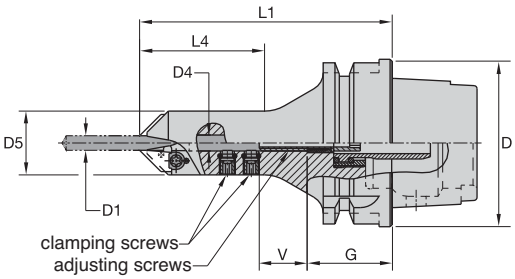


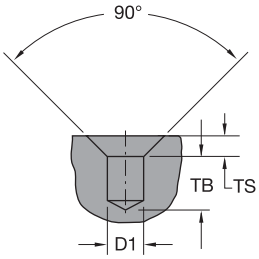


2° Whistle Notch™ (WN) Shank • For Use with Metric Drills • Metric

catalogue number	D1	D1 max	D	D4	D5	L	LS	V	gage insert	insert clamp	Torx wrench	drill clamp screw	adjusting screw
3.37060R720	4,000	6,0	20,0	6,0	24,0	102,0	52,0	18,0	3.42805..	**360.550**	**170.024**	**360.630**	**360.510**
3.37080R720	>6,000	8,0	20,0	8,0	26,0	108,0	52,0	18,0	3.42805..	**360.550**	**170.024**	**360.634**	**360.510**
3.37100R720	>8,000	10,0	20,0	10,0	29,0	122,0	52,0	17,0	3.42805..	**360.550**	**170.024**	**360.631**	**360.510**
3.37120R732	>10,000	12,0	32,0	12,0	38,0	133,0	62,0	21,0	3.42807..	**360.551**	**170.025**	**360.635**	**360.513**
3.37140R732	>12,000	14,0	32,0	14,0	40,0	137,0	62,0	16,0	3.42807..	**360.551**	**170.025**	**360.636**	**360.511**
3.37160R732	>14,000	16,0	32,0	16,0	41,5	141,0	62,0	19,0	3.42807..	**360.551**	**170.025**	**360.632**	**360.511**
3.37180R732	>16,000	18,0	32,0	18,0	47,0	144,0	62,0	15,0	3.42807..	**360.551**	**170.025**	**360.633**	**360.511**

- Drill body shipped with all screws, clamps, and wrenches
- Order the inserts and drills separately.
- Two chamfer inserts required per body.

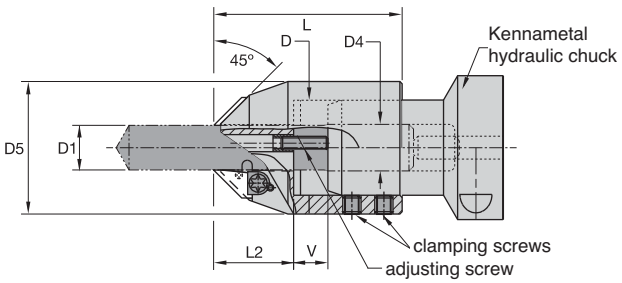


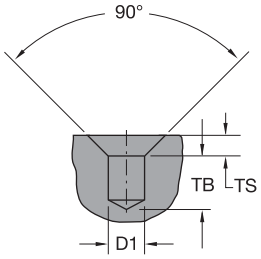


HSK Shank • For Use with Metric Drills • Metric

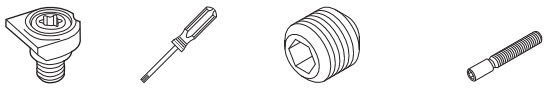
catalogue number	D1	D1 max	D	D4	D5	L1	L4 max	V	gage insert	insert clamp	Torx wrench	drill clamp screw	adjusting screw
SEF040060RHSK63AM	4,000	6,00	63,0	6,0	24,0	95,0	51,0	18,0	3.42805..	**360.550**	**170.024**	**360.630**	**360.510**
SEF060080RHSK63AM	>6,000	8,00	63,0	8,0	26,0	102,0	57,0	18,0	3.42805..	**360.550**	**170.024**	**360.634**	**360.510**
SEF080100RHSK63AM	>8,000	10,00	63,0	10,0	29,0	111,0	68,0	17,0	3.42805..	**360.550**	**170.024**	**360.631**	**360.510**
SEF100120RHSK63AM	>10,000	12,00	63,0	12,0	38,0	122,0	89,0	21,0	3.42807..	**360.551**	**170.025**	**360.635**	**360.517**
SEF120140RHSK63AM	>12,000	14,00	63,0	14,0	40,0	126,0	94,0	16,0	3.42807..	**360.551**	**170.025**	**360.636**	**360.517**
SEF140160RHSK63AM	>14,000	16,00	63,0	16,0	42,0	130,0	99,0	19,0	3.42807..	**360.551**	**170.025**	**360.632**	**360.517**

- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Use only with hydraulic chucks.





Chamfer Rings • For Use with Metric Kennametal Hydraulic Chucks • For Use with Inch or Metric Drills

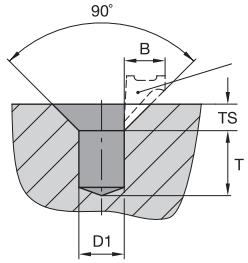


catalogue number	D1	D1 max	D	D4	D5	L	LS	V	gage insert	insert clamp	Torx wrench	drill clamp screw	adjusting screw
3.37526R006	4,000	6,0	25,7	6,0	38,0	49,5	21,0	5,0	3.42805..	**360.550**	**170.024**	**190.195**	**192.057**
3.37528R008	>6,000	8,0	27,7	8,0	40,0	50,0	21,0	6,0	3.42805..	**360.550**	**170.024**	**190.195**	**190.371**
3.37530R010	>8,000	10,0	29,7	10,0	41,5	56,5	22,0	8,0	3.42805..	**360.550**	**170.024**	**190.195**	**193.113**
3.37532R012	>10,000	12,0	31,6	12,0	48,0	68,0	29,0	12,0	3.42807..	**360.551**	**170.025**	**190.076**	**193.114**
3.37534R014	>12,000	14,0	33,6	14,0	50,0	70,5	29,0	12,0	3.42807..	**360.551**	**170.025**	**190.076**	**193.114**
3.37538R016	>14,000	16,0	37,6	16,0	54,0	78,0	32,0	12,0	3.42807..	**360.551**	**170.025**	**190.076**	**193.115**
3.37540R018	>16,000	18,0	39,6	18,0	56,0	80,5	34,0	15,0	3.42807..	**360.551**	**170.025**	**190.076**	**193.116**
3.37542R020	>18,000	20,0	41,6	20,0	58,0	82,5	35,0	15,0	3.42807..	**360.551**	**170.025**	**190.076**	**193.116**

Achievable Drilling (TB) and Sink Depths (TS)

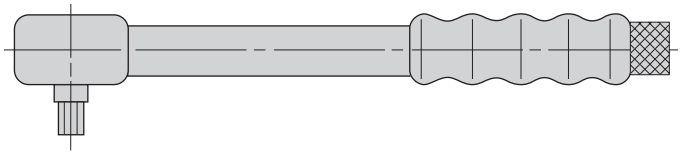
drill diameter D1	B210, B221, B224, B254, B284, B291, B707, B966, B976		B211, B222, B225, B285, B292, B411, B708, B977		B212, B256, B709, B978		B269		unalloyed and low-alloy steel; unalloyed and alloy steel and cast iron; high-alloy steel and stainless steel		
	TB_{min}	TB_{max}	TB_{min}	TB_{max}	TB_{min}	TB_{max}	TB_{min}	TB_{max}	TS_{100}	TS_{80}	TS_{max}
4,0-4,7	4	17	12	29	20	36	45	62	1,2	1,8	2,5
>4,7-6,0	4	20	20	35	27	43	63	80	1,5	2,2	3,0
>6,0-7,0	11	24	23	40	32	49	71	88	2	3,0	4,0
>7,0-8,0	11	28	23	40	42	59	85	102	2,5	4,0	5,0
>8,0-10,0	13	29	27	43	46	62	109	125	2,5	4,0	5,0
>10,0-12,0	15	35	31	51	54	74	131	151	3,5	5,0	7,0
>12,0-14,0	21	36	38	53	69	84	160	175	4,0	6,0	8,0
>14,0-16,0	22	40	40	58	78	96	184	202	4,0	6,0	8,0
>16,0-18,0	31	45	51	65	93	107	213	227	4,0	6,0	8,0
>18,0-20,0	34	50	56	72	103	119	237	253	4,0	6,0	8,0

NOTE: TS_{100}: maximum sink depths at which the full feed values can be maintained during chamfering and sinking.
TS_{80}: maximum sink depths that can be achieved without chipbreak cycles and at a 20% feed reduction.
TS_{max}: maximum sink depths that can be achieved without chipbreak cycles and at a 50% feed reduction.
When using SEFAS with GOdrill™, please contact your Kennametal representative for application support.



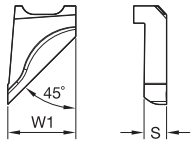
Achievable Drilling (T) and Sink Depths (TS) with KenTIP Tool Bodies

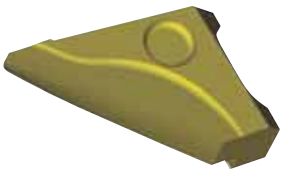
D1	drilling depths (T) with SEFAS compact tools						drilling depths (T) with SEFAS chamfer rings						sink depths (TS)		
	3x		5x		8x		3x		5x		8x				
mm	T	T_{max}	T	T_{max}	T	T_{max}	T	T_{max}	T	T_{max}	T	T_{max}	TS_{100}	TS_{80}	TS_{max}
8,00-8,49	11	19	21	37	47	63	11	22	22	40	48	66	2,5	4,0	5,0
8,50-8,99	12	21	24	40	51	67	12	24	25	43	52	70	2,5	4,0	5,0
9,00-9,49	12	23	27	43	56	72	12	26	28	46	57	75	2,5	4,0	5,0
9,50-9,99	13	25	31	47	61	77	13	28	32	50	62	80	2,5	4,0	5,0
10,00-10,49	13	26	28	49	60	81	13	28	29	51	61	83	3,5	5,0	7,0
10,50-10,99	14	28	31	52	64	85	14	30	32	54	65	87	3,5	5,0	7,0
11,00-11,49	14	30	34	55	69	90	14	32	35	57	70	92	3,5	5,0	7,0
11,50-11,99	15	32	37	58	73	94	15	34	38	60	74	96	3,5	5,0	7,0
12,00-12,49	15	30	41	56	79	94	15	32	36	58	74	96	4,0	6,0	8,0
12,50-12,99	17	32	44	59	83	98	16	34	39	61	78	100	4,0	6,0	8,0
13,00-13,49	19	34	47	62	88	103	16	36	42	64	83	105	4,0	6,0	8,0
13,50-13,99	21	36	51	66	93	108	17	38	46	68	88	110	4,0	6,0	8,0
14,00-14,49	19	37	50	68	94	112	18	40	49	71	93	115	4,0	6,0	8,0
14,50-14,99	21	39	53	71	98	116	20	42	52	74	97	119	4,0	6,0	8,0
15,00-15,99	25	43	59	77	107	125	24	46	58	80	106	128	4,0	6,0	8,0
16,00-16,99	29	47	65	83	117	135	28	50	64	85	115	136	4,0	6,0	8,0
17,00-17,99	35	49	73	87	127	141	30	54	68	92	122	146	4,0	6,0	8,0
18,00-18,99	36	52	76	92	133	149	33	57	73	97	130	154	4,0	6,0	8,0
19,00-19,99	40	56	82	98	142	158	37	61	79	103	139	163	4,0	6,0	8,0



Torque Wrench • Metric

drill diameter D1	torque wrench	tightening torque Nm	SW	drill clamp screw	wrench adaptor
4,0-6,0	170.190	7	3	360.630	170.240
>6,0-8,0	170.190	8	3	360.635	170.240
>8,0-10,0	170.190	10	4	360.631	170.232
>10,0-12,0	170.190	15	4	360.635	170.232
>12,0-14,0	170.190	20	5	360.636	170.233
>14,0-16,0	170.190	30	5	360.632	170.233
>16,0-18,0	170.190	45	6	360.633	170.234
>18,0-20,0	170.190	45	6	360.637	170.234



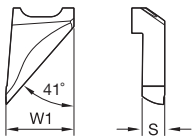


● first choice
○ alternate choice

P		●	
M			
K		●	●
N			●
S			
H			

SEFAS Chamfering Inserts for Solid Carbide Drills • 45°

catalogue number	angle	S mm	W1 mm	CS5	KC7215	KMF
3.42805R001	45	2,83	8,00	●	●	●
3.42807R001	45	3,98	12,00	●	●	●

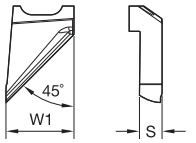


● first choice
○ alternate choice

P		
M		
K		●
N		●
S		
H		

SEFAS Chamfering Inserts for Solid Carbide Drills • 41°

catalogue number	angle	S mm	W1 mm	KC7215
3.42805R081	41	2,83	8,00	●
3.42807R081	41	3,98	12,00	●



● first choice
○ alternate choice

P			●
M		●	
K			●
N			●
S			
H			

SEFAS Chamfering Inserts for KenTIP™ and KSEM™ Drills • 45°

catalogue number	angle	S mm	W1 mm	KC7015	KC7315	KMF
3.42805R021	45	2,83	8,00	●	●	●
3.42807R021	45	3,98	12,00	●	●	●

Indexable Drills

Tool Selection Guide J2–J3

Drill Fix DFR, DFS, and DFT J4–J31

Drill Fix DFR J7–J13

Drill Fix DFS J14–J22

Drill Fix DFT J23–J31

HTS Series Indexable Deep-Hole Drilling System J32–J67

HTS-C Indexable Drill System J34–J39

HTS and HTS-R Indexable Drill System J40–J67

Indexable Drill Inserts J68–J75

Drill Fix DFR Inserts J68–J69

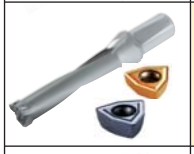
Drill Fix DFT Inserts J70–J71

Drill Fix DFS Inserts J72–J74

HTS-C Drilling Inserts J74–J75

CTR Counterboring Tools J76–J77

Counterboring Inserts J78–J79

		standard							standard range		customised solution range	
		● first choice ○ alternate choice							diameter range D1 mm min - max	drilling depth L/D1	diameter range D1 mm min - max	drilling depth
		P	M	K	N	S	H	hole tolerance				
	DFR™ Indexable Drill Body *Short-Hole Drilling*	●	●	●	●	●		IT9-11	12,5–25	2 x D 3 x D 4 x D	12,5–26	1–5 x D
	DFS™ Indexable Drill Body *Short-Hole Drilling*	●	●	●	●	●		IT9-11	24–55	2 x D 3 x D 4 x D 5 x D	18–55	1–5 x D
	**DFT**™ Indexable Drill Body *Short-Hole Drilling*	●	●	●	●	●		IT9-11	16–83mm	2,5 x D 4 x D	15,8–83	1–5 x D
	HTS-C Indexable Drilling Tool *Deep-Hole Drilling*	●	●	●	●	●		IT9-11	20–45	5 x D 8 x D	19,05–45	1–20 x D
	HTS-R Indexable Drilling Tool *Deep-Hole Drilling*	●	●	●	●	●		IT9-11	40–55	10 x D	40–55	1–10 x D
	HTS Indexable Drilling Tool *Deep-Hole Drilling*	●	●	●	●	●		IT9-11	45–270	10 x D	45–540	1–10 x D
	S2 S Countersinking Countersinking Tool	●	●	●	●	●		IT9-11	15,1–46,2	1 x D	11,5–150	1–5 x D

In regard to insert and drill coatings, anything is possible. If a specific insert or drill is not suitable for your workpiece material, please contact our Engineered Solutions Department for an offer about special coatings and edge preparations.
*Except for L/D 5 x D.
[1] Other shank styles available as customised solution.

	■ standard capabilities [1]								■ standard and □ customised solution capabilities									
	coolant		2°		TS	XMZ	DV	BT	BT										page(s)
		■		■ ■	■					■	■	■	■	■	□	□			J8–J13
		■		■ ■	■	■				■	■	■	■	■*	□	□		□	J15–J22
		■		■ ■	■	■				■	■	■	■	■	□	□			J24–J31
		■		■ ■						■						□			J35–J39
		■			■		■	■	■	■									J51–J54
		■			■		■	■	■	■									J56–J67
		■	■													■	□		J77–J79

Drill Fix™ DFR™, DFS™, and DFT™

Primary Application

Drill short holes up to 5 x D with DFR, DFS, and DFT indexable drills in steel, cast iron, ductile iron, stainless steel, and non-ferrous materials. The Drill Fix portfolio covers the diameter range 12,5–82mm.

Apply where speed and economy are prime considerations.

Features and Benefits

Drill Fix DFR

- Diameter range of 12,5–24mm in 2 x D, 3 x D, and 4 x D.
- Rectangular-shaped inserts offer the highest stability and feed rates at smaller sizes.
- Long body tool life due to soft starting cut, short chips, and low cutting forces.
- X-offset design to adjust diameter size on turning machines and optimise tolerances on machining centres.

Drill Fix DFS

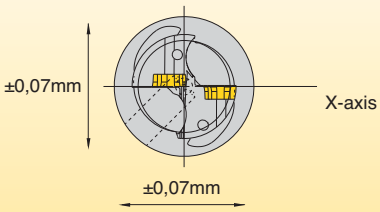
- Combines the benefits of a trigon-style DFT inboard insert and a square-style SP..X outboard insert.
- Standard diameter range from 24–55mm in 2 x D, 3 x D, 4 x D, and new 5 x D.
- Drill Fix DFT insert has inner insert for best centring capabilities.
- Squared-outboard insert offering four economic cutting edges.
- Highest feed rates and cutting speeds applicable due to highly stable tool body design.
- X-offset design to adjust diameter size on turning machines and optimise tolerances on machining centres.
- Beyond™ grades to achieve highest productivity, achieving outstanding results in steel, stainless steel, and cast iron.

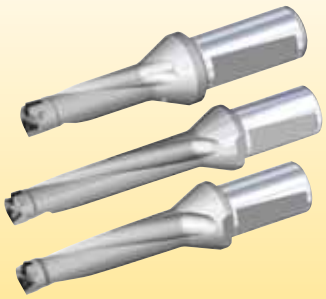
Drill Fix™ DFT™

- One drill system that covers a large diameter range, from 24–82mm in 2,5 x D and 4 x D.
- Best centring capabilities due to trigon-shaped inserts used as inboard and outboard insert.
- Various insert grades and geometries available.
- Balanced cutting forces in the shank centre for highest tool body stability.
- X-offset design to adjust diameter size on turning machines and optimise tolerances on machining centres.

Stationary Applications

Metric Drill Bodies with 2° Whistle Notch™





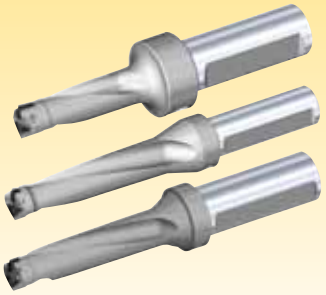
Metric shank drills with a 2° Whistle Notch shank are easily mounted into inch turrets using a WD adaptor. Align the X-axis of the drill with the X-axis of the machine tool as described above. Accurate alignment is absolutely essential for good performance. The drill must be on centre within the tolerance shown above. Angularity must not exceed 0,07mm.

Inch Bodies • Flange

Drill Fix™ inch drills, with a flange, were designed for use on lathes or any machine where the tool remains stationary and the workpiece rotates.

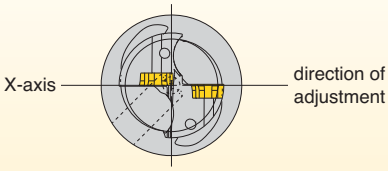
An “x” is marked on the flat of the X-axis of the drill to aid insert orientation on the machine tool.

It is important to align the X-axis of the drill with the X-axis on the machine tool. Accurate alignment is absolutely essential for good performance. The drill must be on centre, within the tolerance shown here. Angularity must not exceed 0,07mm within the designated drill depth.



Drill Fix X-Adjustment

Applications Examples

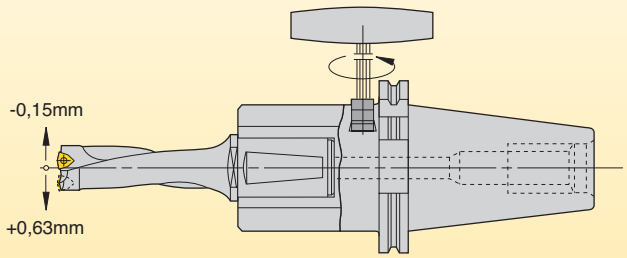


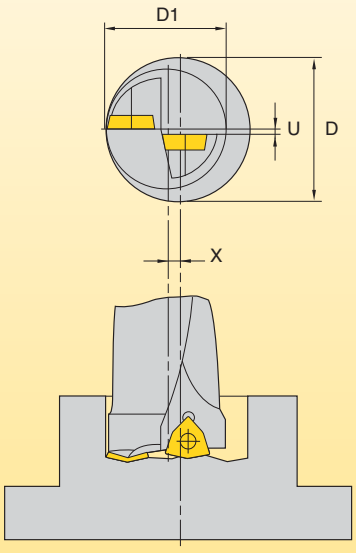
Stationary Tool

The X-adjustment must be made at the outer cutting edge, parallel to the surface of the outer insert when the turret of the turning machine is offset along the X-axis.

Rotating Tool • Straight Shank

Use an adjustable eccentric chuck with a steep taper to help offset the drill along the X-axis when machining with a rotating tool on a machining centre.





X-Adjustment Description

Different diameter holes can be drilled using the same Drill Fix drill. Holes with a diameter greater than the nominal diameter can be drilled directly into a solid. Intermediate dimensions are produced by means of the X-adjustment.

Benefits

- Eliminates the need for special tools for intermediate dimensions.
- Just a few drills cover a wide application range.
- Once precise adjustment of the desired diameter is made, tolerances of ± 0,05mm are achieved.

Additional information on X-adjustment, as well as additional information to Drill Fix tools, is available on the Kennametal website, www.kennametal.com.

Drill Fix™ DFR™

Drill Fix DFR offers maximum feed rates at diameter range 12,5–24mm at 2 x D, 3 x D, and 4 x D applications. Using rectangular-shaped inboard and outboard inserts enables soft starting cuts and short chips as well as enabling higher feed rates than small-size symmetrical-trigon or square inserts. Drill Fix DFR's low cutting forces provide long tool body life and highest stability at smallest sizes.

Furthermore, these inserts enable soft starting cuts and short chips. The low cutting forces of a Drill Fix DFR provide long tool body life and highest stability at smallest sizes.

Features and Benefits

Productivity and Profitability

- Achieve highest feed rates with rectangular-shaped inserts that offer a soft starting cut and highest stability.
- Use X-offset on turning machines to adjust the drill diameter, eliminating the need for specials in many applications and on machining centres, to reach tolerance optimisation.
- Same insert size is used in each pocket, reducing inventory costs.

Versatility

- Diameter range covering 12,5–24mm.
- 2 x D, 3 x D, and 4 x D L/D ratios as standard.
- Various shanks as standard available: WD, SSF, and new KM-TS™.
- Multiple insert grades and geometries available.
- Use where feed rates are the limiting factor.
- Apply at straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Eccentric chuck available as standard.

Reliability

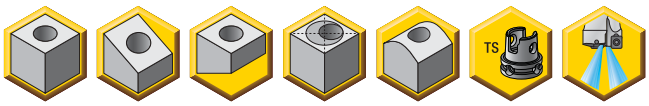
- Highest stability at smaller sizes due to rectangular-shaped insert.
- Same insert can be used as inboard or outboard insert. No risk of mixing up inner and outer insert.
- Low cutting forces resulting in long body tool life.

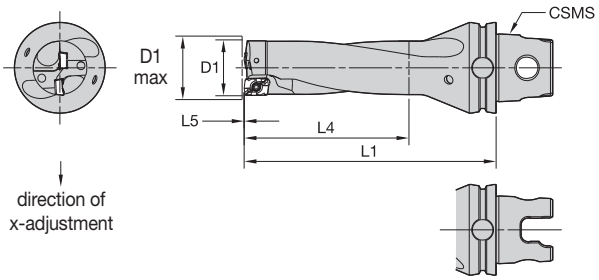
Customisation

- Intermediate diameters available as semi-standards.
- Engineered solutions available.
- Multistep drills available upon request.
- Left-hand version available.

*To learn more, **scan here**.*
For instructions on how to scan, please see page xxix.

- Drill shipped with insert screws and Torx wrench.
- See page J68 for inserts.





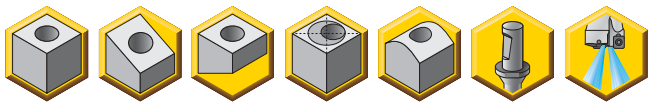
KM32TS, KM40TS, and KM50TS Shanks • 3 x D • Metric

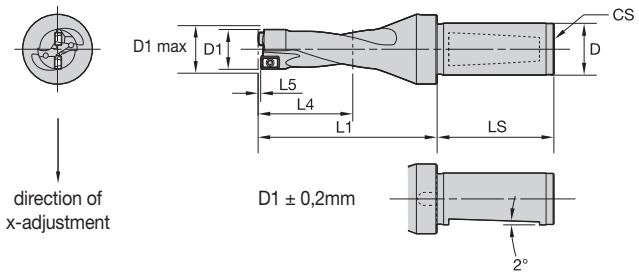
KM32TS	KM40TS	KM50TS	D1 mm	D1 max	L1	L4 max	L5	gage insert
KM32TSDFR125R3M	**KM40TSDFR125R3M**	**KM50TSDFR125R3M**	12,50	13,50	67,9	37,5	0,5	DFR0202..
KM32TSDFR130R3M	**KM40TSDFR130R3M**	**KM50TSDFR130R3M**	13,00	14,00	69,4	39,0	0,5	DFR0202..
KM32TSDFR140R3M	**KM40TSDFR140R3M**	**KM50TSDFR140R3M**	14,00	15,00	72,4	42,0	0,5	DFR0202..
KM32TSDFR150R3M	**KM40TSDFR150R3M**	**KM50TSDFR150R3M**	15,00	16,00	75,4	45,0	0,5	DFR0202..
KM32TSDFR160R3M	**KM40TSDFR160R3M**	**KM50TSDFR160R3M**	16,00	17,00	78,4	48,0	0,5	DFR0202..
KM32TSDFR170R3M	**KM40TSDFR170R3M**	**KM50TSDFR170R3M**	17,00	18,00	82,4	51,0	0,6	DFR0302..
KM32TSDFR180R3M	**KM40TSDFR180R3M**	**KM50TSDFR180R3M**	18,00	19,00	85,4	54,0	0,6	DFR0302..
KM32TSDFR190R3M	**KM40TSDFR190R3M**	**KM50TSDFR190R3M**	19,00	20,00	89,4	57,0	0,6	DFR0302..
KM32TSDFR200R3M	**KM40TSDFR200R3M**	**KM50TSDFR200R3M**	20,00	21,00	92,4	60,0	0,6	DFR0302..
KM32TSDFR210R3M	**KM40TSDFR210R3M**	**KM50TSDFR210R3M**	21,00	22,00	96,6	63,0	0,8	DFR0403..
KM32TSDFR220R3M	**KM40TSDFR220R3M**	**KM50TSDFR220R3M**	22,00	23,00	99,6	66,0	0,8	DFR0403..
KM32TSDFR230R3M	**KM40TSDFR230R3M**	**KM50TSDFR230R3M**	23,00	24,00	103,6	69,0	0,8	DFR0403..
KM32TSDFR240R3M	**KM40TSDFR240R3M**	**KM50TSDFR240R3M**	24,00	25,00	106,6	72,0	0,8	DFR0403..

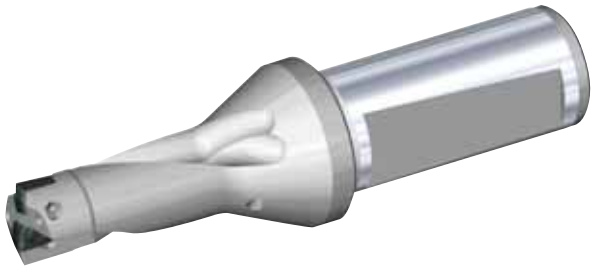
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	**193.281**	**170.027**	T6
DFR0302..	**192.416**	**170.023**	T7
DFR0403..	**192.432**	**170.025**	T8

- Drill shipped with insert screws and Torx wrench.
- See page J68 for inserts.







WN/WD Shank • 2 x D • Metric

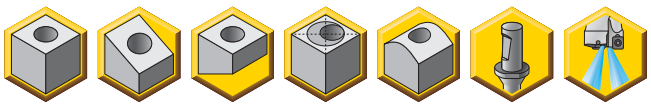
D		D1					gage
20	32	mm	D1 max	L1	L4 max	L5	insert
DFR125R2WD20M	–	12,50	13,50	47,4	25,0	0,5	DFR0202..
DFR127R2WD20M	–	12,70	13,70	47,8	25,4	0,5	DFR0202..
DFR130R2WD20M	–	13,00	14,00	48,4	26,0	0,5	DFR0202..
DFR135R2WD20M	–	13,50	14,50	49,4	27,0	0,5	DFR0202..
DFR140R2WD20M	–	14,00	15,00	50,4	28,0	0,5	DFR0202..
DFR145R2WD20M	–	14,50	15,50	53,4	29,0	0,5	DFR0202..
DFR150R2WD20M	–	15,00	16,00	54,4	30,0	0,5	DFR0202..
DFR155R2WD20M	–	15,50	16,50	55,4	31,0	0,5	DFR0202..
DFR160R2WD20M	–	16,00	17,00	56,4	32,0	0,5	DFR0202..
–	**DFR165R2WD32M**	16,50	17,50	62,4	33,0	0,6	DFR0302..
–	**DFR170R2WD32M**	17,00	18,00	63,4	34,0	0,6	DFR0302..
–	**DFR175R2WD32M**	17,50	18,50	64,4	35,0	0,6	DFR0302..
–	**DFR180R2WD32M**	18,00	19,00	65,4	36,0	0,6	DFR0302..
–	**DFR185R2WD32M**	18,50	19,50	66,4	37,0	0,6	DFR0302..
–	**DFR190R2WD32M**	19,00	20,00	67,4	38,0	0,6	DFR0302..
–	**DFR195R2WD32M**	19,50	20,50	68,4	39,0	0,6	DFR0302..
–	**DFR200R2WD32M**	20,00	21,00	72,4	40,0	0,6	DFR0302..
–	**DFR205R2WD32M**	20,50	21,50	73,6	41,0	0,8	DFR0403..
–	**DFR210R2WD32M**	21,00	22,00	74,6	42,0	0,8	DFR0403..
–	**DFR220R2WD32M**	22,00	23,00	76,6	44,0	0,8	DFR0403..
–	**DFR230R2WD32M**	23,00	24,00	78,6	46,0	0,8	DFR0403..
–	**DFR240R2WD32M**	24,00	25,00	80,6	48,0	0,8	DFR0403..

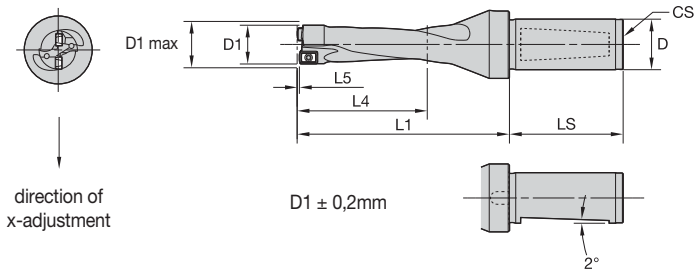
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	**193.281**	**170.027**	6
DFR0302..	**192.416**	**170.023**	7
DFR0403..	**192.432**	**170.028**	8

D	LS	CS
20	45	R 1/8 BSP
32	58	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See page J68 for inserts.





WN/WD Shank • 3 x D • Metric

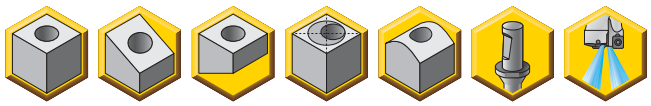
D			D1					gage
20	25	32	mm	D1 max	L1	L4 max	L5	insert
DFR125R3WD20M	–	–	12,50	13,50	59,9	37,5	0,5	DFR0202..
DFR127R3WD20M	–	–	12,70	13,70	60,5	38,1	0,5	DFR0202..
DFR130R3WD20M	–	–	13,00	14,00	61,4	39,0	0,5	DFR0202..
DFR135R3WD20M	–	–	13,50	14,50	62,9	40,5	0,5	DFR0202..
DFR140R3WD20M	–	–	14,00	15,00	64,4	42,0	0,5	DFR0202..
DFR145R3WD20M	–	–	14,50	15,50	67,9	43,5	0,5	DFR0202..
DFR150R3WD20M	–	–	15,00	16,00	69,4	45,0	0,5	DFR0202..
DFR155R3WD20M	–	–	15,50	16,50	70,9	46,5	0,5	DFR0202..
DFR160R3WD20M	–	–	16,00	17,00	72,4	48,0	0,5	DFR0202..
–	–	**DFR165R3WD32M**	16,50	17,50	78,9	49,5	0,6	DFR0302..
–	–	**DFR170R3WD32M**	17,00	18,00	80,4	51,0	0,6	DFR0302..
–	**DFR175R3WD25M**	**DFR175R3WD32M**	17,50	18,50	81,9	52,5	0,6	DFR0302..
–	**DFR180R3WD25M**	**DFR180R3WD32M**	18,00	19,00	83,4	54,0	0,6	DFR0302..
–	**DFR185R3WD25M**	**DFR185R3WD32M**	18,50	19,50	84,9	55,5	0,6	DFR0302..
–	**DFR190R3WD25M**	**DFR190R3WD32M**	19,00	20,00	86,4	57,0	0,6	DFR0302..
–	**DFR195R3WD25M**	**DFR195R3WD32M**	19,50	20,50	87,9	58,5	0,6	DFR0302..
–	**DFR200R3WD25M**	**DFR200R3WD32M**	20,00	21,00	92,4	60,0	0,6	DFR0302..
–	**DFR205R3WD25M**	**DFR205R3WD32M**	20,50	21,50	94,1	61,5	0,8	DFR0403..
–	**DFR210R3WD25M**	**DFR210R3WD32M**	21,00	22,00	95,6	63,0	0,8	DFR0403..
–	**DFR220R3WD25M**	**DFR220R3WD32M**	22,00	23,00	98,6	66,0	0,8	DFR0403..
–	**DFR230R3WD25M**	**DFR230R3WD32M**	23,00	24,00	101,6	69,0	0,8	DFR0403..
–	**DFR240R3WD25M**	**DFR240R3WD32M**	24,00	25,00	104,6	72,0	0,8	DFR0403..

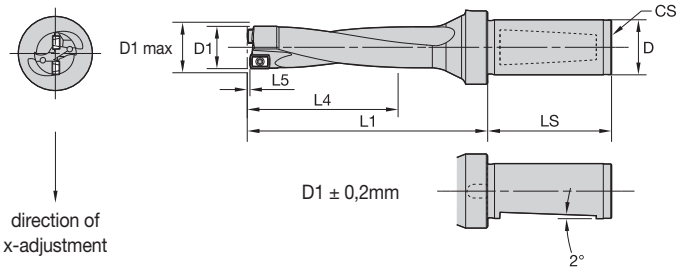
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	**193.281**	**170.027**	6
DFR0302..	**192.416**	**170.023**	7
DFR0403..	**192.432**	**170.028**	8

D	LS	CS
20	45	R 1/8 BSP
25	45	R 1/4 BSP
32	58	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See page J68 for inserts.





WN/WD Shank • 4 x D • Metric

D		D1					gage
20	32	mm	D1 max	L1	L4 max	L5	insert
DFR125R4WD20M	–	12,50	13,50	72,4	50,0	0,5	DFR0202..
DFR127R4WD20M	–	12,70	13,70	73,2	50,8	0,5	DFR0202..
DFR130R4WD20M	–	13,00	14,00	74,4	52,0	0,5	DFR0202..
DFR135R4WD20M	–	13,50	14,50	76,4	54,0	0,5	DFR0202..
DFR140R4WD20M	–	14,00	15,00	78,4	56,0	0,5	DFR0202..
DFR145R4WD20M	–	14,50	15,50	82,4	58,0	0,5	DFR0202..
DFR150R4WD20M	–	15,00	16,00	84,4	60,0	0,5	DFR0202..
DFR155R4WD20M	–	15,50	16,50	86,4	62,0	0,5	DFR0202..
DFR160R4WD20M	–	16,00	17,00	88,4	64,0	0,5	DFR0202..
–	**DFR165R4WD32M**	16,50	17,50	95,4	66,0	0,6	DFR0302..
–	**DFR170R4WD32M**	17,00	18,00	97,4	68,0	0,6	DFR0302..
–	**DFR175R4WD32M**	17,50	18,50	99,4	70,0	0,6	DFR0302..
–	**DFR180R4WD32M**	18,00	19,00	101,4	72,0	0,6	DFR0302..
–	**DFR185R4WD32M**	18,50	19,50	103,4	74,0	0,6	DFR0302..
–	**DFR190R4WD32M**	19,00	20,00	105,4	76,0	0,6	DFR0302..
–	**DFR195R4WD32M**	19,50	20,50	107,4	78,0	0,6	DFR0302..
–	**DFR200R4WD32M**	20,00	21,00	109,4	80,0	0,6	DFR0302..
–	**DFR205R4WD32M**	20,50	21,50	111,6	82,0	0,8	DFR0403..
–	**DFR210R4WD32M**	21,00	22,00	113,6	84,0	0,8	DFR0403..
–	**DFR220R4WD32M**	22,00	23,00	117,6	88,0	0,8	DFR0403..
–	**DFR230R4WD32M**	23,00	24,00	121,6	92,0	0,8	DFR0403..
–	**DFR240R4WD32M**	24,00	25,00	125,6	96,0	0,8	DFR0403..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	**193.281**	**170.027**	6
DFR0302..	**192.416**	**170.023**	7
DFR0403..	**192.432**	**170.028**	8

D	LS	CS
20	45	R 1/8 BSP
32	58	R 1/4 BSP

DFR™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Metric						
						Cutting Speed — vc Range — m/min			Recommended Feed Rate (f) by Diameter			
						min	Starting Value	max	Ø (mm)	DFR02... 12,50 - 16,00	DFR03... 16,50 - 20,00	DFR04 20,50-24,00
P	1	S	O	MD	KCU25	310	**325**	360	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	MD	KC7140							
		U	O	MD	KCU40	200	**215**	230	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	MD	KC7140							
		I	O	MD	KC7140	130	**135**	150	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	MD	KC7140							
	2	S	O	GD	KCPK10	310	**325**	360	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		U	O	GD	KCU40	200	**215**	230	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		I	O	MD	KC7140	130	**135**	150	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
	3	S	O	GD	KCPK10	260	**285**	320	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		U	O	GD	KCU40	180	**195**	220	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		I	O	GD	KC7140	110	**120**	140	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
	4	S	O	GD	KCU25	220	**250**	300	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		U	O	GD	KCU40	150	**180**	220	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
		I	O	GD	KC7140	90	**110**	140	mm/r	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25
			I	LD	KC7140							
	5	S	O	GD	KCU25	180	**200**	220	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
		U	O	GD	KCU40	120	**135**	150	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
		I	O	GD	KC7140	70	**85**	100	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
	6	S	O	GD	KCU25	180	**200**	220	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
		U	O	GD	KCU40	120	**135**	150	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
		I	O	GD	KC7140	70	**85**	100	mm/r	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18
			I	LD	KC7140							
M	1	S	O	MD	KC7140	150	**190**	230	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		U	O	MD	KC7140	100	**130**	160	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		I	O	MD	KC7140	60	**80**	100	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
	2	S	O	MD	KC7140	150	**180**	210	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		U	O	MD	KC7140	100	**130**	160	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		I	O	MD	KC7140	60	**80**	100	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
	3	S	O	MD	KC7140	100	**130**	160	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		U	O	MD	KC7140	80	**110**	140	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							
		I	O	MD	KC7140	50	**70**	90	mm/r	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18
			I	MD	KC7140							

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

DFR™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Metric						
						Cutting Speed — vc Range — m/min			Recommended Feed Rate (f) by Diameter			
						min	Starting Value	max	Ø (mm)	DFR02... 12,50 - 16,00	DFR03... 16,50 - 20,00	DFR04 20,50-24,00
K	1	S	O	GD	KCPK10	200	**240**	300	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KCU40							
		U	O	GD	KCU25	120	**155**	200	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
		I	O	GD	KCU40	80	**100**	125	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
	2	S	O	GD	KCPK10	180	**220**	260	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KCU40							
		U	O	GD	KCU25	110	**140**	170	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
		I	O	GD	KCU40	80	**100**	120	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
	3	S	O	GD	KCPK10	180	**220**	260	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KCU40							
		U	O	GD	KCU25	110	**140**	170	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
		I	O	GD	KCU40	80	**100**	120	mm/r	0,10 - 0,18	0,12 - 0,20	0,14 - 0,24
			I	LD	KC7140							
N	1	S	O	ST	KD1425	400	**600**	800	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	ST	KD1425							
		U	O	LD	KCU40	300	**400**	500	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
		I	O	LD	KCU40	200	**300**	400	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
	2	S	O	ST	KD1425	375	**550**	775	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	ST	KD1425							
		U	O	LD	KCU40	250	**350**	450	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
		I	O	LD	KCU40	175	**250**	325	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
	3	S	O	ST	KD1425	350	**500**	650	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	ST	KD1425							
		U	O	LD	KCU40	250	**350**	450	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
		I	O	LD	KCU40	150	**250**	350	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
	4	S	O	ST	KD1425	400	**600**	800	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	ST	KD1425							
		U	O	LD	KCU40	250	**350**	450	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
		I	O	LD	KCU40	200	**300**	400	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	LD	KCU40							
	5	S	O	ST	KD1425	400	**600**	800	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	ST	KD1425							
		U	O	HP	KCU40	250	**350**	450	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	HP	KCU40							
		I	O	HP	KMF	200	**300**	400	mm/r	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16
			I	HP	KMF							
S	1	S	O	GD	KCU40	60	**70**	75	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	LD	KCU40							
		U	O	GD	KCU40	40	**50**	60	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	LD	KC7140							
		I	O	MD	KC7140	25	**30**	40	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	MD	KC7140							
	2	S	O	GD	KCU40	50	**60**	70	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	LD	KCU40							
		U	O	GD	KCU40	30	**40**	50	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	LD	KC7140							
		I	O	MD	KC7140	25	**30**	40	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10
			I	MD	KC7140							
	3	S	O	GD	KCU40	70	**80**	90	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	LD	KCU40							
		U	O	GD	KCU40	50	**60**	70	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	LD	KC7140							
		I	O	MD	KC7140	30	**40**	50	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	MD	KC7140							
	4	S	O	GD	KCU40	70	**80**	90	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	LD	KCU40							
		U	O	GD	KCU40	50	**60**	70	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	LD	KC7140							
		I	O	MD	KC7140	30	**40**	50	mm/r	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10
			I	MD	KC7140							

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

Drill Fix™ DFS™

Drill Fix DFS combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert. The DFS indexable drills offer increased metal removal rates combined with high surface quality and hole straightness.

Available in a diameter range of 24–48mm, the Drill Fix DFS provides the highest cutting data capabilities, even under difficult conditions, offering long tool body life and excellent chip evacuation. DFS indexable drills are now available as standard up to 5 x D supplementing the portfolio of 2 x D, 3 x D, and 4 x D.

Boost your productivity even further and achieve outstanding results in steel, stainless steel, and cast iron with the new Beyond™ DFS outboard inserts in KCPK10™, KCU25™, and KCU40™.

Features and Benefits

Higher Productivity and Profitability

- Achieve highest metal removal rates and excellent chip evacuation due to advanced chip flutes and non-central and increased cooling channels.
- Make use of squared outboard inserts that offer four economic cutting edges where needed.
- Benefit from a complete product portfolio offering standard L/D ratios up to 5 x D.

Versatility

- Drill holes up to 5 x D in steel, cast iron, ductile iron, stainless steel, and non-ferrous materials.
- Use where speed and economy are prime considerations.
- Apply DFS drills to straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Use X-offset on turning machines to adjust the drill diameter, eliminating the need for specials in many applications and on machining centres to reach tolerance optimisation.
- Eccentric chuck available as standard.

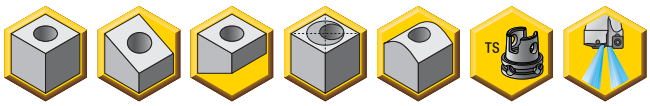
Reliability

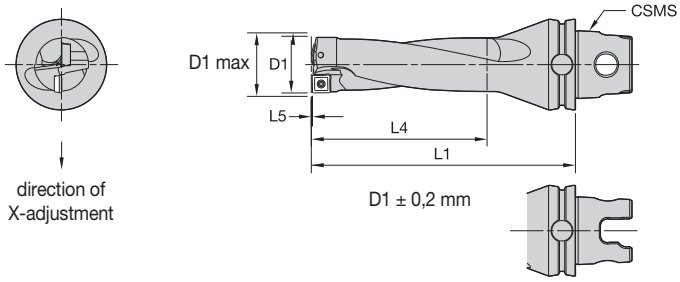
- Benefit from high-accuracy holes independently from feed rates applied.
- Gain outstanding results by applying the Beyond DFS inserts.
- High wear resistance at interrupted cuts due to squared outboard insert.

Customisation

- Intermediate diameters, multistep drills, and other non-standard shanks are available.
- Smaller and larger diameters available.

- Drill shipped with insert screws and Torx wrench.
- See pages J70–J72 and J74–J75 for inserts.





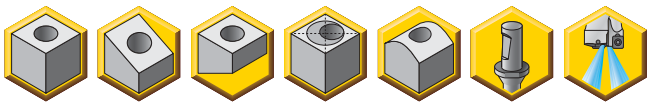
KM40TS, KM50TS, KM63TS, and KM63XMZ Shanks • 3 x D • Metric

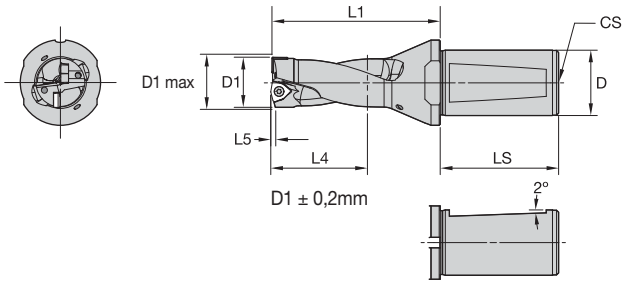
KM40TS	KM50TS	KM63TS	KM63XMZ	D1 mm	D1 max	L1	L4 max	gage insert outside	gage insert inside
KM40TSDFS250R3M	**KM50TSDFS250R3M**	**KM63TSDFS250R3M**	**KM63XMZDFS250R3YM**	25,00	26,00	119,0	75,0	SPGX0703..	DFT05T3..
KM40TSDFS270R3M	**KM50TSDFS270R3M**	**KM63TSDFS270R3M**	**KM63XMZDFS270R3YM**	27,00	28,00	126,0	81,0	SPPX09T3..	DFT05T3..
KM40TSDFS290R3M	**KM50TSDFS290R3M**	**KM63TSDFS290R3M**	**KM63XMZDFS290R3YM**	29,00	30,00	133,0	87,0	SPPX09T3..	DFT05T3..
KM40TSDFS310R3M	**KM50TSDFS310R3M**	**KM63TSDFS310R3M**	**KM63XMZDFS310R3YM**	31,00	32,00	140,0	93,0	SPPX09T3..	DFT05T3..
–	**KM50TSDFS330R3M**	**KM63TSDFS330R3M**	**KM63XMZDFS330R3YM**	33,00	34,00	147,0	99,0	SPPX1204..	DFT06T3..
–	**KM50TSDFS350R3M**	**KM63TSDFS350R3M**	**KM63XMZDFS350R3YM**	35,00	36,00	154,0	105,0	SPPX1204..	DFT06T3..
–	**KM50TSDFS380R3M**	**KM63TSDFS380R3M**	**KM63XMZDFS380R3YM**	38,00	39,00	164,0	114,0	SPPX1204..	DFT06T3..
–	–	**KM63TSDFS410R3M**	**KM63XMZDFS410R3YM**	41,00	42,00	175,0	123,0	SPPX1204..	DFT0704..
–	–	**KM63TSDFS440R3M**	**KM63XMZDFS440R3YM**	44,00	45,00	185,0	132,0	SPPX15T5..	DFT0704..
–	–	**KM63TSDFS470R3M**	**KM63XMZDFS470R3YM**	47,00	48,00	196,0	141,0	SPPX15T5..	DFT0704..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D1 mm	inboard insert screw	outboard insert screw	Torx wrench	Torx size
24–25,9	**193.491**	**192.432**	**170.028**	8
26–32,9	**191.924**	**191.924**	**170.024**	9
33–43,9	**191.916**	**191.916**	**170.025**	15
44–49,9	**191.698**	**192.433**	**170.025**	15
50–56	**192.433**	**192.433**	**170.025**	15

- Drill shipped with insert screws and Torx wrench.
- See pages J70–J72 and J74–J75 for inserts.





WN/WD Shank • 2 x D • Metric

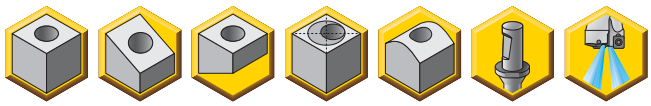
D			D1						
32	40	50	mm	D1 max	L4 max	L1	L5	gage insert outside	gage insert inside
DFS240R2WD32M	–	–	24,00	25,00	48,0	80,0	0,5	SPGX0703..	DFT05T3..
DFS250R2WD32M	–	–	25,00	26,00	50,0	83,0	0,6	SPGX0703..	DFT05T3..
DFS310R2WD32M	–	–	25,00	26,00	50,0	83,0	0,6	SPPX09T3..	DFT05T3..
DFS260R2WD32M	–	–	26,00	27,00	52,0	86,0	0,6	SPPX09T3..	DFT05T3..
DFS270R2WD32M	–	–	27,00	28,00	54,0	89,0	0,7	SPPX09T3..	DFT05T3..
DFS280R2WD32M	–	–	28,00	29,00	56,0	91,0	0,7	SPPX09T3..	DFT05T3..
DFS290R2WD32M	–	–	29,00	30,00	58,0	94,0	0,8	SPPX09T3..	DFT05T3..
DFS300R2WD32M	–	–	30,00	31,00	60,0	97,0	0,8	SPPX09T3..	DFT05T3..
DFS320R2WD32M	–	–	32,00	33,00	64,0	103,0	0,9	SPPX09T3..	DFT05T3..
DFS330R2WD32M	–	–	33,00	34,00	66,0	105,0	0,8	SPPX1204..	DFT06T3..
DFS340R2WD32M	–	–	34,00	35,00	68,0	108,0	0,8	SPPX1204..	DFT06T3..
DFS350R2WD32M	–	–	35,00	36,00	70,0	111,0	0,9	SPPX1204..	DFT06T3..
DFS360R2WD32M	–	–	36,00	37,00	72,0	114,0	0,9	SPPX1204..	DFT06T3..
DFS370R2WD32M	–	–	37,00	38,00	74,0	117,0	0,9	SPPX1204..	DFT06T3..
DFS380R2WD32M	–	–	38,00	39,00	76,0	119,0	1,0	SPPX1204..	DFT06T3..
DFS390R2WD32M	–	–	39,00	40,00	78,0	122,0	1,0	SPPX1204..	DFT06T3..
DFS400R2WD32M	–	–	40,00	41,00	80,0	125,0	1,0	SPPX1204..	DFT06T3..
DFS410R2WD32M	–	–	41,00	42,00	82,0	128,0	1,0	SPPX1204..	DFT0704..
DFS420R2WD32M	–	–	42,00	43,00	84,0	131,0	1,1	SPPX1204..	DFT0704..
DFS430R2WD32M	–	–	43,00	44,00	86,0	133,0	1,1	SPPX1204..	DFT0704..
DFS440R2WD32M	–	–	44,00	45,00	88,0	135,0	1,1	SPPX15T5..	DFT0704..
–	DFS450R2WD40M	–	45,00	46,00	90,0	137,0	1,1	SPPX15T5..	DFT0704..
–	DFS460R2WD40M	–	46,00	47,00	92,0	140,0	1,1	SPPX15T5..	DFT0704..
–	DFS470R2WD40M	–	47,00	48,00	94,0	142,0	1,2	SPPX15T5..	DFT0704..
–	DFS480R2WD40M	–	48,00	49,00	96,0	144,0	1,2	SPPX15T5..	DFT0704..
–	DFS490R2WD40M	–	49,00	50,00	98,0	146,0	1,2	SPPX15T5..	DFT0905..
–	DFS500R2WD40M	–	50,00	51,00	100,0	148,0	1,2	SPPX15T5..	DFT0905..
–	DFS510R2WD40M	–	51,00	52,00	102,0	150,0	1,3	SPPX15T5..	DFT0905..
–	DFS520R2WD40M	–	52,00	53,00	104,0	152,0	1,3	SPPX15T5..	DFT0905..
–	DFS530R2WD40M	–	53,00	54,00	106,0	154,0	1,3	SPPX15T5..	DFT0905..
–	DFS540R2WD40M	–	54,00	55,00	108,0	156,0	1,3	SPPX15T5..	DFT0905..
–	–	DFS550R2WD50M	55,00	56,00	110,0	158,0	1,4	SPPX15T5..	DFT0905..

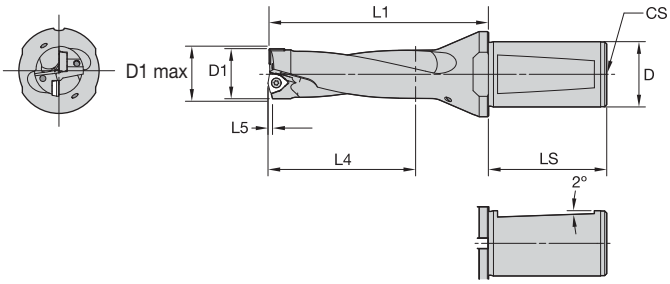
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D1 mm	inboard insert screw	outboard insert screw	Torx wrench	Torx size
24–25,9	**193.491**	**192.432**	**170.028**	8
26–32,9	**191.924**	**191.924**	**170.024**	9
33–43,9	**191.916**	**191.916**	**170.025**	15
44–49,9	**191.698**	**192.433**	**170.025**	15
50–56	**192.433**	**192.433**	**170.025**	15

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP
50	68	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See pages J70–J72 and J74–J75 for inserts.





Whistle Notch™ WD Shank • 3 x D • Metric

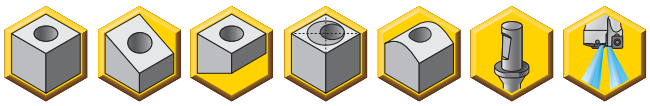
D			D1						
32	40	50	mm	D1 max	L1	L4 max	L5	gage insert outside	gage insert inside
DFS240R3WD32M	–	–	24,00	25,00	104,0	72,0	0,5	SPGX0703..	DFT05T3..
DFS250R3WD32M	–	–	25,00	26,00	108,0	75,0	0,6	SPGX0703..	DFT05T3..
DFS260R3WD32M	–	–	26,00	27,00	112,0	78,0	0,6	SPPX09T3..	DFT05T3..
DFS270R3WD32M	–	–	27,00	28,00	116,0	81,0	0,7	SPPX09T3..	DFT05T3..
DFS280R3WD32M	–	–	28,00	29,00	119,0	84,0	0,7	SPPX09T3..	DFT05T3..
DFS290R3WD32M	–	–	29,00	30,00	123,0	87,0	0,8	SPPX09T3..	DFT05T3..
DFS300R3WD32M	–	–	30,00	31,00	127,0	90,0	0,8	SPPX09T3..	DFT05T3..
DFS310R3WD32M	–	–	31,00	32,00	131,0	93,0	0,8	SPPX09T3..	DFT05T3..
DFS320R3WD32M	–	–	32,00	33,00	135,0	96,0	0,9	SPPX09T3..	DFT05T3..
DFS330R3WD32M	–	–	33,00	34,00	138,0	99,0	0,8	SPPX1204..	DFT06T3..
DFS340R3WD32M	–	–	34,00	35,00	142,0	102,0	0,8	SPPX1204..	DFT06T3..
DFS350R3WD32M	–	–	35,00	36,00	146,0	105,0	0,9	SPPX1204..	DFT06T3..
DFS360R3WD32M	–	–	36,00	37,00	150,0	108,0	0,9	SPPX1204..	DFT06T3..
DFS370R3WD32M	–	–	37,00	38,00	154,0	111,0	0,9	SPPX1204..	DFT06T3..
DFS380R3WD32M	–	–	38,00	39,00	157,0	114,0	1,0	SPPX1204..	DFT06T3..
DFS390R3WD32M	–	–	39,00	40,00	161,0	117,0	1,0	SPPX1204..	DFT06T3..
DFS400R3WD32M	–	–	40,00	41,00	165,0	120,0	1,0	SPPX1204..	DFT06T3..
DFS410R3WD32M	–	–	41,00	42,00	169,0	123,0	1,0	SPPX1204..	DFT0704..
DFS420R3WD32M	–	–	42,00	43,00	173,0	126,0	1,1	SPPX1204..	DFT0704..
DFS430R3WD32M	–	–	43,00	44,00	176,0	129,0	1,1	SPPX1204..	DFT0704..
DFS440R3WD32M	–	–	44,00	45,00	179,0	132,0	1,1	SPPX15T5..	DFT0704..
–	DFS450R3WD40M	–	45,00	46,00	182,0	135,0	1,1	SPPX15T5..	DFT0704..
–	DFS460R3WD40M	–	46,00	47,00	186,0	138,0	1,1	SPPX15T5..	DFT0704..
–	DFS470R3WD40M	–	47,00	48,00	189,0	141,0	1,2	SPPX15T5..	DFT0704..
–	DFS480R3WD40M	–	48,00	49,00	192,0	144,0	1,2	SPPX15T5..	DFT0704..
–	DFS490R3WD40M	–	49,00	50,00	195,0	147,0	1,2	SPPX15T5..	DFT0905..
–	DFS500R3WD40M	–	50,00	51,00	198,0	150,0	1,2	SPPX15T5..	DFT0905..
–	DFS510R3WD40M	–	51,00	52,00	201,0	153,0	1,3	SPPX15T5..	DFT0905..
–	DFS520R3WD40M	–	52,00	53,00	204,0	156,0	1,3	SPPX15T5..	DFT0905..
–	DFS530R3WD40M	–	53,00	54,00	207,0	159,0	1,3	SPPX15T5..	DFT0905..
–	DFS540R3WD40M	–	54,00	55,00	210,0	162,0	1,3	SPPX15T5..	DFT0905..
–	–	DFS550R3WD50M	55,00	56,00	213,0	165,0	1,4	SPPX15T5..	DFT0905..

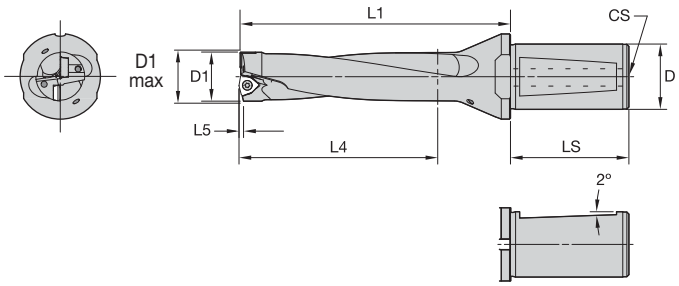
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D1 mm	inboard insert screw	outboard insert screw	Torx wrench	Torx size
24–25,9	**193.491**	**192.432**	**170.028**	8
26–32,9	**191.924**	**191.924**	**170.024**	9
33–43,9	**191.916**	**191.916**	**170.025**	15
44–49,9	**191.698**	**192.433**	**170.025**	15
50–56	**192.433**	**192.433**	**170.025**	15

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP
50	68	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See pages J70–J72 and J74–J75 for inserts.





WN/WD Shank • 4 x D • Metric

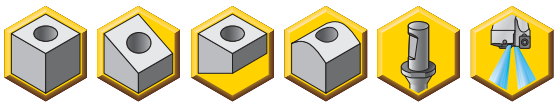
D		D1					gage insert	gage insert
32	40	mm	D1 max	L1	L4 max	L5	outside	inside
DFS240R4WD32M	–	24,00	25,00	128,0	96,0	0,5	SPGX0703..	DFT05T3..
DFS250R4WD32M	–	25,00	26,00	133,0	100,0	0,6	SPGX0703..	DFT05T3..
DFS260R4WD32M	–	26,00	27,00	138,0	104,0	0,6	SPPX09T3..	DFT05T3..
DFS270R4WD32M	–	27,00	28,00	143,0	108,0	0,7	SPPX09T3..	DFT05T3..
DFS280R4WD32M	–	28,00	29,00	147,0	112,0	0,7	SPPX09T3..	DFT05T3..
DFS290R4WD32M	–	29,00	30,00	152,0	116,0	0,8	SPPX09T3..	DFT05T3..
DFS300R4WD32M	–	30,00	31,00	157,0	120,0	0,8	SPPX09T3..	DFT05T3..
DFS310R4WD32M	–	31,00	32,00	162,0	124,0	0,8	SPPX09T3..	DFT05T3..
DFS320R4WD32M	–	32,00	33,00	167,0	128,0	0,9	SPPX09T3..	DFT05T3..
DFS330R4WD32M	–	33,00	34,00	171,0	132,0	0,8	SPPX1204..	DFT06T3..
DFS340R4WD32M	–	34,00	35,00	176,0	136,0	0,8	SPPX1204..	DFT06T3..
DFS350R4WD32M	–	35,00	36,00	181,0	140,0	0,9	SPPX1204..	DFT06T3..
DFS360R4WD32M	–	36,00	37,00	186,0	144,0	0,9	SPPX1204..	DFT06T3..
DFS370R4WD32M	–	37,00	38,00	191,0	148,0	0,9	SPPX1204..	DFT06T3..
DFS380R4WD32M	–	38,00	39,00	195,0	152,0	1,0	SPPX1204..	DFT06T3..
DFS390R4WD32M	–	39,00	40,00	200,0	156,0	1,0	SPPX1204..	DFT06T3..
DFS400R4WD32M	–	40,00	41,00	205,0	160,0	1,0	SPPX1204..	DFT06T3..
DFS410R4WD32M	–	41,00	42,00	210,0	164,0	1,0	SPPX1204..	DFT0704..
DFS420R4WD32M	–	42,00	43,00	215,0	168,0	1,1	SPPX1204..	DFT0704..
DFS430R4WD32M	–	43,00	44,00	219,0	172,0	1,1	SPPX1204..	DFT0704..
DFS440R4WD32M	–	44,00	45,00	223,0	176,0	1,1	SPPX15T5..	DFT0704..
–	**DFS450R4WD40M**	45,00	46,00	227,0	180,0	1,1	SPPX15T5..	DFT0704..
–	**DFS460R4WD40M**	46,00	47,00	232,0	184,0	1,1	SPPX15T5..	DFT0704..
–	**DFS470R4WD40M**	47,00	48,00	236,0	188,0	1,2	SPPX15T5..	DFT0704..
–	**DFS480R4WD40M**	48,00	49,00	240,0	192,0	1,2	SPPX15T5..	DFT0704..

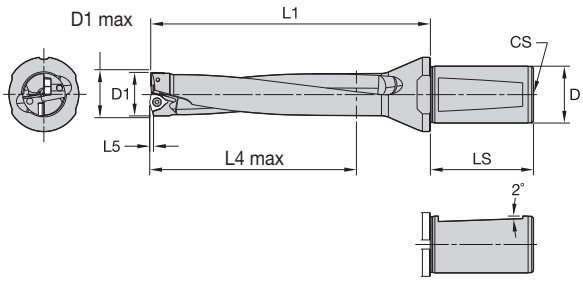
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D1 mm	inboard insert screw	outboard insert screw	Torx wrench	Torx size
24–25,9	**193.491**	**192.432**	**170.028**	8
26–32,9	**191.924**	**191.924**	**170.024**	9
33–43,9	**191.916**	**191.916**	**170.025**	15
44–49,9	**191.698**	**192.433**	**170.025**	15
50–56	**192.433**	**192.433**	**170.025**	15

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See pages J70, J71, J74, and J75 for inserts.





WN/WD Shank • 5 x D • Metric

D 32	D 40	D1 mm	D1 max	L1	L4 max	L5	gage insert outside	gage insert inside
DFS240R5WD32M	–	24,00	24,00	152,0	120,0	0,5	SPGX0703..	DFT05T3..
DFS250R5WD32M	–	25,00	25,00	158,0	125,0	0,6	SPGX0703..	DFT05T3..
DFS260R5WD32M	–	26,00	26,00	164,0	130,0	0,6	SPPX09T3..	DFT05T3..
DFS270R5WD32M	–	27,00	27,00	170,0	135,0	0,7	SPPX09T3..	DFT05T3..
DFS280R5WD32M	–	28,00	28,00	175,0	140,0	0,7	SPPX09T3..	DFT05T3..
DFS290R5WD32M	–	29,00	29,00	181,0	145,0	0,8	SPPX09T3..	DFT05T3..
DFS300R5WD32M	–	30,00	30,00	187,0	150,0	0,8	SPPX09T3..	DFT05T3..
DFS310R5WD32M	–	31,00	31,00	193,0	155,0	0,8	SPPX09T3..	DFT05T3..
DFS320R5WD32M	–	32,00	32,00	199,0	160,0	0,9	SPPX09T3..	DFT05T3..
DFS330R5WD32M	–	33,00	33,00	204,0	165,0	0,8	SPPX1204..	DFT06T3..
DFS340R5WD32M	–	34,00	34,00	210,0	170,0	0,8	SPPX1204..	DFT06T3..
DFS350R5WD32M	–	35,00	35,00	216,0	175,0	0,9	SPPX1204..	DFT06T3..
DFS360R5WD32M	–	36,00	36,00	222,0	180,0	0,9	SPPX1204..	DFT06T3..
DFS370R5WD32M	–	37,00	37,00	228,0	185,0	0,9	SPPX1204..	DFT06T3..
DFS380R5WD32M	–	38,00	38,00	233,0	190,0	1,0	SPPX1204..	DFT06T3..
DFS390R5WD32M	–	39,00	39,00	239,0	195,0	1,0	SPPX1204..	DFT06T3..
DFS400R5WD32M	–	40,00	40,00	245,0	200,0	1,0	SPPX1204..	DFT06T3..
DFS410R5WD32M	–	41,00	41,00	251,0	205,0	1,0	SPPX1204..	DFT0704..
DFS420R5WD32M	–	42,00	42,00	257,0	210,0	1,1	SPPX1204..	DFT0704..
DFS430R5WD32M	–	43,00	43,00	262,0	215,0	1,1	SPPX1204..	DFT0704..
DFS440R5WD32M	–	44,00	44,00	267,0	220,0	1,1	SPPX15T5..	DFT0704..
–	**DFS450R5WD40M**	45,00	45,00	272,0	225,0	1,1	SPPX15T5..	DFT0704..
–	**DFS460R5WD40M**	46,00	46,00	278,0	230,0	1,1	SPPX15T5..	DFT0704..
–	**DFS470R5WD40M**	47,00	47,00	283,0	235,0	1,2	SPPX15T5..	DFT0704..
–	**DFS480R5WD40M**	48,00	48,00	288,0	240,0	1,2	SPPX15T5..	DFT0704..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D1 mm	inboard insert screw	outboard insert screw	Torx wrench	Torx size
24–25,9	**193.491**	**193.491**	**170.028**	8
26–32,9	**191.924**	**191.924**	**170.024**	9
33–43,9	**191.916**	**191.916**	**170.025**	15
44–49,9	**191.698**	**191.698**	**170.025**	15
50–56	**192.433**	**192.433**	**170.025**	15

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP

DFS™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	SPGX07 DFT05 22,00-25,99	SPGX09 DFT05 26,00-32,99	SPGX12 DFT06/..07 33,00-43,99	SPGX15 DFT07/..09 44,00-55,00
P	1	S	O	MD	KCPK10	310	**325**	360	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	FP	KCU25	200	**215**	230	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KCU40	130	**135**	150	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
	2	S	O	MD	KCPK10	310	**325**	360	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	FP	KCU25	200	**215**	230	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KCU40	130	**135**	150	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
	3	S	O	MD	KCPK10	260	**285**	320	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	FP	KCU25	180	**195**	220	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KCU40	110	**120**	140	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
	4	S	O	FP	KCPK10	220	**250**	300	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	HP	KCU25	150	**180**	220	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KCU40	90	**110**	140	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
	5	S	O	HP	KCU25	180	**200**	220	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	HP	KCU40	120	**135**	150	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KC7140	70	**85**	100	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
	6	S	O	HP	KCU25	180	**200**	220	mm/r	0,100 - 0,180	0,140 - 0,250	0,160 - 0,300	0,180 - 0,300
			I	MD	KC7140								
		U	O	HP	KCU40	120	**135**	150	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
		I	O	HP	KC7140	70	**85**	100	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	MD	KC7140								
M	1	S	O	FP	KCU25	150	**190**	230	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	MD	KC7140								
		U	O	MD	KCU40	100	**130**	160	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,200
			I	MD	KC7140								
		I	O	MD	KC7140	60	**80**	100	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,180
			I	MD	KC7140								
	2	S	O	FP	KCU25	150	**180**	210	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	MD	KC7140								
		U	O	MD	KCU40	100	**130**	160	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,200
			I	MD	KC7140								
		I	O	MD	KC7140	60	**80**	100	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,180
			I	MD	KC7140								
	3	S	O	HP	KCU25	100	**130**	160	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KC7140								
		U	O	HP	KCU40	80	**110**	140	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,200
			I	HP	KC7140								
		I	O	MD	KC7140	50	**70**	90	mm/r	0,050 - 0,090	0,070 - 0,130	0,080 - 0,160	0,100 - 0,180
			I	MD	KC7140								

NOTE: Applying Drill Fix™ DFS 5 x D requires high stability. It is highly recommended to be conservative in regard to speeds and feeds, and start with minimum values indicated.

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions

Pocket seat: I = Inboard insert; O = Outboard insert

DFS™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	SPGX07 DFT05 22,00-25,99	SPGX09 DFT05 26,00-32,99	SPGX12 DFT06/..07 33,00-43,99	SPGX15 DFT07/..09 44,00-55,00
K	1	S	O	FP	KCPK10	200	**240**	300	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KCU40								
		U	O	FP	KCU25	120	**155**	200	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KC7140								
		I	O	FP	KC7140	80	**100**	125	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KC7140								
	2	S	O	FP	KCPK10	180	**220**	260	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KCU40								
		U	O	HP	KCU25	110	**140**	170	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KC7140								
		I	O	HP	KC7140	80	**100**	120	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KC7140								
	3	S	O	HP	KCPK10	180	**220**	260	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KCU40								
		U	O	HP	KCU25	110	**140**	170	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KC7140								
		I	O	HP	KC7140	80	**100**	120	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KC7140								
N	1	S	O	HP	KCPK10	350	**500**	650	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KMF								
		U	O	HP	KCU40	300	**400**	500	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KMF								
		I	O	HP	KCU40	200	**300**	400	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KMF								
	2	S	O	HP	KCPK10	300	**400**	500	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KMF								
		U	O	HP	KCU40	250	**350**	450	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KMF								
		I	O	HP	KCU40	175	**250**	325	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KMF								
	3	S	O	HP	KCPK10	300	**400**	500	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KMF								
		U	O	HP	KCU40	250	**350**	450	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KMF								
		I	O	HP	KCU40	150	**250**	350	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KMF								
	4	S	O	HP	KCU25	300	**400**	500	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KC7140								
		U	O	HP	KCU40	250	**350**	450	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KC7140								
		I	O	HP	KCU40	200	**300**	400	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KC7140								
	5	S	O	HP	KCU40	400	**450**	500	mm/r	0,120 - 0,200	0,160 - 0,280	0,180 - 0,320	0,200 - 0,340
			I	HP	KMF								
		U	O	HP	KCU40	250	**350**	450	mm/r	0,080 - 0,150	0,120 - 0,200	0,140 - 0,250	0,160 - 0,280
			I	HP	KMF								
		I	O	HP	KCU40	200	**300**	400	mm/r	0,060 - 0,100	0,090 - 0,150	0,110 - 0,180	0,130 - 0,250
			I	HP	KMF								

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Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions

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DFS™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	SPGX07 DFT05 22,00-25,99	SPGX09 DFT05 26,00-32,99	SPGX12 DFT06/..07 33,00-43,99	SPGX15 DFT07/..09 44,00-55,00
S	1	S	O	HP	KCU40	60	**70**	75	mm/r	0,050 - 0,100	0,080 - 0,120	0,100 - 0,150	0,120 - 0,180
			I	MD	KC7140								
		U	O	HP	KCU40	40	**50**	60	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
		I	O	HP	KCU40	25	**30**	40	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
	2	S	O	HP	KCU40	50	**60**	70	mm/r	0,050 - 0,100	0,080 - 0,120	0,100 - 0,150	0,120 - 0,180
			I	MD	KC7140								
		U	O	HP	KCU40	30	**40**	50	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
		I	O	HP	KCU40	25	**30**	40	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
	3	S	O	HP	KCU40	70	**80**	90	mm/r	0,050 - 0,100	0,080 - 0,120	0,100 - 0,150	0,120 - 0,180
			I	MD	KC7140								
		U	O	HP	KCU40	50	**60**	70	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
		I	O	HP	KCU40	30	**40**	50	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
	4	S	O	HP	KCU40	70	**80**	90	mm/r	0,050 - 0,100	0,080 - 0,120	0,100 - 0,150	0,120 - 0,180
			I	MD	KC7140								
		U	O	HP	KCU40	50	**60**	70	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								
		I	O	HP	KCU40	30	**40**	50	mm/r	0,030 - 0,050	0,040 - 0,060	0,050 - 0,080	0,060 - 0,100
			I	MD	KC7140								

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Drill Fix™ DFT™

Drill Fix DFT is available in the diameter range 24–82mm as a versatile and reliable tool solution with a large portfolio of lengths, insert geometries, and grades.

Balanced cutting forces, improved chip flute, and coolant-channel design enable high metal removal rates and long tool body life. The trigon-shaped DFT inserts are used for both inboard and outboard inserts and offer the highest centring capabilities and three cutting edges each.

Features and Benefits

Productivity and Profitability

- Achieve high hole accuracy with trigon-shaped inboard inserts that offer the highest centring capabilities.
- Use X-offset on turning machines to adjust the drill diameter, eliminating the need for specials in many applications and on machining centres to reach tolerance optimisation.
- Same insert size is used in each pocket reducing inventory costs.

Versatility

Use Drill Fix DFT as most versatile and reliable indexable drilling tool:

- Diameter range covering 24–82mm.
- 2,5 x D and 4 x D L/D ratios are standard.
- Various shanks available as standard: WD, SSF, and new KM-TS™.
- Trigon-shaped inserts offer three cutting edges.
- Large variety of DFT insert grades and geometries available.
- Apply DFT drills to straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Eccentric chuck available as standard.

Reliability

- Highest centring capabilities due to trigon-shaped insert.
- Same insert can be used as inboard or outboard insert — no risk of mixing up inner and outer inserts.
- Benefit from improved chip flute and coolant-channel design resulting in long tool body life and excellent chip evacuation.

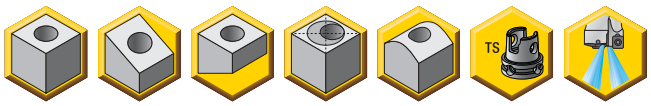
Customisation

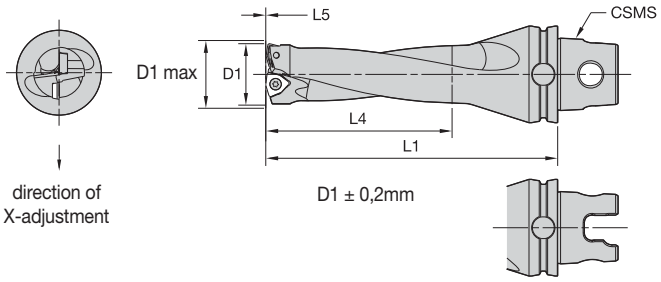
- Intermediate diameters available as semi-standards.
- Engineered solutions available.
- Multistep drills available upon request.
- Stacked material version.

To learn more, ***scan here****.*

For instructions on how to scan, please see page xxix.

- Drill shipped with insert screws and Torx wrench.
- See page J70 for inserts.





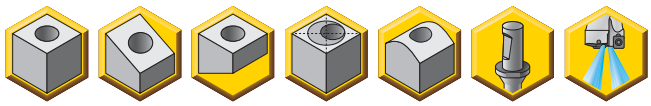
KM40TS, KM50TS, KM63TS, and KM63XMZ Shanks • 3 x D • Metric

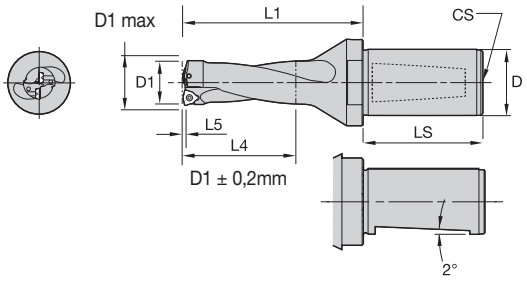
KM40TS	KM50TS	KM63TS	KM63XMZ	D1 mm	D1 max	L1	L4 max	L5	gage insert
KM40TSDFT250R3M	**KM50TSDFT250R3M**	**KM63TSDFT250R3M**	**KM63XMZDFT250R3YM**	25,00	27,00	119,0	75,0	0,9	DFT05T3..
KM40TSDFT270R3M	**KM50TSDFT270R3M**	**KM63TSDFT270R3M**	**KM63XMZDFT270R3YM**	27,00	29,00	126,0	81,0	1,1	DFT05T3..
KM40TSDFT290R3M	**KM50TSDFT290R3M**	**KM63TSDFT290R3M**	**KM63XMZDFT290R3YM**	29,00	31,00	133,0	87,0	1,2	DFT05T3..
KM40TSDFT310R3M	**KM50TSDFT310R3M**	**KM63TSDFT310R3M**	**KM63XMZDFT310R3YM**	31,00	33,00	140,0	93,0	1,3	DFT05T3..
–	**KM50TSDFT330R3M**	**KM63TSDFT330R3M**	**KM63XMZDFT330R3YM**	33,00	35,00	147,0	99,0	1,3	DFT06T3..
–	**KM50TSDFT350R3M**	**KM63TSDFT350R3M**	**KM63XMZDFT350R3YM**	35,00	37,00	154,0	105,0	1,5	DFT06T3..
–	**KM50TSDFT380R3M**	**KM63TSDFT380R3M**	**KM63XMZDFT380R3YM**	38,00	40,00	164,0	114,0	1,7	DFT06T3..
–	–	**KM63TSDFT410R3M**	**KM63XMZDFT410R3YM**	41,00	43,00	175,0	123,0	1,8	DFT0704..
–	–	**KM63TSDFT440R3M**	**KM63XMZDFT440R3YM**	44,00	46,00	185,0	132,0	2,0	DFT0704..
–	–	**KM63TSDFT470R3M**	**KM63XMZDFT470R3YM**	47,00	49,00	196,0	141,0	2,2	DFT0704..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFT05T3..	**191.924**	**170.024**	9
DFT06T3..	**191.848**	**170.025**	15
DFT0704..	**191.698**	**170.025**	15

- Drill shipped with insert screws and Torx wrench.
- See pages J70 for inserts.





WN/WD Shank • 2,5 x D • Metric

D			D1					gage
32	40	50	mm	D1 max	L1	L4 max	L5	insert
DFT250R2WD32M	DFT250R2WD40M	–	25,00	27,00	90,0	58,9	0,9	DFT05T3..
DFT260R2WD32M	DFT260R2WD40M	–	26,00	27,00	90,0	59,1	1,1	DFT05T3..
DFT270R2WD32M	DFT270R2WD40M	–	27,00	29,00	100,0	66,1	1,1	DFT05T3..
DFT280R2WD32M	DFT280R2WD40M	–	28,00	29,00	100,0	66,3	1,3	DFT05T3..
DFT290R2WD32M	DFT290R2WD40M	–	29,00	31,00	100,0	66,3	1,3	DFT05T3..
DFT300R2WD32M	DFT300R2WD40M	–	30,00	31,00	115,0	76,4	1,4	DFT05T3..
DFT310R2WD32M	DFT310R2WD40M	–	31,00	33,00	115,0	76,4	1,4	DFT05T3..
DFT320R2WD32M	DFT320R2WD40M	–	32,00	33,00	115,0	76,5	1,5	DFT05T3..
DFT330R2WD32M	DFT330R2WD40M	–	33,00	35,00	115,0	76,4	1,4	DFT06T3..
DFT340R2WD32M	DFT340R2WD40M	–	34,00	35,00	115,0	76,5	1,5	DFT06T3..
DFT350R2WD32M	DFT350R2WD40M	–	35,00	38,00	115,0	76,6	1,6	DFT06T3..
DFT360R2WD32M	DFT360R2WD40M	–	36,00	37,00	115,0	76,8	1,8	DFT06T3..
DFT370R2WD32M	DFT370R2WD40M	–	37,00	38,00	135,0	96,7	1,7	DFT06T3..
DFT380R2WD32M	DFT380R2WD40M	–	38,00	41,00	135,0	96,8	1,8	DFT06T3..
DFT390R2WD32M	DFT390R2WD40M	–	39,00	40,00	135,0	96,9	1,9	DFT06T3..
DFT400R2WD32M	DFT400R2WD40M	–	40,00	41,00	135,0	97,0	2,0	DFT06T3..
DFT410R2WD32M	DFT410R2WD40M	–	41,00	44,00	135,0	96,9	1,9	DFT0704..
DFT420R2WD32M	DFT420R2WD40M	–	42,00	43,00	135,0	96,9	2,0	DFT0704..
DFT430R2WD32M	DFT430R2WD40M	–	43,00	44,00	150,0	112,1	2,1	DFT0704..
DFT440R2WD32M	DFT440R2WD40M	–	44,00	47,00	150,0	112,1	2,1	DFT0704..
–	DFT450R2WD40M	DFT450R2WD50M	45,00	46,00	150,0	112,2	2,2	DFT0704..
–	DFT460R2WD40M	DFT460R2WD50M	46,00	47,00	150,0	112,0	2,3	DFT0704..
–	DFT470R2WD40M	DFT470R2WD50M	47,00	50,00	150,0	111,5	2,4	DFT0704..
–	DFT480R2WD40M	DFT480R2WD50M	48,00	49,00	150,0	111,0	2,4	DFT0704..
–	DFT490R2WD40M	DFT490R2WD50M	49,00	50,00	165,0	117,2	2,2	DFT0905..
–	DFT500R2WD40M	DFT500R2WD50M	50,00	54,00	165,0	117,2	2,2	DFT0905..
–	DFT510R2WD40M	DFT510R2WD50M	51,00	52,00	165,0	117,4	2,5	DFT0905..
–	DFT520R2WD40M	DFT520R2WD50M	52,00	53,00	165,0	117,5	2,6	DFT0905..
–	DFT530R2WD40M	DFT530R2WD50M	53,00	54,00	165,0	117,6	2,6	DFT0905..
–	DFT540R2WD40M	DFT540R2WD50M	54,00	58,00	165,0	117,7	2,7	DFT0905..
–	–	DFT550R2WD50M	55,00	56,00	180,0	125,0	2,7	DFT0905..
–	–	DFT560R2WD50M	56,00	57,00	180,0	125,0	2,8	DFT0905..
–	–	DFT570R2WD50M	57,00	58,00	180,0	125,0	2,9	DFT0905..
–	–	DFT580R2WD50M	58,00	62,00	180,0	125,0	3,0	DFT0905..
–	–	DFT590R2WD50M	59,00	60,00	180,0	125,0	3,0	DFT0905..
–	–	DFT600R2WD50M	60,00	61,00	180,0	125,0	3,1	DFT0905..
–	–	DFT610R2WD50M	61,00	62,00	180,0	125,0	3,2	DFT0905..
–	–	DFT620R2WD50M	62,00	65,00	180,0	125,0	3,2	DFT0905..
–	–	DFT630R2WD50M	63,00	64,00	180,0	125,0	3,3	DFT0905..
–	–	DFT640R2WD50M	64,00	65,00	180,0	125,0	3,4	DFT0905..

(continued)

(WN/WD Shank • 2,5 x D • Metric continued)

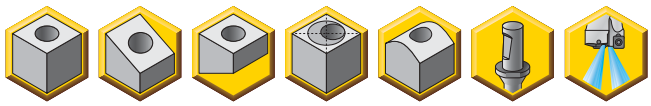
D			D1					gage
32	40	50	mm	D1 max	L1	L4 max	L5	insert
–	–	**DFT650R2WD50M**	65,00	66,00	180,0	125,0	3,4	DFT0905..
–	–	**DFT660R2WD50M**	66,00	69,00	180,0	125,0	3,5	DFT0905..
–	–	**DFT670R2WD50M**	67,00	67,00	180,0	125,0	3,5	DFT0905..
–	–	**DFT680R2WD50M**	68,00	69,00	180,0	125,0	3,6	DFT0905..
–	–	**DFT690R2WD50M**	69,00	73,00	205,0	140,0	3,6	DFT1105..
–	–	**DFT700R2WD50M**	70,00	71,00	205,0	140,0	3,6	DFT1105..
–	–	**DFT710R2WD50M**	71,00	72,00	205,0	140,0	3,9	DFT1105..
–	–	**DFT720R2WD50M**	72,00	73,00	205,0	140,0	3,9	DFT1105..
–	–	**DFT730R2WD50M**	73,00	79,00	205,0	140,0	4,0	DFT1105..
–	–	**DFT740R2WD50M**	74,00	75,00	205,0	140,0	4,1	DFT1105..
–	–	**DFT750R2WD50M**	75,00	76,00	205,0	140,0	4,2	DFT1105..
–	–	**DFT760R2WD50M**	76,00	77,00	205,0	140,0	4,2	DFT1105..
–	–	**DFT770R2WD50M**	77,00	78,00	205,0	140,0	4,3	DFT1105..
–	–	**DFT780R2WD50M**	78,00	79,00	205,0	140,0	4,3	DFT1105..
–	–	**DFT790R2WD50M**	79,00	82,00	205,0	140,0	4,4	DFT1105..
–	–	**DFT800R2WD50M**	80,00	81,00	205,0	140,0	4,5	DFT1105..
–	–	**DFT810R2WD50M**	81,00	82,00	205,0	140,0	4,5	DFT1105..
–	–	**DFT820R2WD50M**	82,00	83,00	205,0	140,0	4,5	DFT1105..

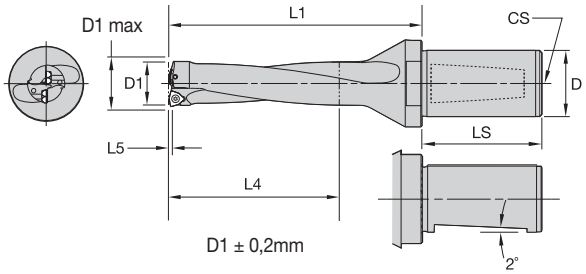
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFT05T3..	**191.924**	**170.024**	9
DFT06T3..	**191.848**	**170.025**	15
DFT0704..	**191.698**	**170.025**	15
DFT0905..	**191.726**	**170.026**	20
DFT1105..	**191.375**	**170.026**	20

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP
50	68	R 1/4 BSP

- Drill shipped with insert screws and Torx wrench.
- See page J70 for inserts.





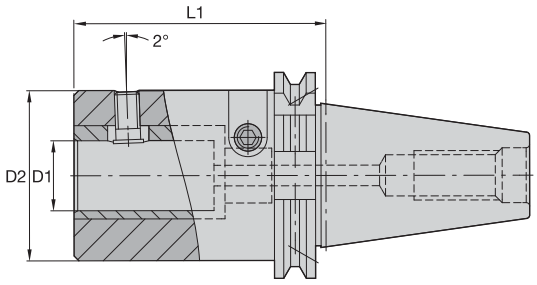
WN/WD Shank • 4 x D • Metric

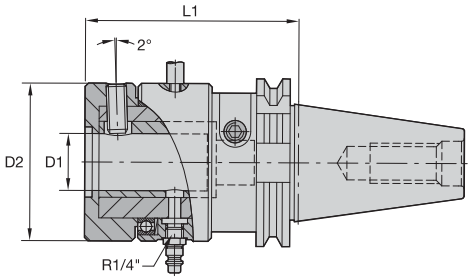
D		D1					gage
32	40	mm	D1 max	L1	L4 max	L5	insert
DFT250R4WD32M	DFT250R4WD40M	25,00	27,00	135,0	100,0	0,8	DFT05T3..
DFT260R4WD32M	DFT260R4WD40M	26,00	27,00	139,0	104,0	0,9	DFT05T3..
DFT270R4WD32M	DFT270R4WD40M	27,00	29,00	143,0	108,0	1,0	DFT05T3..
DFT280R4WD32M	DFT280R4WD40M	28,00	29,00	156,0	112,0	1,1	DFT05T3..
DFT290R4WD32M	DFT290R4WD40M	29,00	31,00	151,0	116,0	1,1	DFT05T3..
DFT300R4WD32M	DFT300R4WD40M	30,00	31,00	160,0	120,0	1,2	DFT05T3..
DFT310R4WD32M	DFT310R4WD40M	31,00	33,00	164,0	124,0	1,3	DFT05T3..
DFT320R4WD32M	DFT320R4WD40M	32,00	33,00	168,0	128,0	1,3	DFT05T3..
–	DFT330R4WD40M	33,00	35,00	177,0	132,0	1,1	DFT06T3..
–	DFT340R4WD40M	34,00	35,00	181,0	136,0	1,3	DFT06T3..
–	DFT350R4WD40M	35,00	38,00	185,0	140,0	1,3	DFT06T3..
–	DFT360R4WD40M	36,00	37,00	189,0	144,0	1,4	DFT06T3..
–	DFT370R4WD40M	37,00	38,00	198,0	148,0	1,5	DFT06T3..
–	DFT380R4WD40M	38,00	41,00	202,0	152,0	1,5	DFT06T3..
–	DFT390R4WD40M	39,00	40,00	206,0	156,0	1,6	DFT06T3..
–	DFT400R4WD40M	40,00	41,00	210,0	160,0	1,7	DFT06T3..
–	DFT410R4WD40M	41,00	44,00	214,0	164,0	1,6	DFT0704..
–	DFT420R4WD40M	42,00	43,00	223,0	168,0	1,7	DFT0704..
–	DFT430R4WD40M	43,00	44,00	227,0	172,0	1,7	DFT0704..
–	DFT440R4WD40M	44,00	47,00	231,0	176,0	1,8	DFT0704..
–	DFT450R4WD40M	45,00	46,00	240,0	180,0	1,9	DFT0704..
–	DFT460R4WD40M	46,00	47,00	244,0	184,0	1,9	DFT0704..
–	DFT470R4WD40M	47,00	50,00	248,0	188,0	2,0	DFT0704..
–	DFT480R4WD40M	48,00	49,00	252,0	192,0	2,0	DFT0704..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFT05T3..	**191.924**	**170.024**	9
DFT06T3..	**191.848**	**170.025**	15
DFT0704..	**191.698**	**170.025**	15

D	LS	CS
32	58	R 1/4 BSP
40	68	R 1/4 BSP





catalogue number	D1	D2	L1	SK 40 DIN 69871 A	SK 40 MAS 403 BT	SK 50 DIN 69871 A	SK 50 MAS 403 BT	coolant ring	kg	lbs
BT40BEWD20096M	20,00	63,0	96,0	–	●	–	–	–	3,0	6.6
DV40BEWD20090M	20,00	63,0	96,0	●	–	–	–	–	3,0	6.6
DV50BEWD32108M	32,00	63,0	108,0	–	–	●	–	–	4,3	9.5
DV40RMEWD32108M	32,00	90,0	108,0	●	–	–	–	●	4,0	8.8
BT50BEWD32127M	32,00	63,0	108,0	–	–	–	●	–	4,3	9.5
DV40BEWD32108M	32,00	63,0	108,0	●	–	–	–	–	4,0	8.8
BT40BEWD32114M	32,00	63,0	114,0	–	●	–	–	–	3,4	7.5
BT40RMEWD32114M	32,00	90,0	114,0	–	●	–	–	●	4,0	8.8
DV50RMEWD32108M	32,00	90,0	108,0	–	–	●	–	●	6,9	15.2

NOTE: n_{max}: 4800 U/min; Pmax: 20 bar

With Coolant Ring

D1	clamping screw	adjusting screw	bumper bar	eccentric bushing	dial key
32	**192.941**	**570.850**	**169.974**	**536.088**	**170.236**

Without Coolant Ring

D1	clamping screw	adjusting screw	eccentric bushing	dial key
20	**193.203**	**570.850**	**536.090**	**170.236**
32	**193.204**	**570.850**	**536.091**	**170.236**

SAFETY NOTE: Use only the supplied plug-in nipple with nominal breakage point: R 1/4'' (6,35mm), catalogue number 191.469.

Intermediate sleeve with dial key included (for coolant ring version, use dial key, bumper bar, and plug-in nipple with predetermined breaking point).

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Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric						
									Recommended Feed Rate (f) by Diameter						
						min	Starting Value	max	Ø (mm)	DFT03... 16,00 - 24,00	DFT05... 25,00 - 32,00	DFT06... 33,00 - 40,00	DFT07... 41,00 - 48,00	DFT09... 49,00 - 68,00	DFT11... 69,00 - 82,00
P	1	S	O	MD	KCU25	310	**325**	360	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	MD	KC7140										
		U	O	MD	KCU25	200	**215**	230	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	MD	KC7140										
		I	O	MD	KCU40	130	**135**	150	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	MD	KC7140										
	2	S	O	HP	KCPK10	310	**325**	360	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		U	O	HP	KCU25	200	**215**	230	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		I	O	HP	KCU40	130	**135**	150	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
	3	S	O	HP	KCPK10	260	**285**	320	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		U	O	HP	KCU25	180	**195**	220	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		I	O	HP	KCU40	110	**120**	140	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
	4	S	O	HP	KCU25	220	**250**	300	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		U	O	HP	KCU40	150	**180**	220	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
		I	O	HP	KC7140	90	**110**	140	mm/r	0,06 - 0,10	0,09 - 0,15	0,11 - 0,18	0,15 - 0,25	0,19 - 0,31	0,19 - 0,31
			I	HP	KC7140										
	5	S	O	HP	KCU25	180	**200**	220	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
		U	O	HP	KCU40	120	**135**	150	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
		I	O	HP	KC7140	70	**85**	100	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
	6	S	O	HP	KCU25	180	**200**	220	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
		U	O	HP	KCU40	120	**135**	150	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
		I	O	HP	KC7140	70	**85**	100	mm/r	0,05 - 0,10	0,07 - 0,13	0,09 - 0,15	0,11 - 0,18	0,12 - 0,23	0,12 - 0,23
			I	HP	KC7140										
M	1	S	O	MD	KC7140	150	**190**	230	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		U	O	MD	KC7140	100	**130**	160	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		I	O	MD	KC7140	60	**80**	100	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
	2	S	O	MD	KC7140	150	**180**	210	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		U	O	MD	KC7140	100	**130**	160	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		I	O	MD	KC7140	60	**80**	100	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
	3	S	O	MD	KC7140	100	**130**	160	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		U	O	MD	KC7140	80	**110**	140	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										
		I	O	MD	KC7140	50	**70**	90	mm/r	0,05 - 0,09	0,07 - 0,13	0,08 - 0,16	0,10 - 0,18	0,11 - 0,21	0,11 - 0,21
			I	MD	KC7140										

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

DFT™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric						
									Recommended Feed Rate (f) by Diameter						
						min	Starting Value	max	Ø (mm)	DFT03... 16,00 - 24,00	DFT05... 25,00 - 32,00	DFT06... 33,00 - 40,00	DFT07... 41,00 - 48,00	DFT09... 49,00 - 68,00	DFT11... 69,00 - 82,00
K	1	S	O	HP	KCPK10	200	**240**	300	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KCU40										
		U	O	HP	KCU25	120	**155**	200	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KCU40										
		I	O	HP	KCU40	80	**100**	125	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KC7140										
	2	S	O	HP	KCPK10	180	**220**	260	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KCU40										
		U	O	HP	KCU25	110	**140**	170	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KC7140										
		I	O	HP	KCU40	80	**100**	120	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KC7140										
	3	S	O	HP	KCPK10	180	**220**	260	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KCU40										
		U	O	HP	KCU25	110	**140**	170	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KC7140										
		I	O	HP	KCU40	80	**100**	120	mm/r	0,07 - 0,13	0,10 - 0,18	0,14 - 0,26	0,18 - 0,33	0,21 - 0,39	0,21 - 0,39
			I	HP	KC7140										
N	1	S	O	ST	KD1425	400	**600**	800	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST	KD1425										
		U	O	HP	KCU40	300	**400**	500	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KCU40										
		I	O	HP	KMF	200	**300**	400	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KMF										
	2	S	O	ST	KD1425	375	**550**	775	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST	KD1425										
		U	O	HP	KCU40	250	**350**	450	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KCU40										
		I	O	HP	KMF	175	**250**	325	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KMF										
	3	S	O	ST	KD1425	350	**500**	650	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST	KD1425										
		U	O	HP	KCU40	250	**350**	450	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KCU40										
		I	O	HP	KMF	150	**250**	350	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KMF										
	4	S	O	ST	KD1425	400	**600**	800	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST	KD1425										
		U	O	HP	KCU40	250	**350**	450	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KCU40										
		I	O	HP	KMF	200	**300**	400	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KMF										
	5	S	O	ST	KD1425	400	**600**	800	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST	KD1425										
		U	O	HP	KCU40	250	**350**	450	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KCU40										
		I	O	HP	KMF	200	**300**	400	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	HP	KMF										

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions

Pocket seat: I = Inboard insert; O = Outboard insert

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Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric						
									Recommended Feed Rate (f) by Diameter						
						min	Starting Value	max	Ø (mm)	DFT03... 16,00 - 24,00	DFT05... 25,00 - 32,00	DFT06... 33,00 - 40,00	DFT07... 41,00 - 48,00	DFT09... 49,00 - 68,00	DFT11... 69,00 - 82,00
S	1	S	O	HP	KCU40	60	**70**	75	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	HP	KCU40										
		U	O	HP	KCU40	40	**50**	60	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	HP	KC7140										
		I	O	MD	KC7140	25	**30**	40	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	MD	KC7140										
	2	S	O	HP	KCU40	50	**60**	70	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	HP	KCU40										
		U	O	HP	KCU40	30	**40**	50	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	HP	KC7140										
		I	O	MD	KC7140	25	**30**	40	mm/r	0,03 - 0,05	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,08 - 0,13	0,08 - 0,13
			I	MD	KC7140										
	3	S	O	HP	KCU40	70	**80**	90	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	HP	KCU40										
		U	O	HP	KCU40	50	**60**	70	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	HP	KC7140										
		I	O	MD	KC7140	30	**40**	50	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	MD	KC7140										
	4	S	O	HP	KCU40	70	**80**	90	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	HP	KCU40										
		U	O	HP	KCU40	50	**60**	70	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	HP	KC7140										
		I	O	MD	KC7140	30	**40**	50	mm/r	0,04 - 0,06	0,05 - 0,08	0,06 - 0,10	0,06 - 0,10	0,09 - 0,15	0,09 - 0,15
			I	MD	KC7140										

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

HTS Series Indexable Deep-Hole Drilling System

Primary Application

HTS series indexable drills are designed for deep-hole drilling up to 10 x D in steel, stainless steel, ductile iron, cast iron, and non-ferrous materials. The three HTS systems — HTS-C, HTS, HTS-R — cover a diameter range of 20–270mm.

Features and Benefits

HTS-C Indexable Drill System

- Diameter range 20–45mm in 5 x D and 8 x D ratios.
- Used with pilot drills for best centring possibilities.
- Trigon-shaped inboard insert with three cutting edges, available in various geometries and grades.
- Up to four economic cutting edges with the squared-outboard insert.
- Variable flute helix provides excellent chip evacuation.
- Customised body design available.

HTS Indexable Drill System

- Large diameter range from 45–270mm with standard drill heads.
- Drill Fix DFT™ trigon inserts as outboard and inboard insert offer the best centring capabilities as well as square-outboard insert cartridges for increased surface and hole quality.
- Various insert geometries and grades available as standard.
- Adjust drilling depth and diameter range with suitable extensions and reducers.
- Diameter adjustment by shortening outer cartridge.
- Customised drilling heads up to 540mm.

HTS-R Indexable Drill System

- Modular system that uses drill heads equipped with DFR™ insert cartridges.
- Five drill heads cover the diameter range 40–55mm.
- Drill Fix™ DFR rectangular inboard and outboard inserts offer the highest feed rates at small diameters.
- Various insert geometries and grades available as standard.
- Adjustable drilling depth and diameters by using extensions and reducers.
- Diameter adjustment by shortening outer cartridge.

HTS-C Indexable Drill System

HTS-C Indexable Drills are designed for drilling 5 x D and 8 x D in steel, stainless steel, ductile iron, cast iron, and non-ferrous materials. The HTS-C covers a diameter range from 20–45mm.

When using reduced feeds and cutting speeds, HTS-C can easily be applied on older or low-power machines.

Features and Benefits

Productivity

- Achieve high stability and hole straightness due to the pilot drill that offers the best centring capabilities.
- Benefit from flute helix design that provides excellent chip evacuation resulting in long tool body life.
- Suitable for older or low-power machines due to reduced feed and cutting speed capabilities.

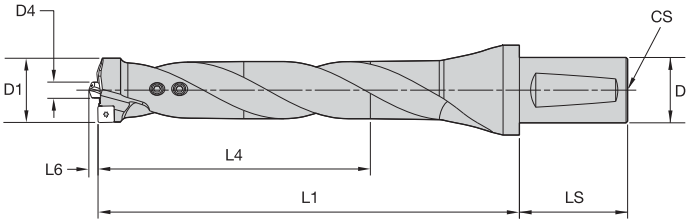
Versatility

- Diameter range of 20–45mm.
- 5 x D and 8 x D L/D ratio as standard.
- Inserts and pilot drills can be applied in various diameters and L/D ratios.
- Carbide and HSS pilot drills available for optimised productivity.

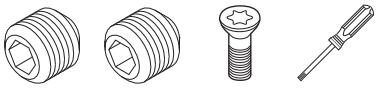
Customisation

- Intermediate diameters available.
- Engineered solutions L/D up to 15 x D available.
- Carbide guidepads available.

- Drills shipped with insert, clamping, and adjusting screws and Torx wrench.
- Order pilot drills separately; see page J37.
- Order inserts separately; see pages J70, J71, J74, J75, J78, and J79.



WN/WD Shank • 5 x D • Metric

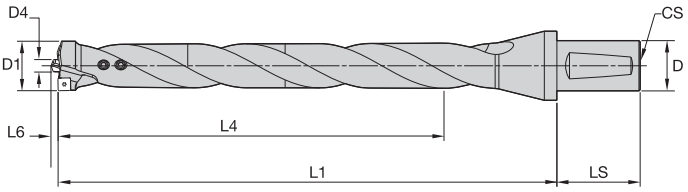


catalogue number	D1 mm	D	D4	L1	L4 max	L6	exterior insert	interior insert	adjusting screw	clamping screw	insert screw	wrench	Torx size
3.75200R215	20,00	20,0	5,0	130,0	100,0	2,3	SPGX / SPHX0602..	WOGX0302	**128.406**	**191.720**	**192.432**	**170.028**	T8
3.75210R215	21,00	20,0	5,0	130,0	105,0	2,3	SPGX / SPHX0602..	WOGX0302	**128.406**	**191.720**	**192.432**	**170.028**	T8
3.75220R215	22,00	20,0	5,0	144,0	110,0	2,5	SPGX / SPHX0602..	WOGX0302..	**128.408**	**191.720**	**192.432**	**170.028**	T8
3.75230R215	23,00	20,0	5,0	144,0	115,0	2,5	SPGX / SPHX0602..	WOGX0302..	**128.408**	**192.057**	**192.432**	**170.028**	T8
3.75240R215	24,00	20,0	5,0	144,0	120,0	2,5	SPGX / SPHX0602..	WOGX0302	**128.408**	**192.057**	**192.432**	**170.028**	T8
3.75250R215	25,00	25,0	6,0	164,0	125,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.508**	**190.114**	**192.432**	**170.028**	T8
3.75260R215	26,00	25,0	6,0	164,0	130,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.508**	**190.114**	**192.432**	**170.028**	T8
3.75270R215	27,00	25,0	6,0	164,0	135,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.114**	**192.432**	**170.028**	T8
3.75280R215	28,00	25,0	6,0	184,0	140,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75290R215	29,00	25,0	6,0	184,0	145,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75300R215	30,00	25,0	6,0	184,0	150,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75310R215	31,00	32,0	8,0	206,0	155,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75320R215	32,00	32,0	8,0	206,0	160,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75330R215	33,00	32,0	8,0	206,0	165,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75340R215	34,00	32,0	8,0	206,0	170,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75350R215	35,00	32,0	8,0	228,0	175,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75360R215	36,00	32,0	8,0	228,0	180,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75370R215	37,00	32,0	8,0	228,0	185,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75380R215	38,00	32,0	8,0	228,0	190,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75390R215	39,00	32,0	8,0	228,0	195,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75400R215	40,00	40,0	10,0	258,0	200,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75410R215	41,00	40,0	10,0	258,0	205,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75420R215	42,00	40,0	10,0	258,0	210,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75430R215	43,00	40,0	10,0	258,0	215,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.816**	**SS03M014**	**191.916**	**170.025**	T15
3.75440R215	44,00	40,0	10,0	258,0	220,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.816**	**SS03M014**	**191.916**	**170.025**	T15
3.75450R215	45,00	40,0	10,0	258,0	225,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.816**	**SS03M014**	**191.916**	**170.025**	T15

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D	LS	CS
20	45	4
25	45	5
32	58	6
40	68	6

- Drills shipped with insert, clamping, and adjusting screws and Torx wrench.
- Order pilot drills separately; see page J37.
- Order inserts separately; see pages J70, J71, J74, J75, J78, and J79.



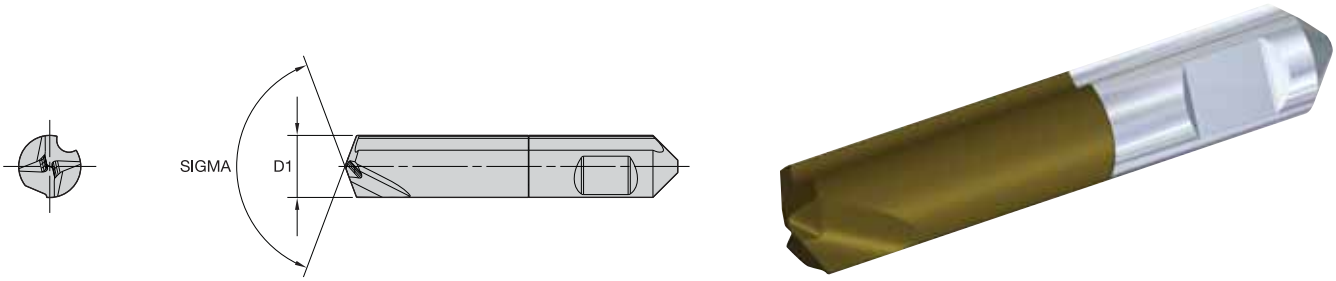
WN/WD Shank • 8 x D • Metric

catalogue number	D1 mm	D	D4	L1	L4 max	L6	exterior insert	interior insert	adjusting screw	clamping screw	insert screw	wrench	Torx size
3.75200R218	20,00	20	5,0	202,0	160,0	2,3	SPGX / SPHX0602..	WOGX0302..	**128.406**	**191.720**	**192.432**	**170.028**	T8
3.75210R218	21,00	20	5,0	202,0	168,0	2,3	SPGX / SPHX0602..	WOGX0302..	**128.406**	**191.720**	**192.432**	**170.028**	T8
3.75220R218	22,00	20	5,0	224,0	176,0	2,5	SPGX / SPHX0602..	WOGX0302..	**128.408**	**191.720**	**192.432**	**170.028**	T8
3.75230R218	23,00	20	5,0	224,0	184,0	2,5	SPGX / SPHX0602..	WOGX0302..	**128.408**	**192.057**	**192.432**	**170.028**	T8
3.75240R218	24,00	20	5,0	224,0	192,0	2,5	SPGX / SPHX0602..	WOGX0302..	**128.408**	**192.057**	**192.432**	**170.028**	T8
3.75250R218	25,00	25	6,0	250,0	200,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.508**	**190.114**	**192.432**	**170.028**	T8
3.75260R218	26,00	25	6,0	250,0	208,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.508**	**190.114**	**192.432**	**170.028**	T8
3.75270R218	27,00	25	6,0	250,0	216,0	3,0	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.114**	**192.432**	**170.028**	T8
3.75280R218	28,00	25	6,0	279,0	224,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75290R218	29,00	25	6,0	279,0	232,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75300R218	30,00	25	6,0	279,0	240,0	3,2	SPGX / SPHX0703..	DFT0303..	**128.510**	**190.125**	**192.432**	**170.028**	T8
3.75310R218	31,00	32	8,0	316,0	248,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75320R218	32,00	32	8,0	316,0	256,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75330R218	33,00	32	8,0	316,0	264,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.610**	**SS03M012**	**191.924**	**170.024**	T9
3.75340R218	34,00	32	8,0	316,0	272,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75350R218	35,00	32	8,0	351,0	280,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75360R218	36,00	32	8,0	351,0	288,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75370R218	37,00	32	8,0	351,0	296,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75380R218	38,00	32	8,0	351,0	304,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75390R218	39,00	32	8,0	351,0	312,0	4,0	SPGX / SPHX0903..	DFT05T3..	**128.612**	**SS03M012**	**191.924**	**170.024**	T9
3.75400R218	40,00	40	10,0	397,0	320,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75410R218	41,00	40	10,0	397,0	328,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75420R218	42,00	40	10,0	397,0	336,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75430R218	43,00	40	10,0	397,0	344,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.816**	**SS03M014**	**191.916**	**170.025**	T15
3.75440R218	44,00	40	10,0	397,0	352,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.812**	**SS03M014**	**191.916**	**170.025**	T15
3.75450R218	45,00	40	10,0	397,0	360,0	4,5	SPGX / SPHX1204..	DFT06T3..	**128.816**	**SS03M014**	**191.916**	**170.025**	T15

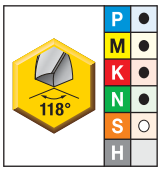
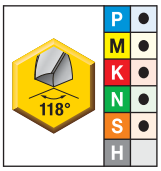
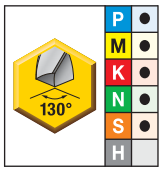
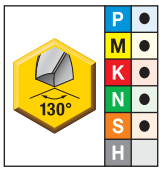
WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

D	LS	CS
20	45	4
25	45	5
32	58	6
40	68	6

• Use in metric drill bodies; see page J35.



HTS-C • Pilot Drills

				
high-speed steel uncoated	high-speed steel coated	solid carbide uncoated	solid carbide coated	D1
A30	AS3	G13	CS3	mm
B503S04000	B503S04000	–	–	4,00
B503S05000	B503S05000	–	–	5,00
B503S06000	B503S06000	–	–	6,00
B503S08000	B503S08000	–	–	8,00
B503S10000	B503S10000	–	–	10,00
–	–	B504S04000	B504S04000	4,00
–	–	B504S05000	B504S05000	5,00
–	–	B504S06000	B504S06000	6,00
–	–	B504S08000	B504S08000	8,00
–	–	B504S10000	B504S10000	10,00

Diameter Reference for Pilot Drill

	reference drill diameter	
D1	min	max
mm	mm	mm
4	–	–
5	20	24
6	25	30
8	31	39
10	40	45

HTS-C • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	20,00 - 24,00	25,00 - 30,00	31,00 - 39,00	40,00 - 45,00
P	1	S	O	SPHX…R-20	KC7215	107	**200**	244	mm/r	0,04 - 0,06	0,05 - 0,07	0,08 - 0,12	0,08 - 0,12
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	74	**140**	170	mm/r	0,04 - 0,06	0,05 - 0,07	0,08 - 0,12	0,08 - 0,12
			I	DFT-HP	KCU40								
	2	S	O	SPHX…R-20	KC7215	101	**170**	232	mm/r	0,04 - 0,06	0,05 - 0,07	0,08 - 0,12	0,10 - 0,16
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	69	**119**	158	mm/r	0,04 - 0,06	0,05 - 0,07	0,08 - 0,12	0,10 - 0,16
			I	DFT-HP	KC7140								
	3	S	O	SPHX…R-20	KC7215	96	**150**	220	mm/r	0,05 - 0,08	0,06 - 0,1	0,08 - 0,13	0,09 - 0,17
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	64	**105**	146	mm/r	0,05 - 0,08	0,06 - 0,1	0,08 - 0,13	0,09 - 0,17
			I	DFT-HP	KC7140								
	4	S	O	SPHX…R-20	KC7215	75	**130**	172	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,12	0,08 - 0,13
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	52	**89**	120	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,12	0,08 - 0,13
			I	DFT-HP	KC7140								
	5	S	O	SPHX…R-20	KC7215	58	**100**	132	mm/r	0,04 - 0,06	0,04 - 0,07	0,06 - 0,10	0,06 - 0,11
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	35	**60**	79	mm/r	0,04 - 0,06	0,04 - 0,07	0,06 - 0,10	0,06 - 0,11
			I	DFT-HP	KC7140								
	6	S	O	SPHX…R-20	KC7215	75	**95**	172	mm/r	0,04 - 0,06	0,05 - 0,07	0,06 - 0,10	0,07 - 0,11
			I	DFT-HP	KCU40								
		U	O	SPHX…R-20	KC7140	52	**75**	120	mm/r	0,04 - 0,06	0,05 - 0,07	0,06 - 0,10	0,07 - 0,11
			I	DFT-HP	KC7140								
M	1	S	O	SPGX…-31	KC7140	55	**112**	137	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								
		U	O	SPGX…-31	KC7140	41	**84**	103	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								
	2	S	O	SPGX…-31	KC7140	55	**101**	116	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								
		U	O	SPGX…-31	KC7140	41	**76**	87	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								
	3	S	O	SPGX…-31	KC7140	55	**90**	107	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								
		U	O	SPGX…-31	KC7140	41	**67**	80	mm/r	0,03 - 0,05	0,03 - 0,05	0,05 - 0,07	0,05 - 0,07
			I	DFT-HP	KC7140								

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

HTS-C • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	20,00 - 24,00	25,00 - 30,00	31,00 - 39,00	40,00 - 45,00
K	1	S	O	SPHX...R-21	KC7215	106	**190**	230	mm/r	0,08 - 0,13	0,09 - 0,15	0,10 - 0,16	0,12 - 0,20
			I	DFT-GD	KCU40								
		U	O	SPHX...R-21	KC7215	74	**130**	160	mm/r	0,08 - 0,13	0,09 - 0,15	0,10 - 0,16	0,12 - 0,20
			I	DFT-GD	KCU40								
	2	S	O	SPHX...R-21	KC7215	106	**171**	230	mm/r	0,08 - 0,13	0,09 - 0,15	0,10 - 0,16	0,12 - 0,20
			I	DFT-GD	KCU40								
		U	O	SPHX...R-21	KC7215	74	**117**	160	mm/r	0,08 - 0,13	0,09 - 0,15	0,10 - 0,16	0,12 - 0,20
			I	DFT-GD	KCU40								
	3	S	O	SPHX...R-21	KC7215	101	**152**	218	mm/r	0,06 - 0,13	0,08 - 0,15	0,10 - 0,16	0,11 - 0,2
			I	DFT-GD	KCU40								
		U	O	SPHX...R-21	KC7215	67	**104**	145	mm/r	0,60 - 0,13	0,08 - 0,15	0,10 - 0,16	0,11 - 0,2
			I	DFT-GD	KCU40								
N	1	S	O	SPHX...R-22	KM1	183	**294**	457	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
		U	O	SPHX...R-20	KM1	121	**196**	304	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
	2	S	O	SPHX...R-22	KM1	183	**365**	457	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
		U	O	SPHX...R-22	KM1	121	**176**	304	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
	3	S	O	SPHX...R-22	KM1	113	**235**	283	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
		U	O	SPHX...R-22	KM1	79	**157**	198	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
	4	S	O	SPHX...R-22	KM1	113	**235**	283	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
		U	O	SPHX...R-22	KM1	79	**157**	198	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
	5	S	O	SPHX...R-20	KM1	137	**265**	360	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
		U	O	SPHX...R-20	KM1	92	**176**	242	mm/r	0,04 - 0,06	0,04 - 0,06	0,09 - 0,12	0,10 - 0,14
			I	DFT-HP	KMF								
S	1	S	O	SPGX...-31	KC7215	21	**40**	49	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,06	0,04 - 0,06
			I	DFT-GD	KCU40								
		U	O	SPGX...-31	KC7215	18	**30**	37	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,06	0,04 - 0,06
			I	DFT-GD	KC7140								
	2	S	O	SPGX...-31	KC7215	19	**35**	42	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,06	0,04 - 0,06
			I	DFT-GD	KCU40								
		U	O	SPGX...-31	KC7215	18	**25**	34	mm/r	0,03 - 0,05	0,03 - 0,05	0,04 - 0,06	0,04 - 0,06
			I	DFT-GD	KC7140								

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

HTS Indexable Drill System

The HTS Indexable Drill system is one of the most reliable deep-hole drilling systems available. Drilling up to 10 x D can be easily achieved in materials like steel, stainless steel, ductile iron, cast iron, and non-ferrous materials. Various drilling heads cover the diameter range 45–270mm.

HTS drill heads are equipped with pilot drills and cartridges using trigon-shaped Drill Fix™ DFT™ inserts. Use HTS extensions and reducers to achieve various diameters and depths of drilling.

For improved surface qualities and increased reliability, finishing HTS cartridges with a squared-outboard insert are available as standard.

Features and Benefits

Productivity

- Achieve high hole accuracy by using pilot drills and trigon-shaped inserts.
- Benefit from improved surface qualities using finishing cartridges with squared outboard insert.
- Adjust outer cartridge to produce the desired cutting diameter, reducing inventory.
- Same insert size is used in each insert cartridge, reducing inventory costs.

Versatility

- Diameter range covering 45–270mm.
- L/D ratio up to 10 x D as standard.
- Inserts and pilot drills can be applied in various heads and cartridges, covering various diameters.
- Large variety of DFT insert grades and geometries available.
- Finishing cartridge with squared outboard insert offering four cutting edges for high process stability.
- Carbide pilot drills are available upon request.

Customisation

- Wear pads can be added for increased stability.
- Fully engineered solutions available.
- Engineered solutions covering diameter range up to 540mm are possible.

HTS-R Indexable Drill System

The HTS-R extends the HTS system by covering diameters between 40–55mm.

Up to 30% higher feed rates achievable with rectangular-shaped Drill Fix™ DFR™ inserts with the added benefit of improved chip control.

Features and Benefits

Productivity

- Benefit from better chip control and higher insert stability for longer tool body life.
- Same insert size is used in each insert cartridge.

Versatility

- Diameter range covering 40–55mm with five drilling heads.
- Large variety of DFR insert grades and geometries available.
- Outer cartridges can be adjusted to produce the desired cutting diameter.
- Extensions and reducers are available as standard.
- Solid carbide and HSS pilot drills are available to match the cutting conditions to your specific applications.

Customisation

- Wear pads can be added for increased stability.
- Fully engineered solutions available.

Pilot drill should be installed and set to the proper length before installing the inner cartridge.

Install inner cartridge, then the outer insert.

Install inner insert into cartridge.

HTS-R

inner cartridge

pilot drill

outer cartridge

HTS Ø 45–102mm

inner cartridge*

pilot drill

outer cartridge*

HTS Ø 102–170mm

inner cartridge

pilot drill

outer cartridge

HTS Ø 195–270mm

inner cartridge

pilot drill

outer cartridge

HTS with SPHX outboard insert

inner cartridge

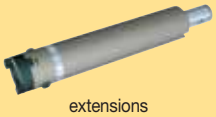
pilot drill

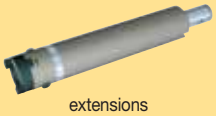
outer cartridge**

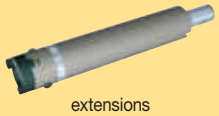
*for Ø 180–186mm: 2 inner and outer cartridges are used

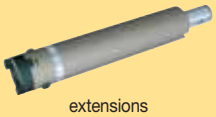
HTS-R head

HTS head


extensions


extensions


extensions


extensions

reducer

reducer

WARNING
- **DO NOT exceed 2 extensions or 1 extension plus reducer.**

DV

BT

CV with rotary ring

CV

HSK

KM

HTS coolant coupling

****for Ø 102–170mm & Ø 195–240mm: the outer cartridge uses 3 inserts**

HTS-R

inner cartridge

pilot drill

outer cartridge

HTS-R head

HTS Ø 45–102mm

inner cartridge*

pilot drill

outer cartridge*

*for Ø 180–186mm:
2 inner and outer
cartridges are used

HTS Ø 102–170mm

inner cartridge

pilot drill

outer cartridge

HTS Ø 195–270mm

inner cartridge

pilot drill

outer cartridge

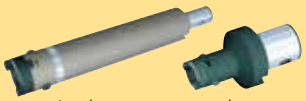
**HTS with SPHX
outboard insert**

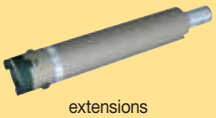
inner cartridge

pilot drill

outer cartridge**

HTS head


extensions reducer


extensions

reducer

basic shanks

DV

BT

BT with
coolant ring

CV

CV with
coolant ring

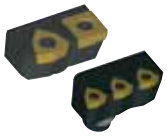
HSK

**for Ø 102–170mm & Ø 195–240mm:
the outer cartridge uses 3 inserts

To assemble your HTS(-R) head, choose the desired drill diameter range from the left-hand column.
Next, follow the columns to the right, and select the appropriate component from each column to complete your HTS(-R) head.

						HTS(-R) head with DFR/DFT inserts								
						inner cartridge				outer cartridge				
	drilling range			L1										
	mm	in	HTS head	mm	in	cartridge	n	insert	n	cartridge	n	insert	n	pilot drill
HTS heads with DFR™ inserts	40–43	1.57–1.69	HTSR040R025M	60	2.36	HTSR10CI	1	DFR0302.	2	HTSR10CE	1	DFR0302.	2	B513S08.
	43–46	1.69–1.81	HTSR043R025M	70	2.76	HTSR11CI	1	DFR0302.	2	HTSR11CE	1	DFR0302.	2	B513S10.
	46–49	1.81–1.93	HTSR046R028M			HTSR12CI	1	DFR0403.	2	HTSR12CE	1	DFR0403.	2	B513S10.
	49–52	1.93–2.05	HTSR049R028M			HTSR13CI	1	DFR0403.	2	HTSR13CE	1	DFR0403..	2	B513S10.
	52–55	2.05–2.17	HTSR052R028M			HTSR14CI	1	DFR0403.	2	HTSR14CE	1	DFR0403..	2	B513S10.
HTS heads with DFT™/SPHX inserts	45–50	1.77–1.97	3.76045R028V	50	1.97	3.77000R050V	1	DFT0303.	2	3.77000R051V	1	DFT0303.	2	B510S08.
	50–55	1.97–2.17	3.76050R028V			3.77000R052V	1	DFT0303.	2	3.77000R053V	1	DFT0303.	2	B510S08.
	55–58	2.17–2.28	3.76055R032V	60	2.36	3.77000R038V	1	DFT05T3.	2	3.77000R039V	1	DFT05T3.	2	B510S08.
	58–63	2.28–2.48	3.76058R032V			3.77000R023V	1	DFT05T3.	2	3.77000R024V	1	DFT05T3.	2	B510S10.
	63–68	2.48–2.68	3.76063R032V			3.77000R025V	1	DFT05T3.	2	3.77000R024V	1	DFT05T3.	2	B510S10.
	63–68	2.48–2.68	**3.76063R040V***	70	2.76	3.77000R025V	1	DFT05T3.	2	3.77000R024V	1	DFT05T3.	2	B510S10.
	68–73	2.68–2.87	3.76068R040V			3.77000R026V	1	DFT05T3.	2	3.77000R027V	1	DFT05T3.	2	B510S10.
	73–78	2.87–3.07	3.76073R040V			3.77000R026V	1	DFT05T3.	2	3.77000R027V	1	DFT05T3.	2	B510S15.
	78–84	3.07–3.31	3.76078R040V			3.77000R028V	1	DFT06T3.	2	3.77000R029V	1	DFT06T3.	2	B510S15.
	78–84	3.07–3.31	**3.76078R048V***	70	2.76	3.77000R028V	1	DFT06T3.	2	3.77000R029V	1	DFT06T3.	2	B510S15.
	84–90	3.31–3.54	3.76084R048V			3.77000R028V	1	DFT06T3.	2	3.77000R029V	1	DFT06T3.	2	B510S15.
	90–94°	3.54–3.70	3.76090R048V			–		–		–		–		–
	90–96	3.54–3.78	3.76090R048V			3.77000R030V	1	DFT06T3.	2	3.77000R031V	1	DFT06T3.	2	B510S15.
	96–100°	3.78–3.93	3.76096R048V			–		–		–		–		–
	96–102	3.78–4.02	3.76096R048V			3.77000R030V	1	DFT06T3.	2	3.77000R031V	1	DFT06T3.	2	B510S20.
	96–100°	3.78–3.93	**3.76096R058V***	80	3.15	–		–		–		–		–
	96–102	3.78–4.02	**3.76096R058V***			3.77000R030V	1	DFT06T3.	2	3.77000R031V	1	DFT06T3.	2	B510S20.
	102–108	4.02–4.25	3.76102R058V			3.77000R081V	1	DFT05T3.	3	3.77000R082V	1	DFT05T3.	3	B510S20.
	108–115	4.25–4.53	3.76108R058V			3.77000R083V	1	DFT06T3.	3	3.77000R084V	1	DFT06T3.	3	B510S20.
	115–122	4.53–4.80	3.76115R070V	90	3.54	3.77000R085V	1	DFT06T3.	3	3.77000R086V	1	DFT06T3.	3	B510S25.
	122–130	4.80–5.12	3.76122R070V			3.77000R079V	1	DFT06T3.	3	3.77000R080V	1	DFT06T3.	3	B510S25.
	130–140	5.12–5.51	3.76130R070V			3.77000R087V	1	DFT06T3.	3	3.77000R088V	1	DFT06T3.	3	B510S25.
	140–150	5.51–5.91	3.76140R080V	100	3.94	3.77000R077V	1	DFT0704.	3	3.77000R078V	1	DFT0704.	3	B510S25.
	150–158	5.91–6.22	3.76150R080V			3.77000R075V	1	DFT0704.	3	3.77000R076V	1	DFT0704.	3	B510S25.
	158–162	6.22–6.38	3.76158R080V			3.77000R073V	1	DFT0704.	3	3.77000R074V	1	DFT0704.	3	B510S25.
	162–170	6.38–6.70	3.76162R080V			3.77000R048V	1	DFT0704.	3	3.77000R049V	1	DFT0704.	3	B510S30.
	180–184°	7.08–7.24	3.76180R110	125	4.92	–		–		–		–		–
	180–186	7.08–7.32	3.76180R110			3.77000R030V	3	DFT06T3.	4	3.77000R031V	1	DFT06T3.	4	B510S30.
	195–201	7.68–7.91	3.76195R110			3.77000R081V	3	DFT05T3.	6	3.77000R082V	1	DFT05T3.	6	B510S30.
	213–220	8.39–8.66	3.76213R125			3.77000R083V	3	DFT06T3.	6	3.77000R084V	1	DFT06T3.	6	B510S30.
	230–240	9.06–9.45	3.76230R160	150	5.91	3.77000R079V	2	DFT06T3.	6	3.77000R080V	2	DFT06T3.	6	B510S30.
	260–270	10.24–10.63	3.76260R160			3.77000R077V	2	DFT06T3.	6	3.77000R078V	2	DFT06T3.	6	B510S30.

° Decreased diameter range by using SPHX insert in exterior cartridge.
* Drill heads with reinforced body for short-chipping materials
n = Required quantity.

	HTS head with DFT inserts and SPHX outboard insert												
	inner cartridge						outer cartridge						
													
	cartridge	n	cartridge	n	insert	n	cartridge	n	insert	n	insert	n	pilot drill
	–		–		–		–		–		–		–
	–		–		–		–		–		–		–
	–		–		–		–		–		–		–
	–		–		–		–		–		–		–
	–		–		–		–		–		–		–
	3.77000R250V	1	–		DFT0303.	2	3.77000R251V	1	DFT0303.	1	SPHX0703.	1	B510S08.
	3.77000R252V	1	–		DFT0303.	2	3.77000R253V	1	DFT0303.	1	SPHX0703.	1	B510S08.
	3.77000R038V	1	–		DFT05T3.	2	3.77000R239V	1	DFT05T3.	1	SPHX0903.	1	B510S08.
	3.77000R023V	1	–		DFT05T3.	2	3.77000R224V	1	DFT05T3.	1	SPHX0903.	1	B510S10.
	3.77000R025V	1	–		DFT05T3.	2	3.77000R224V	1	DFT05T3.	1	SPHX0903.	1	B510S10.
	3.77000R025V	1	–		DFT05T3.	2	3.77000R224V	1	DFT05T3.	1	SPHX0903.	1	B510S10.
	3.77000R026V	1	–		DFT05T3.	2	3.77000R227V	1	DFT05T3.	1	SPHX0903.	1	B510S10.
	3.77000R026V	1	–		DFT05T3.	2	3.77000R227V	1	DFT05T3.	1	SPHX0903.	1	B510S15.
	3.77000R028V	1	–		DFT06T3.	2	3.77000R229V	1	DFT06T3.	1	SPHX0903.	1	B510S15.
	3.77000R028V	1	–		DFT06T3.	2	3.77000R229V	1	DFT06T3.	1	SPHX0903.	1	B510S15.
	3.77000R228V	1	–		DFT06T3.	2	3.77000R229V	1	DFT06T3.	1	SPHX0903.	1	B510S15.
	3.77000R230V	1	–		DFT06T3.	2	3.77000R231V	1	DFT06T3.	1	SPHX0903.	1	B510S15.
	–		–		–		–		–		–		–
	3.77000R230V	1	–		DFT06T3.	2	3.77000R231V	1	DFT06T3.	1	SPHX0903.	1	B510S20.
	–		–		–		–		–		–		–
	3.77000R230V	1	–		DFT06T3.	2	3.77000R231V	1	DFT06T3.	1	SPHX0903.	1	B510S20.
	–		–		–		–		–		–		–
	3.77000R081V	1	–		DFT05T3.	3	3.77000R282V	1	DFT05T3.	2	SPHX0903.	1	B510S20.
	3.77000R083V	1	–		DFT06T3.	3	3.77000R284V	1	DFT06T3.	2	SPHX1204.	1	B510S20.
	3.77000R085V	1	–		DFT06T3.	3	3.77000R286V	1	DFT06T3.	2	SPHX1204.	1	B510S25.
	3.77000R079V	1	–		DFT06T3.	3	3.77000R280V	1	DFT06T3.	2	SPHX1204.	1	B510S25.
	3.77000R087V	1	–		DFT06T3.	3	3.77000R288V	1	DFT06T3.	2	SPHX1204.	1	B510S25.
	3.77000R077V	1	–		DFT0704.	3	3.77000R278V	1	DFT0704.	2	SPHX1505.	1	B510S25.
	3.77000R075V	1	–		DFT0704.	3	3.77000R276V	1	DFT0704.	2	SPHX1204.	1	B510S25.
	3.77000R073V	1	–		DFT0704.	3	3.77000R274V	1	DFT0704.	2	SPHX1204.	1	B510S25.
	3.77000R248V	1	–		DFT0704.	3	3.77000R249V	1	DFT0704.	2	SPHX1505.	1	B510S30.
	3.77000R230V	3	–		DFT06T3.	4	3.77000R231V	1	DFT06T3.	3	SPHX0903.	1	B510S30.
	–		–		–		–		–		–		–
	3.77000R081V	3	–		DFT05T3.	9	3.77000R282V	1	DFT05T3.	2	SPHX0903.	1	B510S30.
	3.77000R083V	3	–		DFT06T3.	9	3.77000R284V	1	DFT06T3.	2	SPHX1204.	1	B510S30.
	3.77000R079V	2	3.77000R080V	1	DFT06T3.	9	3.77000R280V	1	DFT06T3.	2	SPHX1204.	1	B510S30.
	–		–		–		–		–		–		–

HTS Tool Assembly Combinations

- Select your appropriate drill diameter range.
- Choose the appropriate adaptor and shank size.
- Follow the columns to the right, and select the appropriate components from each column to complete your HTS(-R) tool.

	drilling range		shank		DV assembly details		BT assembly details		CV assembly details		HSK assembly details
	mm	in		D1	40	50	40	50	40	50	50/63/100
HTS heads with DFR™ Inserts	40–43 43–46	1.57–1.69 1.69–1.81	WD/WN	32	DV40BWD32075M **DV40RMWD32115M****	DV50BWD32060M **DV50RMWD32140M****	BT40BWD32070M	BT50BWD32080M	CV40BWD32M343 **CV40RMWD32M453****	CV50BWD32M343 **CV50RMWD32M453****	HSK50ASWN32110M HSK63ASWN32090M HSK100ASWN32100M
				50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	–
			SS(F)	1.50	–	–	–	–	CV40BSSF150575	CV50SS150400 (AD) CV50SS150600 (AD) CV50SS150800 (AD) CV50BSSF150450	–
	46–49 49–52 52–55	1.81–1.93 1.93–2.05 2.05–2.17	WD/WN	32	DV40BWD32075M **DV40RMWD32115M****	DV50BWD32060M **DV50RMWD32140M****	–	BT50BWD32080M	CV40BWD32M343 **CV40RMWD32M453****	CV50BWD32M343 **CV50RMWD32M453****	–
				50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	–
			SS(F)	2.00	–	–	–	–	–	CV50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–
			HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	–
HTS heads with DFT™/SPHX inserts	45–50 50–55	1.77–1.97 1.97–2.17	WD/WN	32	DV40BWD32075M **DV40RMWD32115M****	DV50BWD32060M **DV50RMWD32140M****	BT40BWD32070M	BT50BWD32080M	CV40BWD32M343 **CV40RMWD32M453****	CV50BWD32M343 **CV50RMWD32M453****	HSK50ASWN32110M HSK63ASWN32090M HSK100ASWN32100M
				50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	HSK100ASWN50110M
			SS(F)	2.00	–	–	–	–	–	CV50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–
			HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	–
	55–58 58–63 63–68	2.17–2.28 2.28–2.48 2.48–2.68	WD/WN	32	DV40BWD32075M **DV40RMWD32115M****	DV50BWD32060M **DV50RMWD32140M****	BT40BWD32070	BT50BWD32080M	CV40BWD32M343 **CV40RMWD32M453****	CV50BWD32M343 **CV50RMWD32M453****	HSK50ASWN32110M HSK63ASWN32090M HSK100ASWN32100M
				50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	HSK100ASWN50110M
			SS(F)	2.00	–	–	–	–	–	CV50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–
			HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	–
	63–68* 68–73 73–78 78–84	2.48–2.68 2.68–2.87 2.87–3.07 3.07–3.31	WD/WN	50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	HSK100ASWN50110M
			SS(F)	2.00	–	–	–	–	–	V50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–
			HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	–

* HTS drilling head with reinforced body for short-chipping materials.
** Adaptor with coolant ring.
The combinations shown above are not complete. Ask your Kennametal Representative to get the most reasonable solution for your application.
Please note that the assembled total length of the drilling tool is not necessarily the total achievable drilling depth.

KM	basic shank				reducer					extension			HTS head
assembly details		L4		L4		L1		for use with coolant adaptor			L1		
80	metric	mm	inch	in		mm	in	coolant adaptor	shell mill DV/BT		mm	in	
–	5.34032-025115 5.34032-025200	110 195	–	–	–	–	–	–	–	5.34125R025150	160	6.30	HTSR040R025M HTSR043R025M
–	5.34050-025300 5.34050-025450	270 420	–	–	–		–	–	–				
–	–	–	SSF150HTS130239 SSF150HTS130664 SSF150HTS131114 SSF150HTS131764	.39 4.65 9.14 15.64	–	–	–	–	–				
–	5.34032-028115 5.34032-028200	110 195	–	–	–	–	–	–	–	5.34128R028150	160	6.30	HTSR046R028M HTSR049R028M HTSR052R028M
–	.34050-028300 5.34050-028450	265 415	–	–	–		–	–	–				
–	–	–	SSF200HTS130239 SSF200HTS130664 SSF200HTS131114 SSF200HTS131764	.39 4.65 9.14 15.64	–	–	–	–	–				
KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R028080	90	3.54	5.34350-090100	DV50SM60070M BT50SM60090M				
–	5.34032-028115 5.34032-028200	110 195	–	–	–	–	–	–	–	5.34128R028150	160	6.30	3.76045R028V 3.76050R028V
–	5.34050-028300 5.34050-028450	265 415	–	–	–		–	–	–				
–	–	–	SSF200HTS130239 SSF200HTS130664 SSF200HTS131114 SSF200HTS131764	39 4.65 9.14 15.64	–	–	–	–	–				
KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R028080	90	3.54	5.34350-090100	DV50SM60070M BT50SM60090M				
–	5.34032-032125	120	–	–	–	–	–	–	–	5.34132R032100 5.34132R032200	110 210	4.33 8.27	3.76055R032V 3.76058R032V 3.76063R032V
–	5.34050-032500 5.34050032350 5.34050032350	165 315 465	–	–	–		–	–	–				
–	–	–	SSF200HTS160239 SSF200HTS160714 SSF200HTS161214 SSF200HTS161964	.39 5.14 10.14 17.64	–	–	–	–	–				
KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R032080	90	3.5	5.34350-090100	DV50SM60070M BT50SM60090M				
–	5.34050-040148 5.34050-040300 5.34050-040450 5.34050-040600	140 267 417 567	–	–	–	–	–	–	–	5.34140R040200	212	8.35	**3.76063R040V*** 3.76068R040V 3.76073R040V 3.76078R040V
–	–	–	SSF200HTS220297 SSF200HTS220922 SSF200HTS221572 SSF200HTS222572	.47 7.22 13.72 23.72	–	–	–	–	–				
KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R040080	92	3.62	5.34350-090100	DV50SM60070M BT50SM60090M				

(continued)

(continued)

HTS Tool Assembly Combinations

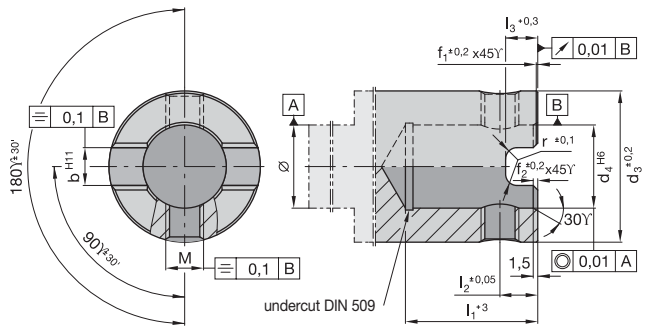
- Select your appropriate drill diameter range.
- Choose the appropriate adaptor and shank size.
- Follow the columns to the right, and select the appropriate components from each column to complete your HTS(-R) tool.

	drilling range		shank		DV assembly details		BT assembly details		CV assembly details		HSK assembly details	
	mm	in		D1	40	50	40	50	40	50	50/63/100	
HTS heads with DFT™/SPHX inserts	**78–84*** 84–90 90–96 96–102	3.07–3.31 3.31–3.54 3.54–3.70 3.78–4.02	WD / WN	50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	HSK100ASWN50110M	
			SS(F)	2.00	–	–	–	–	–	CV50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–	
			HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	V50BHTS50M314 **CV50RMHTS50M413****	–	
	96–102* 102–108 108–115	3.78–4.02 4.02–4.25 4.25–4.53	WD / WN	50	–	DV50BWD50075M **DV50RMWD50144M****	–	BT50BWD50085M **BT50RMWD50162M****	–	CV50BWD50M343 **CV50RMWD50M472****	HSK100ASWN50110M	
			SS(F)	2.00	–	–	–	–	–	50SS200562 (AD) CV50SS200762 (AD) CV50BSSF200550	–	
			HTS	50	–	5.36050-154050		BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	–	
	115–122 122–130 130–140	4.53–4.80 4.80–5.12 5.12–5.51	SS(F)	40	–	–	–	–	–	CV50SS250800	–	
			HTS	40	5.36050154040	–	BT50BHTS40080M	–	V50BHTS40M314 **CV50RMHTS40M412****		HSK100AHTS40085M	
				50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	HSK100AHTS50090M	
	140–150 150–158 158–162 162–170	5.51–5.91 5.91–6.22 6.22–6.38 6.38–6.70	HTS	50	–	5.36050-154050	–	BT50BHTS50080M	–	CV50BHTS50M314 **CV50RMHTS50M413****	HSK100AHTS50090M	
	180–186 195–201 213–220	7.08–7.32 7.68–7.91 8.39–8.66	customised solutions available upon request									
	230–240 260–270	9.06–9.45 10.24–10.63	customised solutions available upon request									

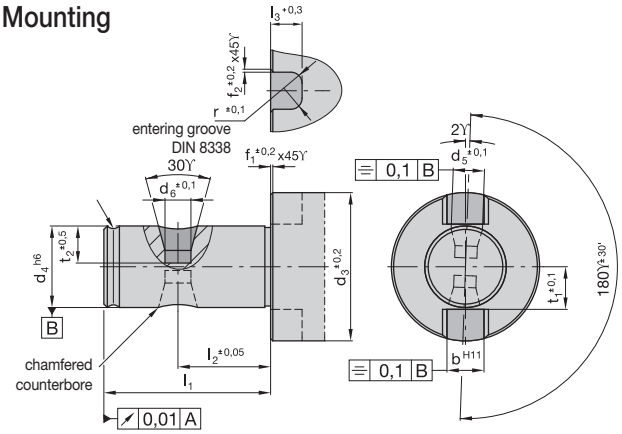
* HTS drilling head with reinforced body for short-chipping materials.
** Adaptor with coolant ring.
The combinations shown above are not complete. Ask your Kennametal Representative to get the most reasonable solution for your application.
Please note that the assembled total length of the drilling tool is not necessarily the total achievable drilling depth.

	KM	basic shank				reducer					extension			HTS head
	assembly details		L4		L4		L1		for use with coolant adaptor			L1		
	80	metric	mm	inch	in		mm	in	coolant adaptor	shell mill DV/BT		mm	in	
	–	5.34050-048168 5.34050-048300 5.34050-048450 5.34050-048600	160 267 417 567	–	–	–	–	–	–	–	5.34140R048200	212	8.35	**3.76078R048V*** 3.76084R048V 3.76090R048V 3.76096R048V
	–	–	–	SSF200HTS270297 SSF200HTS271122 SSF200HTS271922 SSF200HTS273122	1.47 9.22 17.22 29.22	–	–	–	–	–				
	KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R048080	92	3.62	5.34350-090100	DV50SM60070M BT50SM60090M				
	–	5.34050-058186 5.34050-058300 5.34050-058450 5.34050-058600	180 254 404 554	–	–	–	–	–	–	–	5.34158R058300	314	12.36	**3.76096R058V*** 3.76102R058V 3.76108R058V
	–	–	–	SSF200HTS160239 SSF200HTS160714 SSF200HTS161214 SSF200HTS161964	.39 5.14 10.14 17.64	–	–	–	–	–				
	KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	5.34280R058080	94	3.70	5.34350-090100	DV50SM60070M BT50SM60090M				
	–	–	–	SSF250HTS400355 SSF250HTS401055 SSF250HTS401555 SSF250HTS402555	1.63 8.21 13.21 23.21	–	–	–	–	–	–	–	–	3.76115R070V 3.76122R070V 3.76130R070V
	KM80ATCHTS40085M KM80ATCHTS40100M	–	–	–	–	5.34280R070150	164	6.45	5.34350-090100	DV50SM60070M BT50SM60090M	5.34170R070300 5.34170R070500	314 514	12.36 20.24	
	KM80ATCHTS50085M KM80ATCHTS50100M	–	–	–	–	–	–	–	–	–				
	KM80ATCHTS50085M KM80ATCHTS50100M	–	–	SSF300HTS500413 SSF300HTS501313 SSF300HTS502113 SSF300HTS503113	1.87 10.55 18.55 28.55	–	–	–	5.34350-090100	DV50SM60070M BT50SM60090M	5.34180R080204 5.34180R080300 5.34180R080500	220 316 516	8.66 12.44 20.32	3.76140R080V 3.76150R080V 3.76158R080V 3.76162R080V
customised solutions available upon request														3.76180R110 3.76195R110 3.76213R125
customised solutions available upon request														3.76230R160 3.76260R160

Adaptor



Mounting



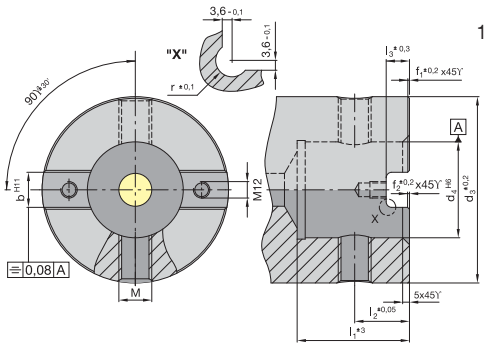
Adaptor Dimensions

d3	d4	l1	l2	l3	M	b	r	f1	f2	drive ring	clamping screw	thread	MAn* Nm	sliding block	clamping screw M 12 x 25 for sliding block
25	13	28	12,4	7,0	M 8 x 1,0	8,0	3	0,5	0,5	193.371	193.372	M 8 x 1,0	10	–	–
28	13	28	12,4	7,0	M 8 x 1,0	8,0	3	0,5	0,5	192.419	193.372	M 8 x 1,0	10	–	–
32	16	32	14,4	7,5	M 8 x 1,0	8,0	3	0,5	0,5	192.420	192.156	M 8 x 1,0	10	–	–
40	22	35	13,4	8,5	M 10 x 1,0	10,0	3	0,5	0,5	192.421	192.157	M 10 x 1,0	16	–	–
48	27	40	15,4	9,0	M 12 x 1,0	12,0	3	1,0	1,0	192.422	191.727	M 10 x 1,0	16	–	–
58	32	38	15,4	10,0	M 12 x 1,0	14,0	3	1,0	1,0	192.423	191.727	M 12 x 1,0	20	–	–
70	40	43	16,4	10,0	M 16 x 1,5	16,0	3	1,0	1,0	192.424	191.728	M 16 x 1,5	34	–	–
80	50	46	20,4	12,5	M 16 x 1,5	18,0	4	1,0	1,0	192.425	191.728	M 16 x 1,5	34	–	–
90	50	46	20,4	12,5	M 16 x 1,5	18,0	4	1,0	1,0	192.426	191.729	M 16 x 1,5	34	–	–
110	60	46	20,4	12,5	M 16 x 1,5	20,0	4	1,0	1,0	192.427	191.729	M 16 x 1,5	34	–	–
1251)	60	77	40,0	12,5	M 24 x 2,0	25,5	4	1,0	1,0	–	193.107	M 24 x 2,0	120	191.019	125.225
1401)	70	82	40,0	12,5	M 24 x 2,0	25,5	4	1,0	1,0	–	193.107	M 24 x 2,0	120	191.019	125.225
1601)	80	82	40,0	12,5	M 24 x 2,0	25,5	4	1,0	1,0	–	193.107	M 24 x 2,0	120	191.019	125.225

* MAn = Clamping torque of clamping screw in Nm.

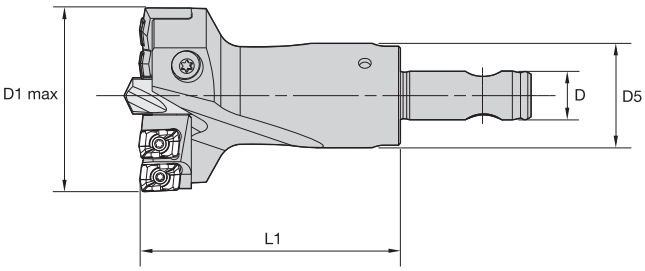
Mounting Dimensions

d3	d4	d5	d6	l1	l2	l3	t1	t2	b	r	f1	f2
25	13	8,50	6,5	35	22,0	7,00	6,7	6,50	8,0	3	0,5	0,5
28	13	8,50	6,5	35	22,0	7,00	7,0	6,50	8,0	3	0,5	0,5
32	16	8,30	6,5	40	24,0	7,50	8,5	7,50	8,0	3	0,5	0,5
40	22	10,50	7,0	45	25,0	8,50	11,5	10,00	10,0	3	0,5	0,5
48	27	12,75	9,0	50	27,0	9,00	14,0	12,00	12,0	3	1,0	1,0
58	32	11,50	9,0	50	29,0	10,00	16,5	7,25	14,0	3	1,0	1,0
70	40	15,25	12,2	55	30,0	10,50	20,5	10,00	16,0	3	1,0	1,0
80	50	15,25	12,2	60	36,0	12,50	25,5	12,50	18,0	4	1,0	1,0
90	50	16,50	12,2	60	36,0	12,50	25,5	12,50	18,0	4	1,0	1,0
110	60	14,50	12,2	60	36,0	13,65	30,5	10,00	20,0	4	1,0	1,0
1251)	60	25,00	18,0	75	39,5	17,00	35,0	20,25	25,5	6	1,0	1,0
1401)	70	25,00	18,0	80	39,5	17,00	42,0	20,25	25,5	6	1,0	1,0
1601)	80	25,00	18,0	80	39,5	17,00	42,0	20,25	25,5	6	1,0	1,0



1) Adaptor for d3 = 125, 140, and 160

- Head shipped with clamping and adjusting screws.
- Order pilot drill separately; see page J52.
- Order cartridges separately; see below.

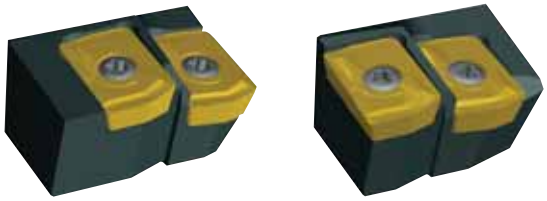


HTS Adjustable Heads with DFR™ Inserts

catalogue number	D1	D1 max	D5	D	L1	pilot drill HSS	pilot drill carbide	cartridge interior	n	cartridge exterior	n	gage insert	ni
HTSR040R025M	40	43	25	13A	60	B513S08..	B514S08..	**HTSR10CI**	1	**HTSR10CE**	1	DFR0302..	4
HTSR043R025M	43	46	25	13A	70	B513S10..	B514S10..	**HTSR11CI**	1	**HTSR11CE**	1	DFR0302..	4
HTSR046R028M	46	49	28	13B	70	B513S10..	B514S10..	**HTSR12CI**	1	**HTSR12CE**	1	DFR0403..	4
HTSR049R028M	49	52	28	13B	70	B513S10..	B514S10..	**HTSR13CI**	1	**HTSR13CE**	1	DFR0403..	4
HTSR052R028M	52	55	28	13B	70	B513S10..	B514S10..	**HTSR14CI**	1	**HTSR14CE**	1	DFR0403..	4

NOTE: n: number of cartridges required by head.
ni: number of inserts required by head.

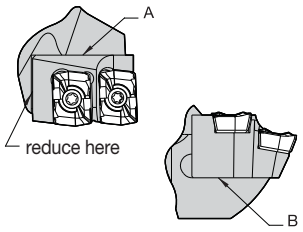
D1 diameter	clamping screw	adjusting screw
40–42	**190.116**	**128.610**
43–52	**193.397**	**190.458**

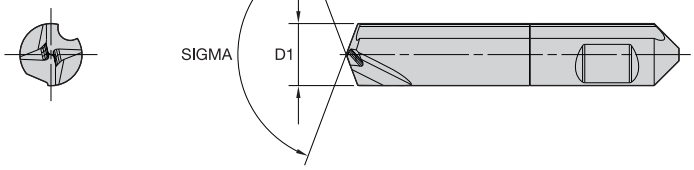


HTS DFR Cartridges

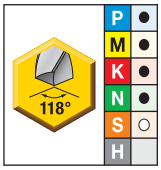
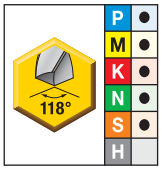
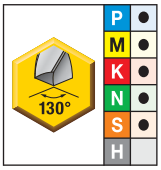
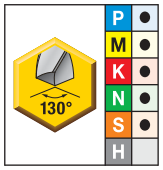
catalogue number	gage insert	Nm	insert screw	cartridge screw	washer
HTSR10CE	DFR0302..	5,0	**192.416**	**192.592**	**192.902**
HTSR10CI	DFR0302..	5,0	**192.416**	**192.592**	**192.902**
HTSR11CE	DFR0302..	5,0	**192.416**	**192.592**	**192.902**
HTSR11CI	DFR0302..	5,0	**192.416**	**192.592**	**192.902**
HTSR12CE	DFR0403..	5,0	**192.432**	**192.592**	**192.902**
HTSR12CI	DFR0403..	5,0	**192.432**	**192.592**	**192.902**
HTSR13CE	DFR0403..	5,0	**192.432**	**192.592**	**192.902**
HTSR13CI	DFR0403..	5,0	**192.432**	**192.592**	**192.902**
HTSR14CE	DFR0403..	5,0	**192.432**	**192.592**	**192.902**
HTSR14CI	DFR0403..	5,0	**192.432**	**192.592**	**192.902**

- Change drill diameter by shortening the outer cartridge.
- Shorten at 90° to the contact face A and the support face B.
- Shortening reduces the effective drill diameter by 2x the amount removed.

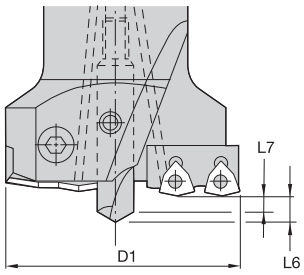




HTS DFR™ • Pilot Drills

				
high-speed steel uncoated	high-speed steel coated	solid carbide uncoated	solid carbide coated	D1
A30	AS3	G13	KC7030	mm
B513S08000	B513S08000	–	–	8
B513S10000	B513S10000	–	–	10
–	–	B514S08000	B514S08000	8
–	–	B514S10000	B514S10000	10

Pilot Drill Setting Lengths



	high-speed steel		solid carbide	
D1	L6	L7	L6	L7
mm	mm	mm	mm	mm
8,00	4,14	1,73	3,61	1,73
10,00	4,88	1,88	4,19	1,88

HTS DFR™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric		
									Recommended Feed Rate (f) by Diameter		
						min	Starting Value	max	Ø (mm)	DFR03... 40,00 - 46,00	DFR04 46,00 - 55,00
P	1	S	O	MD	KCU25	79	**190**	229	mm/r	0,10 - 0,14	0,12 - 0,18
			I	MD	KCU25						
		U	O	MD	KCU40	71	**130**	171	mm/r	0,10 - 0,14	0,12 - 0,18
			I	MD	KCU40						
		I	O	MD	KC7140	44	**80**	106	mm/r	0,10 - 0,14	0,12 - 0,18
			I	MD	KC7140						
	2	S	O	GD	KCU25	75	**180**	217	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU25						
		U	O	GD	KCU40	71	**120**	271	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU40						
		I	O	GD	KC7140	44	**70**	106	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KC7140						
	3	S	O	GD	KCU25	60	**140**	169	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU25						
		U	O	GD	KCU40	50	**100**	121	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU40						
		I	O	GD	KC7140	30	**60**	72	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KC7140						
	4	S	O	GD	KCU25	79	**120**	229	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU25						
		U	O	GD	KCU40	71	**100**	171	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KCU40						
		I	O	GD	KC7140	44	**80**	106	mm/r	0,10 - 0,14	0,12 - 0,18
			I	GD	KC7140						
	5	S	O	GD	KCU40	62	**100**	190	mm/r	0,06 - 0,11	0,07 - 0,14
			I	GD	KCU40						
		U	O	GD	KC7140	47	**60**	114	mm/r	0,06 - 0,11	0,07 - 0,14
			I	GD	KC7140						
		I	O	GD	KC7140	31	**40**	76	mm/r	0,06 - 0,11	0,07 - 0,14
			I	GD	KC7140						
	6	S	O	GD	KCU40	59	**95**	180	mm/r	0,07 - 0,11	0,08 - 0,13
			I	GD	KCU40						
		U	O	GD	KC7140	45	**57**	108	mm/r	0,07 - 0,11	0,08 - 0,13
			I	GD	KC7140						
		I	O	GD	KC7140	30	**38**	72	mm/r	0,07 - 0,11	0,08 - 0,13
			I	GD	KC7140						
M	1	S	O	MD	KCU40	40	**110**	134	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		U	O	MD	KC7140	31	**70**	86	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		I	O	MD	KC7140	22	**50**	61	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
	2	S	O	MD	KCU40	38	**99**	127	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		U	O	MD	KC7140	31	**63**	86	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		I	O	MD	KC7140	22	**45**	61	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
	3	S	O	MD	KCU40	32	**88**	107	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		U	O	MD	KC7140	31	**56**	86	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						
		I	O	MD	KC7140	22	**40**	61	mm/r	0,07 - 0,11	0,12 - 0,18
			I	MD	KC7140						

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

HTS DFR™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric		
									Recommended Feed Rate (f) by Diameter		
						min	Starting Value	max	Ø (mm)	DFR03... 40,00 - 46,00	DFR04 46,00 - 55,00
K	1	S	O	GD	KCPK10	79	**171**	229	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCPK10						
		U	O	LD	KCU25	64	**117**	156	mm/r	0,11 - 0,20	0,13 - 0,27
			I	LD	KCU25						
		I	O	LD	KCU40	40	**72**	96	mm/r	0,11 - 0,20	0,13 - 0,27
			I	LD	KCU40						
	2	S	O	GD	KCPK10	75	**162**	217	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCPK10						
		U	O	GD	KCU25	64	**111**	156	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCU25						
		I	O	LD	KCU40	40	**68**	96	mm/r	0,11 - 0,20	0,13 - 0,27
			I	LD	KCU40						
	3	S	O	GD	KCPK10	68	**146**	195	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCPK10						
		U	O	GD	KCU25	59	**100**	144	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCU25						
		I	O	GD	KCU40	35	**62**	84	mm/r	0,11 - 0,20	0,13 - 0,27
			I	GD	KCU40						
N	1	S	O	ST	KD1425	128	**240**	358	mm/r	0,06 - 0,09	0,11 - 0,19
			I	ST	KD1425						
		U	O	LD	KCU40	102	**160**	239	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
		I	O	LD	KCU40	67	**104**	155	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
	2	S	O	ST	KD1425	119	**223**	333	mm/r	0,06 - 0,09	0,11 - 0,19
			I	ST	KD1425						
		U	O	LD	KCU40	102	**149**	239	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
		I	O	LD	KCU40	67	**97**	155	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
	3	S	O	ST	KD1425	110	**206**	308	mm/r	0,06 - 0,09	0,11 - 0,19
			I	ST	KD1425						
		U	O	LD	KCU40	102	**138**	239	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
		I	O	LD	KCU40	67	**89**	155	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
	4	S	O	ST	KD1425	119	**223**	333	mm/r	0,06 - 0,09	0,11 - 0,19
			I	ST	KD1425						
		U	O	LD	KCU40	102	**149**	239	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
		I	O	LD	KCU40	67	**97**	155	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
	5	S	O	ST	KD1425	92	**220**	262	mm/r	0,06 - 0,09	0,11 - 0,19
			I	ST	KD1425						
		U	O	LD	KCU40	72	**140**	167	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						
		I	O	LD	KCU40	46	**90**	107	mm/r	0,06 - 0,09	0,11 - 0,19
			I	LD	KCU40						

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

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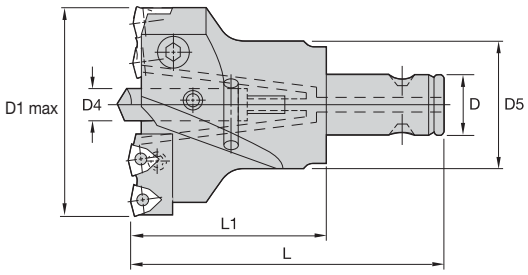
KENNAMETAL®

- Head shipped with clamping and adjusting screws.
- Order pilot drill separately; see page J60.
- Order cartridges separately; see page J58.

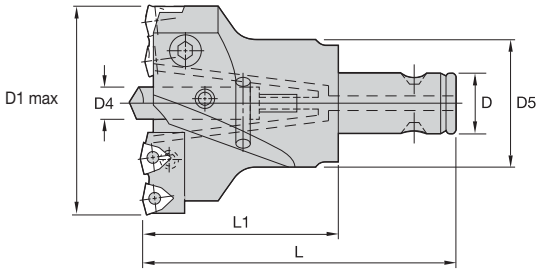


HTS Adjustable Heads • DFT™ Inserts

catalogue number	D1	D1 max	D5	D	L	L1	pilot drill	cartridge interior	n	cartridge exterior	n	gage insert	ni	kg
3.76045R028V	45	50	28	13	85,0	50	B510S08.	**3.77000R050V**	1	**3.77000R051V**	1	DFT0303.	4	0,3
3.76050R028V	50	55	28	13	85,0	50	B510S08.	**3.77000R052V**	1	**3.77000R053V**	1	DFT0303.	4	0,4
3.76055R032V	55	58	33	16	100,0	60	B510S08.	**3.77000R038V**	1	**3.77000R039V**	1	DFT05T3.	4	0,4
3.76058R032V	58	63	33	16	100,0	60	B510S10.	**3.77000R023V**	1	**3.77000R024V**	1	DFT05T3.	4	0,4
3.76063R032V	63	68	33	16	100,0	60	B510S10.	**3.77000R025V**	1	**3.77000R024V**	1	DFT05T3.	4	0,4
3.76063R040V	63	68	41	22	115,0	70	B510S10.	**3.77000R025V**	1	**3.77000R024V**	1	DFT05T3.	4	0,5
3.76068R040V	68	73	41	22	115,0	70	B510S10.	**3.77000R026V**	1	**3.77000R027V**	1	DFT05T3.	4	0,8
3.76073R040V	73	78	41	22	115,0	70	B510S15.	**3.77000R026V**	1	**3.77000R027V**	1	DFT05T3.	4	0,8
3.76078R040V	78	84	41	22	115,0	70	B510S15.	**3.77000R028V**	1	**3.77000R029V**	1	DFT06T3.	4	0,8
3.76078R048V	78	84	49	27	120,0	70	B510S15.	**3.77000R028V**	1	**3.77000R029V**	1	DFT06T3.	4	0,9
3.76084R048V	84	90	49	27	120,0	70	B510S15.	**3.77000R028V**	1	**3.77000R029V**	1	DFT06T3.	4	1,0
3.76090R048V	90	96	49	27	120,0	70	B510S15.	**3.77000R030V**	1	**3.77000R031V**	1	DFT06T3.	4	1,0
3.76096R048V	96	102	49	27	120,0	70	B510S20.	**3.77000R030V**	1	**3.77000R031V**	1	DFT06T3.	4	1,1
3.76096R058V	96	102	59	32	130,0	80	B510S20.	**3.77000R030V**	1	**3.77000R031V**	1	DFT06T3.	4	1,2
3.76102R058V	102	108	59	32	130,0	80	B510S20.	**3.77000R081V**	1	**3.77000R082V**	1	DFT05T3.	6	1,7
3.76108R058V	108	115	59	32	130,0	80	B510S20.	**3.77000R083V**	1	**3.77000R084V**	1	DFT06T3.	6	1,8
3.76115R070V	115	122	71	40	145,0	90	B510S25.	**3.77000R085V**	1	**3.77000R086V**	1	DFT06T3.	6	2,9
3.76122R070V	122	130	71	40	145,0	90	B510S25.	**3.77000R079V**	1	**3.77000R080V**	1	DFT06T3.	6	2,9
3.76130R070V	130	140	71	40	145,0	90	B510S25.	**3.77000R087V**	1	**3.77000R088V**	1	DFT06T3.	6	3,0
3.76140R080V	140	150	81	50	160,0	100	B510S25.	**3.77000R077V**	1	**3.77000R078V**	1	DFT0704.	6	4,3
3.76150R080V	150	158	81	50	160,0	100	B510S25.	**3.77000R075V**	1	**3.77000R076V**	1	DFT0704.	6	4,5
3.76158R080V	158	162	81	50	160,0	100	B510S25.	**3.77000R073V**	1	**3.77000R074V**	1	DFT0704.	6	4,5
3.76162R080V	162	170	80	50	160,0	100	B510S30.	**3.77000R048V**	1	**3.77000R049V**	1	DFT0704.	6	4,5
3.76180R110	180	186	110	60	185,0	125	B510S30.	**3.77000R030V**	3	**3.77000R031V**	1	DFT06T3.	8	6,0
3.76195R110	195	201	110	60	185,0	125	B510S30.	**3.77000R081V**	3	**3.77000R082V**	1	DFT05T3.	12	6,5
3.76213R125	213	220	125	60	200,0	125	B510S30.	**3.77000R083V**	3	**3.77000R084V**	1	DFT06T3.	12	7,5
3.76230R160	230	240	160	80	230,0	150	B510S30.	**3.77000R079V**	2	**3.77000R080V**	2	DFT06T3.	12	8,5
3.76260R160	260	270	160	80	230,0	150	B510S30.	**3.77000R077V**	2	**3.77000R078V**	2	DFT06T3.	12	9,0

NOTE: n: number of cartridges required by head.
ni: number of inserts required by head.

- Head shipped with clamping and adjusting screws.
- Order pilot drill separately; see page J60.
- Order cartridges separately; see page J58.



HTS Adjustable Heads • DFT™ and SPHX Inserts

catalogue number	D1	D1 max	pilot drill	cartridge interior	n	cartridge interior 2	n	gage insert	ni	cartridge exterior SPHX	n	gage insert	ni
3.76045R028V	45	50	B510S08.	**3.77000R250V**	1	—	—	DFT0303.	3	**3.77000R251V**	1	SPHX0703.	1
3.76050R028V	50	55	B510S08.	**3.77000R252V**	1	—	—	DFT0303.	3	**3.77000R253V**	1	SPHX0703.	1
3.76055R032V	55	58	B510S08.	**3.77000R038V**	1	—	—	DFT05T3.	3	**3.77000R239V**	1	SPHX0903.	1
3.76058R032V	58	63	B510S10.	**3.77000R023V**	1	—	—	DFT05T3.	3	**3.77000R224V**	1	SPHX0903.	1
3.76063R032V	63	68	B510S10.	**3.77000R025V**	1	—	—	DFT05T3.	3	**3.77000R224V**	1	SPHX0903.	1
3.76063R040V	63	68	B510S10.	**3.77000R025V**	1	—	—	DFT05T3.	3	**3.77000R224V**	1	SPHX0903.	1
3.76068R040V	68	73	B510S10.	**3.77000R026V**	1	—	—	DFT05T3.	3	**3.77000R227V**	1	SPHX0903.	1
3.76073R040V	73	78	B510S15.	**3.77000R026V**	1	—	—	DFT05T3.	3	**3.77000R227V**	1	SPHX0903.	1
3.76078R040V	78	84	B510S15.	**3.77000R028V**	1	—	—	DFT06T3.	3	**3.77000R229V**	1	SPHX0903.	1
3.76078R048V	78	84	B510S15.	**3.77000R028V**	1	—	—	DFT06T3.	3	**3.77000R229V**	1	SPHX0903.	1
3.76084R048V	84	90	B510S15.	**3.77000R228V**	1	—	—	DFT06T3.	3	**3.77000R229V**	1	SPHX0903.	1
3.76090R048V	90	94	B510S15.	**3.77000R230V**	1	—	—	DFT06T3.	3	**3.77000R231V**	1	SPHX0903.	1
3.76096R048V	96	100	B510S20.	**3.77000R230V**	1	—	—	DFT06T3.	3	**3.77000R231V**	1	SPHX0903.	1
3.76096R058V	96	100	B510S20.	**3.77000R230V**	1	—	—	DFT06T3.	3	**3.77000R231V**	1	SPHX0903.	1
3.76102R058V	102	108	B510S20.	**3.77000R081V**	1	—	—	DFT05T3.	5	**3.77000R282V**	1	SPHX0903.	1
3.76108R058V	108	115	B510S20.	**3.77000R083V**	1	—	—	DFT06T3.	5	**3.77000R284V**	1	SPHX1204.	1
3.76115R070V	115	122	B510S25.	**3.77000R085V**	1	—	—	DFT06T3.	5	**3.77000R286V**	1	SPHX1204.	1
3.76122R070V	122	130	B510S25.	**3.77000R079V**	1	—	—	DFT06T3.	5	**3.77000R280V**	1	SPHX1204.	1
3.76130R070V	130	140	B510S25.	**3.77000R087V**	1	—	—	DFT06T3.	5	**3.77000R288V**	1	SPHX1204.	1
3.76140R080V	140	150	B510S25.	**3.77000R077V**	1	—	—	DFT0704.	5	**3.77000R278V**	1	SPHX1505.	1
3.76150R080V	150	158	B510S25.	**3.77000R075V**	1	—	—	DFT0704.	5	**3.77000R276V**	1	SPHX1505.	1
3.76158R080V	158	162	B510S25.	**3.77000R073V**	1	—	—	DFT0704.	5	**3.77000R274V**	1	SPHX1505.	1
3.76162R080V	162	170	B510S30.	**3.77000R248V**	1	—	—	DFT0704.	5	**3.77000R249V**	1	SPHX1505.	1
3.76180R110	180	184	B510S30.	**3.77000R230V**	3	—	—	DFT06T3.	7	**3.77000R231V**	1	SPHX0903.	1
3.76195R110	195	201	B510S30.	**3.77000R081V**	3	—	—	DFT05T3.	11	**3.77000R282V**	1	SPHX0903.	1
3.76213R125	213	220	B510S30.	**3.77000R083V**	3	—	—	DFT06T3.	11	**3.77000R284V**	1	SPHX1204.	1
3.76230R160	230	240	B510S30.	**3.77000R079V**	2	**3.77000R080V**	1	DFT06T3.	11	**3.77000R280V**	1	SPHX1204.	1

NOTE: n: number of cartridges required by head.
ni: number of inserts required by head.

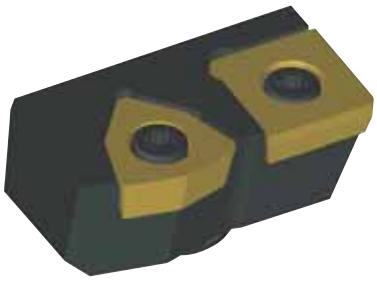
HTS Interior and Exterior Cartridges • DFT™ Inserts

catalogue number	gage insert	number of inserts	insert screw	cartridge screw	fan washer	Nm
3.77000R023V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R024V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R025V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R026V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R027V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R028V	DFT06T3..	2	**191.848**	**129.612**	**192.111**	10,0
3.77000R029V	DFT06T3..	2	**191.848**	**129.612**	**192.111**	10,0
3.77000R030V	DFT06T3..	3	**191.848**	**129.616**	**192.111**	10,0
3.77000R031V	DFT06T3..	3	**191.848**	**129.612**	**192.111**	10,0
3.77000R038V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R039V	DFT05T3..	2	**191.924**	**192.593**	**192.903**	5,0
3.77000R048V	DFT0704..	3	**191.698**	**125.830**	**192.112**	35,0
3.77000R049V	DFT0704..	3	**191.698**	**125.830**	**192.112**	35,0
3.77000R050V	DFT0303..	2	**192.432**	**192.592**	**192.902**	5,0
3.77000R051V	DFT0303..	2	**192.432**	**192.592**	**192.902**	5,0
3.77000R052V	DFT0303..	2	**192.432**	**192.592**	**192.902**	5,0
3.77000R053V	DFT0303..	2	**192.432**	**192.592**	**192.902**	5,0
3.77000R073V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R074V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R075V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R076V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R077V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R078V	DFT0704..	3	**191.698**	**125.825**	**192.112**	35,0
3.77000R079V	DFT06T3..	3	**191.848**	**125.820**	**192.112**	35,0
3.77000R080V	DFT06T3..	3	**191.848**	**125.820**	**192.112**	35,0
3.77000R081V	DFT05T3..	3	**191.924**	**125.820**	**192.112**	35,0
3.77000R082V	DFT05T3..	3	**191.924**	**125.820**	**192.112**	35,0
3.77000R083V	DFT06T3..	3	**191.924**	**125.820**	**192.112**	35,0
3.77000R084V	DFT06T3..	3	**191.924**	**125.820**	**192.112**	35,0
3.77000R085V	DFT06T3..	3	**191.848**	**125.825**	**192.112**	35,0
3.77000R086V	DFT06T3..	3	**191.924**	**125.820**	**192.112**	35,0
3.77000R087V	DFT06T3..	3	**191.848**	**125.820**	**192.112**	35,0
3.77000R088V	DFT06T3..	3	**191.848**	**125.820**	**192.112**	35,0

HTS Finishing Interior Cartridges • For Use with Exterior Cartridges Equipped with SPHX Inserts

catalogue number	gage insert	number of inserts	insert screw	washer	Nm
3.77000R228V	DFT06T3..	2	**191.848**	**192.111**	10,0
3.77000R230V	DFT06T3..	2	**191.848**	**192.111**	10,0
3.77000R248V	DFT0704..	3	**191.698**	**192.112**	35,0
3.77000R250V	DFT0303..	2	**192.432**	**192.902**	5,0
3.77000R252V	DFT0303..	2	**192.432**	**192.902**	5,0

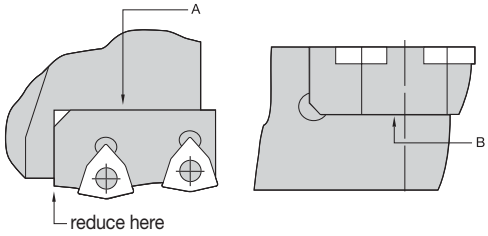
NOTE: Modified interior cartridges for use with SPHX equipped exterior cartridges only.

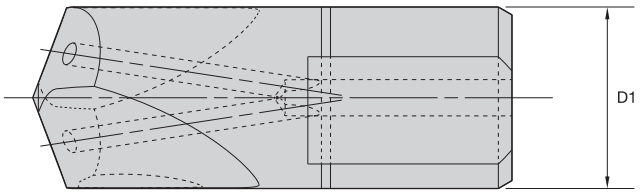


HTS Finishing Exterior Cartridges • SPHX Inserts

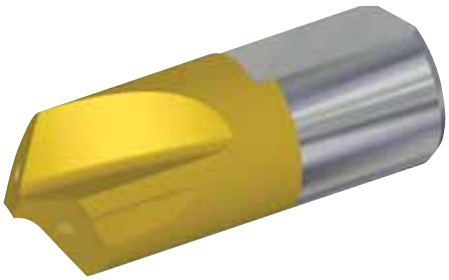
catalogue number	gage insert inside	number of inserts	gage insert outside	number of inserts	insert screw	screw	washer	Nm
3.77000R224V	DFT05T3..	1	SPHX0903..	1	**191.924**	**193.451**	**192.903**	5,0
3.77000R227V	DFT05T3..	1	SPHX0903..	1	**191.924**	**192.593**	**192.903**	5,0
3.77000R229V	DFT06T3..	1	SPHX0903..	1	**191.916**	**129.612**	**192.111**	10,0
3.77000R231V	DFT06T3..	1	SPHX0903..	1	**191.916**	**129.616**	**192.111**	10,0
3.77000R239V	DFT05T3..	1	SPHX0903..	1	**191.924**	**193.451**	**192.903**	5,0
3.77000R249V	DFT0704..	2	SPHX1505..	1	**192.433**	**125.830**	**192.112**	35,0
3.77000R251V	DFT0303..	1	SPHX0703..	1	**192.432**	**193.450**	**192.902**	5,0
3.77000R253V	DFT0303..	1	SPHX0703..	1	**192.432**	**193.450**	**192.902**	5,0
3.77000R274V	DFT0704..	2	SPHX1505..	1	**192.433**	**125.825**	**192.112**	35,0
3.77000R276V	DFT0704..	2	SPHX1505..	1	**192.433**	**125.825**	**192.112**	35,0
3.77000R278V	DFT0704..	2	SPHX1505..	1	**192.433**	**125.825**	**192.112**	35,0
3.77000R280V	DFT06T3..	2	SPHX1204..	1	**191.916**	**125.820**	**192.112**	35,0
3.77000R282V	DFT05T3..	2	SPHX0903..	1	**191.924**	**125.820**	**192.112**	35,0
3.77000R284V	DFT06T3..	2	SPHX1204..	1	**191.916**	**125.820**	**192.112**	35,0
3.77000R286V	DFT06T3..	2	SPHX1204..	1	**191.916**	**125.825**	**192.112**	35,0
3.77000R288V	DFT06T3..	2	SPHX1204..	1	**191.916**	**125.820**	**192.112**	35,0

- Change drill diameter by shortening the outer cartridge.
- Shorten at 90° to the contact face A and the support face B.
- Shortening reduces the effective drill diameter by two times the amount removed.

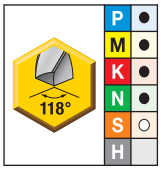


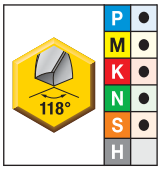


8–10mm sizes are without coolant.



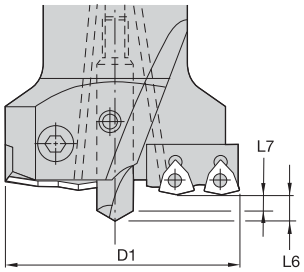
HTS DFT™ • Pilot Drills





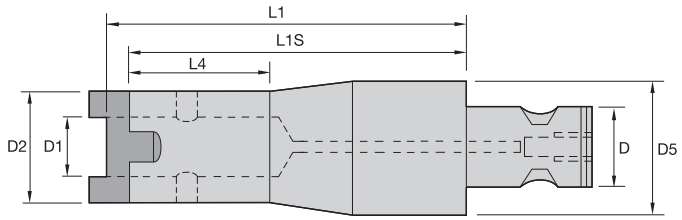
high-speed steel uncoated A30	high-speed steel coated AS3	carbide drills KC7315	D1 mm
B510S08000 **B510S10000**	**B510S08000** **B510S10000**	**B511S08000** **B511S10000**	8,00 10,00
B510S15000 **B510S20000**	**B510S15000** **B510S20000**	**B511S15000** **B511S20000**	15,00 20,00
B510S25000 **B510S30000**	**B510S25000** **B510S30000**	**B511S25000** **B511S30000**	25,00 30,00

Pilot Drill Setting Lengths



D1	2–4 x D1		4–6 x D1		>6 x D1	
	L6	L7	L6	L7	L6	L7
mm	mm	mm	mm	mm	mm	mm
8,00	3,00	0,80	3,40	1,20	3,80	1,60
10,00	4,00	1,30	4,30	1,60	4,60	1,90
15,00	6,20	2,10	6,50	2,40	6,80	2,70
20,00	8,10	2,60	8,40	2,90	8,70	3,20
25,00	10,50	3,50	7,40	3,90	11,30	4,30
30,00	12,30	4,10	12,80	4,50	13,20	5,00

• Reducers are shipped with drive ring and clamping screws.

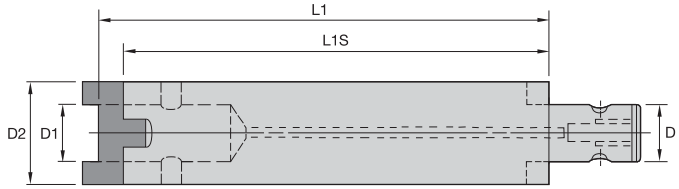


Reducers

catalogue number	D1 coupling size	D coupling size	D2 mm	D5 mm	L1 mm	L1S mm	L4 mm	drive ring	clamping screw	Nm
5.34280R028080	13B	50	27,6	80,0	90,0	80,0	50,0	**192.419**	**192.156**	10,2
5.34240R032100	16	22	31,6	40,0	110,0	100,0	55,0	**192.420**	**192.156**	10,2
5.34280R032080	16	50	31,6	80,0	90,0	80,0	55,0	**192.420**	**192.156**	10,2
5.34248R040100	22	27	39,6	48,0	112,0	100,0	57,0	**192.421**	**192.157**	16,3
5.34280R040080	22	50	39,6	80,0	92,0	80,0	57,0	**192.421**	**192.157**	16,3
5.34258R048100	27	32	47,6	58,0	112,0	100,0	57,0	**192.422**	**191.727**	20,3
5.34280R048080	27	50	47,6	80,0	92,0	80,0	57,0	**192.422**	**191.727**	20,3
5.34270R058100	32	40	57,6	70,0	113,9	100,0	58,9	**192.423**	**191.727**	20,3
5.34280R058080	32	50	57,6	80,0	93,9	80,0	58,9	**192.423**	**191.727**	20,3
5.34280R070150	40	50	69,6	80,0	163,9	150,0	68,9	**192.424**	**191.728**	33,9

NOTE: Assemble components using recommended torque values.

• Extensions are shipped with drive ring and clamping screws.

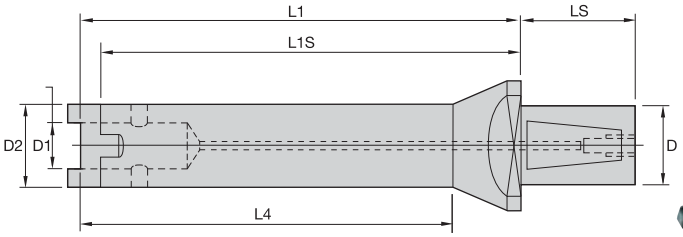


Extensions

catalogue number	D1 coupling size	D coupling size	D2 mm	L1 mm	L1S mm	drive ring	clamping screw	Nm
5.34125R025150	13A	13A	25,0	160,0	150,0	**193.371**	**193.372**	10,2
5.34128R028150	13B	13B	28,0	160,0	150,0	**192.419**	**192.156**	10,2
5.34132R032100	16	16	32,0	110,0	100,0	**192.420**	**192.156**	10,2
5.34132R032200	16	16	32,0	210,0	200,0	**192.420**	**192.156**	10,2
5.34140R040200	22	22	40,0	212,0	200,0	**192.421**	**192.157**	16,3
5.34148R048200	27	27	48,0	212,0	200,0	**192.422**	**191.727**	20,3
5.34158R058300	32	32	58,0	314,0	300,0	**192.423**	**191.727**	33,9
5.34170R070186	40	40	70,0	200,0	186,0	**192.424**	**191.728**	33,9
5.34170R070300	40	40	70,0	314,0	300,0	**192.424**	**191.728**	33,9
5.34170R070500	40	40	70,0	514,0	500,0	**192.424**	**191.728**	33,9
5.34180R080204	50	50	80,0	220,0	204,0	**192.425**	**191.728**	33,9
5.34180R080300	50	50	80,0	316,0	300,0	**192.425**	**191.728**	33,9
5.34180R080500	50	50	80,0	516,0	500,0	**192.425**	**191.728**	33,9

NOTE: Assemble components using recommended torque values.

• Shanks are shipped with drive ring and clamping screws.

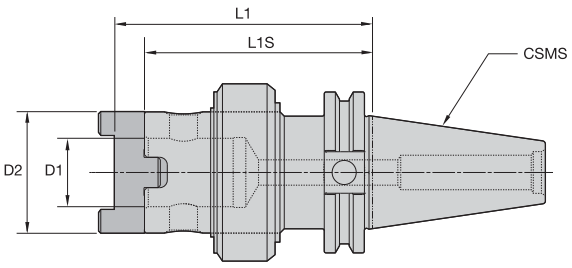


Basic Shank WN/WD • Metric

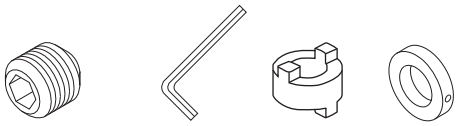
catalogue number	D1 coupling size	D	D2	L1	L1S	L4	LS	drive ring	clamping screw	Nm
5.34032-025115	13A	32,0	25,0	125,0	115,0	110,0	58,0	**193.371**	**193.372**	10,2
5.34032-025200	13A	32,0	25,0	210,0	200,0	195,0	58,0	**193.371**	**193.372**	10,2
5.34050-025300	13A	50,0	25,0	310,0	300,0	270,0	68,0	**193.371**	**193.372**	10,2
5.34050-025450	13A	50,0	25,0	460,0	450,0	420,0	68,0	**193.371**	**193.372**	10,2
5.34032-028115	13B	32,0	28,0	125,0	115,0	110,0	58,0	**192.419**	**192.156**	10,2
5.34032-028200	13B	32,0	28,0	210,0	200,0	195,0	58,0	**192.419**	**192.156**	10,2
5.34050-028300	13B	50,0	28,0	310,0	300,0	265,0	68,0	**192.419**	**192.156**	10,2
5.34050-028450	13B	50,0	28,0	460,0	450,0	415,0	68,0	**192.419**	**192.156**	10,2
5.34032-032125	16	32,0	32,0	135,0	125,0	120,0	58,0	**192.420**	**192.156**	10,2
5.34050-032200	16	50,0	32,0	210,0	200,0	165,0	68,0	**192.420**	**192.156**	10,2
5.34050-032500	16	50,0	32,0	510,0	500,0	465,0	68,0	**192.420**	**192.156**	10,2
5.34050032350	16	50,0	32,0	360,0	350,0	315,0	68,0	**192.420**	**192.156**	10,2
5.34050-040148	22	50,0	40,0	160,0	148,0	140,0	68,0	**192.421**	**192.157**	16,3
5.34050-040300	22	50,0	40,0	312,0	300,0	267,0	68,0	**192.421**	**192.157**	10,2
5.34050-040450	22	50,0	40,0	462,0	450,0	417,0	68,0	**192.421**	**192.157**	10,2
5.34050-040600	22	50,0	40,0	612,0	600,0	567,0	68,0	**192.422**	**192.157**	10,2
5.34050-048168	27	50,0	48,0	175,0	168,0	160,0	68,0	**192.422**	**191.727**	20,3
5.34050-048300	27	50,0	48,0	312,0	300,0	267,0	68,0	**192.422**	**191.727**	16,3
5.34050-048450	27	50,0	48,0	462,0	450,0	417,0	68,0	**192.422**	**191.727**	16,3
5.34050-048600	27	50,0	48,0	612,0	600,0	567,0	68,0	**192.422**	**191.727**	16,3
5.34050-058186	32	50,0	58,0	200,0	186,0	180,0	68,0	**192.423**	**191.727**	20,3
5.34050-058300	32	50,0	58,0	314,0	300,0	254,0	68,0	**192.423**	**191.727**	20,3
5.34050-058450	32	50,0	58,0	464,0	450,0	404,0	68,0	**192.423**	**191.727**	20,3
5.34050-058600	32	50,0	58,0	614,0	600,0	554,0	68,0	**192.423**	**191.727**	20,3

NOTE: Assemble components using recommended torque values.

• Shanks are shipped with drive ring and clamping screws.



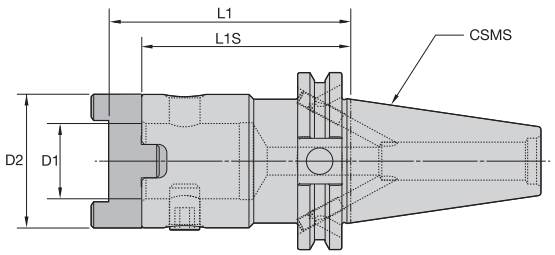
CV Taper Shank • Form AD • Rotary Coolant Ring



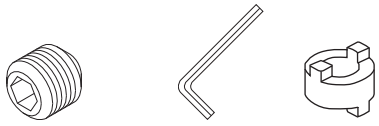
catalogue number	CSMS system size	D1 coupling size	D2	L1	L1S	clamping screw	hex wrench	drive ring	coolant ring	ft. lbs.
CV50RMHTS13M394	CV50	13B	1.09	4.33	3.94	**192.156**	**170.004**	**192.419**	**302.011**	7.0
CV50RMHTS16M394	CV50	16	1.25	4.33	3.94	**192.156**	**170.004**	**192.420**	**302.011**	7.0
CV50RMHTS22M394	CV50	22	1.54	4.41	3.94	**192.157**	**170.004**	**192.421**	**302.011**	12.0
CV50RMHTS27M394	CV50	27	1.88	4.41	3.94	**191.727**	**170.006**	**192.422**	**302.011**	15.0
CV50RMHTS32M394	CV50	32	2.27	4.49	3.94	**191.727**	**170.006**	**192.423**	**302.011**	15.0
CV50RMHTS40M413	CV50	40	2.74	4.69	4.13	**191.728**	**170.008**	**192.424**	**302.009**	26.0
CV50RMHTS50M413	CV50	50	3.13	4.76	4.13	**191.728**	**170.008**	**192.425**	**302.010**	26.0

NOTE: Assemble components using recommended torque values.

• Shanks are shipped with drive ring and clamping screws.



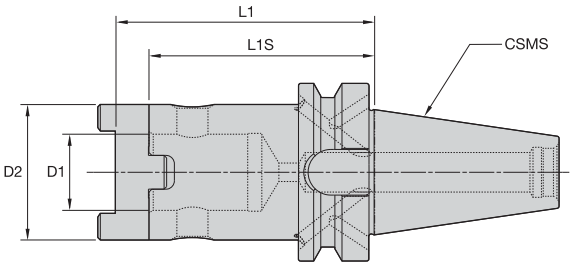
CV Taper Shank • Form B/AD Coolant



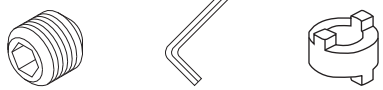
catalogue number	CSMS system size	D1 coupling size	D2	L1	L1S	clamping screw	hex wrench	drive ring	ft. lbs.
CV50BHTS13M295	CV50	13B	1.10	3.35	2.95	**192.156**	**170.004**	**192.419**	7.0
CV50BHTS16M295	CV50	16	1.26	3.35	2.95	**192.156**	**170.004**	**192.420**	7.0
CV50BHTS22M295	CV50	22	1.57	3.43	2.95	**192.157**	**170.004**	**192.421**	12.0
CV50BHTS27M295	CV50	27	1.89	3.43	2.95	**191.727**	**170.006**	**192.422**	15.0
CV50BHTS32M314	CV50	32	2.28	3.70	3.15	**191.727**	**170.006**	**192.423**	15.0
CV50BHTS40M314	CV50	40	2.76	3.70	3.15	**191.728**	**170.008**	**192.424**	26.0
CV50BHTS50M314	CV50	50	3.15	3.78	3.15	**191.728**	**170.008**	**192.425**	26.0

NOTE: Assemble components using recommended torque values.

• Shanks are shipped with drive ring and clamping screw.



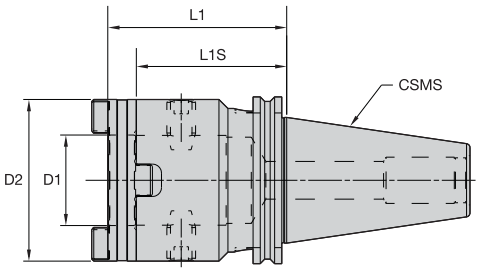
BT Taper Shank • Form B/AD Coolant



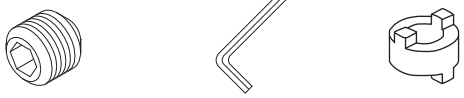
catalogue number	CSMS system size	D1 coupling size	D2	L1 mm	L1S mm	clamping screw	hex wrench	drive ring	Nm
BT50BHTS22075M	BT50	22	40,0	87,0	75,0	**192.157**	**170.005**	**192.421**	16,0
BT50BHTS32080M	BT50	32	58,0	94,0	80,0	**191.727**	**170.006**	**192.423**	20,0
BT50BHTS40080M	BT50	40	70,0	94,0	80,0	**191.728**	**170.008**	**192.424**	34,0
BT50BHTS50080M	BT50	50	80,0	96,0	80,0	**191.728**	**170.008**	**192.425**	34,0

NOTE: Assemble components using recommended torque values.

• Shanks are shipped with drive ring and clamping screws.

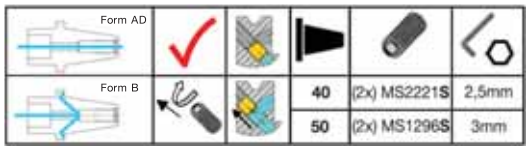


DV Taper Shank • Form B/AD Coolant

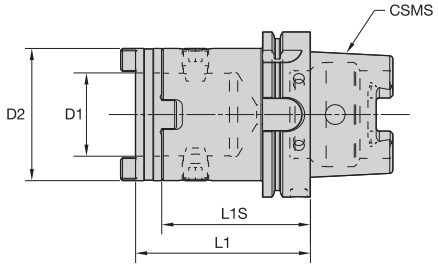


catalogue number	CSMS system size	D1	D2 mm	L1 mm	L1S mm	clamping screw	hex wrench	drive ring	Nm
5.36050154040	DV50	40	70,0	100,0	84,0	191.728	**170.008**	**192.424**	–
5.36050-154050	DV50	50	90,0	100,0	84,0	191.729	**170.008**	**192.426**	–

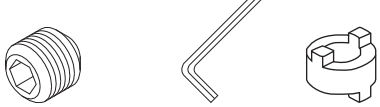
NOTE: Assemble components using recommended torque values.



• Shanks are shipped with drive ring and clamping screws.



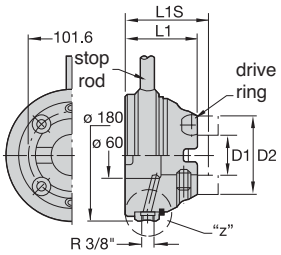
HSK100A Taper Shank

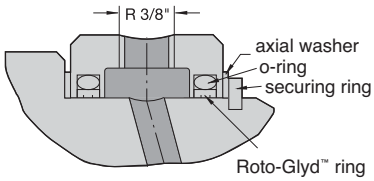


catalogue number	CSMS system size	D1 coupling size	D2 mm	L1 mm	L1S mm	clamping screw	hex wrench	drive ring	Nm
HSK100AHTS40085M	HSK100A	40	70,0	99,0	85,0	**191.728**	**170.008**	**192.424**	35,0
HSK100AHTS50090M	HSK100A	50	80,0	106,0	90,0	**191.728**	**170.008**	**192.425**	35,0

NOTE: Assemble components using recommended torque values.

Clamping Chucks





Flanged Adaptor (Including Drive Ring)

catalogue number	D1	D2 mm	L1 mm	L1S mm	kg
5.34350-090100	50,00	90,0	116,0	100,0	10,0

NOTE: Adaptor includes all items shown except the nipple. Nipple must be ordered separately.
If replacement becomes necessary, the nipple is manufactured with a predetermined breaking point for safety purposes.
Maximum RPM is 1500. Maximum pressure is 72 psi or 5 bar.

Spare Parts

catalogue number	drive ring	clamping screw	coolant ring	O-ring	securing ring	axial washer	Roto-Glyd ring	stop rod	nipple
5.34350-090100	**192.426**	**191.729**	**302.014**	**192.731**	**192.126**	**192.158**	**192.730**	**460.716**	**192.759**

HTS DFT™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	DFT03... 45,00 - 55,00	DFT05... 55,00 - 78,00	DFT06... 78,00 - 140,00	DFT07... 140,00 - 270,00
P	1	S	O	MD	KCU25	94	**190**	229	mm/r	0,06 - 0,10	0,08 - 0,12	0,10 - 0,14	0,13 - 0,19
			I	MD	KCU40								
		U	O	MD	KCU40	71	**130**	171	mm/r	0,06 - 0,10	0,08 - 0,12	0,10 - 0,14	0,13 - 0,19
			I	MD	KC7140								
		I	O	MD	KCU40	44	**80**	106	mm/r	0,06 - 0,10	0,08 - 0,12	0,10 - 0,14	0,13 - 0,19
			I	MD	KC7140								
	2	S	O	HP	KCU25	94	**180**	229	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KCU40								
		U	O	HP	KCU40	71	**120**	1714	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
		I	O	HP	KCU40	44	**70**	106	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
	3	S	O	HP	KCU25	70	**140**	169	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KCU40								
		U	O	HP	KCU40	50	**100**	121	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
		I	O	HP	KCU40	30	**60**	72	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
	4	S	O	HP	KCU25	94	**120**	229	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KCU40								
		U	O	HP	KCU40	71	**100**	171	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
		I	O	HP	KCU40	44	**80**	106	mm/r	0,10 - 0,14	0,12 - 0,18	0,12 - 0,18	0,12 - 0,20
			I	HP	KC7140								
	5	S	O	HP	KCU25	78	**100**	190	mm/r	0,05 - 0,07	0,06 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KCU40								
		U	O	HP	KCU40	47	**60**	114	mm/r	0,05 - 0,07	0,06 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KC7140								
		I	O	HP	KCU40	31	**40**	76	mm/r	0,05 - 0,07	0,06 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KC7140								
	6	S	O	HP	KCU25	74	**95**	180	mm/r	0,04 - 0,07	0,05 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KCU40								
		U	O	HP	KCU40	45	**57**	108	mm/r	0,04 - 0,07	0,05 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KC7140								
		I	O	HP	KCU40	30	**38**	72	mm/r	0,04 - 0,07	0,05 - 0,08	0,06 - 0,10	0,08 - 0,12
			I	HP	KC7140								
M	1	S	O	MD	KCU25	48	**110**	134	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KCU40								
		U	O	MD	KCU40	31	**70**	86	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								
		I	O	MD	KC7140	22	**50**	61	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								
	2	S	O	MD	KCU25	48	**99**	134	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KCU40								
		U	O	MD	KCU40	31	**63**	86	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								
		I	O	MD	KC7140	22	**45**	61	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								
	3	S	O	MD	KCU25	48	**88**	134	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KCU40								
		U	O	MD	KCU40	31	**56**	86	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								
		I	O	MD	KC7140	22	**40**	61	mm/r	0,07 - 0,11	0,12 - 0,18	0,14 - 0,20	0,16 - 0,22
			I	MD	KC7140								

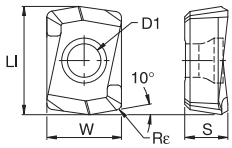
Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

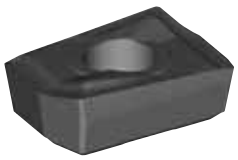
HTS DFT™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric				
									Recommended Feed Rate (f) by Diameter				
						min	Starting Value	max	Ø (mm)	DFT03... 45,00 - 55,00	DFT05... 55,00 - 78,00	DFT06... 78,00 - 140,00	DFT07... 140,00 - 270,00
K	1	S	O	HP	KCPK10	94	**171**	229	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCPK10								
		U	O	HP	KCU25	64	**117**	156	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCU25								
		I	O	HP	KCU40	40	**72**	96	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCU40								
	2	S	O	HP	KCPK10	94	**162**	229	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCPK10								
		U	O	HP	KCU25	64	**111**	156	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCU25								
		I	O	HP	KCU40	40	**68**	96	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,17 - 0,33
			I	HP	KCU40								
	3	S	O	HP	KCPK10	90	**146**	217	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,15 - 0,31
			I	HP	KCPK10								
		U	O	HP	KCU25	59	**100**	144	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,15 - 0,31
			I	HP	KCU25								
		I	O	HP	KCU40	35	**62**	84	mm/r	0,11 - 0,20	0,13 - 0,27	0,15 - 0,31	0,15 - 0,31
			I	HP	KCU40								
N	1	S	O	ST	KD1425	154	**240**	358	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	ST	KD1425								
		U	O	HP	KC7140	102	**160**	239	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KC7140								
		I	O	HP	KC7140	67	**104**	155	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KC7140								
	2	S	O	ST	KD1425	154	**223**	358	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	ST	KD1425								
		U	O	HP	KCU40	102	**149**	239	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
		I	O	HP	KCU40	67	**97**	155	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
	3	S	O	ST	KD1425	154	**206**	358	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	ST	KD1425								
		U	O	HP	KCU40	102	**138**	239	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
		I	O	HP	KCU40	67	**89**	155	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
	4	S	O	ST	KD1425	154	**223**	358	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	ST	KD1425								
		U	O	LD	KC7140	102	**149**	239	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	LD	KC7140								
		I	O	LD	KC7140	67	**97**	155	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	LD	KC7140								
	5	S	O	ST	KD1425	112	**220**	262	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	ST	KD1425								
		U	O	HP	KCU40	72	**140**	167	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
		I	O	HP	KCU40	46	**90**	107	mm/r	0,06 - 0,09	0,11 - 0,19	0,12 - 0,20	0,14 - 0,25
			I	HP	KCU40								
S	1	S	O	HP	KC7140	24	**40**	49	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								
		U	O	HP	KC7140	18	**30**	37	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								
		I	O	HP	KC7140	15	**25**	30	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								
	2	S	O	HP	KC7140	25	**35**	48	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								
		U	O	HP	KC7140	18	**25**	34	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								
		I	O	HP	KC7140	14	**20**	27	mm/r	0,04 - 0,07	0,05 - 0,08	0,07 - 0,10	0,07 - 0,10
			I	HP	KC7140								

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

DFR-GD





● first choice
○ alternate choice

NEW!

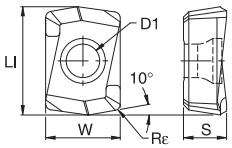
beyond

		KCPK10*	KCU25*	KCU40*	KC7140	KC7225
P		●	●	●	●	
M		○	○	○	○	
K		●	●	○	○	
N		○		○	○	
S		○		●	●	
H				○	○	

catalogue number	LI mm	W mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225
DFR020204GD	7,12	4,90	2,30	2,79	0,40	●	●	●	●	
DFR030204GD	8,71	6,00	2,50	2,88	0,40	●	●	●	●	
DFR040304GD	10,76	7,38	2,85	3,79	0,40	●	●	●	●	

*Beyond™ grade.

DFR-MD



● first choice
○ alternate choice

NEW!

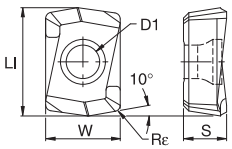
beyond

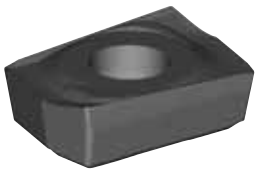
		KCPK10*	KCU25*	KCU40*	KC7140	KC7225
P			●	●	●	
M			○	●	●	
K			○	○	○	
N			○	○	○	
S			○	●	●	
H						

catalogue number	LI mm	W mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225
DFR020204MD	7,12	4,90	2,30	2,79	0,40		●	●	●	
DFR030204MD	8,71	6,00	2,50	2,88	0,40		●	●	●	
DFR040304MD	10,76	7,38	2,85	3,79	0,40		●	●	●	

*Beyond™ grade.

DFR-LD





● first choice
○ alternate choice

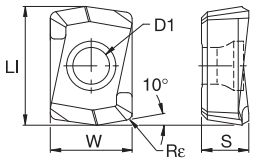
NEW!

beyond

		KCPK10*	KCU25*	KCU40*	KC7140	KC7225
P				○	●	○
M				●	●	○
K				●	○	●
N				●	○	●
S				●	○	●
H				○		

catalogue number	LI mm	W mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225
DFR020204LD	7,12	4,90	2,30	2,79	0,40			●	●	●
DFR030204LD	8,71	6,00	2,50	2,86	0,40			●		●
DFR040304LD	10,76	7,38	2,85	3,76	0,40			●		●

*Beyond™ grade.

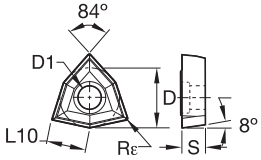


● first choice
○ alternate choice

P	
M	
K	
N	●
S	
H	

DFR • PCD • Single Tipped

catalogue number	LI mm	W mm	D1 mm	S mm	Rε mm	KD1425
DFR040304ST	10,50	7,40	2,85	3,18	0,40	●



● first choice
○ alternate choice

P	
M	
K	
N	●
S	
H	

DFT • PCD • Single Tipped • Full Face

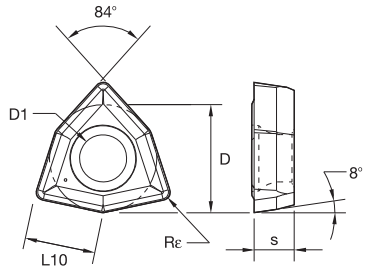
catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KD1425
DFT030304C	3,93	6,00	2,65	2,95	0,40	●
DFT05T308ST	5,19	8,00	3,40	3,75	0,80	●
DFT06T308ST	6,52	10,00	4,40	3,75	0,80	●
DFT070408ST	7,84	12,00	4,40	4,75	0,80	●
DFT090508ST	9,83	15,00	5,50	5,19	0,80	●
DFT110508ST	11,53	17,60	5,85	4,81	0,80	●

DFR™ • PCD

Material Group		Condition	Pocket seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric	
									Recommended Feed Rate (f) by Diameter	
						min	Starting Value	max	Ø (mm)	DFR04 20,50 - 24,00
N	1	S	O	ST	KD1425	396	**720**	841	mm/r	0,06 - 0,08
			I	ST	KD1425	396	**720**	841	mm/r	0,06 - 0,08
	2	S	O	ST	KD1425	369	**670**	782	mm/r	0,12 - 0,18
			I	ST	KD1425	369	**670**	782	mm/r	0,12 - 0,18
	3	S	O	ST	KD1425	341	**619**	723	mm/r	0,12 - 0,18
			I	ST	KD1425	341	**619**	723	mm/r	0,12 - 0,18
	4	S	O	ST	KD1425	475	**720**	841	mm/r	0,12 - 0,18
			I	ST	KD1425	475	**720**	841	mm/r	0,12 - 0,18
	5	S	O	ST	KD1425	480	**720**	864	mm/r	0,06 - 0,08
			I	ST	KD1425	480	**720**	864	mm/r	0,06 - 0,08

DFT™ • PCD

Material Group		Condition	Pocket Seat	Geometry	Grade	Cutting Speed — vc Range — m/min			Metric						
									Recommended Feed Rate (f) by Diameter						
						min	Starting Value	max	Ø (mm)	DFT03 16,00 - 24,00	DFT05 25,00 - 32,00	DFT06 33,00 - 40,00	DFT07 41,00 - 48,00	DFT09 49,00 - 68,00	DFT11 69,00 - 82,00
N	1	S	O	ST / C	KD1425	480	**720**	864	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST / C	KD1425	480	**720**	864	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
	2	S	O	ST / C	KD1425	447	**670**	804	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST / C	KD1425	447	**670**	804	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
	3	S	O	ST / C	KD1425	413	**619**	743	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST / C	KD1425	413	**619**	743	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
	4	S	O	ST / C	KD1425	447	**670**	804	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST / C	KD1425	447	**670**	804	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
	5	S	O	ST / C	KD1425	480	**720**	864	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18
			I	ST / C	KD1425	480	**720**	864	mm/r	0,05 - 0,07	0,07 - 0,09	0,10 - 0,14	0,12 - 0,16	0,14 - 0,18	0,14 - 0,18



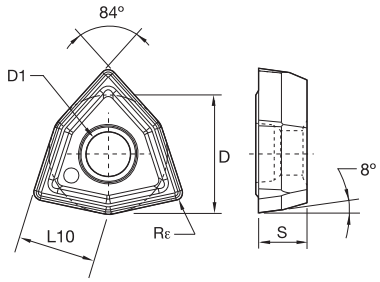
● first choice
○ alternate choice

NEW!

DFT-GD

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225	KC720	KMF
DFT030204GD	3,97	6,00	2,25	2,45	0,40	●	●	●			●	
DFT030304GD	3,97	6,00	2,65	2,95	0,40	●	●	●			●	
DFT05T308GD	5,29	8,00	3,40	3,75	0,80	●	●	●			●	
DFT06T308GD	6,62	10,00	4,40	3,75	0,80	●	●	●			●	
DFT070408GD	7,94	12,00	4,40	4,75	0,80	●	●	●			●	
DFT090508GD	9,92	15,00	5,50	5,25	0,80	●	●	●			●	

*Beyond™ grade.



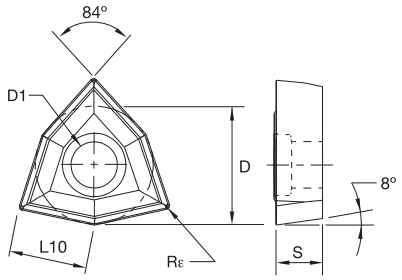
● first choice
○ alternate choice

NEW!

DFT-HD

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KC7820	KC7215*	KC7225*	KC7935*	KC7140	KC7815	KC720	KMF
DFT110506HD	11,63	17,60	5,85	4,93	0,60		●		●			●	
DFT110508HD	11,63	17,60	5,85	4,98	0,80		●			●			

*Beyond™ grade.



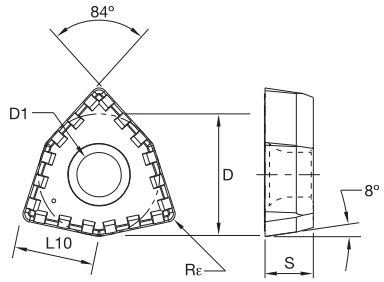
● first choice
○ alternate choice

NEW!

DFT-HP

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225	KC720	KMF
DFT030204HP	3,97	6,00	2,25	2,45	0,40	●	●	●	●			●
DFT030304HP	3,97	6,00	2,65	2,95	0,40	●	●	●	●			●
DFT05T308HP	5,29	8,00	3,50	3,75	0,80	●	●	●	●			●
DFT06T308HP	6,62	10,00	4,40	3,75	0,80	●	●	●	●			●
DFT070408HP	7,94	12,00	4,40	4,75	0,80	●	●	●	●			●
DFT090508HP	9,92	15,00	5,50	5,25	0,80	●	●	●	●			●

*Beyond™ grade.

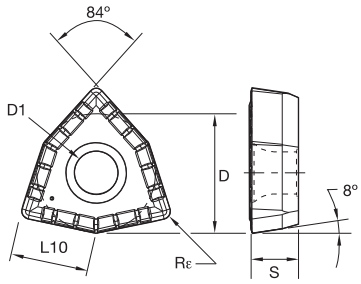


● first choice
○ alternate choice

	KC7820	KC7215	KC7225	KC7935	KC7140	KC7815	KC720	KMF
P			●				●	
M			○				●	
K			○					
N			●					
S							●	
H								

DFT-LD

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KC7820	KC7215	KC7225	KC7935	KC7140	KC7815	KC720	KMF
DFT030204LD	3,97	6,00	2,25	2,45	0,40			●					
DFT030304LD	3,97	6,00	2,65	2,95	0,40			●					
DFT05T308LD	5,29	8,00	3,40	3,75	0,80			●				●	
DFT06T308LD	6,62	10,00	4,40	3,75	0,80			●				●	
DFT070408LD	7,94	12,00	4,40	4,75	0,80			●				●	
DFT090508LD	9,92	15,00	5,50	5,25	0,80			●				●	



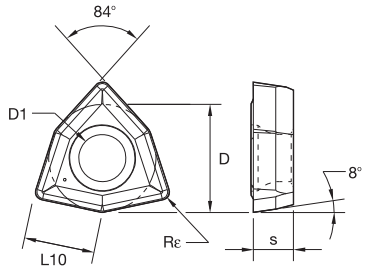
● first choice
○ alternate choice

	KCPK10*	KCU25*	KCU40*	KC7140	KC7225	KC720	KMF
P		●	●	●		●	
M		○	●	●		●	
K		○	○	○			
N		○	○	○			
S		○	●	○		●	
H							

DFT-MD

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KCPK10*	KCU25*	KCU40*	KC7140	KC7225	KC720	KMF
DFT030204MD	3,97	6,00	2,25	2,45	0,40		●	●	●		●	
DFT030304MD	3,97	6,00	2,65	2,95	0,40		●	●	●		●	
DFT05T308MD	5,29	8,00	3,40	3,75	0,80		●	●	●		●	
DFT06T308MD	6,62	10,00	4,40	3,75	0,80		●	●	●		●	
DFT070408MD	7,94	12,00	4,40	4,75	0,80		●	●	●		●	
DFT090508MD	9,92	15,00	5,50	5,25	0,80		●	●	●		●	

*Beyond™ grade.

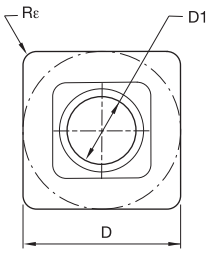


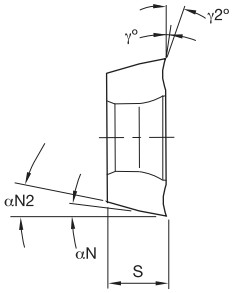
● first choice
○ alternate choice

	KC7820	KC7215	KC7225	KC7935	KC7140	KC7815	KC720	KMF	CS5
P		●			●				●
M		○			●				●
K		●			○				
N					○				●
S		●			○				○
H									

WOGX...24

catalogue number	L10 mm	D mm	D1 mm	S mm	Rε mm	KC7820	KC7215	KC7225	KC7935	KC7140	KC7815	KC720	KMF	CS5
WOGX03020424	3,94	6,00	2,65	2,50	0,40		●			●				●





● first choice
○ alternate choice

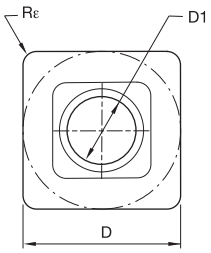
beyond

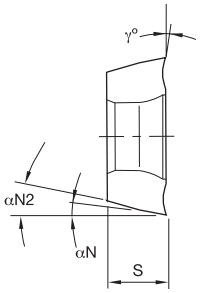
		KCPK10*	KCU25*	KCU40*
P		●	●	●
M		○	●	●
K		●	●	●
N		○	○	○
S		○	○	●
H				

SP.X..HP

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	γ2°	αN	αN2	KCPK10*	KCU25*	KCU40*
SPGX070308HP	7,80	2,85	3,18	0,80	10	24	7	11	●	●	●
SPPX09T310HP	9,38	3,60	3,97	1,00	10	24	7	11	●	●	●
SPPX120412HP	12,56	4,60	4,76	1,20	10	24	7	11	●	●	●
SPPX15T512HP	15,73	5,50	5,95	1,20	10	24	7	11	●	●	●

*Beyond™ grade.





● first choice
○ alternate choice

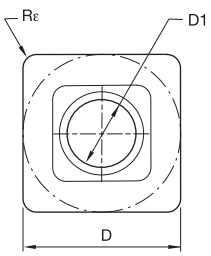
beyond

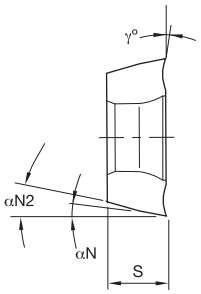
		KCPK10*	KCU25*	KCU40*
P		●	●	●
M		○	●	●
K		●	●	●
N		○	○	○
S		○	○	●
H				

SP.X..MD

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN2	KCPK10*	KCU25*	KCU40*
SPGX070308MD	7,80	2,85	3,18	0,80	16	7	11	●	●	●
SPPX09T310MD	9,38	3,60	3,97	1,00	16	7	11	●	●	●
SPPX120412MD	12,56	4,60	4,76	1,20	16	7	11	●	●	●
SPPX15T512MD	15,73	5,50	5,95	1,20	16	7	11	●	●	●

*Beyond™ grade.





● first choice
○ alternate choice

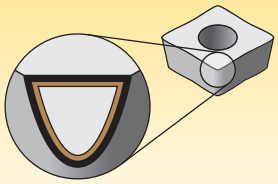
beyond

		KCPK10*	KCU25*	KCU40*
P		●	●	●
M		○	●	●
K		●	●	●
N		○	○	○
S		○	○	●
H				

SP.X..FP

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN2	KCPK10*	KCU25*	KCU40*
SPGX070308FP	7,80	2,85	3,18	0,80	6	7	11	●	●	●
SPPX09T310FP	9,38	3,60	3,97	1,00	6	7	11	●	●	●
SPPX120412FP	12,56	4,60	4,76	1,20	6	7	11	●	●	●
SPPX15T512FP	15,73	5,50	5,95	1,20	6	7	11	●	●	●

*Beyond™ grade.

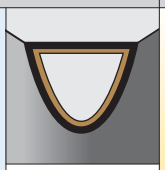
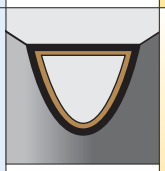
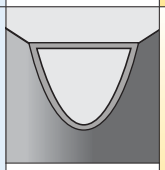


Coatings provide high-speed capability and are engineered for finishing to light roughing.

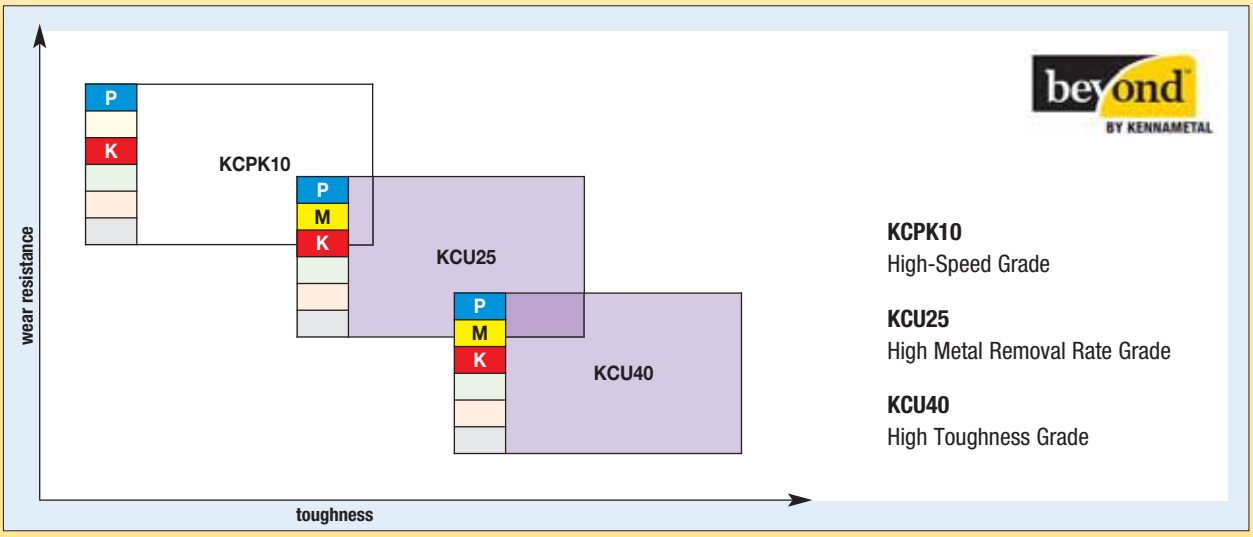
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KCPK10  Al_2O_3 TiCN	Composition: With an advanced CVD TiCN-Al_2O_3 coating combined with a cobalt-enriched carbide substrate, this grade offers a balanced combination of deformation resistance and edge toughness. Application: The KCPK10 grade offers outstanding abrasion and crater wear resistance for high-speed machining of steels and cast irons. Use for very high cutting speeds with low to medium feed rates.	P								
KCU25  Al_2O_3 TiCN	Composition: This advanced CVD TiCN-Al_2O_3 coating together with a newly engineered tough carbide substrate, adequate deformation resistance along with excellent edge strength is ensured and offers very good wear resistance over a wide range of machining conditions. Application: KCU25, as a high productivity grade with high speeds and feeds, is the first choice for productive process with very good reliability in steels, stainless steels, and cast irons.	P								
KCU40  PVD TiN_TiAlN	Composition: With a multilayered PVD TiN-TiAlN coating and a tough substrate, this grade withstands interruptions and provides high wear resistance for long tool life. Application: The KCU40 grade is the first choice for high reliability in most materials. This grade should be used at medium speeds and high feeds due to sharper edges and as a grade for high toughness applications. It covers steel, stainless steel, cast iron, and high-temp alloys under certain conditions.	P								

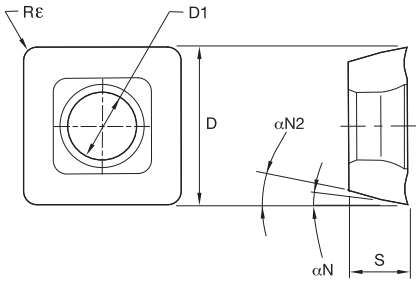
Drill Fix™ Inserts



KCPK10
High-Speed Grade

KCU25
High Metal Removal Rate Grade

KCU40
High Toughness Grade

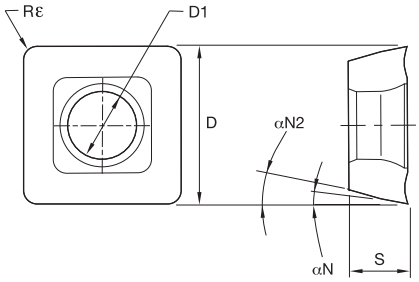


● first choice
○ alternate choice

P	○	●		●		
M		○		○		
K	●	●		●		
N	○			○		
S		●		○		
H						

SP..X..FP

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN2	KC7210	KC7215	KC7140	KC7815	KM1
SPGX060304FP	6,35	2,85	3,18	0,40	6	7	11	●	●		●	
SPGX070304FP	7,94	2,85	3,18	0,40	6	7	11	●	●		●	
SPPX09T308FP	9,53	3,60	3,97	0,80	6	7	11	●	●		●	
SPPX120408FP	12,70	4,60	4,76	0,80	6	7	11	●	●		●	
SPPX15T508FP	15,73	5,50	5,95	0,80	6	7	11	●	●		●	

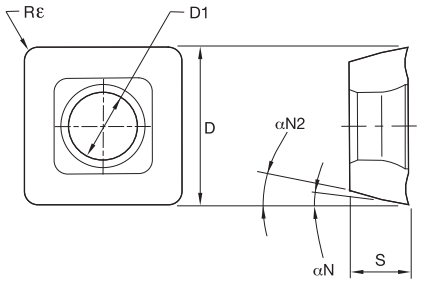


● first choice
○ alternate choice

P				●	●	
M				●	○	
K				○	●	
N				○	○	
S				○	○	
H						

SP..X..MD

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN2	KC7210	KC7215	KC7140	KC7815	KM1
SPGX060304MD	6,35	2,65	3,18	0,40	20	7	11			●	●	
SPGX070304MD	7,94	2,85	3,18	0,40	16	7	11			●	●	
SPPX09T308MD	9,53	3,60	3,97	0,80	16	7	11			●	●	
SPPX120408MD	12,70	4,60	4,76	0,80	16	7	11			●	●	
SPPX15T508MD	15,73	5,50	5,95	0,80	16	7	11			●	●	

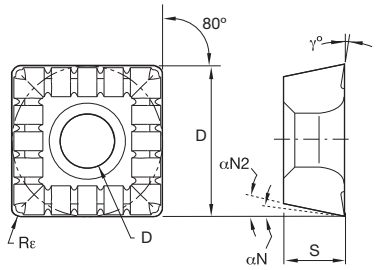


● first choice
○ alternate choice

P		●	●	●		
M		○	●	○		
K		●	○	●		
N			○	○		
S		●	○	○		
H						

SP..X..RHP

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN2	KC7210	KC7215	KC7140	KC7815	KM1
SPGX060304RHP	6,35	2,65	3,18	0,40	10	7	11		●	●	●	
SPGX070304RHP	7,94	2,85	3,18	0,40	10	7	11		●	●	●	
SPPX09T308RHP	9,53	3,60	3,97	0,80	10	7	11		●	●	●	
SPPX120408RHP	12,70	4,60	4,76	0,80	10	7	11		●	●	●	
SPPX15T508RHP	15,73	5,50	5,95	0,80	10	7	11		●	●	●	



● first choice
○ alternate choice

P		●	●			
M		○	●			
K		○	○			
N			○			
S		●	○			
H						

SPGX...-31(ISO) • SPGT...MD/MDT (ANSI)

ISO catalogue number	ANSI catalog number	D mm	D1 mm	S mm	Rε mm	γ°	KC7210	KC7215	KC7140	KC7815	KM1
SPGX06020431	**SPGT060204MD**	6,35	2,65	2,38	0,40	–		●	●		
SPGX07030431	**SPGT070304MDT**	7,94	2,85	3,18	0,40	12		●	●		
SPGX09030831	**SPGT090308MDT**	9,53	3,50	3,18	0,79	12		●	●		
SPGX12040831	**SPGT120408MDT**	12,70	4,50	4,76	0,79	12		●	●		

NOTE: SPGX (ISO code)/SPGT (ANSI code) are only to be used for HTS-C.

CTR™ Counterboring Tools

CTR Counterboring Tools are designed for high-production screw-head counterbores and similar counterboring operations. Tools can be adapted to almost all applications resulting in optimum cutting performance and long tool life.

Extremely unequal insert positioning and flutes prevent chattering and generates less noise. A precise 90° bottom can be achieved with the S2 S inserts.

Features and Benefits

Productivity and Reliability

- S2 S inserts reduce additional drill operations to achieve a precise 90° bottom.
- Chatter-free operations for improved surface quality due to extremely unequal insert positioning and flutes.
- Yield high metal removal rates to reduce machine time and manufacturing costs.

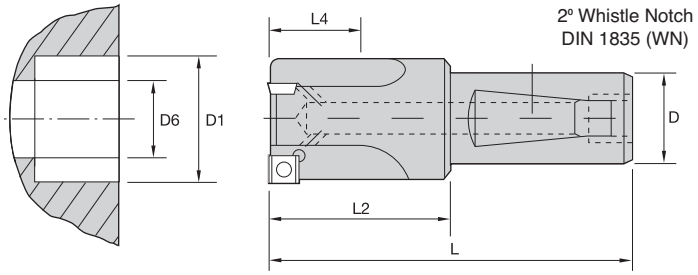
Versatility

- Counterboring tools can be applied for steel, stainless steel, non-ferrous materials, cast irons, and heat-resistant alloy applications.
- Toolholders are double- or triple-fluted at a diameter range starting at 15–46mm offering through-coolant capabilities.
- S2 S standard inserts are double edged and available in various grades and geometries.

Customisation

- Length and diameter variations with and without adjustable cartridges available.
- Combination and multistep tooling based on drilling tools, like Drill Fix™, with short distance and small diameter steps.
- Various radii and customised grades available upon request.

- Counterboring tool shipped with insert screws and Torx wrench.
- Order inserts separately; see pages J78–J79.

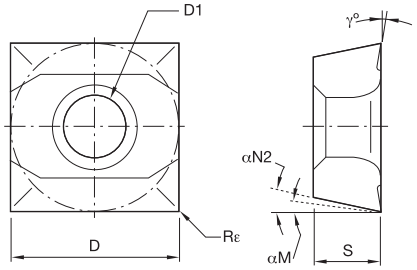


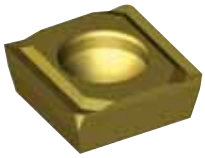
S2 S Whistle Notch™ WN Shank • Metric

	mm									
	D1									
catalogue number	mm	tol min D1	tol max D1	D	D6	L	L2	L4 max	gage insert	number of inserts
CBTF150R2WD20N2M	15,14	-0,135	0,135	20	6,0	81	31	8,5	SPHX060204R..	2
CBTF160R2WD20N2M	16,14	-0,135	0,135	20	7,0	81	31	8,5	SPHX060204R..	2
CBTF170R2WD20N2M	17,14	-0,135	0,135	20	8,0	86	36	13,5	SPHX060204R..	2
CBTF180R2WD20N2M	18,14	-0,135	0,135	20	8,4	86	36	13,5	SPHX070304R..	2
CBTF180R2WD20N3M	18,14	-0,135	0,135	20	8,4	86	36	13,5	SPHX060204R..	3
CBTF200R2WD20N2M	20,17	-0,165	0,165	20	8,5	86	36	16,0	SPHX070304R..	2
CBTF200R2WD20N3M	20,17	-0,165	0,165	20	8,5	86	36	16,0	SPHX060204R..	3
CBTF210R2WD20N2M	21,17	-0,165	0,165	20	8,5	86	36	16,0	SPHX070304R..	2
CBTF210R2WD20N3M	21,17	-0,165	0,165	20	10,5	86	36	11,0	SPHX060204R..	3
CBTF220R2WD20N2M	22,17	-0,165	0,165	20	10,4	86	36	16,0	SPHX070304R..	2
CBTF220R2WD20N3M	22,17	-0,165	0,165	20	10,5	86	36	16,0	SPHX060204R..	3
CBTF230R2WD20N2M	23,17	-0,165	0,165	20	10,5	91	41	21,0	SPHX090304R..	2
CBTF230R2WD20N3M	23,17	-0,165	0,165	20	10,5	91	41	16,0	SPHX070304R..	3
CBTF240R2WD20N2M	24,17	-0,165	0,165	20	10,5	91	41	18,5	SPHX090304R..	2
CBTF240R2WD20N3M	24,17	-0,165	0,165	20	10,5	91	41	16,0	SPHX070304R..	3
CBTF250R2WD20N2M	25,17	-0,165	0,165	20	12,0	96	46	23,5	SPHX090304R..	2
CBTF250R2WD20N3M	25,17	-0,165	0,165	20	10,5	96	46	21,0	SPHX070304R..	3
CBTF260R2WD20N2M	26,17	-0,165	0,165	20	13,0	96	46	23,5	SPHX090304R..	2
CBTF270R2WD20N3M	27,17	-0,165	0,165	20	10,5	96	46	21,0	SPHX090304R..	3
CBTF280R2WD20N3M	28,17	-0,165	0,165	20	15,0	101	51	23,5	SPHX090304R..	3
CBTF300R2WD20N3M	30,17	-0,165	0,165	20	15,0	101	51	23,0	SPHX090304R..	3
CBTF320R2WD20N3M	32,20	-0,195	0,195	20	17,0	101	51	23,0	SPHX090304R..	3
CBTF330R2WD20N3M	33,20	-0,195	0,195	20	17,0	101	51	25,5	SPHX090304R..	3
CBTF340R2WD32N3M	34,20	-0,195	0,195	32	18,0	111	51	25,5	SPHX090304R..	3
CBTF350R2WD32N3M	35,20	-0,195	0,195	32	19,0	111	51	25,5	SPHX090304R..	3
CBTF360R2WD32N3M	36,20	-0,195	0,195	32	19,0	116	56	27,5	SPHX090304R..	3
CBTF380R2WD32N3M	38,20	-0,195	0,195	32	22,0	121	61	30,0	SPHX120404R..	3
CBTF400R2WD32N3M	40,20	-0,195	0,195	32	21,0	121	61	30,5	SPHX120404R..	3
CBTF420R2WD32N3M	42,20	-0,195	0,195	32	22,0	126	66	33,5	SPHX120404R..	3
CBTF460R2WD32N3M	46,20	-0,195	0,195	32	25,0	126	66	33,5	SPHX120404R..	3

Spare Parts

gage insert	insert screw	wrench	Torx size
SPHX060204R..	192.432	170.028	T8
SPHX070304R..	192.432	170.028	T8
SPHX090304R..	191.924	170.024	T9
SPHX070304R..	192.432	170.028	T8
SPHX120404R..	191.916	170.025	T15





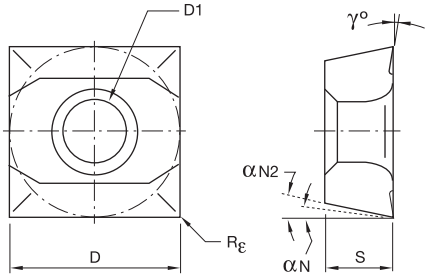
● first choice
○ alternate choice

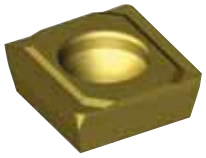
P			●	●		
M			○	●		
K			○	○		
N				○		
S				○		
H						

SPHX..R-20

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN M	KC7210	KC7215	KC7140	KC7815	KM1
SPHX060202R20	6,35	2,85	2,38	0,20	12	11	7		●			
SPHX060204R20	6,35	2,85	2,38	0,40	12	11	7		●	●		
SPHX060206R20	6,35	2,85	2,38	0,60	12	11	7		●			
SPHX060208R20	6,35	2,85	2,38	0,80	12	11	7		●			
SPHX070302R20	7,94	2,85	3,18	0,20	12	11	7		●			
SPHX070304R20	7,94	2,85	3,18	0,40	12	11	7		●	●		
SPHX070306R20	7,94	2,85	3,18	0,60	12	11	7		●			
SPHX070308R20	7,94	2,85	3,18	0,80	12	11	7		●			
SPHX070310R20	7,94	2,85	3,18	1,00	12	11	7		●			
SPHX070312R20	7,94	2,85	3,18	1,20	12	11	7		●			
SPHX090304R20	9,53	3,50	3,18	0,40	12	11	7		●	●		
SPHX090308R20	9,53	3,50	3,18	0,80	12	11	7		●			
SPHX090310R20	9,53	3,50	3,18	1,00	12	11	7		●			
SPHX090312R20	9,53	3,50	3,18	1,20	12	11	7		●			
SPHX090316R20	9,53	3,50	3,18	1,60	12	11	7		●			
SPHX120404R20	12,70	4,50	4,76	0,40	12	11	7		●	●		
SPHX120408R20	12,70	4,50	4,76	0,80	12	11	7		●			
SPHX120410R20	12,70	4,50	4,76	1,00	12	11	7		●			
SPHX120412R20	12,70	4,50	4,76	1,20	12	11	7		●			
SPHX120416R20	12,70	4,50	4,76	1,60	12	11	7		●			
SPHX120420R20	12,70	4,50	4,76	2,00	12	11	7		●			
SPHX150508R20	15,88	5,50	5,95	0,80	12	11	7		●			
SPHX150512R20	15,88	5,50	5,95	1,20	12	11	7		●			
SPHX150516R20	15,88	5,50	5,95	1,60	12	11	7		●			
SPHX150520R20	15,88	5,50	5,95	2,00	12	11	7		●			

NOTE: SPHX...R-20: This geometry is first choice for steel applications.





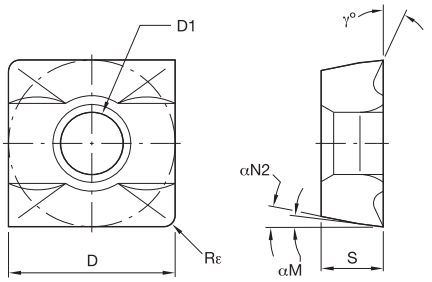
● first choice
○ alternate choice

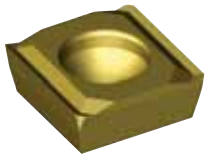
P	○	○				
M		○				
K	●	●				●
N	○					
S		○				
H						

SPHX..R-21

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	αN M	KC7210	KC7215	KC7140	KC7815	KM1
SPHX060202R21	6,35	2,85	2,38	0,20	4	11	7		●			
SPHX060204R21	6,35	2,85	2,38	0,40	4	11	7	●	●			●
SPHX060206R21	6,35	2,85	2,38	0,60	4	11	7		●			
SPHX060208R21	6,35	2,85	2,38	0,80	4	11	7		●			
SPHX070304R21	7,94	2,85	3,18	0,40	4	11	7	●	●			●
SPHX070306R21	7,94	2,85	3,18	0,60	4	11	7		●			
SPHX070308R21	7,94	2,85	3,18	0,80	4	11	7		●			
SPHX070310R21	7,94	2,85	3,18	1,00	4	11	7		●			
SPHX090304R21	9,53	3,50	3,18	0,40	4	11	7	●	●			●
SPHX090308R21	9,53	3,50	3,18	0,80	4	11	7		●			
SPHX090310R21	9,53	3,50	3,18	1,00	4	11	7		●			
SPHX090312R21	9,53	3,50	3,18	1,20	4	11	7		●			
SPHX090316R21	9,53	3,50	3,18	1,60	4	11	7		●			
SPHX120404R21	12,70	4,50	4,76	0,40	4	11	7	●	●			●
SPHX120408R21	12,70	4,50	4,76	0,80	4	11	7		●			
SPHX120410R21	12,70	4,50	4,76	1,00	4	11	7		●			
SPHX120412R21	12,70	4,50	4,76	1,20	4	11	7		●			
SPHX120416R21	12,70	4,50	4,76	1,60	4	11	7		●			
SPHX120420R21	12,70	4,50	4,76	2,00	4	11	7		●			
SPHX150504R21	15,88	5,50	5,95	0,40	4	11	7					●

NOTE: SPHX...R-21: This geometry is first choice for cast iron applications.





● first choice
○ alternate choice

P						
M						
K						○
N						●
S						
H						

SPHX..R-22

catalogue number	D mm	D1 mm	S mm	Rε mm	γ°	αN	KC7210	KC7215	KC7140	KC7815	KM1
SPHX060204R22	6,35	2,85	2,38	0,40	25	11					●
SPHX070304R22	7,94	2,85	3,18	0,40	25	11					●
SPHX090304R22	9,53	3,50	3,18	0,40	25	11					●
SPHX120404R22	12,70	4,50	4,76	0,40	25	11					●
SPHX150504R22	15,88	5,50	5,95	0,40	25	11					●

NOTE: SPHX...R-22: This geometry is first choice for aluminium applications.

Hole Finishing

Tool Selection Guide **K4–K5**

Application Examples **K6–K92**

Reaming Tools **K94–K127**

RMS K94–K97

RMB K98–K101

RHM K102–K112

Multiflute Reaming Tools K113–K114

RIQ Quattro Cut and RIR K115–K124

Valve Seat and Guide K125

Reaming Tool Order Sheet K126

Application Hints K127

SIF Steerable Toolholders **K128–K134**

PCD Customised Tooling **K135–K138**

Romicron Fine-Boring System **K139–K178**

ModBORE Boring Systems **K180–K204**

Hole Finishing with Kennametal

Owning the entire process chain from raw materials all the way to reconditioning means Kennametal is almost the only source in the metalworking industry where you can get all types of Hole Finishing tooling, from reaming and fine boring to motion tooling, directly from one hand. Kennametal is capable of offering you customised solutions for your application that are the best fit for your machining challenge without any limitations, in regard to portfolio or capacity.

PCD Tooling

- Extremely productive and tailored for satisfying your high-volume production needs.
- Several standard PCD grades, like KD1415™ and KD1425™, are available to provide the highest tool life and cutting data as well as unmatched surface and diameter tolerance quality.
- Platforms are available depending on your application and preference from steel to carbide based, adjustable pocket seats, fine-boring components like Romicron™ or FB cartridges, spindle couplings, or SIF™ steerable adaptors.

Multiflute Reaming

- RMS™, RMB™, and RHM™.
- Highly productive and easy to apply.
- Large, standard, off-the-shelf portfolio of solid carbide, cermet, carbide-tipped, and modular reaming tools, all ground to achieve H7 without any customisation.
- Complex Specials with multiple steps, coupling, and length variations are available.
- Intermediate sizes, grades, and lead chamfers available with short delivery.

Padded Reaming

- RIQ™ Quattro Cut™ and RIR™.
- Highest precision and surface quality achievable but still easy to apply.
- RIQ is the market-leading reaming technology, enabling you to leave out any back taper adjustment, dramatically reducing setup time and effort while still offering highest accuracy and surface quality and four cutting edges with PCD, CBN, carbide, or cermet.
- RIR provides you the most stable pocket seat and fail-safe clamping, from smallest to largest diameters.
- Combine the large, standard RIQ and RIR insert offering with your customised tool body.

Fine Boring

- Romicron™ and ModBORE™
- Extremely flexible, covering a very large diameter and length range.
- Offers the latest grade technology by using standard turning inserts.
- Romicron enables diameter modifications directly at the machine by hand without setup equipment or accuracy affecting lock screws.
- ModBORE offers a very large diameter range with each type of tool along with roughing to finishing tooling and can be easily and safely adapted to every KM™ spindle.

Motion Tooling

- Sophisticated tooling achieves most challenging tasks.
- Large, customised Complex Solution portfolio of:
  - Linear feed out heads.
  - Eccentric actuating heads.
  - Pivot heads.
  - Cylinder boring tools.
  - Line boring bars.
  - Bottle boring tools.
  - Valve seat and guide tools.
  - Machining centre tools.
- Depending on your application and preference, tools are based on the positive-stop-principle; use drawbars, like with engineered solution machines, or don't require machining centre modifications at all.

● first choice
○ alternate choice

			P	M	K	N	S	H	standard diameter range	standard diameter accuracy	engineered solution diameter range	engineered solution diameter accuracy	⊕	⌭
reaming tools		**RMS**™ reaming monoblock — solid carbide	●	●	●	●	○		5–14mm	IT7	1,4–25,4mm	IT6	10 µm	7 µm
		RMB™ reaming monoblock — brazed carbide/cermet	●	●	●	●	○		14–20mm	IT7	14–65mm	IT6	10 µm	7 µm
		RMB-E™ (expandable) reaming monoblock — brazed carbide/cermet	●	●	●	●	○		14–20mm	IT6	14–42mm	IT5–IT6	10 µm	7 µm
		RHM™ reaming head — modular carbide/cermet	●	●	●	●	○		14–42mm	IT7	14–50mm	IT6	10 µm	7 µm
		RHM-E™ (expandable) reaming head — modular carbide/cermet	●	●	●	●	○		14–42mm	IT6	14–42mm	IT5–IT6	10 µm	7 µm
		RIR™ reamer insert — rectangular carbide	●	●	●	●	●	○	—	—	6–300mm	IT5	10 µm	4 µm
		Quattro Cut™ **RIQ**™ reamer insert — Quattro Cut carbide/cermet/PCD/CBN	●	●	●	●	●	○	—	—	16–300mm	IT5	10 µm	4 µm
		RIQ MicroFinish reamer insert — Quattro Cut carbide/cermet/PCD/CBN	●	●	●	●	●		—	—	16–300mm	IT5	10 µm	4 µm
fine-boring tools		**Romicron**™ **SVU BB** fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	4–100mm	IT6	1,6–100mm	IT6	5 µm	5–10 µm
		Romicron SVS00B — 6B fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	●	25–139mm	IT6	25–183mm	IT6	5 µm	5–10 µm
		Romicron SVU65/92 fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	71–213mm	IT6	10–326mm	IT6	5 µm	5–10 µm
		Romicron SVS M fine boring carbide/cermet/PCD/CBN	●	●	●	○	●	○	>40mm	IT6	40–1600mm	IT6	5 µm	5–10 µm
		Romicron Multicron fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	—	—	70–180mm	IT6	5 µm	10–15 µm
		ModBORE™ **RBHT** roughing carbide/cermet/PCD/CBN	●	●	●	●	●		23,5–153mm	IT9	23,5–153mm	IT9	10 µm	>20 µm
		ModBORE FBHO fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	9,75–88,1mm	IT7	3,0–88,1mm	IT7	5 µm	5–10 µm
		ModBORE FBHM fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	9,75–320mm	IT7	3,0–320mm	IT7	5 µm	5–10 µm
		ModBORE FBHS fine boring carbide/cermet/PCD/CBN	●	●	●	●	●	○	23,5–153mm	IT7	23,5–153mm	IT7	5 µm	5–10 µm
		ModBORE Bridge Tools roughing carbide/cermet/PCD/CBN	●	●	●	●	●		150–2205mm	IT9	150–2205mm	IT9	10 µm	>20 µm
		ModBORE Bridge Tools fine boring carbide/cermet/PCD/CBN	●	●	●	●	●		150–2205mm	IT7	150–2205mm	IT7	5 µm	>10 µm
		Fine Boring Cartridges fine boring carbide/cermet/PCD/CBN	●	○	●	●	○		>28mm	IT7	>28mm	IT7	5 µm	5–10 µm
PCD		**PCD** round tools — steel base				●			—	—	10–100mm	IT6	10 µm	10 µm
		PCD round tools — carbide base				●			—	—	5–25mm	IT6	5 µm	7 µm

⌭ Cylindricity
NOTE: Process and application dependant.
Highly dependant on the premachine hole accuracy.
Use of high-performance drilling/premachining tools mandatory to reach values.

⊕ Position
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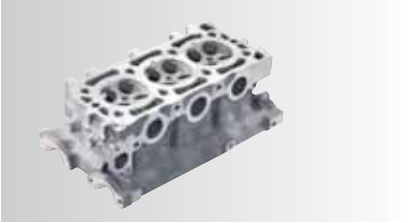
achievable surface quality Ra						capability				cost/part	cycle time	required operator experience	page(s)
P	M	K	N	S	H								
0,5–1,0 µm	0,5–1,0 µm	0,5–1,5 µm	–	0,5–1,0 µm	–	●	●	●	●	moderate	low	low	K94–K97
0,5–1,0 µm	0,5–1,0 µm	0,5–1,5 µm	–	0,5–1,0 µm	–	●	●	● carbide only	● carbide only	moderate	low	low	K98–K101
0,5–1,0 µm	0,5–1,0 µm	0,5–1,5 µm	–	0,5–1,0 µm	–	●	●	● carbide only	● carbide only	moderate	low	moderate	**please contact us**
0,5–1,0 µm	0,5–1,0 µm	0,5–1,5 µm	–	0,5–1,0 µm	–	●	●	● carbide only	● carbide only	moderate	low	low	K103–K106
0,5–1,0 µm	0,5–1,0 µm	0,5–1,5 µm	–	0,5–1,0 µm	–	●	●	● carbide only	● carbide only	moderate	low	moderate	**please contact us**
0,5–1,6 µm	0,5–1,6 µm	0,5–1,8 µm	0,1–0,6 µm	<0,8 µm	<0,8 µm	●	●	●	●	low	moderate	high	K118–K119
0,5–1,6 µm	0,5–1,6 µm	0,5–1,8 µm	0,1–0,6 µm	<0,8 µm	<0,8 µm	●	●	●	●	low	moderate	moderate	K119–K121
0,3–1,6 µm	0,3–1,6 µm	0,5–1,8 µm	0,1–0,6 µm	<0,8 µm	–	●	●	●	●	low	moderate	moderate	K119–K121
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	○	○	low	moderate	low	K144–K149
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	●	●	low	moderate	low	K150–K151
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	○	○	low	moderate	low	K152–K154
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	●	●	low	moderate	low	K155–K156
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	○	○	low	low–moderate	low	**please contact us**
1,0–5,0 µm	1,0–5,0 µm	1,0–5,0 µm	1,0–2,0 µm	1,0–5,0 µm	–	●	●	●	●	low	low	low–moderate	K185–K188
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	●	●	low	moderate	low–moderate	K189
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	●	●	low	moderate	low–moderate	K190–K191
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	<1,2 µm	●	●	●	●	low	moderate	low–moderate	K194
1,0–5,0 µm	1,0–5,0 µm	1,0–5,0 µm	1,0–2,0 µm	1,0–5,0 µm	–	●	●	●	●	low	low	low–moderate	K196–K197
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	–	●	●	●	●	low	moderate	low–moderate	K196–K197
0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	0,8–2,0 µm	–	●	●	○	○	low	moderate	low–moderate	K200
–	–	–	0,1–0,8 µm	–	–	●	●	●	●	low	very low	moderate	K135–K138
–	–	–	0,1–0,8 µm	–	–	●	●	●	●	low	very low	moderate	K135–K138

Ra Surface roughness
NOTE: Surface roughness values are guidelines and depend on the application, coolant situation, machine, and cutting data applied.

Cylinder Head



RIQ™ QUATTRO CUT™ VALVE SEAT & GUIDE PARENT BORE

CHALLENGE

- Valve seat and guide parent bore machining combined.
- Tolerance range 8 µm.
- Cast iron.
- Machining centre with internal coolant.

SOLUTION

- RIQ padded reamer with integrated hydraulic chuck.
- RIQ Full face CBN KB1630™ insert.
- RMS™ reamer for guide parent bore.

CUTTING DATA

- vc 425 m/min f 0,10 mm/rev valve seat.
- vc 130 m/min f 0,60 mm/rev valve guide.

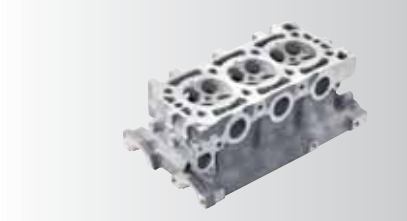
RESULT

- **Four usable cutting edges per CBN insert.**
- **CBN RIQ insert with 28.000 bore tool life.**
- **1.400 bores with regrindable RMS reamer.**

BENEFIT

- **Cost savings due to four edged full face CBN insert.**
- **No insert back taper adjustment needed.**
- **Same RPM at both stages saving time of spindle acceleration and deceleration.**

Cylinder Head



Polished flutes
for improved
chip evacuation

PCD SEAT & GUIDE PARENT BORE PCDRSC04RLE

CHALLENGE

- Valve seat and guide parent bore machining combined.
- Tolerance range H7.
- Aluminium.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel based tool (valve seat) with shrink in PCD tip, carbide based reamer (valve guide) with less than 4 µm total run out.

CUTTING DATA

- vc 344 m/min f 0,60 mm/rev valve seat.
- vc 985 m/min f 0,60 mm/rev valve guide.

RESULT

- **Tool life of 456.000 bores.**

BENEFIT

- **Productivity increases as same RPM applied to both seat and guide stages.**
- **Lowest possible run out resulting in higher tool life.**

Cylinder Head

RIQ serration defines valve seat angle

RIQ™ QUATTRO CUT™ VALVE SEAT & GUIDE MACHINING

CHALLENGE

- Valve guide machining combined with primary and secondary seat angles.
- Sinter metal.
- Concentricity of seat to guide less than 50 µm.
- Machining centre with internal coolant.

SOLUTION

- RIQ Valve Seat tooling with integrated hydraulic chuck.
- RIQ K68™ carbide inserts and solid carbide RMS™ multiflute reamer.

CUTTING DATA

- vc 80 m/min f 0,10 mm/rev valve seat.
- vc 80 m/min f 0,32 mm/rev valve guide.

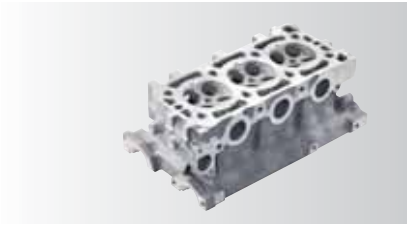
RESULT

- **Tool life of 12.000 valve seats per insert.**

BENEFIT

- **Twelve usable cutting edges per carbide insert.**
- **Due to high precision RIQ pocket seat there is less setup effort as no angular adjustment of the insert is needed.**
- **Able to adapt RIR™ padded reamer machining the valve guide.**

Cylinder Head



RIQ serration defines valve seat angle

RIQ™ QUATTRO CUT™ VALVE SEAT & GUIDE MACHINING

CHALLENGE

- Valve guide machining combined with primary and secondary seat angles.
- Sinter metal.
- Concentricity of seat to guide less than 50 µm.
- Transfer line with internal coolant.

SOLUTION

- RIQ Valve Seat tooling with carbide bushing for Valve Guide reaming tools.
- RIQ KB1630™ insert with TiN wear indicator.
- RIR™ padded reamer machining.

CUTTING DATA

- vc 80 m/min f 0,07 mm/rev valve seat.
- vc 60 m/min f 0,14 mm/rev valve guide.

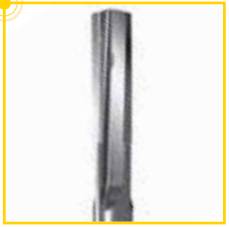
RESULT

- **Tool life of 18.000 valve seats per roughing insert.**
- **Tool life of 12.000 valve seats per roughing insert.**

BENEFIT

- **Twelve usable cutting edges per full face CBN insert.**
- **Due to high precision RIQ pocket seat there is less setup effort as no angular adjustment of the insert is needed.**
- **Able to adapt RMS™ solid carbide reamer machining the valve guide.**

Cylinder Head



Semi finish stage
after pilot hole

PCD insert with
chipbreaker

RMS™ VALVE GUIDE MACHINING

CHALLENGE

- Valve guide bore Ø 6mm (.236").
- Tolerance range 12 µm H7.
- Brass material, lead free.
- Concentricity of seat to guide less than 50 µm.

SOLUTION

- RMS solid carbide reamer — engineered solution.
- Machining centre — with semi finish stage for picking up pilot hole.
- Transfer line — without semi finish stage.

CUTTING DATA

- vc 30 m/min (98 SFM).
- f 0,42 mm/rev (.017 IPR).

RESULT

- **Tool life of 3.000 bores.**

BENEFIT

- **No presetting is needed.**
- **Productivity increases due to four effective cutting edges compared to one with padded reamers.**

RIR™ VALVE GUIDE MACHINING

CHALLENGE

- Valve guide bore Ø 6mm (.236“).
- Tolerance range 12 µm H7.
- Brass material, lead free.
- Concentricity of seat to guide less than 50 µm.

SOLUTION

- RIR padded reamer with PCD guide pads.
- Single edged KD1415™ PCD insert with chip breaker.

CUTTING DATA

- vc 60 m/min (197 SFM).
- f 0,14 mm/rev (.006 IPR).

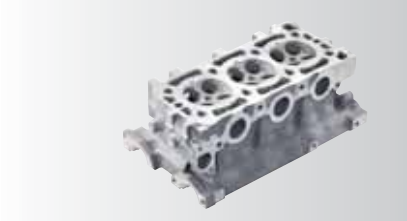
RESULT

- **Tool life of 100 bores.**
- **Surface finish Rz 6.3 µm.**

BENEFIT

- **Secure process due to very good chip control on lead free brass.**

Cylinder Head



MOTION TOOLING VALVE SEAT & GUIDE MACHINING

CHALLENGE

- Semi-finish and finish machining of primary seat angle and valve guide in one operation.
- Sinter metal.
- Transfer line with internal coolant.

SOLUTION

- Taper turning head with quill for reamer.

CUTTING DATA

- vc 271 m/min f 0,05 mm/rev valve seat.
- vc 60 m/min f 0,11 mm/rev valve guide.

RESULT

- **Run out of guide to seat 7 µm.**
- **Cylindricity of guide 12 µm.**

BENEFIT

- **Higher accuracy of valve seat angles as machining result is independent from insert wear.**
- **Time saving combination with valve guide reamer.**

Cylinder Head

Polished flutes in for
improved chip evacuation

Chipformer in carbide body

PCD STEP REAMING PCDCSC22RLE

CHALLENGE

- Valve lifter bore Ø 12mm (.472").
- Tolerance range 18 µm G7.
- Aluminium AlSi7Mg.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, carbide based reamer and counter sinker with internal coolant.
- Four effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,10 mm/rev (.004 IPR).

RESULT

- **Tool life of 125.000 holes.**
- **Surface finish better than Rz 1.5 µm.**

BENEFIT

- **Secure process and very good concentricity.**

PCD STEP REAMING PCDCSC02RLE

CHALLENGE

- Injector bore Ø 7,75–19,5mm (.305–.768").
- Tolerance range 5 µm.
- Aluminium G-AlSi7Mg.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, carbide based tool with PCD guide pads at Ø 19,5mm and internal coolant.
- Two effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 220 m/min (722 SFM).
- f 0,35 mm/rev (.014 IPR).

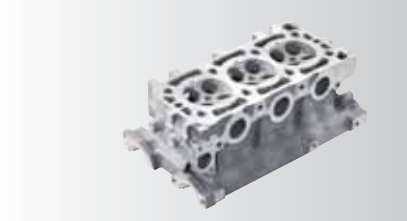
RESULT

- **Tool life of 400.000 bores.**
- **Surface finish better than Rz 3 µm.**

BENEFIT

- **Secure process due to chipformer in carbide body improving chip formation.**

Cylinder Head



RIQ pocket for indexing without adjustment

RIQ™ QUATTRO CUT™/RIR™ PADDED REAMING

CHALLENGE

- Injector bore Ø 10,3–41mm (.406–1.614").
- Tolerance range 18–25 µm H7.
- Cast iron GG25.
- Quick-change interface between first and second machining stage.

SOLUTION

- First stage: RIR reamer with RIQ profile insert.
- Second stage: RIQ padded multi step reamer.
- Radial actuated KST interface as stages have different tool life due to different diameters.

CUTTING DATA

- vc 23–90 m/min n = 700 RPM.
- f 0,32 mm/rev (.025 IPR).

RESULT

- **Tool life of 1.000 components per insert edge.**
- **Surface finish better than Rz 16 µm.**

BENEFIT

- **No back taper adjustment needed with RIQ inserts.**
- **Front and back end of tool can be handled independently.**
- **RIQ pocket seat allows insert indexing without adjustment reaching < 20 µm axial run out.**

Cylinder Head

Self aligning
padded reamer

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Oil seal bore finishing Ø 56,4mm (2.220").
- Tolerance range 30 µm H7.
- Aluminium.
- Cambore to oil seal bore self alignment.
- Transfer line with internal coolant.

SOLUTION

- RIQ padded reamer with two PCD KD1415™ full-face inserts floating on finish machined cam bore.
- Self-aligning reamer body to ensure cam bore to oil seal bore concentricity.

CUTTING DATA

- vc 326 m/min (1.070 SFM).
- f 0,32 mm/rev (.004 IPR).

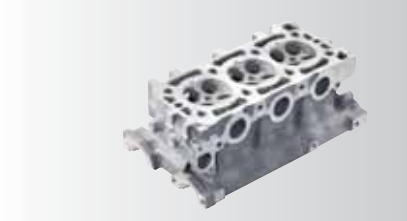
RESULT

- **Tool life of 80.000 cylinder heads.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Cost savings due to four edged full face PCD RIQ insert.**

Cylinder Head



Semi finish and finish stage combined

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Cambore finishing Ø 25mm (.984").
- Tolerance range 21 µm H7.
- Aluminium.
- Deflection less than 20 µm over total length.
- Machining centre with internal coolant.

SOLUTION

- RIQ padded reamer with two PCD KD1415™ full-face inserts for semi-finishing and two PCD KD1415 full-face inserts for finishing.

CUTTING DATA

- vc 334 m/min (1.096 SFM).
- f 0,16 mm/rev (.006 IPR).

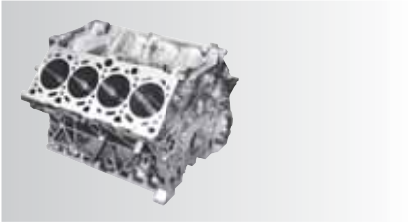
RESULT

- **Tool life of 160.000 cylinder heads.**
- **Surface finish Ra 0.3 µm.**

BENEFIT

- **No insert back taper adjustment is needed.**
- **Cost savings due to four edged full face PCD RIQ insert.**
- **Setup time reduction from 8 h with competitive tooling to less than 1/2 h with RIQ.**

Cylinder Block



Individual and simultaneous CLB adjustment

ROMICRON™ FINE BORING

CHALLENGE

- Cylinder bore Ø 78,45mm (3.089").
- Tolerance range 20 µm.
- Cast iron GG26.
- Replace low productivity reaming process.
- Machining centre HSK100 with internal coolant.

SOLUTION

- Multicron engineered solutions tool with three finishing cartridges with individual set up and automatic wear compensation with front CLB knob.
- CPGW060204S01015C KB1630.

CUTTING DATA

- vc 1.281 m/min (4.200 SFM).
- f 0,42 mm/rev (.017 IPR).

RESULT

- **Tool life of 2.000 components per setup.**
- **Cylindricity 13 µm.**
- **Surface finish Ra 2.4 µm.**

BENEFIT

- **High productivity due to three cutting edges and automatic wear compensation inside of machine.**
- **Bore tolerance range of 20 µm easily and consistently achieved due to 1 µm per click in radius adjustment executed by machine.**

Cylinder Block

CLB screw for automatic wear compensation

MOTION TOOLING

CHALLENGE

- Cylinder bore Ø 75mm (2.953").
- Cast iron GG25.
- Semi-finish and finish operation combined in one tool with coolant pressure activated finish stage.
- Machining centre with internal coolant.

SOLUTION

- Motion tool with feed out cartridges.
- Two channel coolant system with coolant supply for inserts and feed out cartridges.
- Solid CBN inserts with eight cutting edges KB1340™.

CUTTING DATA

- vc 600 m/min f 0,05 mm/rev semi-finish.
- vc 600 m/min f 0,11 mm/rev finish.

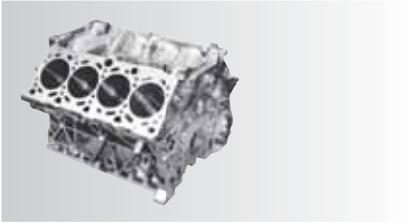
RESULT

- **Tool life of 2.000 bores per tooling setup.**
- **Cylindricity better than 8 µm.**

BENEFIT

- **Higher productivity as roughing at forward and finishing at backward movement — with coolant feed out.**
- **Finish diameter adjustable with CLB process.**
- **Improved cylindricity than two separate operations.**

Cylinder Block



Bayonet quick change system

ROMICRON™ FINE BORING

CHALLENGE

- Cylinder bore Ø 78,933mm (3.108").
- Cast iron GG25.
- Reduce setup and adjustment effort with roughing and finishing at various cylinder blocks.
- Engineered solutions vertical mill with internal coolant.

SOLUTION

- Romicron engineered solutions tool with quick-change interface and drawbar actuated finish cartridge.
- SNGN090308T00520 KY1615 roughing insert.
- CPMT09T308LF KT315™ finishing insert.

CUTTING DATA

- vc 580 m/min f 0,26 mm/rev roughing.
- vc 580 m/min f 0,19 mm/rev finishing.

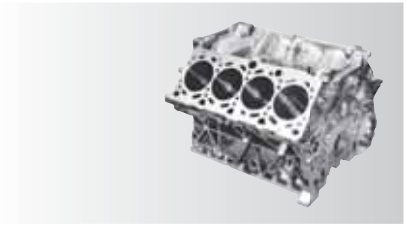
RESULT

- **Tool life of 100 components per setup.**
- **Cylindricity 13 µm.**
- **Surface finish Ra 1,5 µm.**

BENEFIT

- **Bore tolerance easily and consistently achieved due to 1 µm per click in radius adjustment.**
- **Weight reduction from 11 kg to 1,8 kg.**
- **Setup time reduction from 1,5 h to 15 min.**
- **Secure process resulting in higher cpk value.**

Cylinder Block



ROMICRON™ FINE BORING

CHALLENGE

- Piston bore Ø 68mm (2.677").
- Tolerance range 30 µm.
- Cast iron.
- Machining centre HSK100A with internal coolant.

SOLUTION

- Engineered solution SVS4B head.
- Two semi-finish and one finish cutting edge.
- TPGW110204S01015C KB1630™.

CUTTING DATA

- vc 595 m/min (1.952 SFM).
- f 0,15 mm/rev (.006 IPR).

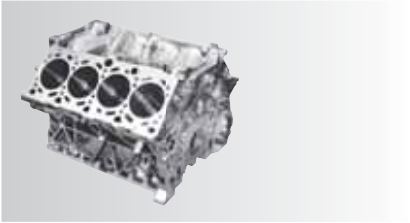
RESULT

- **Surface finish Ra 0.8 µm.**
- **Roundness better than 8 µm.**

BENEFIT

- **80% less adjustment time needed.**
- **Bore tolerance range of 30 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Cylinder Block



ROMICRON™ FINE BORING

CHALLENGE

- Cylinder bore Ø 96,9mm (3.815").
- Tolerance range 30 µm.
- Cast iron.
- Machining centre with internal coolant.

SOLUTION

- Romicron standard KR50SVS4B094M head with engineered solution steep taper adaptor with chamfering inserts.
- CPGW060208S01015C KB1630™.

CUTTING DATA

- vc 600 m/min (1.969 SFM).
- f 0,30 mm/rev (.012 IPR).

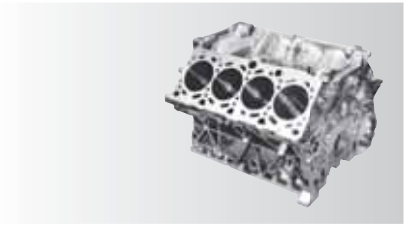
RESULT

- **Tool life of 800 components.**
- **Surface finish Ra 3 µm.**

BENEFIT

- **High productivity increase as a a result of 2x cutting speed and 40% higher feed rate compared to previous solution.**
- **Bore tolerance range of 30 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Cylinder Block



Semi and finishing stages combined

ROMICRON™ FINE BORING

CHALLENGE

- Cylinder bore Ø 103,17mm (4.062").
- Tolerance range 50 µm.
- Cast iron.
- Semi-finish and finish operation combined.
- Machining centre HSK100A with internal coolant.

SOLUTION

- Romicron engineered solutions tool with two semi-finishing, one finishing and one chamfering cartridges.
- Automatic wear compensation with CLB.
- SCGW09T308S01015C KB1630™.

CUTTING DATA

- vc 1.000 m/min (3.281 SFM).
- f 0,25 mm/rev (.010 IPR).

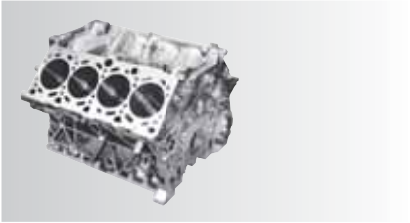
RESULT

- **Tool life of 450 components per cutting edge.**
- **Cylindricity less than 17 µm.**
- **Surface finish Ra 2.4 µm.**

BENEFIT

- **High productivity due to automatic wear compensation inside of machine.**
- **1 µm per click in radius adjustment.**

Cylinder Block



Individual
and simultaneous
CLB adjustment

ROMICRON™ FINE BORING

CHALLENGE

- Cylinder liner Ø 127,94mm (5.037").
- Cast iron GGzCrMo250.
- Increase productivity, reduce amount of constant stock for following honing process.
- Custom vertical lathe with internal coolant.

SOLUTION

- Multicron engineered solution tool with five finishing cartridges with HSK80C adaptor for facing and boring through feed-out system included.
- CPGW060204S01015C KB1630™.

CUTTING DATA

- vc 1.200 m/min (3.937 SFM).
- f 0,50 mm/rev (.020 IPR).

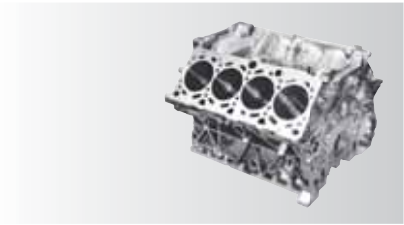
RESULT

- **Tool life of 4.000 components per setup.**
- **Cylindricity 8 µm.**
- **Surface finish Ra 2,0 µm.**

BENEFIT

- **High productivity due to five cutting edges.**
- **Bore tolerance range of 20 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Cylinder Block



1 µm per click
in radius adjustment

ROMICRON™ FINE BORING

CHALLENGE

- Crank bore finishing Ø 60mm (2.362").
- Tolerance range 30 µm.
- Cast iron GG25.
- Reduce setup and cycle time.
- Transfer line with internal coolant.

SOLUTION

- Line boring bar with Romicron standard cartridges KRMSVS00M055M.
- Semi-finishing and finishing operations in one.
- CPGT060204LF KC5010™.

CUTTING DATA

- vc 150 m/min f 0,2 mm/rev semi finish.
- vc 150 m/min f 0,12 mm/rev finish.

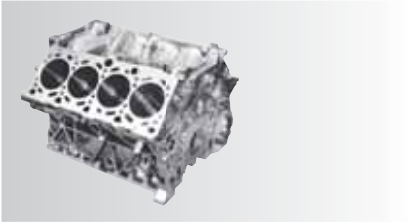
RESULT

- **Tool life of 120 components.**
- **Surface finish better than Rz 16 µm.**
- **Roundness better than 5 µm.**

BENEFIT

- **Semi-finishing operation during forward movement and finishing operation during backward movement of the workpiece.**
- **Use of standard of the shelf Romicron tooling with engineered solution line boring bar.**
- **Time saving due to low presetting effort with 1 µm per click in radius adjustment.**

Cylinder Block



Semi finish and
finish stage combined

FINE BORING

CHALLENGE

- Crank bore finishing Ø 37mm (1.457").
- Tolerance range 5 µm.
- Cast iron.
- Maintain tolerance for minimum of 50 bores.
- Machining centre with internal coolant.

SOLUTION

- Line boring bar with tool bits adjusted by differential screw for more sensitivity.
- Dynamically balanced by design with axial holes ensuring highest stiffness of tool.

CUTTING DATA

- vc 160 m/min f 0,12 mm/rev semi-finish.
- vc 160 m/min f 0,08 mm/rev finish.

RESULT

- **Customer proprietary information.**

BENEFIT

- **Use of standard C-style inserts in LF reduce tooling costs in KCK15.**
- **Reduction of cycle time.**
- **Easy and fine adjustments ensure a stable process.**

Cylinder Block

RIQ chamfering, plunging and reaming insert

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Balancing shaft bore Ø 31–39mm.
- Cast iron.
- Reaming of three diameters, machining of three chamfers and one facing operation in one tool.
- Minimum quantity lubrication MQL.

SOLUTION

- RIQ padded reamer with one effective cutting edge combining chamfering, counter sinking and reaming stage in one tool, using two reaming RIQ and one special RIQ insert.

CUTTING DATA

- vc 100 m/min (328 SFM).
- f 0,14 mm/rev (.006 IPR).

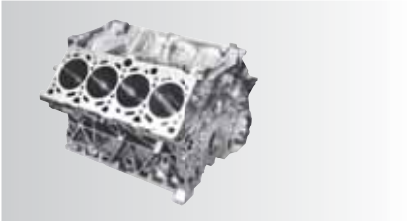
RESULT

- **Tool life of 8.000 bores per insert.**
- **Surface finish Rz 10 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Highest angular precision without any adjustment with RIQ at chamfering stage.**

Cylinder Block



KST pre-loaded taper face contact interface

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Dowel pin bore Ø 15,341mm (.604").
- Tolerance range 50 µm.
- Cast iron GG26Cr.
- Machining centre with internal coolant.

SOLUTION

- RIQ padded reamer with HSK interface.
- Coated carbide KC6105™ RIQ inserts with four edges.

CUTTING DATA

- vc 70 m/min (328 SFM).
- f 0,13 mm/rev (.005 IPR).

RESULT

- **Tool life of 96.000 bores per insert.**

BENEFIT

- **No insert back taper adjustment needed.**

RHM™ MODULAR REAMING

CHALLENGE

- Position bore Ø 20mm (.787").
- Tolerance range 21 µm N7.
- Cast iron GG26Cr.
- Replace padded double-edged reamer.
- Machining centre with internal coolant.

SOLUTION

- Special RHM head with six cutting edges.
- Engineered solution KC6105 TiN coated carbide grade.

CUTTING DATA

- vc 63 m/min (207 SFM).
- f 0,84 mm/rev (.033 IPR).

RESULT

- **Tool life of 336m.**

BENEFIT

- **8x higher productivity due to higher feed rate.**
- **Tool life increased by 240% when compared to previous solution.**

Conrod

ROMICRON™ FINE BORING

CHALLENGE

- Pin bore Ø 58,033mm (2.285").
- Brass.
- Combine finishing of crank and pin bore into one tool to increase productivity.
- Machining centre with internal coolant.

SOLUTION

- Romicron engineered-solution tool with two Romicron mechanism in one tool body.
- KC5010™.

CUTTING DATA

- vc 450 m/min (1.476 SFM).
- f 0,10 mm/rev (.004 IPR).

RESULT

- **Tool life of 350 pin bores per insert.**
- **Surface finish better than Ra 1,0 µm.**
- **Cylindricity 5 µm.**

BENEFIT

- **Combination tool increases productivity.**
- **Bore tolerance range of 26 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

ROMICRON™ FINE BORING

CHALLENGE

- Crank bore Ø 93,777mm (3.692").
- Steel C70.
- Combine finishing of crank and pin bore into one tool to increase productivity.
- Machining centre with internal coolant.

SOLUTION

- Romicron engineered solution tool with two Romicron mechanism in one tool body.
- KT315™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,10 mm/rev (.004 IPR).

RESULT

- **Tool life of 260 crank bores per insert.**
- **Surface finish better than Ra 1,0 µm.**
- **Cylindricity 5 µm.**

BENEFIT

- **Combination tool increases productivity.**
- **Bore tolerance range of 26 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

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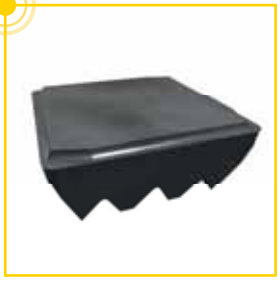


RIQ cermet insert with chip former geometry

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Pin bore Ø 19mm (.748").
- Tolerance range 33 µm H8.
- Steel C70.
- Entry/exit inclined and chip control improvement.
- Transfer line with MQL internal coolant.

SOLUTION

- RIQ padded reamer with two axial staggered RIQ inserts in microfinishing setup.
- Coated cermet RIQ inserts with four edges and special chip former.

CUTTING DATA

- vc 200 m/min (328 SFM).
- f 0,20 mm/rev (.006 IPR).

RESULT

- **Tool life of more than 5.000 components per insert.**
- **Surface finish Rz 12–14 µm.**
- **Cylindricity 5 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **High productivity increase due to higher feed rate when compared to previous fine boring tools.**
- **Very short chips improve chip evacuation.**
- **Secure process as surface requirement of Rz 8 µm to Rz 16 µm are achieved.**

Conrod

Individual and simultaneous CLB adjustment

ROMICRON™ FINE BORING

CHALLENGE

- Crank bore Ø 91,24mm (3.592").
- Steel C70.
- Increase productivity with semi-finishing and finishing operations.
- Transfer line with internal coolant.

SOLUTION

- Multicron quick-change engineered-solution tool with three semi-finishing and three finishing cartridges.
- Drawbar CLB adjustment of finishing inserts.
- SCMT09T308LF KT315™.

CUTTING DATA

- vc 230 m/min (820 SFM).
- f 0,36 mm/rev (.014 IPR).

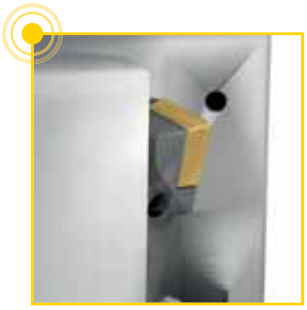
RESULT

- **Tool life of 2,320 conrods per insert.**
- **Surface finish Ra 1,0 µm.**
- **Cylindricity 2 µm.**

BENEFIT

- **High productivity due to three cutting edges.**
- **Quick-change coupling to enable individual cartridge setup at multicron finishing stage.**
- **Bore tolerance range of 22 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Conrod



Double feed out mechanism

ROMICRON™ MOTION TOOLING

CHALLENGE

- Crank bore Ø 98,82mm (3.891").
- Tolerance range 26 µm.
- Steel C70.
- Drawbar actuated solution to semi-finish, finish, and chamfer both sides of the crank bore.

SOLUTION

- Motion tool based on Romicron with double feed out mechanism and fixed insert cartridges.
- SCMT09T308LF KC5010™.

CUTTING DATA

- vc 230 m/min (755 SFM).
- f 0,12 mm/rev (.005 IPR).

RESULT

- **Tool life of 600 conrods per insert.**
- **Surface finish Ra 1.0 µm.**
- **Cylindricity 2 µm.**

BENEFIT

- **Very stable and highly productive process as multiple operations are combined.**
- **Blue print solution for various types of conrods at customer site.**

Conrod

ROMICRON™ FINE BORING

CHALLENGE

- Pin bore Ø 16,77mm (660").
- Crank bore Ø 20,77mm (.818").
- Steel C70.
- Combines roughing, semi-finishing, and finishing operation into one tool.

SOLUTION

- Romicron standard head HSK63ASVUBB2116M with engineered-solution boring bar.
- CPMT060204LF KC5010™.

CUTTING DATA

- vc 120 m/min f 0,10 mm/rev roughing.
- vc 120 m/min f 0,05 mm/rev finishing.

RESULT

- **Tool life of 2.500 components per insert edge.**
- **Surface finish Ra 0,5 µm.**
- **Cylindricity 3 µm.**

BENEFIT

- **Productivity increase due to combination tool.**
- **Bore tolerance range of 20 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Steering Column

Adjustable cartridge
with PCD insert

PCD COUNTERSINKING PCDCSTM03RLE

CHALLENGE

- Bore Ø 26,2; 37,6; and 44mm.
- Tolerance range 21 µm N7.
- Aluminium G-AlSi9Cu3.
- Varying depth of cut ca. 1,5mm.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with internal coolant.
- Three effective cutting teeth; KD1415™.
- Standard cartridge SCFCR08CA06 achieves required surface finish range.

CUTTING DATA

- vc 500 m/min (1.640 SFM).
- f 0,30 mm/rev (.012 IPR).

RESULT

- **Surface finish Ra 1,6–2,3 µm.**

BENEFIT

- **Secure process.**

Steering Column

PCD COUNTERSINKING PCDCSTA03RLE

CHALLENGE

- Bore Ø 17,07; 39,1; and 50,9mm.
- Tolerance range 21 µm N7.
- Aluminium G-AlSi10Mg.
- Varying depth of cut ca. 2,5mm.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Three effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 600 m/min (1.969 SFM).
- f 0,30 mm/rev (0,012 IPR).

RESULT

- **Tool life of 2.000 metres.**

BENEFIT

- **Productivity increased due to higher cutting data.**

Gear Housing

PCD STEP REAMING PCDRSCA04RLE

CHALLENGE

- Bearing bore Ø 13,5 and 18mm.
- Tolerance range 18 µm H7.
- Aluminium G-AlSi10Mg.
- Varying depth of cut ca. 0,5mm.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, carbide-based tool shrinked in SIF™ steerable interface with internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 230 m/min (755 SFM).
- f 0,25 mm/rev (0,010 IPR).

RESULT

- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process.**

Gear Housing

Adjustable PCD pocket seat

PCD COUNTERSINKING PCDCSTMJ04RLE

CHALLENGE

- Bearing bore Ø 40, 62, 85mm.
- Tolerance range 25 µm S7.
- Aluminium AlSi9Cu3.
- Machine three different diameters with one tool.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with adjustable pocket seats, SIF™ steerable interface and internal coolant.
- Four effective cutting and chamfering teeth; KD1415™.

CUTTING DATA

- vc 630–1.340 m/min n = 5.010 RPM.
- f 0,32 mm/rev (0,013 IPR).

RESULT

- **Tool life of 500 workpieces.**

BENEFIT

- **Secure process with only 1,2 sec cutting time per operation.**
- **Higher productivity due to combining three operations into one tool.**
- **Very stable process without chip control issues.**

Gear Housing

Highly uneven spacing

PCD STEP REAMING PCDRSTM06RLE

CHALLENGE

- Bearing bore Ø 130mm.
- Tolerance range 25 µm S6.
- Aluminium AlSi8Cu3.
- Varying depth of cut ca. 0,5–5mm.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with HSK interface and internal coolant.
- Six effective cutting and chamfering teeth in positive cutting position; KD1415™.

CUTTING DATA

- vc 350 m/min (1.148 SFM).
- f 0,60 mm/rev (0,024 IPR).

RESULT

- **Tool life increase versus previous solution.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process.**

Gear Housing

PCD REAMING PCDRSTA03RLE

CHALLENGE

- Bearing bore Ø 35mm (.984").
- Tolerance range 21 µm H7.
- Aluminium G-AlSi10Mg.
- Pre-drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Three effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 235 m/min (771 SFM).
- f 0,30 mm/rev (0,012 IPR).

RESULT

- **Tool life of 100.000 holes.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process despite high L/D ratio.**
- **Very good surface quality.**

Gear Housing

PCD REAMING PCDRSC02RLE

CHALLENGE

- Index bore Ø 11,5mm (0,435").
- Tolerance range 18 µm H7.
- Aluminium G-AlSi10Mg.
- Varying depth of cut ca. 3mm.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, carbide-based tool with shrink in HSK63A adaptor with internal coolant.
- Two effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 1.005 m/min (3.297 SFM).
- f 0,16 mm/rev (0,024 IPR).

RESULT

- **Tool life of 200.000 holes.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**
- **Very short overhang length resulting in very good stability.**

Gear Housing

PCD REAMING PCDRSTA04RLE

CHALLENGE

- Bearing bore Ø 80mm (3,150").
- Tolerance range 30 µm H7.
- Aluminium G-AlSi10Mg.
- Pre-drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Four effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,32 mm/rev (0,013 IPR).

RESULT

- **Tool life of more than 30.000 components.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**

Gear Housing

PCD MULTI-OPERATION TOOL PCDMSTA04RLE

CHALLENGE

- Bearing bore Ø 28 and 90mm.
- Tolerance range 21 and 35 µm H7.
- Aluminium G-AlSi10Mg.
- Pre-drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with two individual adjustable SIF™ steerable interfaces and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,32 mm/rev (0,013 IPR).

RESULT

- **Tool life of more than 95.000 holes.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**

Gear Housing

PCD STEP REAMING PCDRSTM04RLE

CHALLENGE

- Bearing bore Ø 80 and 120mm.
- Tolerance range 30 and 35 µm H7.
- Aluminium G-AlSi7Mg.
- Pre-drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with HSK63A interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 800 m/min (2.625 SFM).
- f 0,32 mm/rev (0,013 IPR).

RESULT

- **Tool life of more than 400 min.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**
- **Tool life increase versus previous solution.**

Gear Housing

PCD COUNTERSINKING PCDCSTA03RLE

CHALLENGE

- Bearing bore Ø 81,25 and 90,3mm.
- Tolerance range 30 and 35 µm H7.
- Aluminium G-AlSi7Mg.
- Pre drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Three effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,30 mm/rev (0,012 IPR).

RESULT

- **Tool life of 10.000 components.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**

Gear Housing

PCD STEP REAMING PCDRSTA03RLE

CHALLENGE

- Bearing bore Ø 17,984 and 66,037mm.
- Tolerance range 8 and 20 µm.
- Aluminium GD-AlSi7.
- Pre-drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Three effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 315 m/min f 0,24 mm/rev Ø 17,984 mm.
- vc 1.156 m/min f 0,15 mm/rev Ø 66,037 mm.

RESULT

- **Tool life of 35.000 components.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and very good surface quality.**
- **Achieves high concentricity and straightness.**

Gear Housing

PCD PROFILE MILLING PCDPSTM04E

CHALLENGE

- Retraining grooves Ø 60,4 and 90,7mm.
- Tolerance range 60 µm.
- Aluminium G-AlSi10Mg.
- Pre drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with HSK63A interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 1.500 m/min (4.921 SFM).
- f 0,06 mm/rev (0,002 IPR).

RESULT

- **Tool life of 50.000 parts.**
- **Surface finish better than Ra 0,4 µm.**

BENEFIT

- **Secure process.**
- **Combining two operations in one tool increases productivity.**
- **High accuracy in the distance between the two machined grooves.**

PCD PROFILE MILLING PCDPSTM04E

CHALLENGE

- Retraining grooves Ø 58, 58,6 and 60mm.
- Tolerance range 25 µm.
- Aluminium G-AlSi10Mg.
- Pre drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel based tool with HSK63A interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 1.500 m/min (4.921 SFM).
- f 0,06 mm/rev (0,002 IPR).

RESULT

- **Tool life of 50.000 work pieces.**
- **Surface finish better than Ra 0,2 µm.**

BENEFIT

- **Combining machining operations increases productivity.**
- **Excellent dimensional accuracy.**

Differential Housing

ROMICRON™ FINE BORING

CHALLENGE

- Bearing bores Ø 60,22 and 88,85mm.
- Tolerance range 17 µm.
- Ductile cast iron GGG50.
- Finishing, back boring, and chamfering in one tool.
- Machining centre HSK100A with internal coolant.

SOLUTION

- Dynamically balanced Romicron engineered solution.
- Individual adjustment of fine boring and back boring stages.
- CPGT060204LF KC5010™.

CUTTING DATA

- vc 200 m/min (656 SFM).
- f 0,12 mm/rev (0,005 IPR).

RESULT

- **Tool life of 240 components per insert.**
- **Surface finish Ra 1,6 µm.**

BENEFIT

- **Bore tolerance range of 17 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Differential Housing

SPHX insert for
precise 90° shoulder

PCD STEP REAMING

CHALLENGE

- Pin bore Ø 60mm (2.362").
- Tolerance range 19 µm H6.
- Ductile cast iron GGG40.
- Finishing bore and 90° shoulder to Ø 55mm.
- Machining centre with internal coolant.

SOLUTION

- Standard Romicron KM50SVS2B107M head with engineered solution cartridge.
- SPHX060204R21 KC7215™ standard double-edged countersinking insert.

CUTTING DATA

- vc 180 m/min (590 SFM).
- f 0,05 mm/rev (0,002 IPR).

RESULT

- **Tool life of 4.000 components per insert.**
- **Surface finish Ra 1,6 µm.**

BENEFIT

- **All requirements regarding perpendicularity achieved.**
- **Bore tolerance range of 19 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Differential Housing

Adjustable pocket seat

PCD STEP REAMING PCDRSTA04RLE

CHALLENGE

- Bore Ø 40 and 55mm (1,575 and 2,165").
- Tolerance range 30 µm R7.
- Aluminium GD-AlSi10Mg.
- Fine boring two diameters with one tool.
- Machining centre with internal coolant.

SOLUTION

- PCD steel-based fine boring tool with four effective cutting edges, adjustable pocket seats at Ø 55mm, SIF™ steerable interface, and internal coolant.
- CCMT060202 KM™one uncoated carbide.

CUTTING DATA

- vc 340 and 520 m/min n = 3.000 RPM.
- f 0,60 mm/rev (0,024 IPR).

RESULT

- **Tool life of more than 15.000 components per insert.**
- **Surface finish Rz 10–12 µm.**
- **Cylindricity better than 20 µm.**

BENEFIT

- **All requirements regarding perpendicularity, roundness, and surface quality between Rz 8 µm and Rz 16 µm continuously achieved.**
- **Higher productivity due to combining three operations in one tool.**

Water Pump Housing

PCD COUNTERSINKING PCDCSTA03RLE

CHALLENGE

- Bore positions of Ø 21 and 24mm (0,827 and 0,945").
- Tolerance range 13 and 33 µm.
- Aluminium AlSi9Cu3.
- Pre drilled hole with 0,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with adjustable pocket seats, SIF™ steerable interface and internal coolant.
- Four effective cutting teeth; KD1415™.

CUTTING DATA

- vc 600 m/min (1.969 SFM).
- f 0,12 mm/rev (0,005 IPR).

RESULT

- **Tool life of 80000 components.**
- **Surface finish Rz 0,8 µm with Ø 21mm and Rz 12 µm with Ø 24mm.**

BENEFIT

- **All requirements regarding perpendicularity, roundness, and surface quality between Rz 8 µm and Rz 15 µm at Ø 24mm are continuously achieved.**

Water Pump Housing

PCD MULTI-OPERATION TOOL PCDMSC02CCE

CHALLENGE

- Position bore Ø 7,9mm (0,311").
- Tolerance range 22 µm H8.
- Aluminium AlSi9Cu3.
- Combine drilling, back chamfering, and facing.
- Machining centre BT40 with internal coolant.

SOLUTION

- Solid carbide, PCD tipped, steel-based tool with back chamfering capability and internal coolant.
- Two effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 350 m/min (1.148 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Tool life of 50.000 components.**
- **Surface finish Rz 0,8 µm.**

BENEFIT

- **Higher productivity due to combining three operations in one tool.**

Water Pump Housing

PCD STEP REAMING PCDRSTM04RLE

CHALLENGE

- Bearing bores Ø 10,14–18,45mm.
- Tolerance range 3–10 µm.
- Aluminium GD-AlSi9Cu3.
- Pre-casted hole with 0,3mm depth of cut.
- Machining centre HSK32A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with adjustable pocket seats, SIF™ steerable interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 89–162 m/min n = 2800 RPM.
- f 0,4 mm/rev (0,015 IPR).

RESULT

- **Tool life of 40.000 components.**
- **Surface finish Rz 0,8 µm.**

BENEFIT

- **The quality criterion with an exact alignment of rightness, concentricity, and a high value of surface quality was reached.**

Water Pump Housing

PCD END MILLING PCDESTM05E

CHALLENGE

- Face milling of connection face Ø 32mm.
- Aluminium AlSi10Mg.
- Casted face with 2,5mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based end mill with HSK63A interface and internal coolant.
- Five effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 1.005 m/min (3.294 SFM).
- f 0,06 mm/rev (0,002 IPR).

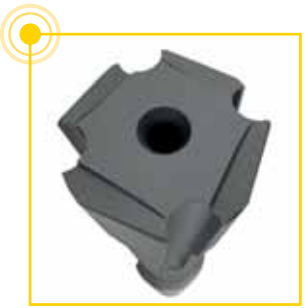
RESULT

- **Tool life of 3.000 min.**
- **Surface finish Ra 0,3 µm.**

BENEFIT

- **Very low burr formation.**

Planetary Gear Carrier



Chip control geometry

RMS™ MULTIFLUTE REAMING

CHALLENGE

- Bearing bores Ø 8,8mm (.346").
- Tolerance range 9 µm M6.
- Steel 42CrMo4 and 31CrMoV9.
- Increase tool life with long chipping material.
- Machining centre with internal coolant.

SOLUTION

- RMS engineered-solution reamer with four effective cutting edges, internal coolant hole, and coolant channels at shank.
- KC6305™ TiAlN coated carbide.

CUTTING DATA

- vc 70 m/min (230 SFM.).
- f 0,30 mm/rev (0,012 IPR).

RESULT

- **Tool life of 300 components.**
- **Surface finish Rz 1,0–2,0 µm.**

BENEFIT

- **All requirements regarding perpendicularity, roundness, and surface quality below Rz 4 µm are continuously achieved.**

Planetary Gear Carrier

ROMICRON™ FINE BORING

CHALLENGE

- Bearing bores Ø 35 and 36,5mm.
- Tolerance range 20 µm.
- Steel 20MnCr5.
- Replace padded step reamer.
- Machining centre with internal coolant.

SOLUTION

- Romicron standard heads KR32SVS0B93M and HSK63ASVS0B117M.
- CCMT06020411 KT315™ cermet insert.

CUTTING DATA

- vc 290 m/min (230 SFM).
- f 0,10 mm/rev (0,012 IPR).

RESULT

- **Surface finish better than Ra 1,0 µm.**
- **Cylindricity better than 5 µm.**

BENEFIT

- **More than 25% reduction in machining time.**
- **Removing setup of padded reamer outside of the machine results in increased up time.**
- **Bore tolerance range of 20 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Planetary Gear Carrier

Padded reaming pin machining

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Bearing pin machining Ø 45mm (1.772").
- Tolerance range 16 µm k6.
- Ductile cast iron GGG40.
- Surface quality of Rmax 10 µm to achieve.
- Special dimensional accuracy requirement.

SOLUTION

- RIQ padded reamer with SIF™ steerable tooling interface and special gashing for external coolant supply.
- Balanced by design and fine balanced.

CUTTING DATA

- vc 105 m/min (344 SFM).
- f 0,06 mm/rev (0,002 IPR).

RESULT

- **Surface finish better than Rz 2,5 µm.**
- **Roundness 3 µm.**
- **Cylindricity 6 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Faster setup and less scrap.**

Brake Caliper

RMB™ MULTIFLUTE REAMING

CHALLENGE

- Main bore Ø 54mm (2,126").
- Tolerance range 50 µm.
- Cast iron.
- Machining centre BT50 with internal coolant.

SOLUTION

- UpSharp engineered-solution carbide tipped reamer with 12 cutting edges, clamped in standard Shrink Fit holder.
- TICN coated carbide.

CUTTING DATA

- vc 90 m/min (295 SFM).
- f 1,21 mm/rev (0,048 IPR).

RESULT

- **Tool life of 1.500–2.000 components.**
- **Surface finish Ra 2–2,4 µm.**

BENEFIT

- **Rigid design enables high feed rates increasing productivity.**
- **Reduces setup effort by using standard tooling with Shrink Fit adaptor.**
- **Regrindable up to 5x.**

Brake Caliper

RMS™ MULTIFLUTE REAMING

CHALLENGE

- Pin hole Ø 12mm (0,472").
- Tolerance range 30 µm.
- Cast iron.
- Machining centre HSK63A with internal coolant.

SOLUTION

- UpSharp engineered-solution solid carbide reamer with six cutting edges.
- TICN coated carbide.

CUTTING DATA

- vc 75 m/min (246 SFM).
- f 0,8 mm/rev (0,031 IPR).

RESULT

- **Tool life of 5.000 holes.**
- **Surface finish Ra 1,0 µm.**

BENEFIT

- **Productivity increase.**
- **Longer tool life than competition.**
- **Ease of use due to shrink technology.**

Brake Caliper

RIR™ PADDED REAMING

CHALLENGE

- Main bore Ø 60mm (2,362").
- Tolerance range 46 µm H8.
- Cast iron.
- Obsolete honing process and produce undercut in the caliper bore.

SOLUTION

- RIR padded reamer with end cutting radius profile insert.
- Coated carbide RIR insert with two edges.
- KC6305™.

CUTTING DATA

- vc 70 m/min (230 SFM).
- f 0,12 mm/rev (0,005 IPR).

RESULT

- **Tool life of 800 components per insert.**
- **Surface finish better than Ra 1,6 µm.**

BENEFIT

- **Bore tolerance range of 46 µm easily and consistently achieved.**
- **Cuts cost by eliminating honing and additional undercut operations.**

Brake Caliper

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Main bore Ø 54,02mm (2,127").
- Tolerance range 40 µm.
- Cast iron GGG.
- Reduce setup time and cost per part.

SOLUTION

- RIQ padded reamer with customer specific shank.
- Coated carbide RIQ insert with four edges.
- KC6305™.

CUTTING DATA

- vc 80 m/min (262 SFM).
- f 0,40 mm/rev (0,016 IPR).

RESULT

- **Tool life of 16.000 bores per insert.**
- **Surface finish better than Ra 1,6 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **High cost savings due to more than 100% increase in tool life.**

Brake Caliper

PCD REAMING PCDRSTM04RLE

CHALLENGE

- Main bore Ø 42mm (1,654").
- Tolerance range 8 µm.
- Aluminium.
- Varying depth of cut between 1–2mm.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with HSK63A interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 500 m/min (1.640 SFM).
- f 1 mm/rev (0,039 IPR).

RESULT

- **Tool life of 400.000–600.000 bores.**
- **Surface finish better than Ra 1,6 µm.**

BENEFIT

- **Secure process and high tool life.**
- **Productivity increase compared to previous solution.**

Brake Caliper

Producing two different diameter

RMB™ MULTIFLUTE REAMING

CHALLENGE

- Location holes Ø 39 and 40mm.
- Tolerance range 39 µm H8.
- Cast iron GGG60.
- Produce both diameters with one tool.
- Machining centre with internal coolant.

SOLUTION

- RMB engineered-solution carbide tipped reamer with 10 teeth and internal coolant supply.
- KC6305™ TiAlN coated carbide.

CUTTING DATA

- vc 70 m/min (230 SFM).
- f 3,30 mm/rev (0,130 IPR).

RESULT

- **Tool life of 5.000 holes.**
- **Surface finish Rz 20 µm better than required Rz 25 µm.**

BENEFIT

- **Very stable and highly productive process as multiple operations are combined at very high cutting data.**

Brake Master Cylinder

RIQ PCD insert with chip former geometry

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Piston bore Ø 25,431mm (1,001").
- Tolerance range 10 µm.
- Aluminium AlSi7.
- Combine multiflute and padded reaming process.
- Round table machine with internal coolant.

SOLUTION

- RIQ padded reamer in angular micro finishing setup with semi- and fine-finishing inserts.
- RIQ full face PCD KD1415™ as finishing insert.

CUTTING DATA

- vc 360 m/min (1.181 SFM).
- f 0,24 mm/rev (0,009 IPR).

RESULT

- **Tool life of 1.600 bores per insert.**
- **Surface finish better than Ra 0,4 µm.**
- **Cylindricity 7 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Higher productivity due to combining two operations in one tool and increasing feed by more than 30%.**
- **Very stable process without chip control issues.**
- **Better cylindricity than requested.**

Brake Master Cylinder

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Piston bore Ø 25,431mm (1,001").
- Tolerance range 10 µm.
- Ductile cast iron.
- Replace honing process with reaming.
- Machining centre with internal coolant.

SOLUTION

- RIQ padded reamer in angular micro-finishing setup with semi- and fine-finishing insert.
- RIQ full face PCD KD1415™ as finishing insert.

CUTTING DATA

- vc 120 m/min (394 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Tool life of 1.600 bores per insert.**
- **Surface finish better than Ra 0,4 µm.**
- **Cylindricity 6 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Higher productivity due to combining two operations in one tool.**

The SPEED to EXCEED

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Steering Knuckle

ROMICRON™ FINE BORING

CHALLENGE

- Main bearing bore Ø 82mm (3,228").
- Replace setup of padded reamer and cover various diameters with one tool.
- Machining centre with internal coolant.

SOLUTION

- Romicron engineered solution. HSK80ASVSB156M SVS4B head.
- CPMT 060204 FW KCK20™.

CUTTING DATA

- vc 400 m/min (1.312 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Tool life of 1.000 components.**
- **Surface finish 1,2 µm.**
- **Cylindricity better than 6 µm.**

BENEFIT

- **Reduce setup time and cost reduction when standard inserts are used.**
- **Bore tolerance range of 30 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Steering Knuckle

Very uneven spacing

RMB™ MULTIFLUTE REAMING

CHALLENGE

- Axle arm Ø 52,935mm (2,084").
- Tolerance range 20 µm.
- Steel St52-3 and 30MnVS6.
- Surface finish and chip control improvements.
- Machining centre with internal coolant.

SOLUTION

- RMB engineered-solution cermet tipped reamer with wide chip flutes.
- 6° left hand helix and special lead geometry.
- KT6215™ TiAlN coated cermet.

CUTTING DATA

- vc 20 m/min f 2 mm/rev entering hole.
- vc 90 m/min f 2 mm/rev finish hole.

RESULT

- **Tool life of 460 components.**
- **Surface finish Rz 1,3 µm.**

BENEFIT

- **More than 30% increase in tool life compared to previous competitive tooling.**
- **Surface finish Rz 1,3 µm better than requested Rz 6,3 µm.**

Suspension Subframe

RIR™ PADDED REAMING

CHALLENGE

- Location hole Ø 18,5–23,0mm (0,728–0,906").
- Tolerance range 0,1°.
- Steel.
- Improvement in roundness and angularity.
- Transfer line with internal coolant.

SOLUTION

- RIR taper reamer with HSK interface.
- R904S00771 KC6005™ with two edges.

CUTTING DATA

- vc 32 m/min (105 SFM).
- f 0,133 mm/rev (0,005 IPR).

RESULT

- **Tool life of 800 bores per insert.**
- **Surface finish Ra 1,6 µm.**

BENEFIT

- **Predictable performance and cost savings because inserts can be reconditioned.**
- **Easy to set with three clock padded reamer setting fixtures.**
- **Roundness improvement over competitive solid carbide multiflute reamer.**

Mounting Lever

PCD COUNTERSINKING PCDCSTM04RLE

CHALLENGE

- Reaming pre-casted hole Ø 20mm (0,787").
- Tolerance range 21 µm H7.
- Aluminium AlSi9Cu3.
- 220mm over hang due to workpiece fixture.
- Machining centre with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with HSK63A interface and internal coolant.
- Four effective cutting teeth.
- KD1415™.

CUTTING DATA

- vc 125 m/min (410 SFM).
- f 0,70 mm/rev (0,003 IPR).

RESULT

- **Tool life of 60.000 components.**
- **Surface finish Ra 0,2 µm.**

BENEFIT

- **Secure process and less scrap than previous competitive solution.**
- **No adjustment effort due to solid solution.**

CV Joint

ROMICRON™ FINE BORING

CHALLENGE

- Central bore Ø 28mm (1,102").
- Tolerance range 18 µm.
- Steel, hardened.
- Material hardness 61–70 HRC.
- Machining centre with MQL internal coolant.

SOLUTION

- Romicron standard head HSK63ASVS00B096M.
- CPGW060208S01015M KB5625™.

CUTTING DATA

- vc 110 m/min (361 SFM).
- f 0,08 mm/rev (0,003 IPR).

RESULT

- **Tool life of 500 bores per insert.**
- **Surface finish Ra 0,3 µm.**

BENEFIT

- **Fine adjustments increases productivity resulting in less manufacturing interruptions.**
- **Bore tolerance range of 18 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Turbo Charger

RIR™ PADDED REAMING

CHALLENGE

- Bearing bore Ø 9,6mm (0,378").
- Tolerance range 9 µm H6.
- Cast iron.
- Interrupted cut.
- Lathe with internal coolant.

SOLUTION

- RIR padded reamer in floating toolholder.
- RIR01E1300 KC6005™ coated carbide insert.

CUTTING DATA

- vc 50 m/min (164 SFM).
- f 0,33 mm/rev (0,013 IPR).

RESULT

- **Surface finish better than Rz 16 µm.**
- **Cylindricity 10 µm.**

BENEFIT

- **Increased productivity due to 2x the feed rate when compared to previous competitive tool.**

Turbo Charger

RMS™ MULTIFLUTE REAMING

CHALLENGE

- Mounting holes Ø 12mm (0,472").
- Tolerance range 18 µm H7.
- Ductile cast iron.
- Machining centre with internal coolant.

SOLUTION

- RMS standard reamer with six effective cutting edges and internal coolant.
- KC6305™ TiAlN coated carbide.

CUTTING DATA

- vc 20 m/min (66 SFM).
- f 0,30 mm/rev (0,012 IPR).

RESULT

- **Tool life of 1.000 components.**
- **Surface finish better than Rz 10 µm.**

BENEFIT

- **Productivity and tool life increase compared to previous solution.**

Compressor

ROMICRON™ FINE BORING

CHALLENGE

- Piston bore Ø 23,5mm (0,925").
- Tolerance range 18 µm.
- Aluminium 12% Si.
- Machining centre BT40 with external coolant.

SOLUTION

- Standard SVUBB2 head with KR coupling.
- Standard steel boring bar.
- CPGW060204FST KD1400™.

CUTTING DATA

- vc 367 m/min (1.204 SFM).
- f 0,07 mm/rev (0,003 IPR).

RESULT

- **Surface finish Ra 0,6 µm.**
- **Roundness better than 5 µm.**

BENEFIT

- **2x the productivity compared to the current solution.**
- **80% less adjustment time needed.**
- **Bore tolerance range of 18 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Compressor

ROMICRON™ FINE BORING

CHALLENGE

- Piston bore Ø 25mm (0,984").
- Tolerance range 21 µm.
- Aluminium 15% Si.
- Machining centre BT40 with external coolant.

SOLUTION

- Engineered-solution SVS00B head with straight shank clamped in hydraulic chuck.
- CPGW060204FST KD1425™.

CUTTING DATA

- vc 391 m/min (1.283 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Surface finish better than Ra 2,0 µm.**
- **Roundness better than 20 µm.**

BENEFIT

- **More than 60% reduction in machining time.**
- **80% less adjustment time needed.**
- **Amortisation in less than two months.**
- **Bore tolerance range of 21 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Compressor

Polished flutes improving chip evacuation

PCD COUNTERSINKING PCDCSC22RLE

CHALLENGE

- Bearing hole Ø 12–31mm (0,472–1,220").
- Tolerance range 50 µm.
- Aluminium G-AlSi12.
- Machining centre HSK40 with internal coolant.

SOLUTION

- PCD tipped, carbide-based tool with four guiding lands, flat-bottom drilling point and internal coolant.
- Two effective cutting and chamfering teeth; KD1415™.

CUTTING DATA

- vc 440 m/min (1.444 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Surface finish Rz 1–2 µm.**
- **Roundness better than 5 µm.**

BENEFIT

- **Productivity increases due to combining different tools in one.**
- **Tool life increase versus previous solution.**

Compressor

KST pre-loaded taper face contact interface

RHM MODULAR REAMING

CHALLENGE

- Piston bore Ø 23,5mm (1,220").
- Tolerance range 10 µm.
- Cast iron GGG60.
- Machining centre HSK63 with internal coolant.

SOLUTION

- RHM modular reamer with six cutting edges.
- KT325™ uncoated cermet.
- Standard lead geometry.
- SIF™ steerable tooling.

CUTTING DATA

- vc 125 m/min (410 SFM).
- f 0,75 mm/rev (0,030 IPR).

RESULT

- **Surface finish better than Rz 4 µm.**

BENEFIT

- **Higher productivity than single-edged padded reamer.**

Hydraulic Valve Block

RIR™ PADDED REAMING

CHALLENGE

- Spool bore Ø 18,5mm (0,728").
- Tolerance range 10 µm.
- Cast iron.
- Up to 4mm varying depth of cut.
- Machining centre with internal coolant.

SOLUTION

- RIR padded reamer with up to 100mm long cermet guide pads.
- Engineered solution RIR insert with modified chipformer.

CUTTING DATA

- vc 70 m/min (230 SFM).
- f 0,125 mm/rev (0,005 IPR).

RESULT

- **Tool life of 400 min per double-edged insert.**
- **Roundness and straightness within 10 µm.**

BENEFIT

- **Very stable process control and predictable performance.**

Hydraulic Valve Block

RMS™ MULTIFLUTE REAMING

CHALLENGE

- Rinse slider bore Ø 9,534mm (0,375").
- Tolerance range 6 µm.
- Ductile cast iron 0.7060.
- Three interrupted cuts at a reaming depth of 100mm.
- Special dimensional accuracy requirement.

SOLUTION

- RMS solid carbide reamer engineered solution.
- Special back taper configuration and support margins lands.
- KC6305™ TiAlN coated carbide.

CUTTING DATA

- vc 150 m/min (492 SFM).
- f 0,72 mm/rev (0,028 IPR).

RESULT

- **Tool life of 500 pieces.**

BENEFIT

- **Speed and feed rates are almost 30x faster resulting in higher productivity.**
- **Less scrap due to consistent accuracy.**

Hydraulic Valve Block

PCD COUNTERSINKING PCDCSC02RLE

CHALLENGE

- Thread core hole Ø 24mm (0,945").
- Tolerance range 21 µm F7.
- Aluminium AlSi9Cu3.
- Pre-drilled hole.
- Machining centre DV40 with internal coolant.

SOLUTION

- PCD tipped, carbide-based tool with internal coolant.
- Two effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

• vc	360–750 m/min	n = 7.500 RPM.
• f	0,20 mm/rev	(0,008 IPR).

RESULT

- **Tool life of 100.000 holes.**
- **Surface finish Ra 0,1 µm.**

BENEFIT

- **Productivity increase due to combining two operations into one.**
- **Carbide base increases tool life and accuracy.**

ABS Valve Block

PCD COUNTERSINKING PCDCSTA02RLE

CHALLENGE

- Bearing bores Ø 20,99 and 24,275mm.
- Tolerance range 20 µm.
- Aluminium AlSi1.
- Pre-casted hole with 0,15mm depth of cut.
- Machining centre HSK63A with internal coolant.

SOLUTION

- PCD tipped, steel-based tool with SIF™ steerable interface and internal coolant.
- Two effective cutting and chamfering teeth.
- KD1415™.

CUTTING DATA

- vc 300 m/min (984 SFM).
- f 0,35 mm/rev (0,014 IPR).

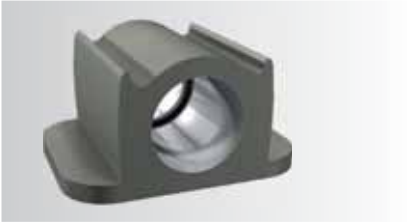
RESULT

- **Tool life of 150.000 components.**
- **Surface finish Ra 0,4–0,6 µm.**

BENEFIT

- **Very stable process control and predictable performance.**
- **Very favourable chip creation.**

Bearing Seat



KST pre-loaded taper face contact interface

RHM™ MODULAR REAMING

CHALLENGE

- Reaming Ø 35mm (1,378").
- Tolerance range 20 µm.
- Carbon steel, annealed, long-chipping.
- Blind hole limiting chip evacuation.
- Machining centre with internal coolant.

SOLUTION

- RHM modular reamer with eight cutting edges.
- KT325™ uncoated cermet.
- Standard lead geometry.
- Short engineered-solution axial clamping tool body.

CUTTING DATA

- vc 120 m/min (394 SFM).
- f 1,18 mm/rev (0,046 IPR).

RESULT

- **Tool life of 145.000 holes.**
- **Surface finish better than Rz 6,3 µm.**

BENEFIT

- **Predictable tool life as only 2 µm diameter deviation after 10.000 holes.**

Bearing Seat

RIQ single adjustment screw setup

FB easy to setup fine-boring cartridges

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Reaming Ø 47mm (1,850").
- Tolerance range 19 µm N6.
- Aluminium AlSi9Cu3.
- Machine four different diameters, two spot faces, and four different chamfers with one tool.

SOLUTION

- RIQ padded reamer with full-face PCD KD1415™ insert having four cutting edges.
- SIF™ steerable interface between reaming and fine boring section.

CUTTING DATA

- vc 236 m/min (774 SFM).
- f 0,08 mm/rev (0,003 IPR).

RESULT

- **Surface finish better than Rz 16 µm.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Less operations increase productivity.**
- **Higher accuracy than multiple operations.**
- **Full-face PCD inserts reduce cost per hole.**

FB CARTRIDGE FINEBORING

CHALLENGE

- Reaming Ø 144mm (5,669").
- Tolerance range 40 µm H7.
- Aluminium AlSi9Cu3.
- Machine two different diameters.

SOLUTION

- Standard FB fine-boring cartridges with almost back lash free fine adjustment.
- CCGW060204 KD1415™.

CUTTING DATA

- vc 723 m/min (2.372 SFM).
- f 0,08 mm/rev (0,003 IPR).

RESULT

- **Surface finish better than Rz 16 µm.**

BENEFIT

- **Radial adjustment does not influence axial adjustment of inserts resulting in faster setup.**
- **Productivity increase with less operations.**
- **More accurate than previous solution.**

Heat Exchanger Plates

KST pre-loaded taper face contact interface

RHM™ MODULAR REAMING

CHALLENGE

- Tube holes Ø 25,25mm (0,994").
- Tolerance range 21 µm H7.
- Stainless Steel 304L.
- Machining centre with external coolant.

SOLUTION

- Special RHM head with six cutting edges.
- KC6305™ TiAlN coated carbide.
- Standard tool body with SIF™ steerable backend.

CUTTING DATA

- vc 36 m/min (118 SFM).
- f 0,79 mm/rev (0,031 IPR).

RESULT

- **Tool life of 167 m.**

BENEFIT

- **Higher productivity as a result of a 50% higher feed rate and 2x speed.**
- **200% more tool life than previous competitive solution.**

RHM™ MODULAR REAMING

CHALLENGE

- Tube holes Ø 25,25mm (0,994").
- Tolerance range 100 µm.
- Alloy steel, long-chipping.
- Machining centre with internal coolant.

SOLUTION

- Special RHM head with six cutting edges.
- KT6215™ TiAlN coated cermet.
- Standard 5xD body clamped into hydraulic chuck.
- KSEM HPGM used for drilling into solid.

CUTTING DATA

- vc 90 m/min (295 SFM).
- f 0,48 mm/rev (0,019 IPR).

RESULT

- **After more than 30 minutes, only minor wear is visible.**

BENEFIT

- **Reduced machining time to less than 60 min per 180 holes.**
- **Predictable tool life as only 2 µm diameter deviation after 30 minutes.**

Heat Exchanger Plates

KST pre-loaded taper face contact interface

RHM™ MODULAR REAMING

CHALLENGE

- Tube holes Ø 25,25mm (0,994").
- Tolerance range 21 µm H7.
- Steel, annealed, long-chipping.
- Replace HSS shot core drilling.
- Machining centre with internal coolant.

SOLUTION

- Special RHM head with six cutting edges.
- KT325™ uncoated cermet.
- Standard 5 x D body clamped into hydraulic chuck.

CUTTING DATA

- vc 84 m/min (276 SFM).
- f 0,49 mm/rev (0,019 IPR).

RESULT

- **Tool life of 189 m.**

BENEFIT

- **10x faster when compared to previous competitive core drilling solution.**
- **16x higher tool life.**

RHM™ MODULAR REAMING

CHALLENGE

- Tube holes Ø 32mm (1,260").
- Tolerance range 25 µm H7.
- Low alloy steel, annealed.
- Interrupted cut.
- Machining centre with internal coolant.

SOLUTION

- Standard RHM head with eight cutting edges.
- KC6305™ TiAlN coated carbide.
- Standard 5 x D body clamped into hydraulic chuck.
- KSEM HPGM used for drilling into solid.

CUTTING DATA

- vc 60 m/min (197 SFM).
- f 1,12 mm/rev (0,044 IPR).

RESULT

- **Tool life of 624 holes.**

BENEFIT

- **Almost 29% productivity increase.**
- **Close to 25% overall cost reduction due to higher tool life and higher cutting data.**

Pump Housing

Full-face PCD insert with chipformer geometry

RIQ™ QUATTRO CUT™ PADDED REAMING

CHALLENGE

- Piston bore Ø 18,5mm (0,728").
- Tolerance range 21 µm H7.
- Aluminium.
- Heavy interrupted cut and surface finish Rz 6,3.
- Machining centre with internal coolant.

SOLUTION

- RIQ padded reamer with helical chip flute and helical solid carbide guide pad.
- Full-face KD1415™ insert having four cutting edges.
- Positive wiper insert geometry.

CUTTING DATA

- vc 230 m/min (755 SFM).
- f 0,15 mm/rev (0,006 IPR).

RESULT

- **No chip evacuation issues.**
- **No burr, marks, or scratches at entrance or exit of interruptions.**

BENEFIT

- **No insert back taper adjustment needed.**
- **Half cycle time compared to previous competitive tooling.**

Hydraulic Pump

RIR™ PADDED REAMING

CHALLENGE

- Piston bore Ø 9,365mm (0,369").
- Tolerance range 10 µm.
- Ductile cast iron GGG40.
- Machining centre with internal coolant.

SOLUTION

- RIR padded reamer with cermet guide pads.
- R901EGS06F AlTiN coated carbide.

CUTTING DATA

- vc 53 m/min (174 SFM).
- f 0,043 mm/rev (0,002 IPR).

RESULT

- **294 bores per double-edged insert.**
- **Surface finish Ra 0,8 µm.**

BENEFIT

- **200% tool life increase.**
- **More than 10% reduction in cycle time.**
- **Consistent quality and stable process due to better chip formation.**
- **Tolerance achieved was a 50% improvement compared to the previous competitive solution.**

Valve Housing

ROMICRON™ FINE BORING

CHALLENGE

- Various bore Ø 170–480mm (6,7–18,9").
- Tolerance range 75 µm.
- Cast iron GG25.
- Automated wear compensation at interrupted cut.
- Machining centre HSK100 with internal coolant.

SOLUTION

- Semi-standard SVU120 CLB head with engineered-solution diameter extender and automatic wear compensation with CLB.
- CPGW09T308S01015C KB1630™.

CUTTING DATA

- vc 800 m/min (2.625 SFM).
- f 0,12 mm/rev (0,005 IPR).

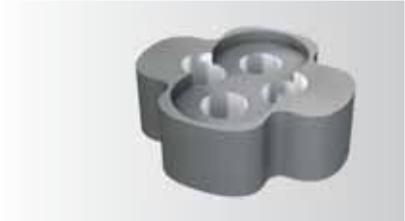
RESULT

- **Tool life of 1.200 minutes per insert.**
- **Surface finish better than Rz 16 µm.**

BENEFIT

- **More than 30% reduction in manufacturing lead time.**
- **Third shift and weekend without operators.**
- **1 µm per click in radius adjustment executed by machine.**

Pump Housing



ROMICRON™ FINE BORING

CHALLENGE

- Bore Ø 38,1mm (1,500").
- Tolerance range 18 µm.
- Cast iron.
- Interrupted cut at figure eight hole.

SOLUTION

- Romicron KM50SVS0B103M standard head.
- CPGW2151S0415C KB1645™.

CUTTING DATA

- vc 197 m/min (646 SFM).
- f 0,05 mm/rev (0,002 IPR).

RESULT

- **Tool life of 450 workpieces.**
- **Surface finish better than Ra 32 µm.**
- **Roundness better than 8 µm.**

BENEFIT

- **Secure finishing process with no oversized bores.**
- **Less adjustment effort.**
- **Amortisation in less than four months.**
- **Bore tolerance range of 18 µm easily and consistently achieved due to 1 µm per click in radius adjustment.**

Wind Energy Housing

Multiple boring heads based on KM63™ shank

KM™ FINE BORING

CHALLENGE

- Bearing seat Ø 2.700mm (106,3").
- Tolerance range 210 µm H7.
- Cast iron GGG40.
- Pull machining – spindle needs to adapt bridge inside workpiece.

SOLUTION

- Welded space frame bridge with KM coupling to adapt cutting units.
- One base bridge to adapt roughing, semi-finish and fine finish head.

CUTTING DATA

- vc 240 m/min (787 SFM).
- f 0,28 mm/rev (0,011 IPR).

RESULT

- **Customer proprietary information.**

BENEFIT

- **Machining in one workpiece results in a productivity increase.**
- **Investment saving as only one base bridge needed.**
- **Ease of use due to KM coupling for fast and accurate cutting unit change.**

Wind Energy Housing

Multiple boring heads
based on KM63™ shank

KM™ FINE BORING

CHALLENGE

- Bearing seat Ø 3000mm (118,1").
- Tolerance range 210 µm H7.
- Ductile cast iron GGG40.
- Machining centre without coolant.
- Tolerance range 210 µm H7.

SOLUTION

- Welded space frame bridge with KM coupling to adapt cutting units.
- One base bridge to adapt roughing, semi-finish, and fine finish head.

CUTTING DATA

- vc 240 m/min (787 SFM).
- f 0,28 mm/rev (0,011 IPR).

RESULT

- **Customer proprietary information.**

BENEFIT

- **Investment saving as only one base bridge and KM cutting units are used for diameter 2.700mm and 3.000mm.**
- **Ease of use due to KM coupling for fast and accurate cutting unit change.**

Wind Energy Housing

1 µm per click in radius adjustment

ROMICRON™ FINE BORING

CHALLENGE

- Flange Ø 1260–1400mm (49,6–55,1").
- Tolerance range 125 µm H7.
- Cast iron GGG40.
- One base bridge for multiple diameters.
- Machining centre without coolant.

SOLUTION

- Romicron standard modular MF40 element with engineered-solution aluminium bridge.
- CPGT060204/08HP KC5410™.

CUTTING DATA

- vc 200 m/min (650 SFM).
- f 0,12 mm/rev (0,005 IPR).

RESULT

- **Tool life of 73 min.**

BENEFIT

- **Investment saving as only one base bridge needed.**
- **Use of standard off-the-shelf Romicron tool.**
- **Ease of use due to Romicron.**

Synchronous Joint

Balanced by design

ROMICRON™ FINE BORING

CHALLENGE

- Pin machining Ø 13mm (0,512").
- Tolerance range 6 µm.
- Steel 42CrMo4 (4140).
- Machining centre with internal coolant.

SOLUTION

- Romicron standard HSK63ASVUBB1095MCLB head with engineered solution pin boring bar.
- TCMT110202FP KTP10™.

CUTTING DATA

- vc 160 m/min (525 SFM).
- f 0,1 mm/rev (0,004 IPR).

RESULT

- **Tool life of 300–450 components per insert.**
- **Surface finish Ra 0,3 µm.**
- **Cpk value ≥ 1,33.**

BENEFIT

- **Use of standard off-the-shelf Romicron tooling.**
- **Bore tolerance of 6 µm consistently achieved due to 1 µm per click in radius adjustment.**

Landing Gear

Feed out slide

MOTION TOOLING

CHALLENGE

- Bottle boring Ø 65–85,3mm (2,559–3,358").
- Steel 34CrNiMo6; 4340M.
- Generate complex rotationally symmetric shape inside pre-machined workpiece.
- Custom machining centre with internal coolant.

SOLUTION

- Motion tool with two slides activated by drawbar.
- Hole shape generated while tool is retracted.
- Engineered-solution insert to improve chip formation.

CUTTING DATA

- vc 31 m/min (102 SFM).
- f 0,20 mm/rev (0,008 IPR).

RESULT

- **Customer proprietary information.**

BENEFIT

- **Time savings compared to previous boring bar.**
- **Bottle boring Ø 65–85,3mm (2,559–3,358").**
- **Steel 34CrNiMo6; 4340M.**
- **Generate complex rotationally symmetric shape.**

Ream to the Extreme

The RHM™ Modular Reaming System offers performance levels commonly achieved with solid carbide reaming tools. With a unique, preloaded KST coupling, it is best suited to ream IT6 and IT7 high-quality holes in steel, stainless steel, and cast irons.

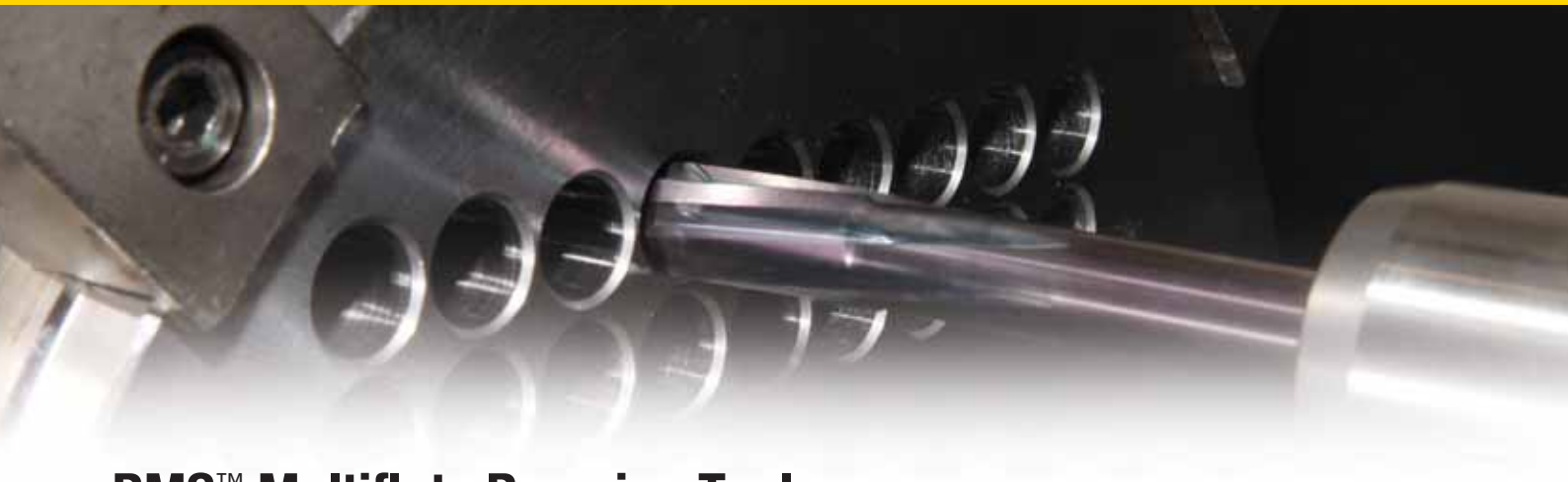
RHM offers you:

- A market-leading runout accuracy.
- A strong proprietary coupling that enables higher feed rates.
- Latest technology carbide and cermet grades for high cutting speeds and extended tool life.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com.

KENNAMETAL®



RMS™ Multiflute Reaming Tools

RMS™ Multiflute Reaming Tools achieve highest metal removal rates from diameter 5–14mm with no customisation. All standard reamers are ground to an ISO H7 tolerance class hole to address most common applications. Specific coatings and lead configurations enable high-speed machining of steel, stainless steel, cast iron, and non–ferrous materials at accelerated speeds.

Primary Application

Use standard SIF™ Steerable Hydraulic Chucks or SIF Adaptors for easy compensation of radial runout and angular inaccuracies of the spindle to achieve the highest possible hole straightness and surface quality.

Features and Benefits

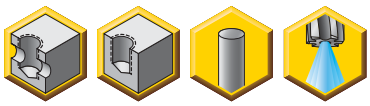
Higher Productivity and Profitability

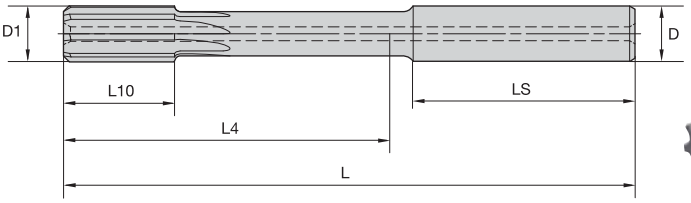
- Longer tool life with increased hole and surface quality due to lapped ground leads.
- Highest metal removal rate at higher speeds and feeds due to reaming-specific grades and substrates.
- Improved straightness and cylindrical form compared to competitive tools and reduced vibration tendency due to unequal flutes.
- All RMS reamers offer internal coolant supply.

Customisation

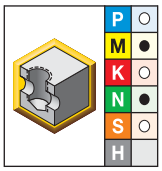
- Diameters 1,40–14,15mm available with and without internal coolant in 0,001mm steps.
- Intermediate diameters of standard program available as Simple Specials with short delivery time.
- Solid cermet reaming tools and tooling for heat-resistant materials are available on request.

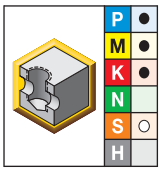
- For hole tolerance H7.
- Intermediate sizes ground to achieve IT7 hole tolerance class available.
- Starting with Ø 10mm in IT6 hole tolerance available.





RMS with Straight Flutes and Internal Coolant





● first choice
○ alternate choice

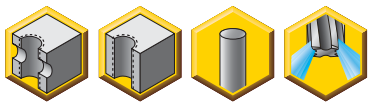
K605	KC6305	D1 mm	D	L	L4 mm	L10	LS	Z
RMS05000H7SF	RMS05000H7SF	5,00	6,00	74,0	18,0	12,0	36,0	4
RMS05500H7SF	RMS05500H7SF	5,50	6,00	74,0	18,0	12,0	36,0	4
RMS06000H7SF	RMS06000H7SF	6,00	6,00	74,0	18,0	12,0	36,0	4
RMS06500H7SF	RMS06500H7SF	6,50	8,00	91,0	35,0	16,0	36,0	4
RMS07000H7SF	RMS07000H7SF	7,00	8,00	91,0	35,0	16,0	36,0	4
RMS08000H7SF	RMS08000H7SF	8,00	8,00	91,0	35,0	16,0	36,0	6
RMS09000H7SF	RMS09000H7SF	9,00	10,00	103,0	43,0	20,0	40,0	6
RMS10000H7SF	RMS10000H7SF	10,00	10,00	103,0	43,0	20,0	40,0	6
RMS11000H7SF	RMS11000H7SF	11,00	12,00	118,0	53,0	24,0	45,0	6
RMS12000H7SF	RMS12000H7SF	12,00	12,00	118,0	53,0	24,0	45,0	6
RMS13000H7SF	RMS13000H7SF	13,00	14,00	132,0	67,0	28,0	45,0	6
RMS14000H7SF	RMS14000H7SF	14,00	14,00	132,0	67,0	28,0	45,0	6

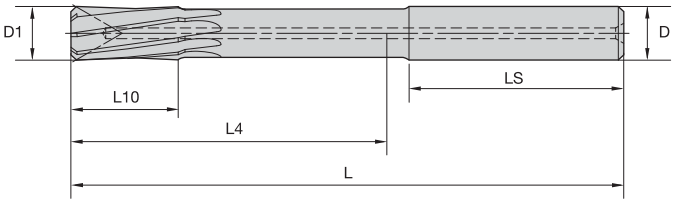
Dimensions for Engineered-Solution Reamers

D1 min mm	D1 max mm	D mm	L mm	L4 mm	L10 mm	LS mm	Z
4,16	4,79	6	74	32	10	36	4
4,80	5,79	6	74	32	12	36	4
5,80	6,15	6	74	33	12	36	4
6,16	7,15	8	91	49	16	36	4
7,16	7,69	8	91	49	16	36	6
7,70	8,15	8	91	50	16	36	6
8,16	9,59	10	103	57	20	40	6
9,60	10,15	10	103	58	20	40	6
10,16	11,59	12	118	67	24	45	6
11,60	12,15	12	118	68	24	45	6
12,16	14,15	14	118	81	28	45	6

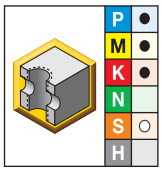
NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

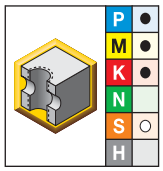
- For hole tolerance H7.
- Intermediate sizes ground to achieve IT7 hole tolerance class available.
- Starting with Ø 10mm in IT6 hole tolerance available.





RMS with Helical Flutes and Internal Coolant





● first choice
○ alternate choice

K605	KC6305	D1 mm	D	L	L4 mm	L10	LS	Z
RMS05000H7HF	**RMS05000H7HF**	5,00	6,00	74,0	18,0	12,0	36,0	4
RMS05500H7HF	**RMS05500H7HF**	5,50	6,00	74,0	18,0	12,0	36,0	4
RMS06000H7HF	**RMS06000H7HF**	6,00	6,00	74,0	18,0	12,0	36,0	4
RMS06500H7HF	**RMS06500H7HF**	6,50	8,00	91,0	35,0	16,0	36,0	4
RMS07000H7HF	**RMS07000H7HF**	7,00	8,00	91,0	35,0	16,0	36,0	4
RMS08000H7HF	**RMS08000H7HF**	8,00	8,00	91,0	35,0	16,0	36,0	6
RMS09000H7HF	**RMS09000H7HF**	9,00	10,00	103,0	43,0	20,0	40,0	6
RMS10000H7HF	**RMS10000H7HF**	10,00	10,00	103,0	43,0	20,0	40,0	6
RMS11000H7HF	**RMS11000H7HF**	11,00	12,00	118,0	53,0	24,0	45,0	6
RMS12000H7HF	**RMS12000H7HF**	12,00	12,00	118,0	53,0	24,0	45,0	6
RMS13000H7HF	**RMS13000H7HF**	13,00	14,00	132,0	67,0	28,0	45,0	6
RMS14000H7HF	**RMS14000H7HF**	14,00	14,00	132,0	67,0	28,0	45,0	6

Dimensions for Engineered-Solution Reamers

D1 min mm	D1 max mm	D mm	L mm	L4 mm	L10 mm	LS mm	Z
4,16	**4,79**	**6**	**74**	**32**	**10**	36	**4**
4,80	**5,79**	**6**	**74**	**32**	**12**	36	**4**
5,80	**6,15**	**6**	**74**	**33**	**12**	36	**4**
6,16	**7,15**	**8**	**91**	**49**	**16**	36	**4**
7,16	**7,69**	**8**	**91**	**49**	**16**	36	**6**
7,70	**8,15**	**8**	**91**	**50**	**16**	36	**6**
8,16	**9,59**	**10**	**103**	**57**	**20**	40	**6**
9,60	**10,15**	**10**	**103**	**58**	**20**	40	**6**
10,16	**11,59**	**12**	**118**	**67**	**24**	45	**6**
11,60	**12,15**	**12**	**118**	**68**	**24**	45	**6**
12,16	**14,15**	**14**	**118**	**81**	**28**	45	**6**

NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

RMS

Material Group		K605 Cutting Speed — vc Range — m/min			KC6305 Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate per Tooth						
								Tool Diameter (mm)	4,16–7,15		7,16–9,59		9,60–14,00	
		min	Starting Value	max	min	Starting Value	max	Feed/Tooth	min	max	min	max	min	max
P	1	40	**60**	70	90	**120**	155	mm/z	0,05	0,10	0,05	0,12	0,05	0,15
	2	40	**60**	70	90	**120**	155	mm/z	0,05	0,10	0,05	0,12	0,05	0,15
	3	35	**50**	60	75	**100**	130	mm/z	0,05	0,10	0,05	0,12	0,05	0,15
	4	25	**40**	45	60	**80**	105	mm/z	0,05	0,10	0,05	0,12	0,05	0,15
	4	15	**20**	25	30	**40**	55	mm/z	0,04	0,08	0,04	0,10	0,04	0,12
	6	15	**20**	25	30	**40**	55	mm/z	0,04	0,08	0,04	0,10	0,04	0,12
M	1	8	**10**	15	15	**20**	28	mm/z	0,04	0,08	0,04	0,09	0,04	0,10
	2	8	**10**	15	15	**20**	28	mm/z	0,04	0,08	0,04	0,09	0,04	0,10
	3	8	**10**	15	15	**20**	28	mm/z	0,04	0,08	0,04	0,09	0,04	0,10
K	1	35	**50**	60	75	**100**	130	mm/z	0,05	0,16	0,05	0,18	0,05	0,20
	2	25	**40**	50	60	**90**	110	mm/z	0,05	0,14	0,05	0,16	0,05	0,18
	3	20	**30**	45	60	**80**	105	mm/z	0,05	0,12	0,05	0,14	0,05	0,16
N	1	110	**150**	195	–	**–**	–	mm/z	0,06	0,16	0,06	0,18	0,06	0,20
	2	110	**150**	195	–	**–**	–	mm/z	0,06	0,16	0,06	0,18	0,06	0,20
	3	110	**150**	195	–	**–**	–	mm/z	0,06	0,16	0,06	0,18	0,06	0,20
	4	110	**150**	195	–	**–**	–	mm/z	0,06	0,16	0,06	0,18	0,06	0,20
	5	105	**140**	180	–	**–**	–	mm/z	0,06	0,16	0,06	0,18	0,06	0,20
S	1	8	**10**	15	15	**20**	28	mm/z	0,04	0,08	0,04	0,10	0,04	0,12
	2	8	**10**	15	15	**20**	28	mm/z	0,04	0,08	0,04	0,10	0,04	0,12
	3	15	**20**	30	20	**30**	40	mm/z	0,05	0,10	0,05	0,12	0,05	0,15
	4	15	**20**	30	20	**30**	40	mm/z	0,05	0,10	0,05	0,12	0,05	0,15

RMB™ Multiflute Reaming

The RMB Multiflute Reaming System achieves solid carbide and solid cermet metal removal rates from 14–20mm with no customisation required. All standard reamers are ground to an ISO H7 tolerance class hole to address most applications, giving you an economical solution for large diameter sizes compared to solid carbide reamers. Specific coatings and lead configurations enable high-speed machining of steel, stainless steel, cast iron, and non-ferrous materials at accelerated speeds.

Primary Application

Use SIF™ Steerable Hydraulic Chucks or SIF Adaptors for easy compensation of radial runout and angular inaccuracies of the spindle to achieve the highest possible hole straightness and surface quality.

Features and Benefits

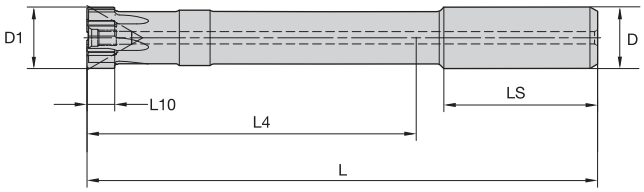
Higher Productivity and Profitability

- Longer tool life with increased hole and surface quality due to lapped ground leads.
- Highest metal removal rate at higher speeds and feeds due to reaming specific grades and substrates.
- Improved straightness and cylindrical form compared to competitive tools and reduced vibration tendency due to unequal flutes.
- Adjustment screw at straight-fluted RMB reamers to change internal coolant supply from axial to radial.

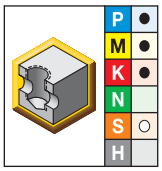
Customisation

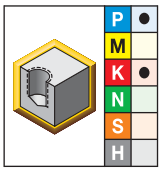
- Diameters up to 50mm available with and without internal coolant in 0,001mm steps.
- Intermediate diameters of standard program available as Simple Specials with short delivery time.
- RMB tooling for machining heat-resistant materials is available on request.

- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Adjustment screw to change internal coolant supply from axial to radial.



RMB with Straight Flutes and Internal Coolant





● first choice
○ alternate choice

KC6305	KT6215	D1 mm	D	L	L4 mm	L10	LS	Z
RMB14000H7SF	**RMB14000H7SF**	14,00	16,00	145,0	76,0	8,0	49,0	6
RMB15000H7SF	**RMB15000H7SF**	15,00	16,00	145,0	76,0	8,0	49,0	6
RMB16000H7SF	**RMB16000H7SF**	16,00	20,00	157,0	86,0	8,0	51,0	6
RMB17000H7SF	**RMB17000H7SF**	17,00	20,00	157,0	86,0	10,0	51,0	6
RMB18000H7SF	**RMB18000H7SF**	18,00	20,00	171,0	100,0	10,0	51,0	6
RMB19000H7SF	**RMB19000H7SF**	19,00	20,00	171,0	100,0	10,0	51,0	6
RMB20000H7SF	**RMB20000H7SF**	20,00	20,00	200,0	129,0	10,0	51,0	6

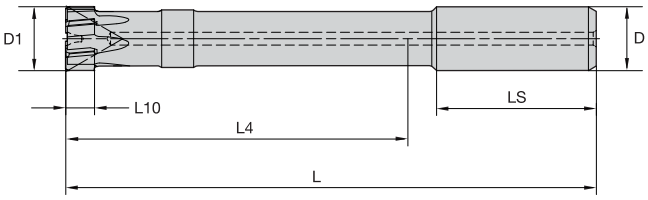
NOTE: Uncoated carbide grade K605™ and uncoated cermet grade KT325™ are available on request.

Dimensions for Engineered-Solution Reamers

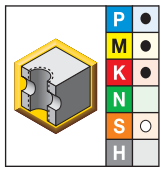
D1 min mm	D1 max mm	D mm	L mm	L4 mm	L10 mm	LS mm	Z
14,00	15,99	16,00	145	97	9	48	6
16,00	17,99	20,00	157	107	9	50	6
18,00	19,99	20,00	171	121	9	50	6
20,00	21,99	20,00	200	150	9	50	6
22,00	25,99	20,00	210	160	11	50	6
26,00	29,99	25,00	240	184	11	56	8
30,00	32,00	25,00	270	214	11	56	8

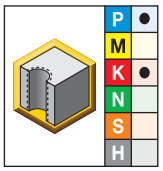
NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Adjustment screw to change internal coolant supply from axial to radial.



RMB with Helical Flutes and Internal Coolant





● first choice
○ alternate choice

KC6305	KT6215	D1 mm	D	L	L4 mm	L10	LS	Z
RMB14000H7HF	**RMB14000H7HF**	14,00	16,00	145,0	76,0	8,0	49,0	6
RMB15000H7HF	**RMB15000H7HF**	15,00	16,00	145,0	76,0	8,0	49,0	6
RMB16000H7HF	**RMB16000H7HF**	16,00	20,00	157,0	86,0	8,0	51,0	6
RMB17000H7HF	**RMB17000H7HF**	17,00	20,00	157,0	86,0	10,0	51,0	6
RMB18000H7HF	**RMB18000H7HF**	18,00	20,00	171,0	100,0	10,0	51,0	6
RMB19000H7HF	**RMB19000H7HF**	19,00	20,00	171,0	100,0	10,0	51,0	6
RMB20000H7HF	**RMB20000H7HF**	20,00	20,00	200,0	129,0	10,0	51,0	6

NOTE: Uncoated carbide grade K605™ and uncoated cermet grade KT325™ are available on request.

Dimensions for Engineered-Solution Reamers

D1 min mm	D1 max mm	D mm	L mm	L4 mm	L10 mm	LS mm	Z
14,00	**15,99**	**16,00**	**145**	**97**	**9**	48	**6**
16,00	**17,99**	**20,00**	**157**	**107**	**9**	50	**6**
18,00	**19,99**	**20,00**	**171**	**121**	**9**	50	**6**
20,00	**21,99**	**20,00**	**200**	**150**	**9**	50	**6**
22,00	**25,99**	**20,00**	**210**	**160**	**11**	50	**6**
26,00	**29,99**	**25,00**	**240**	**184**	**11**	56	**8**
30,00	**32,00**	**25,00**	**270**	**214**	**11**	56	**8**

NOTE: The above dimensions are used when ordering engineered-solution reamers on this page unless otherwise specified.

RMB™

Material Group		KT325 Cutting Speed — vc Range — m/min			KT6215 Cutting Speed — vc Range — m/min			K605 Cutting Speed — vc Range — m/min			KC6305 Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate per Tooth				
														Tool Diameter (mm)	14.00–19.99		20.00–32.00	
		min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	Feed/Tooth	min	max	min	max
P	1	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,22	0,10	0,25
	2	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,22	0,10	0,25
	3	130	**160**	180	150	**180**	210	30	**40**	50	75	**100**	130	mm/z	0,10	0,22	0,10	0,25
	4	100	**130**	150	120	**150**	170	25	**40**	45	50	**80**	105	mm/z	0,10	0,22	0,10	0,25
	4	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,2	0,08	0,22
	6	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,2	0,08	0,22
M	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,2
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,2
	3	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,18	0,08	0,2
K	1	150	**180**	200	180	**210**	240	30	**50**	60	80	**110**	130	mm/z	0,10	0,22	0,10	0,25
	2	130	**160**	180	150	**180**	210	25	**40**	45	65	**90**	110	mm/z	0,10	0,22	0,10	0,25
	3	100	**130**	160	120	**150**	170	20	**30**	40	50	**70**	90	mm/z	0,10	0,2	0,10	0,22
N	1	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30
	2	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30
	3	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30
	4	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30
	5	–	**–**	–	–	**–**	–	105	**140**	180	–	**–**	–	mm/z	0,10	0,30	0,10	0,30
S	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,10	0,18	0,10	0,20
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,10	0,18	0,10	0,20
	3	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,10	0,20	0,10	0,20
	4	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,10	0,20	0,10	0,20

RHM™ Modular Reaming System

The RHM Modular Reaming System achieves solid reamer metal removal rates from diameter 14–50mm with no customisation required. All standard reamer heads are ground to achieve an ISO H7 tolerance class addressing most applications. This system gives you fast and easy change of heads using axial actuation toolholders, and replaceable heads eliminate the need for repeating runout check. Specific coatings and lead configurations enable high-speed machining of steel, stainless steel, cast iron, and non-ferrous materials at accelerated speeds.

Primary Application

Use SIF™ Steerable Hydraulic Chucks or SIF Adaptors for easy compensation of radial runout and angular inaccuracies of the spindle to achieve the highest possible hole straightness and surface quality.
Radial or axial actuation tool bodies are available at diameter 20mm.

Features and Benefits

Taper-Face Contact with KST Coupling

- Symmetrical torque transmission near head.
- Higher feed rate than conventional reaming tools.
- Better surface quality and tool life due to less tendency to vibrate.
- No need for head to body orientation.

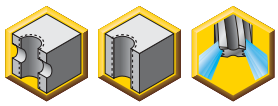
Higher Productivity and Profitability

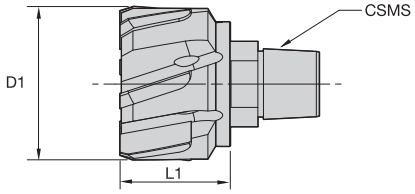
- Longer tool life with increased hole and surface quality due to lapped ground leads.
- Highest metal removal rate at higher speeds and feeds due to reaming specific grades and substrates.
- Improved straightness and cylindrical form compared to competitive tools and reduced vibration tendency due to unequal flutes.

Customisation

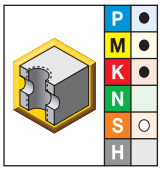
- Diameters up to 50mm available with and without internal coolant in 1 µm steps.
- Intermediate diameters of standard program available with short delivery time.
- RHM tooling for machining heat-resistant materials, as well as different lengths and couplings or shanks, available on request.

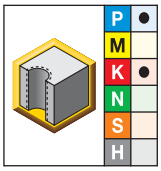
- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Please order screw for axial use or pull stud separately.

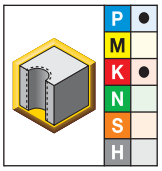




RHM Heads with Helical Flutes and Internal Coolant





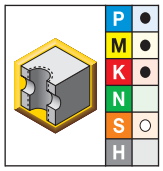


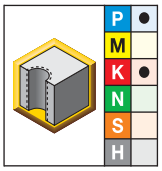
● first choice
○ alternate choice

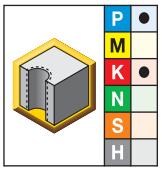
KC6305	KT325	KT6215	CSMS system size	D1 mm	L1 mm	Z
RHM14000KST115H7HF	**RHM14000KST115H7HF**	**RHM14000KST115H7HF**	KST115	14,00	13,50	6
RHM14288KST115H7HF	**RHM14288KST115H7HF**	**RHM14288KST115H7HF**	KST115	14,29	13,50	6
RHM15000KST115H7HF	**RHM15000KST115H7HF**	**RHM15000KST115H7HF**	KST115	15,00	13,50	6
RHM15875KST115H7HF	**RHM15875KST115H7HF**	**RHM15875KST115H7HF**	KST115	15,88	13,50	6
RHM16000KST135H7HF	**RHM16000KST135H7HF**	**RHM16000KST135H7HF**	KST135	16,00	13,50	6
RHM17000KST135H7HF	**RHM17000KST135H7HF**	**RHM17000KST135H7HF**	KST135	17,00	15,50	6
RHM17463KST135H7HF	**RHM17463KST135H7HF**	**RHM17463KST135H7HF**	KST135	17,46	15,50	6
RHM18000KST155H7HF	**RHM18000KST155H7HF**	**RHM18000KST155H7HF**	KST155	18,00	15,50	6
RHM19000KST155H7HF	**RHM19000KST155H7HF**	**RHM19000KST155H7HF**	KST155	19,00	15,50	6
RHM19050KST155H7HF	**RHM19050KST155H7HF**	**RHM19050KST155H7HF**	KST155	19,05	15,50	6
RHM20000KST175H7HF	**RHM20000KST175H7HF**	**RHM20000KST175H7HF**	KST175	20,00	15,50	6
RHM20640KST175H7HF	**RHM20640KST175H7HF**	**RHM20640KST175H7HF**	KST175	20,64	15,50	6
RHM21000KST175H7HF	**RHM21000KST175H7HF**	**RHM21000KST175H7HF**	KST175	21,00	15,50	6
RHM22000KST175H7HF	**RHM22000KST175H7HF**	**RHM22000KST175H7HF**	KST175	22,00	15,50	6
RHM22230KST175H7HF	**RHM22230KST175H7HF**	**RHM22230KST175H7HF**	KST175	22,23	15,50	6
RHM22500KST200H7HF	**RHM22500KST200H7HF**	**RHM22500KST200H7HF**	KST200	22,50	16,50	6
RHM23000KST200H7HF	**RHM23000KST200H7HF**	**RHM23000KST200H7HF**	KST200	23,00	16,50	6
RHM23810KST200H7HF	**RHM23810KST200H7HF**	**RHM23810KST200H7HF**	KST200	23,81	16,50	6
RHM24000KST200H7HF	**RHM24000KST200H7HF**	**RHM24000KST200H7HF**	KST200	24,00	16,50	6
RHM25000KST200H7HF	**RHM25000KST200H7HF**	**RHM25000KST200H7HF**	KST200	25,00	16,50	6
RHM25400KST200H7HF	**RHM25400KST200H7HF**	**RHM25400KST200H7HF**	KST200	25,40	16,50	6
RHM26000KST200H7HF	**RHM26000KST200H7HF**	**RHM26000KST200H7HF**	KST200	26,00	16,50	8
RHM26990KST200H7HF	**RHM26990KST200H7HF**	**RHM26990KST200H7HF**	KST200	26,99	16,50	8
RHM27000KST200H7HF	**RHM27000KST200H7HF**	**RHM27000KST200H7HF**	KST200	27,00	16,50	8
RHM27500KST250H7HF	**RHM27500KST250H7HF**	**RHM27500KST250H7HF**	KST250	27,50	16,50	8
RHM28000KST250H7HF	**RHM28000KST250H7HF**	**RHM28000KST250H7HF**	KST250	28,00	16,50	8

(continued)

(RHM Heads with Helical Flutes and Internal Coolant continued)





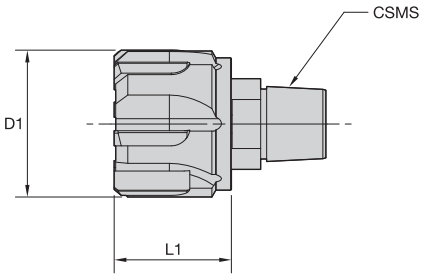


● first choice
○ alternate choice

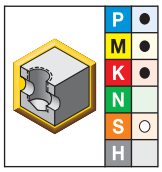
KC6305	KT325	KT6215	CSMS system size	D1 mm	L1 mm	Z
RHM28580KST250H7HF	**RHM28580KST250H7HF**	**RHM28580KST250H7HF**	KST250	28,58	16,50	8
RHM29000KST250H7HF	**RHM29000KST250H7HF**	**RHM29000KST250H7HF**	KST250	29,00	16,50	8
RHM30000KST250H7HF	**RHM30000KST250H7HF**	**RHM30000KST250H7HF**	KST250	30,00	16,50	8
RHM30160KST250H7HF	**RHM30160KST250H7HF**	**RHM30160KST250H7HF**	KST250	30,16	16,50	8
RHM31000KST250H7HF	**RHM31000KST250H7HF**	**RHM31000KST250H7HF**	KST250	31,00	16,50	8
RHM31750KST250H7HF	**RHM31750KST250H7HF**	**RHM31750KST250H7HF**	KST250	31,75	16,50	8
RHM32000KST250H7HF	**RHM32000KST250H7HF**	**RHM32000KST250H7HF**	KST250	32,00	16,50	8
RHM32500KST300H7HF	**RHM32500KST300H7HF**	**RHM32500KST300H7HF**	KST300	32,50	18,00	8
RHM33000KST300H7HF	**RHM33000KST300H7HF**	**RHM33000KST300H7HF**	KST300	33,00	18,00	8
RHM33340KST300H7HF	**RHM33340KST300H7HF**	**RHM33340KST300H7HF**	KST300	33,34	18,00	8
RHM34000KST300H7HF	**RHM34000KST300H7HF**	**RHM34000KST300H7HF**	KST300	34,00	18,00	8
RHM34930KST300H7HF	**RHM34930KST300H7HF**	**RHM34930KST300H7HF**	KST300	34,93	18,00	8
RHM35000KST300H7HF	**RHM35000KST300H7HF**	**RHM35000KST300H7HF**	KST300	35,00	18,00	8
RHM36000KST300H7HF	**RHM36000KST300H7HF**	**RHM36000KST300H7HF**	KST300	36,00	18,00	8
RHM36510KST300H7HF	**RHM36510KST300H7HF**	**RHM36510KST300H7HF**	KST300	36,51	18,00	8
RHM37000KST300H7HF	**RHM37000KST300H7HF**	**RHM37000KST300H7HF**	KST300	37,00	18,00	8
RHM37500KST350H7HF	**RHM37500KST350H7HF**	**RHM37500KST350H7HF**	KST350	37,50	18,00	8
RHM38000KST350H7HF	**RHM38000KST350H7HF**	**RHM38000KST350H7HF**	KST350	38,00	18,00	8
RHM38100KST350H7HF	**RHM38100KST350H7HF**	**RHM38100KST350H7HF**	KST350	38,10	18,00	8
RHM39000KST350H7HF	**RHM39000KST350H7HF**	**RHM39000KST350H7HF**	KST350	39,00	18,00	8
RHM39690KST350H7HF	**RHM39690KST350H7HF**	**RHM39690KST350H7HF**	KST350	39,69	18,00	8
RHM40000KST350H7HF	**RHM40000KST350H7HF**	**RHM40000KST350H7HF**	KST350	40,00	18,00	8
RHM41000KST350H7HF	**RHM41000KST350H7HF**	**RHM41000KST350H7HF**	KST350	41,00	18,00	8
RHM41280KST350H7HF	**RHM41280KST350H7HF**	**RHM41280KST350H7HF**	KST350	41,28	18,00	8
RHM42000KST350H7HF	**RHM42000KST350H7HF**	**RHM42000KST350H7HF**	KST350	42,00	18,00	8

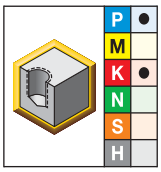
NOTE: Uncoated carbide grade K605™ is available on request.

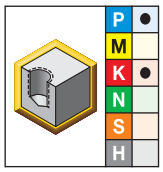
- For hole tolerance H7.
- Intermediate sizes ground to achieve IT6 or IT7 hole tolerance class available.
- Please order screw for axial use or pull stud separately.



RHM Heads with Straight Flutes and Internal Coolant





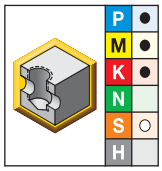


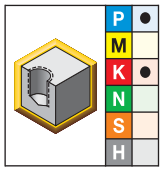
● first choice
○ alternate choice

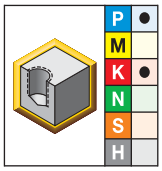
KC6305	KT325	KT6215	CSMS system size	D1 mm	L1 mm	Z
RHM14000KST115H7SF	**RHM14000KST115H7SF**	**RHM14000KST115H7SF**	KST115	14,00	13,50	6
RHM14288KST115H7SF	**RHM14288KST115H7SF**	**RHM14288KST115H7SF**	KST115	14,29	13,50	6
RHM15000KST115H7SF	**RHM15000KST115H7SF**	**RHM15000KST115H7SF**	KST115	15,00	13,50	6
RHM15875KST115H7SF	**RHM15875KST115H7SF**	**RHM15875KST115H7SF**	KST115	15,88	13,50	6
RHM16000KST135H7SF	**RHM16000KST135H7SF**	**RHM16000KST135H7SF**	KST135	16,00	13,50	6
RHM17000KST135H7SF	**RHM17000KST135H7SF**	**RHM17000KST135H7SF**	KST135	17,00	15,50	6
RHM17463KST135H7SF	**RHM17463KST135H7SF**	**RHM17463KST135H7SF**	KST135	17,46	15,50	6
RHM18000KST155H7SF	**RHM18000KST155H7SF**	**RHM18000KST155H7SF**	KST155	18,00	15,50	6
RHM19000KST155H7SF	**RHM19000KST155H7SF**	**RHM19000KST155H7SF**	KST155	19,00	15,50	6
RHM19050KST155H7SF	**RHM19050KST155H7SF**	**RHM19050KST155H7SF**	KST155	19,05	15,50	6
RHM20000KST175H7SF	**RHM20000KST175H7SF**	**RHM20000KST175H7SF**	KST175	20,00	15,50	6
RHM20640KST175H7SF	**RHM20640KST175H7SF**	**RHM20640KST175H7SF**	KST175	20,64	15,50	6
RHM21000KST175H7SF	**RHM21000KST175H7SF**	**RHM21000KST175H7SF**	KST175	21,00	15,50	6
RHM22000KST175H7SF	**RHM22000KST175H7SF**	**RHM22000KST175H7SF**	KST175	22,00	15,50	6
RHM22230KST175H7SF	**RHM22230KST175H7SF**	**RHM22230KST175H7SF**	KST175	22,23	15,50	6
RHM22500KST200H7SF	**RHM22500KST200H7SF**	**RHM22500KST200H7SF**	KST200	22,50	16,50	6
RHM23000KST200H7SF	**RHM23000KST200H7SF**	**RHM23000KST200H7SF**	KST200	23,00	16,50	6
RHM23810KST200H7SF	**RHM23810KST200H7SF**	**RHM23810KST200H7SF**	KST200	23,81	16,50	6
RHM24000KST200H7SF	**RHM24000KST200H7SF**	**RHM24000KST200H7SF**	KST200	24,00	16,50	6
RHM25000KST200H7SF	**RHM25000KST200H7SF**	**RHM25000KST200H7SF**	KST200	25,00	16,50	6
RHM25400KST200H7SF	**RHM25400KST200H7SF**	**RHM25400KST200H7SF**	KST200	25,40	16,50	6
RHM26000KST200H7SF	**RHM26000KST200H7SF**	**RHM26000KST200H7SF**	KST200	26,00	16,50	8
RHM26990KST200H7SF	**RHM26990KST200H7SF**	**RHM26990KST200H7SF**	KST200	26,99	16,50	8
RHM27000KST200H7SF	**RHM27000KST200H7SF**	**RHM27000KST200H7SF**	KST200	27,00	16,50	8
RHM27500KST250H7SF	**RHM27500KST250H7SF**	**RHM27500KST250H7SF**	KST250	27,50	16,50	8
RHM28000KST250H7SF	**RHM28000KST250H7SF**	**RHM28000KST250H7SF**	KST250	28,00	16,50	8

(continued)

(RHM Heads with Straight Flutes and Internal Coolant continued)





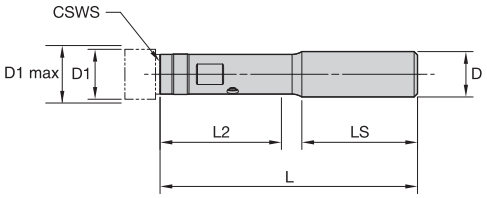


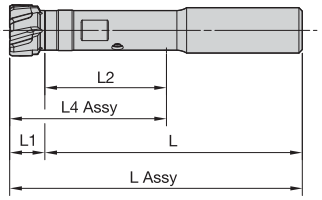
● first choice
○ alternate choice

KC6305	KT325	KT6215	CSMS system size	D1 mm	L1 mm	Z
RHM28580KST250H7SF	**RHM28580KST250H7SF**	**RHM28580KST250H7SF**	KST250	28,58	16,50	8
RHM29000KST250H7SF	**RHM29000KST250H7SF**	**RHM29000KST250H7SF**	KST250	29,00	16,50	8
RHM30000KST250H7SF	**RHM30000KST250H7SF**	**RHM30000KST250H7SF**	KST250	30,00	16,50	8
RHM30160KST250H7SF	**RHM30160KST250H7SF**	**RHM30160KST250H7SF**	KST250	30,16	16,50	8
RHM31000KST250H7SF	**RHM31000KST250H7SF**	**RHM31000KST250H7SF**	KST250	31,00	16,50	8
RHM31750KST250H7SF	**RHM31750KST250H7SF**	**RHM31750KST250H7SF**	KST250	31,75	16,50	8
RHM32000KST250H7SF	**RHM32000KST250H7SF**	**RHM32000KST250H7SF**	KST250	32,00	16,50	8
RHM32500KST300H7SF	**RHM32500KST300H7SF**	**RHM32500KST300H7SF**	KST300	32,50	18,00	8
RHM33000KST300H7SF	**RHM33000KST300H7SF**	**RHM33000KST300H7SF**	KST300	33,00	18,00	8
RHM33340KST300H7SF	**RHM33340KST300H7SF**	**RHM33340KST300H7SF**	KST300	33,34	18,00	8
RHM34000KST300H7SF	**RHM34000KST300H7SF**	**RHM34000KST300H7SF**	KST300	34,00	18,00	8
RHM34930KST300H7SF	**RHM34930KST300H7SF**	**RHM34930KST300H7SF**	KST300	34,93	18,00	8
RHM35000KST300H7SF	**RHM35000KST300H7SF**	**RHM35000KST300H7SF**	KST300	35,00	18,00	8
RHM36000KST300H7SF	**RHM36000KST300H7SF**	**RHM36000KST300H7SF**	KST300	36,00	18,00	8
RHM36510KST300H7SF	**RHM36510KST300H7SF**	**RHM36510KST300H7SF**	KST300	36,51	18,00	8
RHM37000KST300H7SF	**RHM37000KST300H7SF**	**RHM37000KST300H7SF**	KST300	37,00	18,00	8
RHM37500KST350H7SF	**RHM37500KST350H7SF**	**RHM37500KST350H7SF**	KST350	37,50	18,00	8
RHM38000KST350H7SF	**RHM38000KST350H7SF**	**RHM38000KST350H7SF**	KST350	38,00	18,00	8
RHM38100KST350H7SF	**RHM38100KST350H7SF**	**RHM38100KST350H7SF**	KST350	38,10	18,00	8
RHM39000KST350H7SF	**RHM39000KST350H7SF**	**RHM39000KST350H7SF**	KST350	39,00	18,00	8
RHM39690KST350H7SF	**RHM39690KST350H7SF**	**RHM39690KST350H7SF**	KST350	39,69	18,00	8
RHM40000KST350H7SF	**RHM40000KST350H7SF**	**RHM40000KST350H7SF**	KST350	40,00	18,00	8
RHM41000KST350H7SF	**RHM41000KST350H7SF**	**RHM41000KST350H7SF**	KST350	41,00	18,00	8
RHM41280KST350H7SF	**RHM41280KST350H7SF**	**RHM41280KST350H7SF**	KST350	41,28	18,00	8
RHM42000KST350H7SF	**RHM42000KST350H7SF**	**RHM42000KST350H7SF**	KST350	42,00	18,00	8

NOTE: Uncoated carbide grade K605™ is available on request.

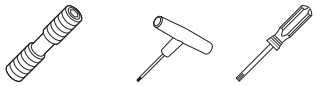
- Tool body shipped with screw for axial use.
- Order reamer head separately.





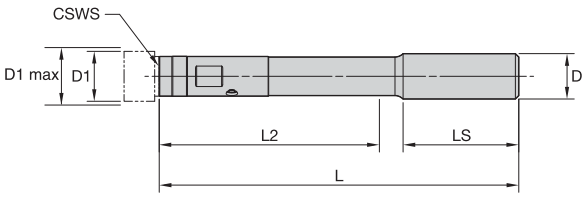
L Assy = L1 (RHM Head) + L (Shank)

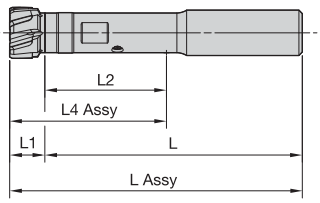
Round Shank Axial Actuation • Metric • 3 x D



order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L	L2	LS	central lock screw	Torx wrench	Torx wrench	Nm
4056174	**SS16KST115AR3M**	KST115	14,00	15,999	16,00	91,00	35,00	48,00	**KST115115AS**	**–**	**170.028**	3,0
4056175	**SS20KST135AR3M**	KST135	16,00	17,999	20,00	99,00	39,00	51,00	**KST135155AS**	**–**	**170.085**	4,0
4056176	**SS20KST155AR3M**	KST155	18,00	19,999	20,00	106,00	45,00	51,00	**KST135155AS**	**–**	**170.085**	4,0
3861185	**SS20KST175AR3M**	KST175	20,00	22,499	20,00	113,50	51,50	51,00	**KST175200AS**	**TT15**	**–**	5,0
3861186	**SS20KST200AR3M**	KST200	22,50	27,499	20,00	130,50	65,50	51,00	**KST175200AS**	**TT15**	**–**	5,0
3861187	**SS25KST250AR3M**	KST250	27,50	32,499	25,00	152,50	80,50	56,00	**KST250250AS**	**TT25**	**–**	9,0
3861188	**SS32KST300AR3M**	KST300	32,50	37,499	32,00	174,00	94,00	61,00	**KST300350AS**	**TT30**	**–**	13,0
3861189	**SS32KST350AR3M**	KST350	37,50	42,000	32,00	190,00	108,00	61,00	**KST300350AS**	**TT30**	**–**	13,0

- Tool body shipped with screw for axial use.
- Order reamer head separately.



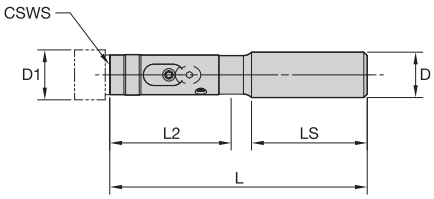


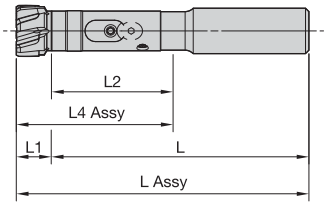
L Assy = L1 (RHM Head) + L (Shank)

Round Shank Axial Actuation • Metric • 5 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L	L2	LS	central lock screw	Torx wrench	Torx wrench	Nm
4056177	**SS16KST115AR5M**	KST115	14,00	15,999	16,00	123,00	67,00	48,00	**KST115115AS**	**–**	**170.028**	3,0
4056178	**SS20KST135AR5M**	KST135	16,00	17,999	20,00	135,00	75,00	51,00	**KST135155AS**	**–**	**170.085**	4,0
4056179	**SS20KST155AR5M**	KST155	18,00	19,999	20,00	146,00	85,00	51,00	**KST135155AS**	**–**	**170.085**	4,0
3861190	**SS20KST175AR5M**	KST175	20,00	22,499	20,00	158,50	96,50	51,00	**KST175200AS**	**TT15**	**–**	5,0
3861191	**SS20KST200AR5M**	KST200	22,50	27,499	20,00	185,50	120,50	51,00	**KST175200AS**	**TT15**	**–**	5,0
3861192	**SS25KST250AR5M**	KST250	27,50	32,499	25,00	217,50	145,50	56,00	**KST250250AS**	**TT25**	**–**	9,0
3861193	**SS32KST300AR5M**	KST300	32,50	37,499	32,00	249,00	169,00	61,00	**KST300350AS**	**TT30**	**–**	13,0
3861194	**SS32KST350AR5M**	KST350	37,50	42,000	32,00	274,00	192,00	61,00	**KST300350AS**	**TT30**	**–**	13,0

- Tool body shipped with pull stud for radial use.
- Order reamer head separately.



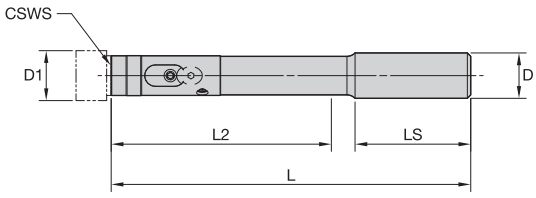


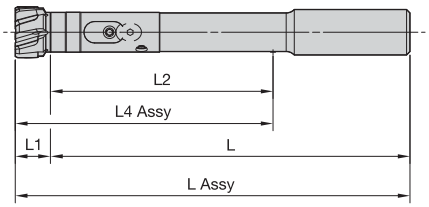
L Assy = L1 (RHM Head) + L (Shank)

Round Shank Radial Actuation • Metric • 3 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L	L2	LS	retention knob	clamp set	Torx wrench	Nm
3861195	**SS20KST175RR3M**	KST175	20,00	22,50	20,00	113,50	51,50	51,00	**KST175200RK**	**KST175CS**	**TT15**	5,0
3861196	**SS20KST200RR3M**	KST200	22,50	27,50	20,00	130,50	65,50	51,00	**KST175200RK**	**KST200CS**	**TT15**	5,0
3861197	**SS25KST250RR3M**	KST250	27,50	32,50	25,00	152,50	80,50	56,00	**KST250250RK**	**KST250CS**	**TT25**	9,0
3861198	**SS32KST300RR3M**	KST300	32,50	37,50	32,00	174,00	94,00	61,00	**KST300350RK**	**KST300CS**	**TT30**	13,0
3861199	**SS32KST350RR3M**	KST350	37,50	42,00	32,00	190,00	108,00	61,00	**KST300350RK**	**KST350CS**	**TT30**	13,0

- Tool body shipped with pull stud for radial use.
- Order reamer head separately.



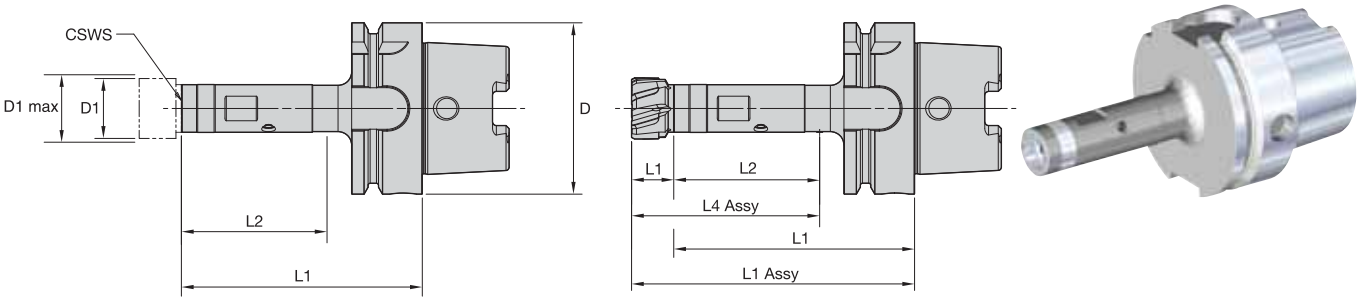


L Assy = L1 (RHM Head) + L (Shank)

Round Shank Radial Actuation • Metric • 5 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L	L2	LS	retention knob	clamp set	Torx wrench	Nm
3861200	**SS20KST175RR5M**	KST175	20,00	22,50	20,00	158,50	96,50	51,00	**KST175200RK**	**KST175CS**	**TT15**	5,0
3861201	**SS20KST200RR5M**	KST200	22,50	27,50	20,00	185,50	120,50	51,00	**KST175200RK**	**KST200CS**	**TT15**	5,0
3861202	**SS25KST250RR5M**	KST250	27,50	32,50	25,00	217,50	145,50	56,00	**KST250250RK**	**KST250CS**	**TT25**	9,0
3861203	**SS32KST300RR5M**	KST300	32,50	37,50	32,00	249,00	169,00	61,00	**KST300350RK**	**KST300CS**	**TT30**	13,0
3861204	**SS32KST350RR5M**	KST350	37,50	42,00	32,00	274,00	192,00	61,00	**KST300350RK**	**KST350CS**	**TT30**	13,0

- Tool body shipped with screw for axial use.
- Order reamer head separately.

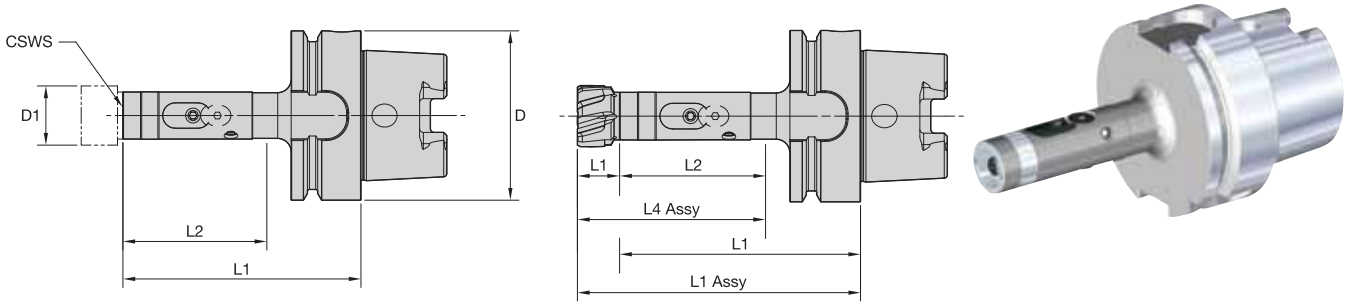


L1 Assy = L1 Head + L1 Shank

HSK63A Shank Axial Actuation • 3 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L1	L2	central lock screw	Torx wrench	Nm
4056180	HSK63AKST115AR3M	KST115	14,00	15,999	63,00	69,00	35,00	KST115115AS	170.028	3,0
4056181	HSK63AKST135AR3M	KST135	16,00	17,999	63,00	74,00	39,00	KST135155AS	170.085	4,0
4056182	HSK63AKST155AR3M	KST155	18,00	19,999	63,00	81,00	45,00	KST135155AS	170.085	4,0
3860911	HSK63AKST175AR3M	KST175	20,00	22,499	63,00	88,50	51,50	KST175200AS	TT15	5,0
3860912	HSK63AKST200AR3M	KST200	22,50	27,499	63,00	105,50	65,50	KST175200AS	TT15	5,0
3860963	HSK63AKST250AR3M	KST250	27,50	32,499	63,00	122,50	80,50	KST250250AS	TT25	9,0
3860964	HSK63AKST300AR3M	KST300	32,50	37,499	63,00	139,00	94,00	KST300350AS	TT30	13,0
3860965	HSK63AKST350AR3M	KST350	37,50	42,000	63,00	155,00	108,00	KST300350AS	TT30	13,0

- Tool body shipped with pull stud for radial use.
- Order reamer head separately.

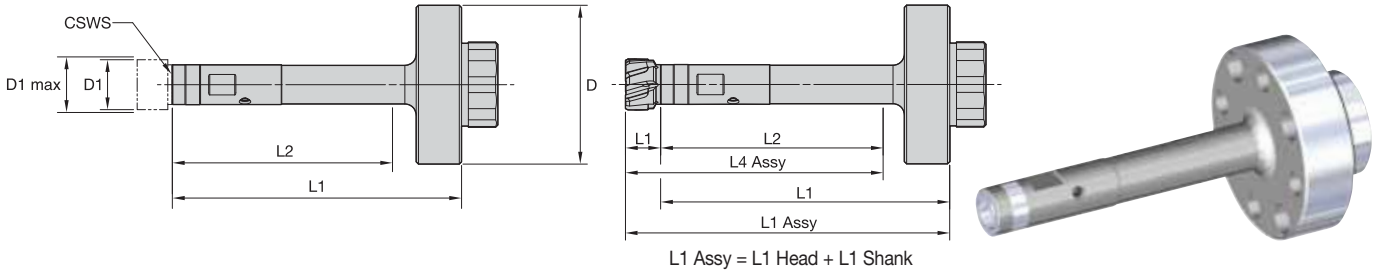


L1 Assy = L1 Head + L1 Shank

HSK63A Shank Radial Actuation • 3 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L1	L2	retention knob	clamp set	Torx wrench	Nm
3860966	HSK63AKST175RR3M	KST175	20,00	22,49	63,00	88,50	51,50	KST175200RK	KST175CS	TT15	5,0
3860967	HSK63AKST200RR3M	KST200	22,50	27,49	63,00	105,50	65,50	KST175200RK	KST200CS	TT15	5,0
3860968	HSK63AKST250RR3M	KST250	27,50	32,49	63,00	122,50	80,50	KST250250RK	KST250CS	TT25	9,0
3860969	HSK63AKST300RR3M	KST300	32,50	37,49	63,00	139,00	94,00	KST300350RK	KST300CS	TT30	13,0
3860970	HSK63AKST350RR3M	KST350	37,50	42,00	63,00	155,00	108,00	KST300350RK	KST350CS	TT30	13,0

- Tool body shipped with screw for axial use.
- Order reamer head separately.

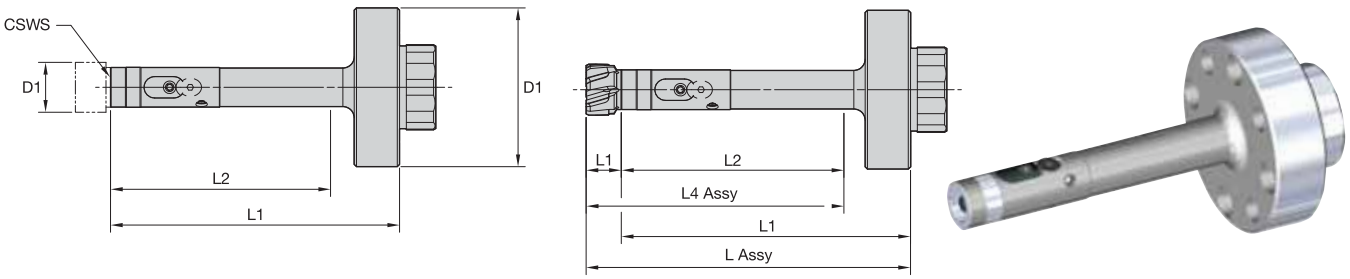


L1 Assy = L1 Head + L1 Shank

SIF70 Shank Axial Actuation • 5 x D

order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L1	L2	central lock screw	Torx wrench	Nm
4056183	SIF70KST115AR5M	KST115	14,00	15,999	70,00	95,00	67,00	KST115115AS	170.028	3,0
4056184	SIF70KST135AR5M	KST135	16,00	17,999	70,00	104,00	75,00	KST135155AS	170.085	4,0
4056185	SIF70KST155AR5M	KST155	18,00	19,999	70,00	115,00	85,00	KST135155AS	170.085	4,0
3860971	SIF70KST175AR5M	KST175	20,00	22,499	70,00	127,50	96,50	KST175200AS	TT15	5,0
3860972	SIF70KST200AR5M	KST200	22,50	27,499	70,00	154,50	120,50	KST175200AS	TT15	5,0
3860973	SIF70KST250AR5M	KST250	27,50	32,499	70,00	181,50	145,50	KST250250AS	TT25	9,0
3860974	SIF70KST300AR5M	KST300	32,50	37,499	70,00	208,00	169,00	KST300350AS	TT30	13,0
3860975	SIF70KST350AR5M	KST350	37,50	42,000	70,00	233,00	192,00	KST300350AS	TT30	13,0

- Tool body shipped with pull stud for radial use.
- Order reamer head separately.



L1 Assy = L1 Head + L1 Shank

SIF70 Shank Radial Actuation • 5 x D

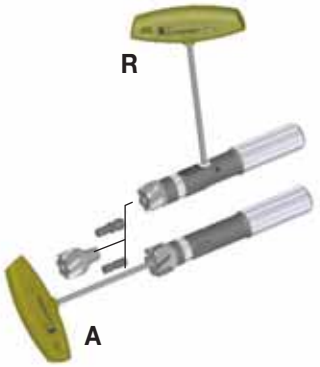
order number	catalogue number	CSWS system size	D1 mm	D1 max mm	D	L1	L2	retention knob	clamp set	Torx wrench	Nm
3860976	SIF70KST175RR5M	KST175	20,00	22,49	70,00	127,50	96,50	KST175200RK	KST175CS	TT15	5,0
3860977	SIF70KST200RR5M	KST200	22,50	27,49	70,00	154,50	120,50	KST175200RK	KST200CS	TT15	5,0
3860978	SIF70KST250RR5M	KST250	27,50	32,49	70,00	181,50	145,50	KST250250RK	KST250CS	TT25	9,0
3860979	SIF70KST300RR5M	KST300	32,50	37,49	70,00	208,00	169,00	KST300350RK	KST300CS	TT30	13,0
3860980	SIF70KST350RR5M	KST350	37,50	42,00	70,00	233,00	192,00	KST300350RK	KST350CS	TT30	13,0

RHM™

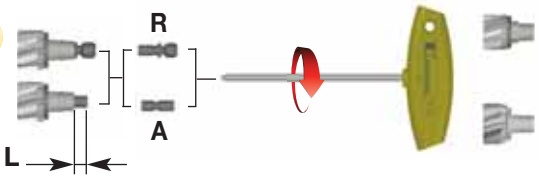
Material Group		KT325 Cutting Speed — vc Range — m/min			KT6215 Cutting Speed — vc Range — m/min			K605 Cutting Speed — vc Range — m/min			KC6305 Cutting Speed — vc Range — m/min			Metric Recommended Feed Rate per Tooth						
														Tool Diameter (mm)	14.00–19.99		20.00–32.00		32.50–42.00	
		min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	min	Starting Value	max	Feed/ Tooth	min	max	min	max	min	max
P	1	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	2	150	**180**	210	180	**210**	240	40	**60**	70	90	**120**	155	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	3	130	**160**	180	150	**180**	210	30	**40**	50	75	**100**	130	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	4	100	**130**	150	120	**150**	170	25	**40**	45	50	**80**	105	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	4	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,18	0,08	0,20	0,08	0,22
	6	80	**100**	120	100	**130**	150	10	**20**	30	30	**40**	55	mm/z	0,08	0,18	0,08	0,20	0,08	0,22
M	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,15	0,08	0,18	0,08	0,20
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,15	0,08	0,18	0,08	0,20
	3	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,08	0,15	0,08	0,18	0,08	0,20
K	1	150	**180**	200	180	**210**	240	30	**50**	60	80	**110**	130	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	2	130	**160**	180	150	**180**	210	25	**40**	45	65	**90**	110	mm/z	0,10	0,20	0,10	0,22	0,10	0,25
	3	100	**130**	160	120	**150**	170	20	**30**	40	50	**70**	90	mm/z	0,10	0,18	0,10	0,20	0,10	0,22
N	1	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	0,10	0,30
	2	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	0,10	0,30
	3	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	0,10	0,30
	4	–	**–**	–	–	**–**	–	110	**150**	195	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	0,10	0,30
	5	–	**–**	–	–	**–**	–	105	**140**	180	–	**–**	–	mm/z	0,10	0,30	0,10	0,30	0,10	0,30
S	1	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,06	0,15	0,10	0,18	0,10	0,20
	2	–	**–**	–	–	**–**	–	8	**10**	15	15	**20**	28	mm/z	0,06	0,15	0,10	0,18	0,10	0,20
	3	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,08	0,18	0,10	0,20	0,10	0,20
	4	–	**–**	–	–	**–**	–	15	**20**	30	20	**30**	40	mm/z	0,08	0,18	0,10	0,20	0,10	0,20

Assemble

1

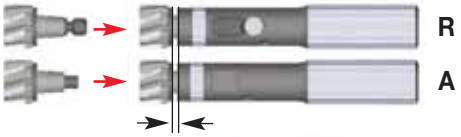


2

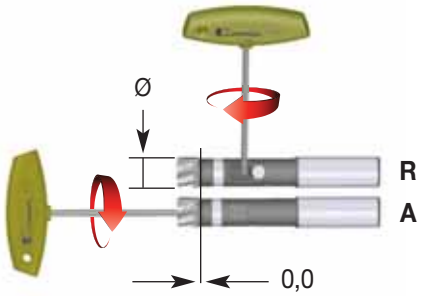


ø (mm)		L (mm)
14,000	27,499	5–5,5
27,500	42,000	5,5–6

3



4

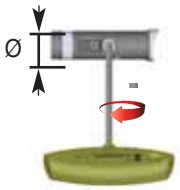


ø (mm)			(Nm)
14,000	15,999	DT - 8	2
16,000	19,999	DT - 10	3
20,000	27,499	TT - 15	5
27,500	32,499	TT - 25	9
32,500	42,000	TT - 30	13

Disassemble 4 → 3 → 2 → 1

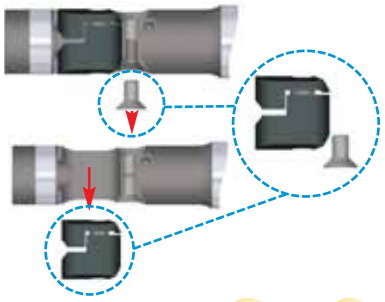
Disassemble

1



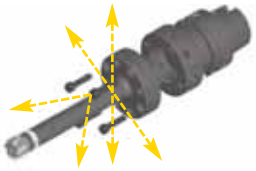
ø (mm)	ø (in)			(Nm)	(ft. lbs.)
17,5	0.686	KST175CS	2,5	2,5	1.9
20	0.784	KST200CS	2,5	2,5	1.9
25	0.980	KST250CS	3	5	3.7
30	1.176	KST300CS	4	9	6.7
35	1.373	KST350CS	4	9	6.7

2 3

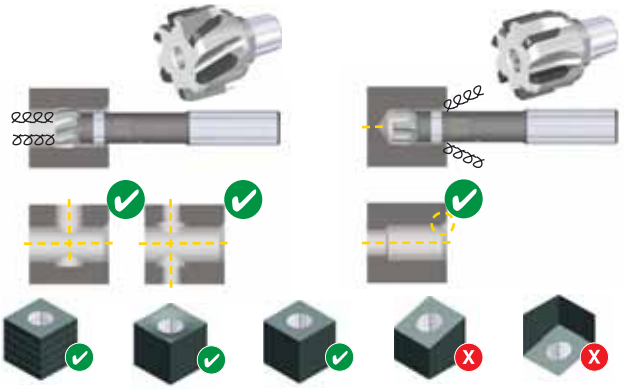


Assemble 3 → 2 → 1

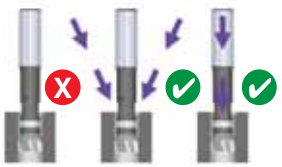
SIF™



Application



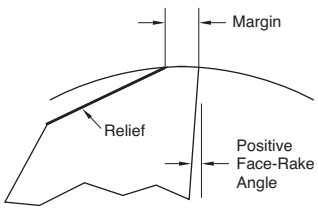
Coolant flow

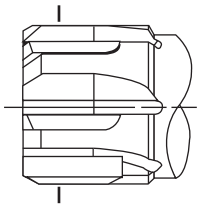


Basic Design Overview • Multiflute Reaming Tooling

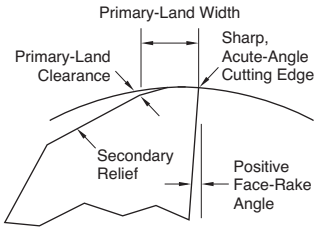
Kennametal offers two basic reaming designs, cylindrical margin land and up sharp. The cylindrical margin land design is used for all standard items of the RMS™, RMB™, and RHM™ reaming platforms. Engineered-solution tooling based on up sharp reaming design offers high hole quality and long tool life in exotic cases and high-temp alloys as only the sharp cutting edges contact with the workpiece.

Cylindrical Margin Reaming "C"

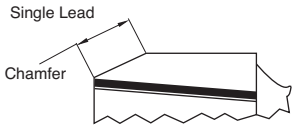


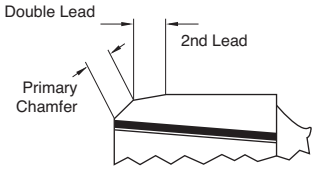


Up Sharp Reaming "U" & "NC"



Basic Lead Differences





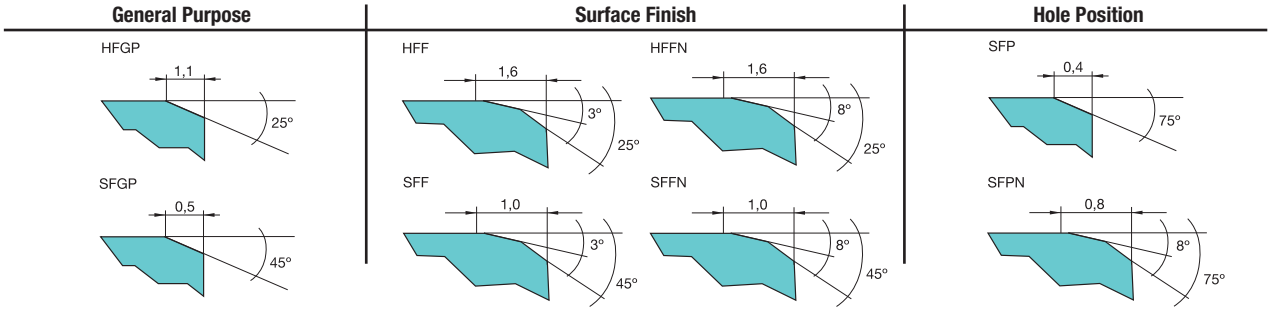
Single Lead

The single lead chamfer design is used with all standard RMS, RMB, and RHM reaming tooling and enables the tool to be applied on various materials without customization. Design can be modified to meet specific applications such as thin walls, straightness correction, etc.

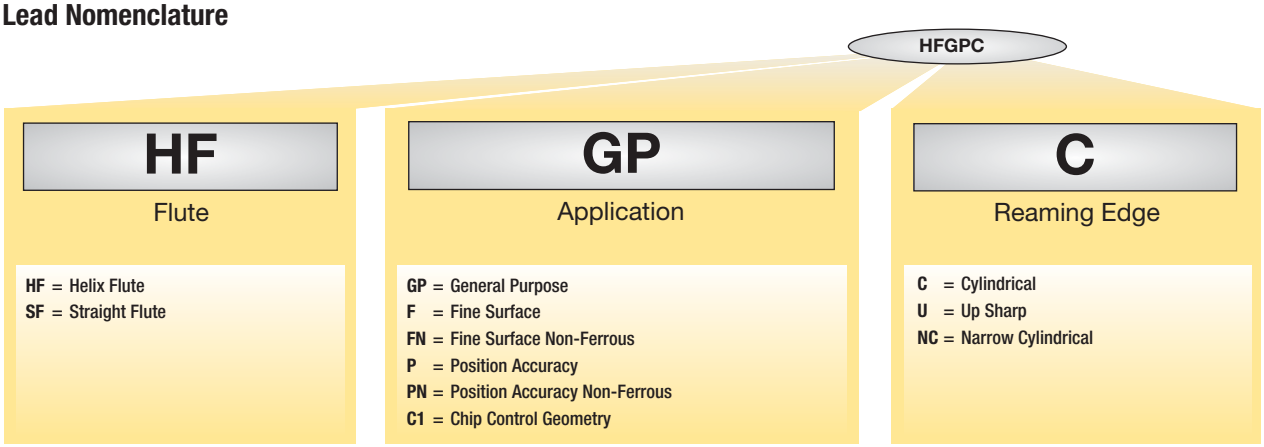
Double Lead

Double lead designs are available as engineered solutions and enable higher surface quality and feed rates in general. Lead dimensions require customisation regarding the material to be machined for best machining results.

Lead Design Overview



Lead Nomenclature



General Purpose

	workpiece material	hole type	surface requirement	recommended geometry	design	recommended grade
P	steel	through	IT 7, Ra <0.8 steel	HFGP	C	KT325 and KT6215 (Ra <0.8), KC6305 (Ra <1.6)
		blind		SFGP		
K	cast iron	through	It 7, Ra <1.6 CI	HFGP	C	KT325 and KT6215 (Ra <0.8), KC6305 (Ra <1.6)
		blind		SFGP		
M	stainless steel	through	IT 7, Ra <1.0	HFGP	C	KC6305
		blind		SFGP		
S	high-temp alloys	through	IT 7, Ra <0.6	HFGP	U	KC6305
		blind		SFGP		
N	non-ferrous	through	IT 7, Ra <0.8	HFGP	C	K605, KD1415
					U	
		blind		SFGP	C	
					U	

Extra Surface Finish

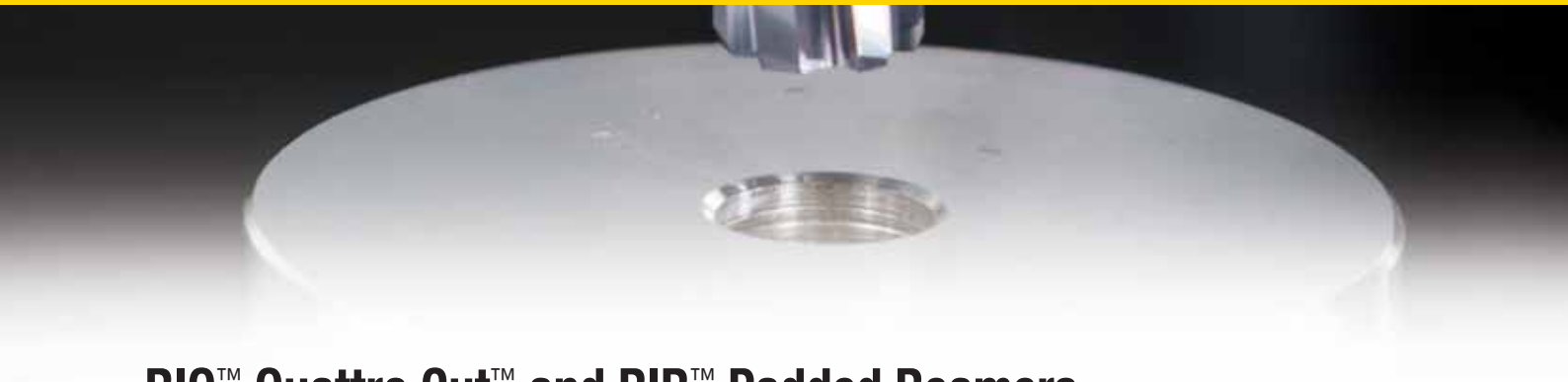
	workpiece material	hole type	surface requirement	recommended geometry	design	recommended grade
P	steel	through	IT 7, Ra <0.8	HFFN	C	KT325 and KT6215 (Ra <0.4), KC6305 (Ra <0.8)
		blind		SFFN		
K	cast iron	through	IT 7, Ra <0.8	HFFN	C	KT325 and KT6215 (Ra <0.4), KC6305 (Ra <0.8)
		blind		SFFN		
N	non-ferrous	through	IT 7, Ra <0.4	HFFN	C	K605, KD1415
					U	
		blind		SFFN	C	
					U	

Additional Hole Position Accuracy

	workpiece material	hole type	surface requirement	recommended geometry	design	recommended grade
P	steel	through	IT 7, Ra <0.8 steel	SFP	C	KT325, KT6215, KC6305
		blind				
K	cast iron	through	It 7, Ra <1.6 CI	SFP	C	KT325, KT6215, KC6305
		blind				
M	stainless steel	through	IT 7, Ra <1.0	SFP	C	KC6305
		blind			NC	
S	high-temp alloys	through	IT 7, Ra <0.6	SFP	U	KC6305
		blind				
N	non-ferrous	through	Ra <0.8	SFP	C	K605, KD1415
		blind			U	
		through	Ra <0.4	SFPN	C	
		blind			U	

Extra Chip Control

	workpiece material	hole type	surface requirement	recommended geometry	design	recommended grade
P	steel (long chipping)	blind	Ra 0.4–1.6	SFC1	C	KT325, KT6215, KC6305
					U	



RIQ™ Quattro Cut™ and RIR™ Padded Reamers

Primary Application

Master the highest precision reaming applications with standard inserts in almost all materials with two unique systems available: RIR for small diameter and RIQ for easy setup in larger diameters.

The RIQ reamers are available starting at diameter 16mm with four edges for lowest cost per hole. They contain a proprietary pocket seat only requiring setup of the diameter, which is a huge benefit in terms of simplicity over other systems that require the diameter and back taper to be adjusted simultaneously. The RIR padded reamers are also proprietary and are available starting at diameter 6mm with two edges.

Features and Benefits

Higher Productivity and Profitability

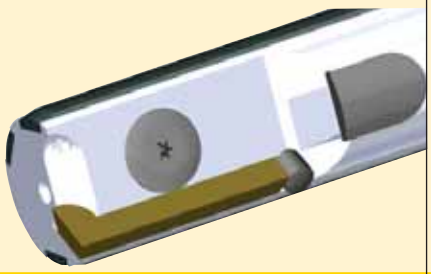
- Higher tool life with Kennametal grades.
- User friendly — RIQ padded reamers reduce setup time.
- Make use of four full edges even in PCD or PCBN when using RIQ inserts.

Complete Insert Portfolio

- Large offering of available lead geometries — E13, EDS, EGU, EKS, radius, and taper inserts.
- Large offering of grades — coated and uncoated carbide, cermet, PCBN, and PCD.

Customisation

- All RIQ tooling is engineered according to your specific needs in diameters 16–350mm with internal coolant.
- All RIR tooling is engineered according to your specific needs in diameters 6–350mm with internal coolant.
- RIR taper reamer for cone-shaped holes is available on request.
- Multiflute and step reaming applications and special blade shapes are available upon request.
- Necessary measuring and adjustment equipment is available as standard.

Application recommendation	RIR	RIQ
	Bore tolerances less than 10 µm (can be greater). Geometric tolerancing down to 2 µm. Skilled workforce experience required. Multidiameter bore possible but less stability during end face machining. 	Bore tolerances less than 10 µm. Geometric tolerancing down to 2 µm. Lower skilled workforce, easier adjustment. Multidiameter bores. Blind bore end face machining, greater stability of insert.
Pocket seat	Flat with clamping groove in blade.	Serrated. Greater insert stability.
Cutting edges	2 (1 with PCD or CBN and 1 within diameter range 6–8mm)	4 (Including PCD, CBN, and cermet)
Special blade forms	yes	yes
Multiple insets on diameter	no	yes
Blade adjustment	Diameter and back taper.	Diameter only, back taper preset.
Blade adjusting screws	2	1
Number of insert sizes	5	3
Chamfer or seat machining	Possible, but adjustment required on length and angle.	Yes. Angle preset into body. Minimal adjustment for length.
General comments	Requires end users to be familiar with adjusting single blade reamers. High accuracy for single or multiple diameters.	Requires end users not to be familiar with typical adjusting single blade padded reamers. Complex multidiameter bores with chamfers and leads between bores. Multidiameter for high accuracy and higher productivity (feed rate).

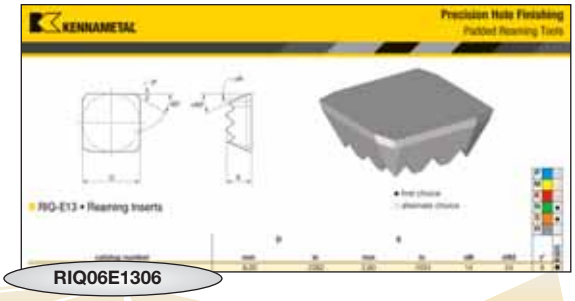
Micro-Finishing Tool

Valve Seat Tool

Tool for Differential Housing

Blade Identification System

The RIR and RIQ blade part numbers are made up of 10 numbers selected from 5 categories. The first three digits indicate the reamer type, the next two digits are determined by reamer size, and the balance of the numbers allow specific blade configurations and grades.



RIQ	06	E13	06	K605
Type	Size	Lead	Rake	Grade

RIR = Reamer Insert Rectangular

RIQ = Reamer Insert Quattro Cut™

Blade Size

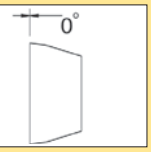
Ø [mm]	RIQ	
16,0–24,99	**06**	6,0 x 6,0mm
Valve Seat	**B7**	6,5 x 6,5mm
Valve Seat	**07**	7,0 x 7,0mm
>25	**09**	9,0 x 9,0mm
>25	**12**	12,0 x 12,0mm

Ø [mm]	RIR	
6,0–7,99	**A0**	10,5 x 2,50mm
8,0–10,99	**01**	15,0 x 2,80mm
11,0–13,99	**02**	18,0 x 4,00mm
14,0–17,99	**03**	20,0 x 4,76mm
18,0–45,99	**04**	27,0 x 5,56mm
>46	**05**	27,0 x 6,75mm
Taper Reamer	**T4**	45,0 x 5,56mm

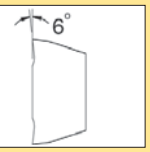
Cutting Lead

Rake Angle

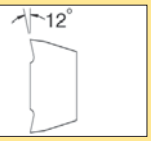
00



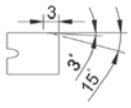
06



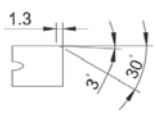
12



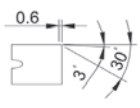
E30



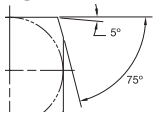
E13



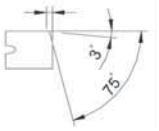
E06



EKS

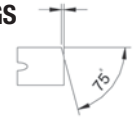


EDS



Blade Size	0	1	2	3	4
Lead Length	.75	.85	1.0	1.1	1.2

EGS

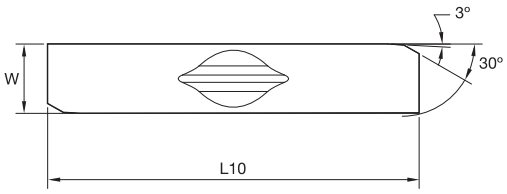


Blade Size	0	1	2	3	4
Lead Length	.25	.35	.50	.60	.70

S — Special Blade

R — Radius Blade

Grade	
Carbide uncoated	**K605**
Carbide TiN	**KC6005**
Carbide TiCN	**KC6105**
Carbide TiAlN	**KC6305**
Cermet uncoated	**KT325**
Cermet TiCN	**KT6115**
Cermet TiAlN	**KT6215**
PCD	**KD1415**
CBN	**KB1610**

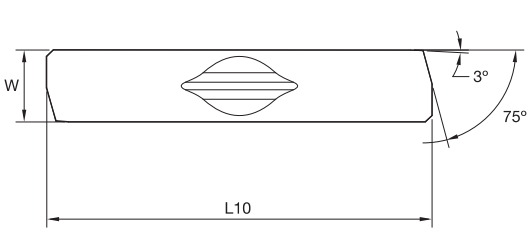


● first choice
○ alternate choice

P	○	●	●	○	
M	○	○	○	●	
K	○	●	○	●	
N	●	○	○	○	
S	●	○	○	●	
H					

RIR-E13 • Reaming Inserts

catalogue number	L10 mm	S mm	W mm	αN	αN2	γ°	K605	KC6005	KC6105	KC6305
RIR00E1300	10,50	1,15	2,00	10	25	–	●			
RIRA0E1300	10,50	1,15	2,44	10	27	–	●			
RIR01E1312	15,00	1,53	2,80	8	18	12	●	●	●	●
RIR01E1300	15,00	1,55	2,80	8	18	–	●	●	●	●
RIR02E1312	18,00	1,93	4,00	8	18	12	●	●	●	●
RIR02E1300	18,00	1,95	4,00	8	18	–	●	●	●	●
RIR03E1312	20,00	2,33	4,76	8	18	12	●	●	●	●
RIR03E1300	20,00	2,35	4,76	8	18	–	●	●	●	●
RIR04E1312	27,00	3,13	5,56	8	18	12	●	●		●
RIR04E1300	27,00	3,15	5,56	8	18	–	●	●	●	●
RIR05E1300	27,00	3,15	6,75	8	18	–	●			



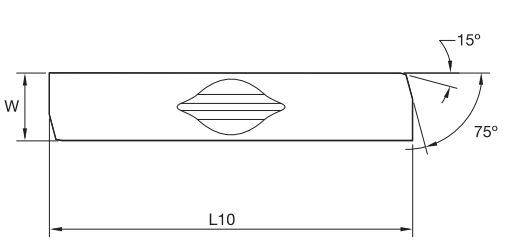
● first choice
○ alternate choice

P	○	●	●		
M	○	○	○		
K	○	●	○		
N	●	○	○	●	
S	●	○	○		
H					

RIR-EDS • Reaming Inserts

catalogue number	L10 mm	S mm	W mm	αN	αN2	γ°	K605	KC6005	KC6105	KD1415
RIR01EDS12	15,00	1,53	2,80	8	18	12	●	●	●	
RIR01EDS00	15,00	1,55	2,80	8	18	–				●
RIR02EDS12	18,00	1,93	4,00	8	18	12	●	●	●	
RIR02EDS06	18,00	1,95	4,00	8	18	6				●
RIR03EDS12	20,00	2,33	4,76	8	18	12	●	●	●	
RIR03EDS06	20,00	2,35	4,76	8	18	6				●
RIR04EDS12	27,00	3,13	5,56	8	18	12	●	●	●	
RIR04EDS06	27,00	3,15	5,56	8	18	6				●

NOTE: All KD1415™ inserts are single tipped except full face at size RIR01.

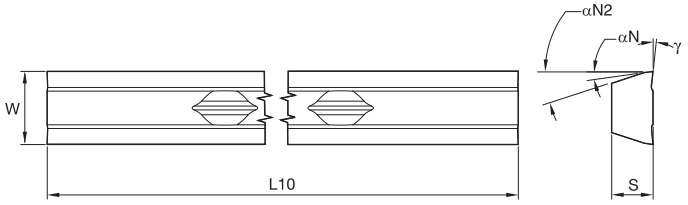


● first choice
○ alternate choice

P	●
M	○
K	○
N	○
S	○
H	

RIR-EGU • Reaming Inserts

catalogue number	L10 mm	S mm	W mm	αN	αN2	γ°	KC6105
RIR01EGU00	15,00	1,55	2,80	8	18	–	●
RIR02EGU00	18,00	1,95	4,00	8	18	–	●
RIR03EGU00	20,00	2,35	4,76	8	18	–	●
RIR04EGU00	27,00	3,15	5,56	8	18	–	●
RIR05EGU00	27,00	3,15	6,75	8	18	–	●



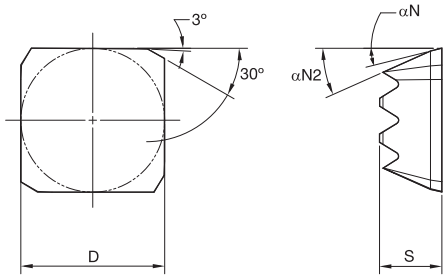
● first choice
○ alternate choice

P	M	K	N	S	H
●	○	●	○	○	

RIR-C45 • Reaming Inserts

catalogue number	L10 mm	S mm	W mm	αN	αN2	γ°	KC6005
RIRT4C4506	45,00	3,15	5,56	8	18	6	●
RIRT4C4512	45,00	3,15	5,56	8	18	12	●

NOTE: For use with taper reamer bodies.

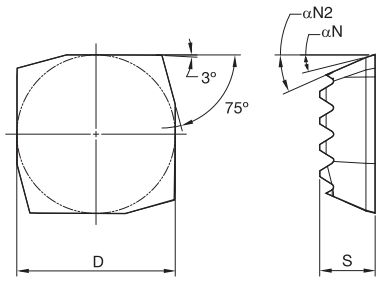


● first choice
○ alternate choice

P	M	K	N	S	H
○	○	○	●	●	

RIQ-E13 • Reaming Inserts

catalogue number	D mm	S mm	αN	αN2	γ°	K605
RIQ06E1306	6,00	2,60	14	24	6	●
RIQ09E1306	9,00	3,15	14	24	6	●
RIQ12E1306	12,00	3,70	14	18	6	●



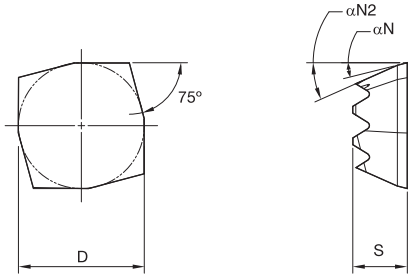
● first choice
○ alternate choice

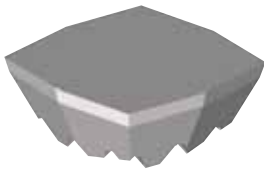
P	M	K	N	S	H
○	○	○	●	●	

RIQ-EDS • Reaming Inserts

catalogue number	D mm	S mm	αN	αN2	γ°	K605	KC6005	KC6105	KD1415
RIQ06EDS06	6,00	2,60	14	24	6	●			●
RIQ06EDS12	6,00	2,60	20	30	12	●	●	●	
RIQ09EDS06	9,00	3,15	14	24	6	●			●
RIQ09EDS12	9,00	3,15	20	30	12	●	●	●	
RIQ12EDS06	12,00	3,70	14	18	6	●			●
RIQ12EDS12	12,00	3,70	20	24	12	●	●	●	

NOTE: All KD1415™ inserts are full face.



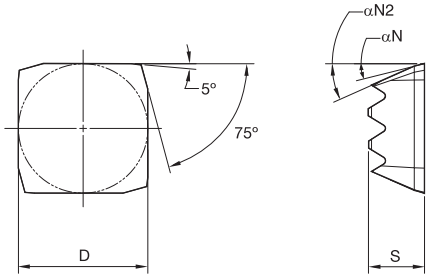


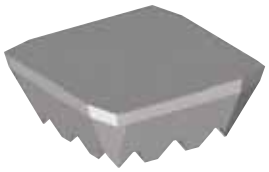
● first choice
○ alternate choice

P	M	K	N	S	H
○	○	○	●	●	

RIQ-EGS • Reaming Inserts

catalogue number	D mm	S mm	αN	αN2	γ°	K605
RIQ06EGS06	6,00	2,60	14	24	6	●
RIQ09EGS06	9,00	3,15	14	24	6	●
RIQ12EGS06	12,00	3,70	14	18	6	●



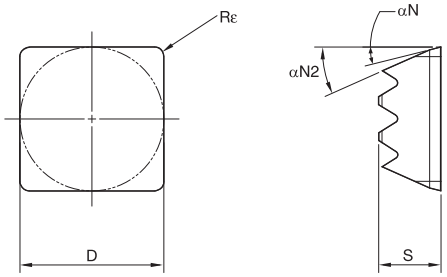


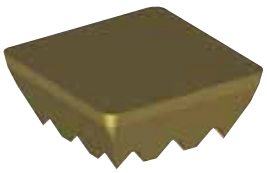
● first choice
○ alternate choice

P	M	K	N	S	H
○	○	○	●	●	

RIQ-EKS • Reaming Inserts

catalogue number	D mm	S mm	αN	αN2	γ°	K605
RIQ06EKS06	6,00	2,60	14	24	6	●
RIQ09EKS06	9,00	3,15	14	24	6	●
RIQ12EKS06	12,00	3,70	14	18	6	●





● first choice
○ alternate choice

P	M	K	N	S	H
●		●			●

RIQ-R04 • Reaming Inserts

catalogue number	D mm	S mm	Rε mm	αN	αN2	γ°	KT325	KB1610
RIQ06R0406	6,00	2,60	0,40	14	24	6	●	
RIQ09R0400T	9,00	3,15	0,40	8	18	–		●
RIQ09R0406	9,00	3,15	0,40	14	24	6	●	
RIQ12R0406	12,00	3,70	0,40	14	18	6	●	

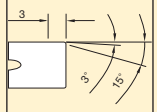
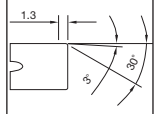
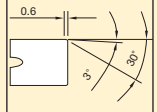
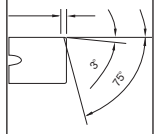
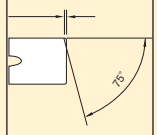
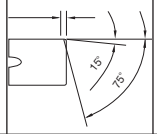
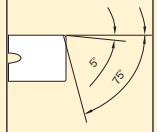
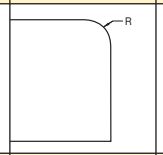
RIR™/RIQ™

Material Group		Grade	Cutting Speed – vc Range – m/min			Hole Types	1	2	3	4	5	
						Metric						
						Recommended Feed Rate per Tooth						
						Hole Type	1,3	1, 3	2, 4	1, 3, 5	1, 3, 5	1, 3, 5
			min	Starting Value	max	Type	E13	E30	E06	EDS	EGS	EGU
P	1	KC6005	30	**60**	100	mm/r	0,10 – 0,30	0,10 – 0,40	0,10 – 0,20	–	–	–
	2	KC6005	20	**50**	90	mm/r	0,10 – 0,30	0,10 – 0,40	0,10 – 0,20	–	–	–
	3	KC6005	20	**40**	80	mm/r	0,05 – 0,25	0,10 – 0,30	0,10 – 0,20	–	–	–
	4	KC6105	15	**30**	50	mm/r	0,05 – 0,25	0,10 – 0,30	0,05 – 0,20	–	–	–
	4	KC6105	10	**25**	40	mm/r	0,05 – 0,20	–	0,05 – 0,20	–	–	–
	6	KC6105	10	**25**	40	mm/r	0,05 – 0,20	–	0,05 – 0,20	–	–	–
M	1	KC6305	10	**25**	40	mm/r	0,05 – 0,20	0,10 – 0,25	0,05 – 0,20	–	–	–
	2	KC6305	10	**25**	40	mm/r	0,05 – 0,20	0,10 – 0,25	0,05 – 0,20	–	–	–
	3	KC6305	10	**25**	40	mm/r	0,05 – 0,20	–	0,05 – 0,20	–	–	–
K	1	KC6005	20	**70**	100	mm/r	0,09 – 0,17	0,11 – 0,19	0,12 – 0,21	0,15 – 0,31	0,18 – 0,35	0,20 – 0,39
	2	KC6305	20	**60**	100	mm/r	0,09 – 0,15	0,11 – 0,18	0,12 – 0,21	0,15 – 0,26	0,18 – 0,30	0,20 – 0,39
	3	KC6305	20	**60**	100	mm/r	0,07 – 0,13	0,09 – 0,16	0,11 – 0,19	0,13 – 0,23	0,15 – 0,27	0,17 – 0,30
N	1	K605	50	**100**	250	mm/r	0,10 – 0,40	–	0,10 – 0,25	0,05 – 0,25	0,05 – 0,20	–
	2	K605	50	**100**	250	mm/r	0,10 – 0,40	–	0,10 – 0,25	0,15 – 0,25	0,05 – 0,20	–
	3	K605	50	**100**	250	mm/r	0,10 – 0,40	–	0,10 – 0,25	0,15 – 0,25	0,05 – 0,20	–
	4	K605	50	**100**	250	mm/r	upon request	–	upon request	upon request	upon request	–
	5	K605	50	**100**	250	mm/r	0,10 – 0,40	–	0,10 – 0,20	0,10 – 0,20	0,05 – 0,15	–
S	1	KC6305	10	**25**	40	mm/r	0,10 – 0,40	–	0,10 – 0,20	0,15 – 0,25	–	–
	2	KC6305	10	**25**	40	mm/r	0,10 – 0,40	–	0,10 – 0,20	0,15 – 0,25	–	–
	3	K605	20	**20**	20	mm/r	0,20 – 0,25	–	0,20 – 0,20	0,10 – 0,20	–	–
	4	K605	20	**20**	20	mm/r	0,20 – 0,25	–	0,20 – 0,20	0,10 – 0,20	–	–
H	1	KB1610	40	**50**	80	mm/r	0,20 – 0,25	–	0,10 – 0,20	–	–	–

Lead Selection

The data chart below is only a guide to allow starting values to be selected. The final data for a particular application is best determined by trial or during the machining process.

● first choice
○ alternate choice

lead	geometry	application		DOC* (mm)		Ra (µm)					
				recommended	max	P	M	K	N	S	H
E30		general purpose, good surface finish at higher feeds float reaming	○	0,1–0,15	0.25	0.6	0.8	0.7			
E13		general purpose, thin wall applications	○	0,1–0,15	0.25	0.7	0.8	0.8	0.3	0.8	
E06		reaming close to a shoulder, use when short lead is required	○	0,1–0,15	0.15	0.8	1.0	1.0	0.4	0.8	
EDS		gun reaming, higher surface quality	● ○	0.5	1,00*	0.15		0.7	0.2	0.6	
EGS		gun reaming, higher position quality	●	0.5	1,00*	0.35		1.2	0.3		
EGU		gun reamer	● ○	0,4–0,5	1,00*			0.8			
EKS		gun reaming, higher position quality	●	0.5	1,00*				0.4		
R..		valve seat, hard reaming	● ○	0,05–0,15	0.20	0.3		1.0	0.4		0.4
C..		RIR, taper reaming	● ○	0,1–0,2	0.25	0.6		0.8	0.4		

*More D.O.C. available upon request.

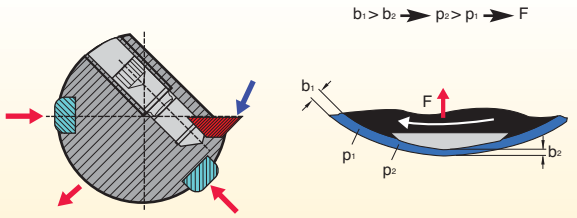
coolant selection		
	recommended	alternative
material type	mineral-oil-based emulsions	semi-synthetic
steel	5%	10%
nickel chrome steel	6%	12%
stainless steel	6%	12%
cast iron	4%	6%
aluminium	6%	12%
zinc alloys	6%	12%
copper	6%	12%
brass	4%	6%

pressure and flow rates		
cut diameter (mm)	flow rate (L/min)	pressure (bar)
6–12	15–20	>10
12–16	20–40	>8
16–20	30–50	>7
20–32	40–75	>5
32–50	65–250	>4
50100	175–350	>3

Basic Principle

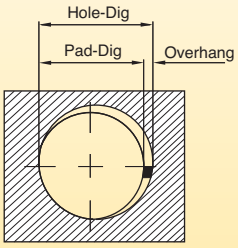
Kennametal's padded reaming tools follow two basic rules. The result, perfectly cylindrical bores with exceptional straightness and superior surface finishes combined with a bore diameter tolerance held to microns:

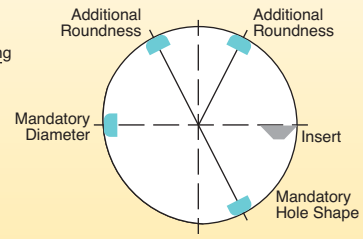
1. A SINGLE-POINT BORING TOOL SUPPORTED BY BEARING PADS, FLOATING ON A COOLANT FILM.
2. A TOOL MUST DEFLECT ONTO THE PADS, ON ENTERING THE HOLE, IN ORDER TO OBTAIN THE CORRECT SIZE.



Each padded reamer hosts a selection of guide pads that are positioned to resist the cutting forces created during machining. A minimum of two guide pads are necessary guiding the reamer in the predrilled hole.

The lubricant, in the form of coolant, gets between the pad and component surface, resulting in frictionless stability during cutting.





Guide pads are ground slightly smaller than the targeted diameter to machine a certain overhang between guide pads and insert cutting edge necessary for the machining process. Most common is a 10 µm overhang but can vary depending on the material to be cut.

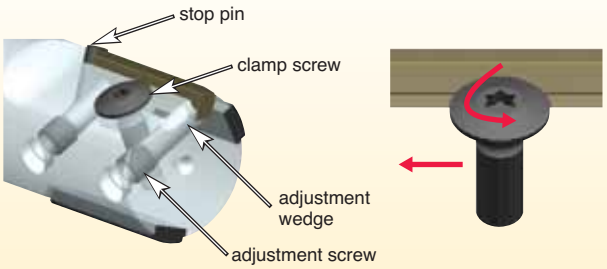
As padded reamers are specifically ground, relative to diameter and tolerance, guide pads are not flexible or adjustable. The pad below the insert ensures hole roundness while the pad opposite to the insert defines the bore diameter. Each further pad improves the roundness, straightness, and bridges over interruptions in the bore area.

These carbide, cermet, PCD, and ceramic guide pads are selected and brazed or bonded to the body depending on coolant availability/type and abrasiveness of the material to be cut. Especially with high L/D ratio tooling (e.g., cam and crank boring bars), bonding of guide pads offers higher precision due to less thermal influence to the steel base body.

● first choice ○ alternate choice

material	P	M	K	N	S	H	MQL
carbide	●	○	●	●		○	
cermet	●	○	●			○	
ceramic			●		●		
PCD			○		●		●

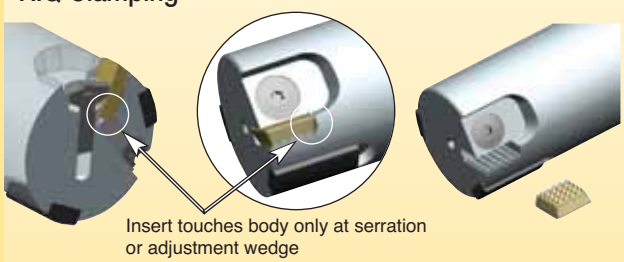
RIR Clamping



RIR reaming inserts are clamped by a single screw to avoid weakening of the pocket seat against common clamping wedges. This clamp screw has a left-hand thread to securely move the insert axially towards the stop pin until the insert aligns there. The stop pin ensures correct advancement of cutting insert to guiding pad.

Like other types of padded reamers using rectangular reaming inserts, two adjustment screws and wedges are required to adjust diameter and back taper accurately. Therefore, RIR is the preferred solution for diameters below RIQ range.

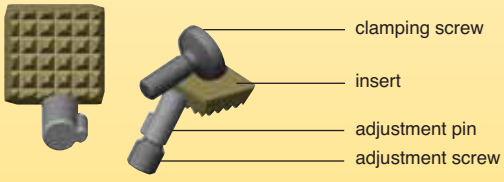
RIQ Clamping



There is no need to adjust back taper as this is already predefined by the serrations. Only the overhang of the cutting edge, relative to the guide pads, needs to be adjusted.

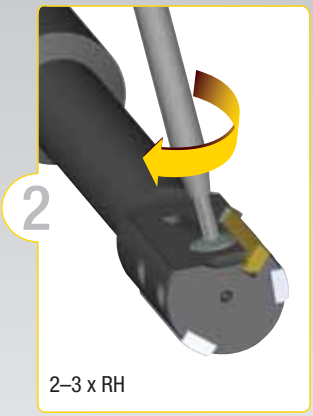
The right-hand clamp screw locks the insert securely onto the high-precision serration. The three cutting edges that are not in use are completely covered by the body while not touching them. All four cutting edges of full-face CBN and PCD inserts can be completely used without the danger of accidently losing one of them.

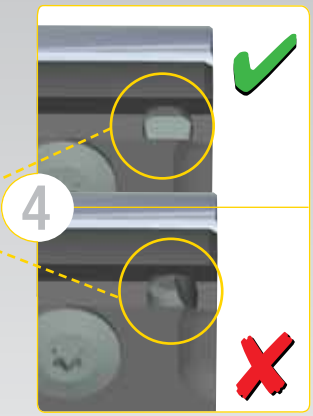
Adjustment Wedge and Screw

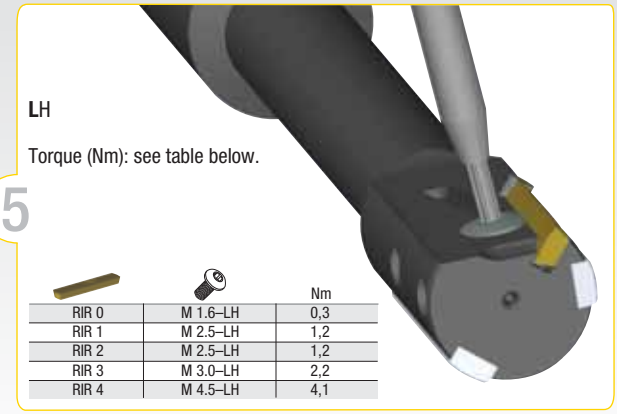


The proprietary adjustment wedge prevents any unpredictable rotation. This avoids errors during setup that cause tool damages.

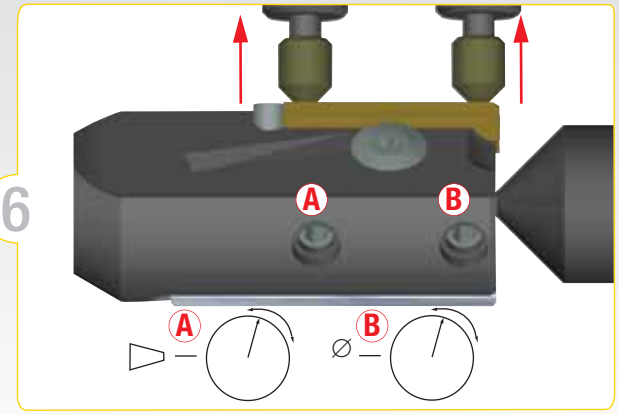
RIR Tooling Setup



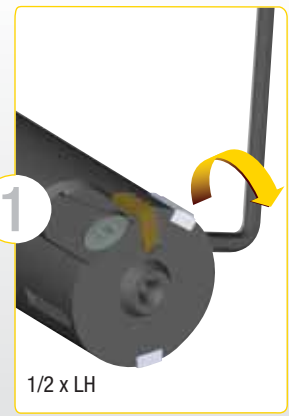


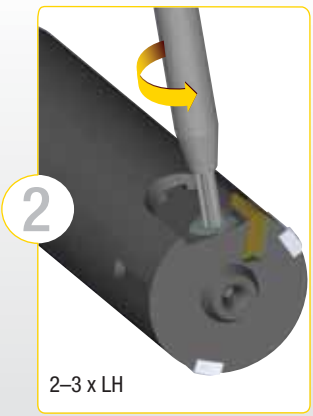


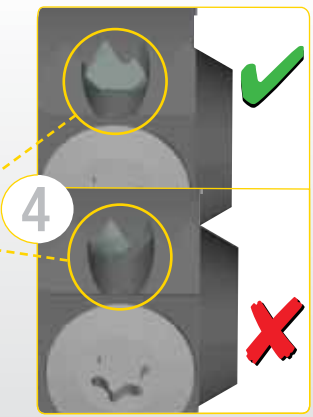
		Nm
RIR 0	M 1.6–LH	0,3
RIR 1	M 2.5–LH	1,2
RIR 2	M 2.5–LH	1,2
RIR 3	M 3.0–LH	2,2
RIR 4	M 4.5–LH	4,1

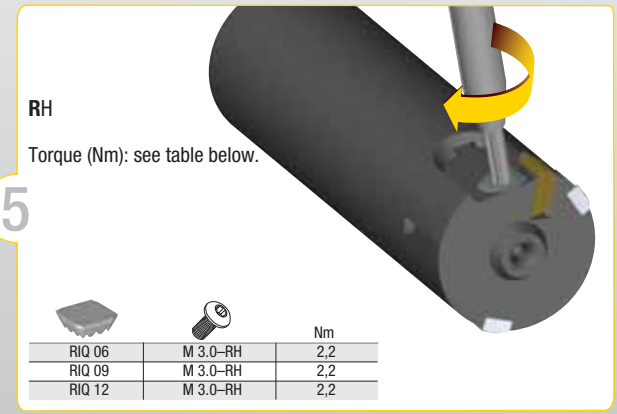


RIQ Tooling Setup

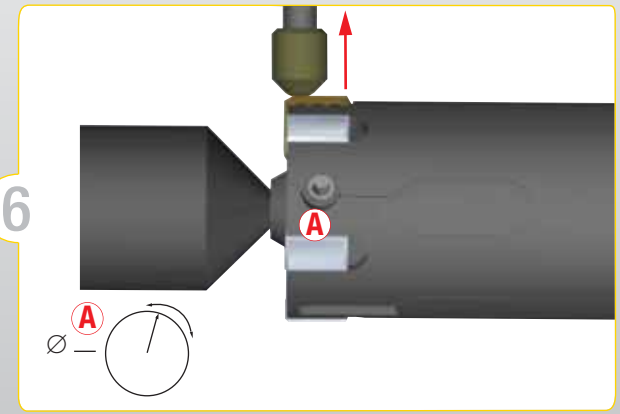






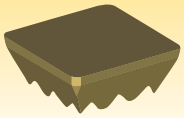


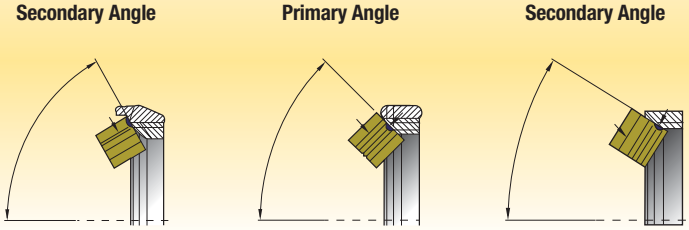
		Nm
RIQ 06	M 3.0–RH	2,2
RIQ 09	M 3.0–RH	2,2
RIQ 12	M 3.0–RH	2,2

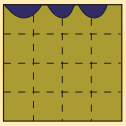


Valve Seat Tools • RIQ™ Quattro Cut™ Based Tooling

RIQ technology enables bypassing any angular adjustment of the insert and provides up to 12 cutting edges.







- Causing in three wear areas per edge.
- Resulting into 12 usable cutting edges per insert.

Valve Seat Tools • Machining Centre Solutions

RIQ valve seat tooling with integrated hydraulic chuck to clamp multiflute RMS™ or RIR™ guide pad reamer.

Machining Centre • Integrated Hydraulic Chuck

RMS Multiflute Reamer
for regular runout accuracy of valve seat to value guide demands

RIR Guide Pad Reamer
for highest runout accuracy of valve seat to value guide demands

Machining Centre Process • All Angles Formed to Finish Specifications in TWO Passes

Process A (Preferred)

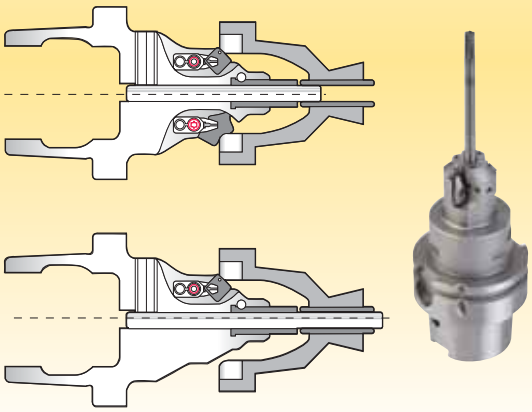
Tool 1 • Semi-Finish:
- Finish of secondary angles.
- Semi-finish of primary angles.
- Create pilot bore (short version of RMS or RIR reamer).

Tool 2 • Finish:
- Finish of primary angles.
- Finish of guide bore (short version of RMS or RIR reamer).

Process B (Alternate)

Tool 1 • Finish Valve Seat:
- Finish of primary and secondary angles.
- Create pilot bore (short version of RMS or RIR reamer).

Tool 2 • Finish Valve Guide:
- Finish of guide bore (short version of RMS or RIR reamer).



Valve Seat Tools • Transfer Line Solutions

RIQ valve seat tooling with carbide bushing guiding RMS or RIR reamer machining the valve guide on transfer lines.

Transfer Line • Integrated Carbide Bushing

Multiflute Reamer RMS
for regular runout accuracy of valve seat to value guide demands

RIR Guide Pad Reamer
for highest runout accuracy of valve seat to value guide demands

Transfer Line Process • All Angles Formed to Finish Specifications in ONE Pass

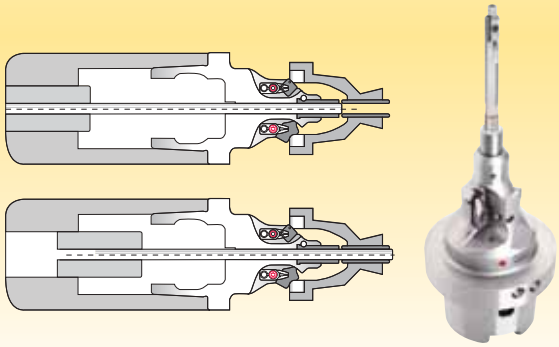
Process A (Preferred)

Tool 1 • Semi-Finish:
- Semi-finish of secondary angles.
- Semi-finish of primary angles.

Tool 2 • Finish:
- Finish of primary angles.
- Finish of secondary angles.
- Finish of guide bore with feed out multiflute or guide pad reamer (squirt-through type).

Process B (Alternate)

Tool 1 • Semi-Finish and Finish Combined:
- Finish of primary and secondary seat angles.
- Finish of guide bore with feed out multiflute or guide pad reamer (squirt-through type).



Application Sheet for Hole Finishing

Sales Eng.:	**Sheet:**
Q-Number:	**Date:**
Customer:	Contact person:
Location:	Fax number/e-mail:

Quotation Processing *Only* with Workpiece Drawing and Filled Out Form

Mandatory Fields

Workpiece material:			Hardness/ tensile strength:	(N/mm², HRC, etc.)
Number of holes/year:				
Tool:	☐ Rotating	☐ Stationary	Spindle connection:	(HSK80A, DV50, BT40, etc.)
Spindle orientation:	☐ Horizontal	☐ Vertical	Tool int. interface:	☐ No ☐ SIF ☐ SIF+HydCh ☐ SIF+HSK
Machine situation:	☐ Rigid	☐ Weak		
Machine type:	☐ Machining center	☐ Transfer line	☐ Special purpose machine	☐ Lathe
Coolant supply:	☐ Internal ☐ External	☐ No	Coolant concentrate:	%
Coolant flow:	L/min		Coolant pressure:	bar
Coolant type:	☐ Soluble	☐ Semisynthetic	☐ Synthetic	☐ MQL

Mandatory Fields if not Defined in the Workpiece Drawing

Nominal hole diameter:			Surface finish:	(N/mm², HRC, etc.)
Hole tolerance:	mm (H7, ±0,01, etc.)		Hole type:	☐ Blind ☐ Through
Tolerance target:	☐ Upper third		Interrupted cut:	☐ Yes ☐ No
	☐ Middle third		Facing included:	☐ Yes ☐ No
	☐ Lower third		Maximum lead length:	mm
CpK-value:			Radial stock:	mm
Straightness:	mm		Taper:	mm
Roundness:			Cylindricity:	mm
Concentricity:	mm		Position:	mm

Additional Information

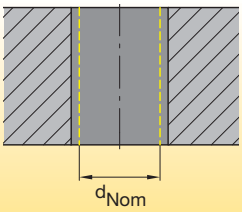
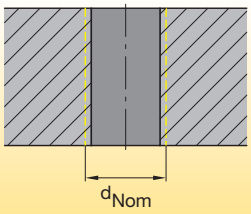
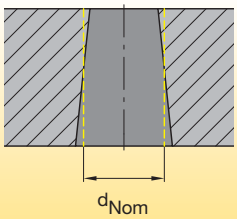
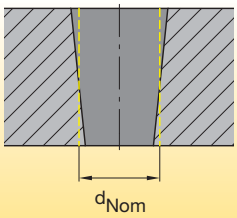
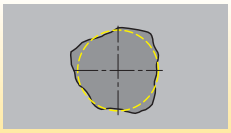
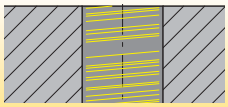
Similar tool:		Required feed rate:	mm/min
Required tool life:	mm	Required speed:	m/min
Required CPP:	per hole (€, RMB, etc.)	Required cycle time:	sec

Additional information: (e.g., step tool diameters, interferences, weight, or dimensional restrictions, customer reason for change, etc.)

Reaming Allowances for Multi-Blade Reaming

	reaming allowance		
	mm		
mm	min	middle	max
1,40–4,80	0,08	0,12	0,20
4,81–9,59	0,10	0,15	0,25
9,60–15,00	0,15	0,20	0,30
15,00–20,00	0,15	0,25	0,35
20,00–50,00	0,20	0,30	0,40

Causes of and Remedies for Reaming Problems

problem		cause	possible remedy
Drill diameter too large		1. Reaming tool running out-of-centre. 2. Concentricity of pilot hole and ream machining unsatisfactory. 3. Built-up edge. 4. Unsuitable cooling lubricant. 5. Reaming tool Ø too large.	• Use SIF™ equalising adaptor. • Re-align, use floating head. • Change cooling lubricant. • Change cutting speed. • Measure reamers and send for repairs.
Drill diameter too small		1. Reamer worn. 2. Unsuitable cooling lubricant. 3. Reaming allowance too small.	• Replace and refit tool. • Change cooling lubricant. • Increase reaming allowance.
Conical drill profile wider towards drill runout		1. Concentricity of pilot hole and reaming unsatisfactory. 2. Positioning accuracy of pilot hole to reaming.	• Re-align, use SIF equalising adaptor. • Correct positioning accuracy.
Conical drill profile wider at drill entry point		1. Concentricity of pilot hole and reaming unsatisfactory. 2. Reaming tool skim cutting with ledger.	• Re-align, use floating head. • Securely clamp reaming tool axially.
Hole out-of-center and/or showing chatter marks		1. Reaming tool running out-of-centre. 2. Slanted cutting surface/asymmetrical cutting. 3. Workpiece twisted.	• Use SIF equalising adaptor. • Flatten surface before drilling or reaming. • Take the direction of impact into account when clamping the workpiece.
Surface quality does not meet specification		1. Tool cutters worn. 2. Reaming tool running out-of-centre. 3. Incorrect technology data (cutting parameters). 4. Inadequate chip evacuation.	• Replace and refit tool. • Use SIF equalising adaptor. • Change cutting parameters in machining range. • Optimise coolant supply; increase coolant pressure and volume.
Feed grooves		1. Built-up edge.	• Change cooling lubricant. • Change cutting speed.

SIF™ Steerable Toolholder

Primary Application

SIF Steerable Toolholders should be used for easy compensation of radial runout and angular inaccuracies caused by the machine spindle or gravity. SIF tooling improves hole roundness for highest possible hole straightness and surface quality. Runout-optimised reaming tools provide higher process stability and longer tool life.

Use a separate SIF tooling package for each machine to ensure best configuration between reaming tool and spindle and HSK bushes for faster tool change to avoid repeating adjustments.

Features and Benefits

Higher Productivity and Profitability

- Easy compensation of radial runout and angular inaccuracies increases process control and tool life.
- Less time-consuming adjustment due to eight radial screws.
- Increase stability due to fewer interfaces by use of RIQ™ Quattro Cut™, RIR™, and RHM™ reaming tooling with SIF backend.

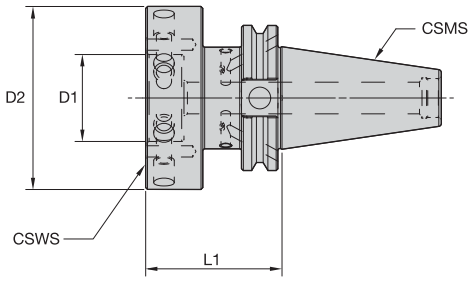
Versatility

- Standard DV, BT, CV, and HSK adaptors can be used in combination with SIF hydraulic chucks for most precise concentric clamping, highest accuracy, and flexible clamping method using hydraulic chuck sleeves.
- HSK bushes with SIF coupling enables fast tool exchange and eliminates the need for repeated runout adjustment, reducing downtime.

Customisation

- Different length versions and coupling size combinations are available.

- Through-the-toolholder coolant capability — form AD or form B.
- Suitable for SIF adaptors.



SIF-CV40 Form B/AD • Metric

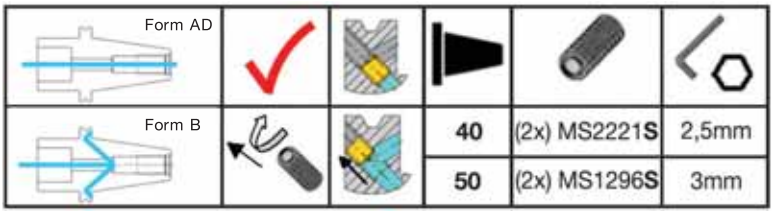
order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738505	**CV40BSIF80248**	CV40	SIF80	80	38	63	**121.812**	**170.004**	**170.005**	**125.625**	1,77

SIF-CV50 Form B/AD • Metric

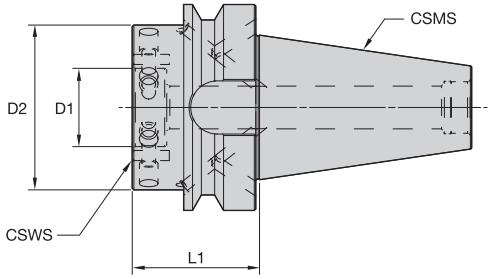
order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738506	**CV50BSIF70236**	CV50	SIF70	70	38	60	**121.808**	**170.004**	**170.005**	**125.625**	3,58
3738507	**CV50BSIF100236**	CV50	SIF100	100	58	60	**121.812**	**170.004**	**170.006**	**125.825**	4,14

SIF-BT40 Form B/AD • Metric

order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738492	**BT40BSIF80063M**	BT40	SIF80	80	38	63	**121.812**	**170.004**	**170.005**	**125.625**	1,86



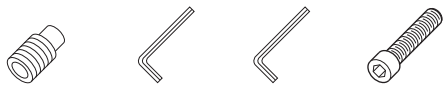
- Through-the-toolholder coolant capability — form AD or form B.
- Suitable for SIF adaptors.



SIF-BT50 Form B/AD • Metric

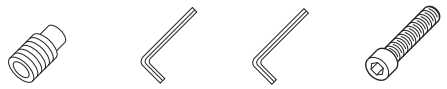
order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738503	**BT50BSIF70063M**	BT50	SIF70	70	38	63	**121.808**	**170.004**	**170.005**	**125.625**	4,08
3738504	**BT50BSIF100068M**	BT50	SIF100	100	58	68	**121.812**	**170.004**	**170.006**	**125.825**	4,94

SIF-DV40 Form B/AD • Metric

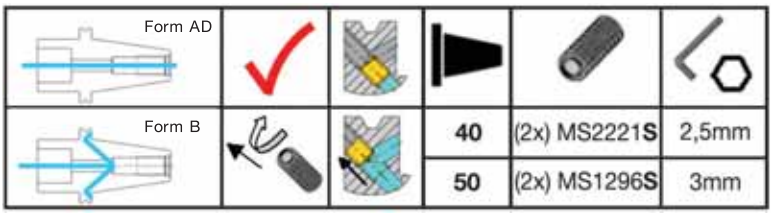


order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738488	**DV40BSIF80061M**	DV40	SIF80	80	38	61	**121.812**	**170.004**	**170.005**	**125.625**	1,83

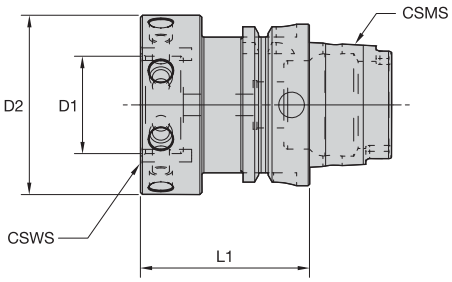
SIF-DV50 Form B/AD • Metric



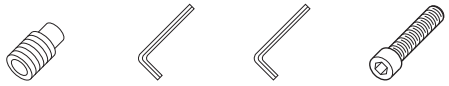
order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738490	**DV50BSIF70060M**	DV50	SIF70	70	38	60	**121.808**	**170.004**	**170.005**	**125.625**	3,60
3738491	**DV50BSIF100060M**	DV50	SIF100	100	58	60	**121.812**	**170.004**	**170.006**	**125.825**	4,30



- Through-the-toolholder coolant capability.
- Suitable for SIF adaptors.



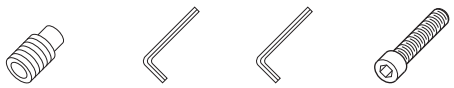
SIF-HSK63 Form A



order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738508	**HSK63ASIF70066M**	HSK63A	SIF70	70	38	66	**121.808**	**170.004**	**170.005**	**125.625**	1,44
3878347	**HSK63ASIF80063M**	HSK63A	SIF80	80	38	63	**121.812**	**170.004**	**170.005**	**125.625**	1,50

NOTE: HSK coolant unit and wrench are available and must be ordered separately.

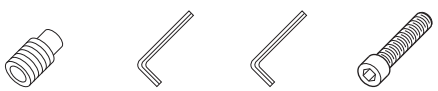
SIF-HSK80 Form A



order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738510	**HSK80ASIF70066M**	HSK80A	SIF70	70	38	66	**121.808**	**170.004**	**170.005**	**125.625**	2,05

NOTE: HSK coolant unit and wrench are available and must be ordered separately.

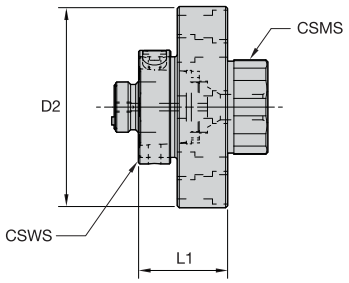
SIF-HSK100 Form A



order number	catalogue number	CSMS system size	CSWS system size	D2	D1	L1	dog-point set screw	hex wrench	hex wrench	socket-head cap screw	kg
3738511	**HSK100ASIF70050M**	HSK100A	SIF70	70	38	50	**121.808**	**170.004**	**170.005**	**125.625**	2,43
3738512	**HSK100ASIF100070M**	HSK100A	SIF100	100	58	70	**121.812**	**170.004**	**170.006**	**125.825**	3,84

NOTE: HSK coolant unit and wrench are available and must be ordered separately.

- Through-the-toolholder coolant capability.
- Suitable for SIF adaptors.



HSK • SIF80

order number	catalogue number	CSMS system size	CSWS system size	D2	L1
3755429	**SIF80HSK32032M**	SIF80	HSK32	32	32
3755430	**SIF80HSK40035M**	SIF80	HSK40	40	35
3755431	**SIF80HSK50040M**	SIF80	HSK50	50	40

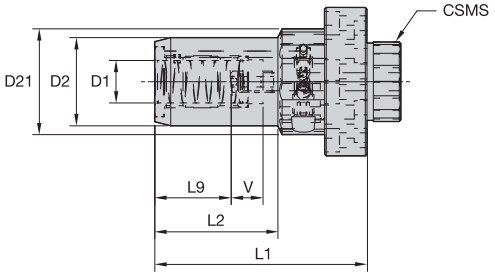
NOTE: HSK coolant unit and wrench are available and must be ordered separately.
IMPORTANT: Do not overtorque actuation screw. Use torque recommendations referenced above.
Supplied with actuation mechanism and sealing ring.

HSK • SIF100

order number	catalogue number	CSMS system size	CSWS system size	D2	L1
3755432	**SIF100HSK32032M**	SIF100	HSK32	32	32
3755453	**SIF100HSK40035M**	SIF100	HSK40	40	35
3755454	**SIF100HSK50040M**	SIF100	HSK50	50	40
3755455	**SIF100HSK63055M**	SIF100	HSK63	63	55

NOTE: HSK coolant unit and wrench are available and must be ordered separately.
IMPORTANT: Do not overtorque actuation screw. Use torque recommendations referenced above.
Supplied with actuation mechanism and sealing ring.

- Runout <0,003mm.
- External side actuation adjustment stop, giving 10mm axial adjustment.



HC HP Line • SIF70

order number	catalogue number	CSMS system size	D1	D2	D21	L1	L2	L9	V	hex wrench	T-handle hex wrench	kg
3667056	**SIF70HC12090M**	SIF70	12	32	44	90	45	36	10	**170.002**	**170.135**	1,13
3667057	**SIF70HC20100M**	SIF70	20	42	44	100	58	41	10	**170.003**	**170.135**	1,35

NOTE: HSK coolant unit and wrench are available and must be ordered separately.
IMPORTANT: Do not overtorque clamp screw. Use supplied wrench and tighten by hand until stop is felt.

HC HP Line • SIF80

order number	catalogue number	CSMS system size	D1	D2	D21	L1	L2	L9	V	hex wrench	T-handle hex wrench	kg
3667058	**SIF80HC12090M**	SIF80	12	32	50	90	45	36	10	**170.002**	**170.135**	9,00
3667059	**SIF80HC20100M**	SIF80	20	42	50	100	58	41	10	**170.003**	**170.135**	1,60
3667060	**SIF80HC25100M**	SIF80	25	50	54	100	51	47	10	**170.003**	**170.136**	1,83

NOTE: HSK coolant unit and wrench are available and must be ordered separately.
IMPORTANT: Do not overtorque clamp screw. Use supplied wrench and tighten by hand until stop is felt.

HC HP Line • SIF100

order number	catalogue number	CSMS system size	D1	D2	D21	L1	L2	L9	V	hex wrench	T-handle hex wrench	kg
3667061	**SIF100HC12090M**	SIF100	12	32	50	90	45	36	10	**170.002**	**170.135**	1,98
3667062	**SIF100HC20100M**	SIF100	20	42	50	100	58	41	10	**170.003**	**170.135**	2,20
3668023	**SIF100HC25100M**	SIF100	25	50	63	100	51	47	10	**170.004**	**170.136**	2,56

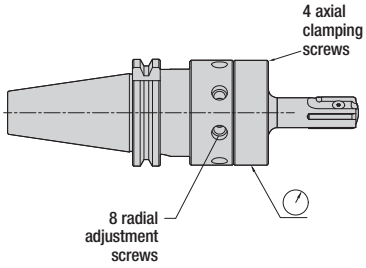
NOTE: HSK coolant unit and wrench are available and must be ordered separately.
IMPORTANT: Do not overtorque clamp screw. Use supplied wrench and tighten by hand until stop is felt.

SIF Tooling Setup

Step 1: Rough setup of runout at flange

1

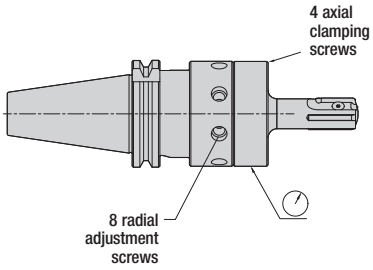
- Set gage (TIR) at SIF flange.
- Tight axial clamping screws 6–8 Nm.
- Use radial adjustment screws to achieve 5 µm runout.



Step 2: Fine setup of runout at flange

2

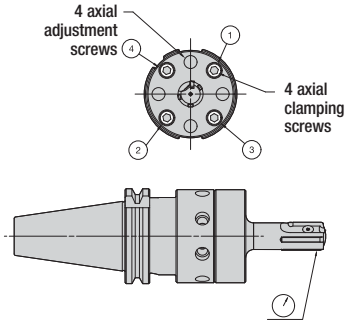
- Tight axial clamping screws crosswise:
  SIF70/80 18 Nm.
  SIF100 32 Nm.
- Use radial adjustment screws to achieve 2 µm runout.
- All radial adjustment screws to be clamped tight at 4 Nm.



Step 3: Adjustment of runout at front

3

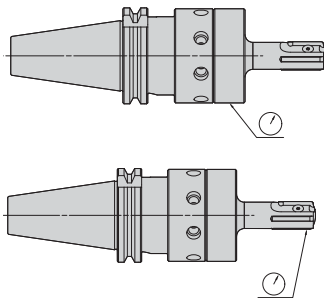
- Set gage (TIR) at control grind, cylindrical land, or guide pads.
- Use axial adjustment screws to achieve a maximum runout error of 2 µm.
- All axial adjustment screws to be clamped tight at 4 Nm.



Step 4: Final runout check

4

- Check using gage (TIR) at flange; no deviation by theory.
- If needed, use radial adjustment screws to set runout below 2 µm.
- Any modification of radial setup demands an axial runout check and adjustment, if necessary.



PCD Customised Tooling

PCD tooling offers the highest productivity and accuracy, reduced tooling costs due to long tool life, and secure process control due to close tolerances, increasing your overall quality and reducing scrap rate and inspection costs.

Primary Application

Use Kennametal PCD tooling for machining aluminium and aluminium alloys, magnesium, copper, brass, bronze, plastics (GFRP, CFRP), MMC (Metal Matrix Composite), graphite, tungsten carbide green-stages, and ceramic. Choose from various standardised PCD product platforms for drilling, counterboring, and reaming. Steel- and solid carbide-based tool body designs are available for direct spindle coupling with or without adjustable PCD pocket seats or with steerable SIF™ backend.

Features and Benefits

Higher Productivity and Profitability

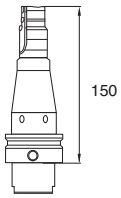
- Highest chip removal rates and less tool changes by using multistep tooling.
- Extremely long tool life even when maintaining very tight tolerances.
- Reduced built-up edge and burr formation, improved concentric hole shape with multistep tooling, and less influence on surface microstructure of the workpiece.

Product Platform Versatility

- All PCD drilling, counterboring, and reaming tools are engineered according to your specific needs in diameter, shape, radii, and steps.
- Various PCD grades are available to match your specific material.
- Multistep drilling, profiling, countersinking, and reaming platforms available.
- Coolant channel design for optimised chip evacuation with regular and MQL.
- Steel-based tool body designs are available for direct spindle coupling or enable adjustable pocket seat design for highest accuracy even at larger sizes.
- Carbide-based tool bodies enable highest accuracy and tool life at high L/D ratio applications.
- Tooling designs with SIF steerable interface optimises runout and enables highest accuracy and tool life.
- All PCD tooling is prebalanced by design. Further precision balancing is available on request.

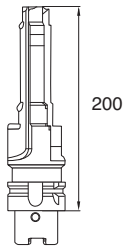
PCD Tooling Basic Design Overview

Kennametal offers you certain PCD design platforms to optimally fulfill your machining task.
These basic designs are independent, whether you are drilling, countersinking, profiling, reaming, or milling.
All tooling designs are capable of internal coolant, MQL coolant, and are balanced by design

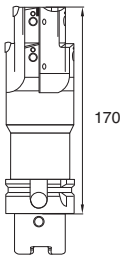


PCD .. ST —
Steel body

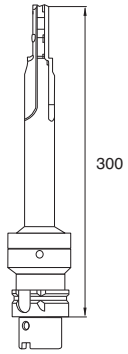
PCD .. SC —
Solid carbide body



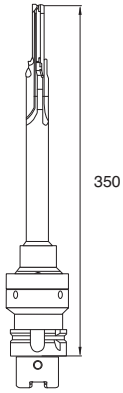
PCD .. STM —
Steel body monoblock



PCD .. STMJ —
Steel body monoblock
Ø adjustable



PCD .. STA —
Steel body with steerable SIF™ backend



PCD .. SCA —
Solid carbide shank and steerable SIF backend

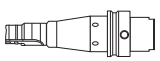
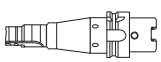
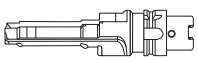
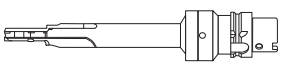
PCDRSC02CCE

PCD	R	SC	02	CC	E
	Technology	Type	Teeth	Point Geometry	Coolant
HF = Helix Flute **SF** = Straight Flute	**D** = Drilling **R** = Reaming **C** = Countersinking **E** = End milling **F** = Face milling **P** = Profile milling **M** = Multioperation tool	**SC** = Solid carbide body **ST** = Steel body **STM** = Steel monoblock **STMJ** = Steel monoblock adjustable **STA** = Steel steerable **SCA** = Carbide steerable	**02** **03** **04** **...** **12** **...** **22***	**RL** = Reaming lead **CC** = Centre cut **CT** = Drill point **CTE** = Drill point **SW** = Drill point **MT** = Drill point	**E** = Emulsion **M** = MQL **A** = Air **D** = Dry

* Exception for **Type** Reamer **22** = **2** teeth + **2** additional land = **4** guiding lands.

Runout of the Spindle

Depending on spindle runout and/or higher L/D ratios

runout < = 0,005mm		runout > = 0,006mm	
	**PCD-ST** **PCD-SC**		**PCD-ST or PCD-SC with hydraulic chuck and SIF shank**
	**PCD-STM**		**PCD-STA with SIF** **PCD-SCA with SIF**

PCD Drill-Point Design Overview

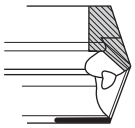
CT
- PCD corner tipped.
- Carbide-based body design.
- Diameter >4,2mm.

Use for general application at moderate cutting speeds up to 12 x D drilling depth.

CTE
- PCD corner tipped, E point.
- Carbide-based body design.
- Diameter >4,2mm.

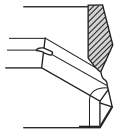
Use at precasted holes at moderate cutting speeds up to 12 x D drilling depth.

SW
- Full-face sandwich PCD.
- Carbide-based body design.
- Diameter >5mm.



Use at high cutting speeds and abrasive materials up to 5 x D drilling depth.

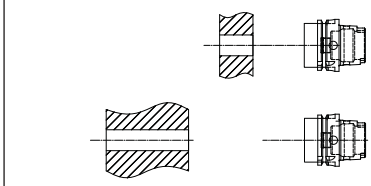
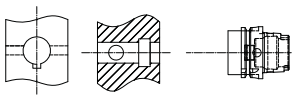
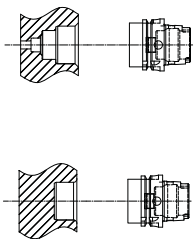
MT
- PCD corner tipped.
- Steel- and carbide-based body design.
- Diameter >12mm.



Use for drilling casted surfaces up to 3 x D drilling depth.

Cutting Edge and Margin Land Requirements

Determine correlations between spindle to edge overhang, amount of cutting, and margin lands for guidance and increased precision.

		number of cutting edges				
		2 flutes	2 flutes	3 flutes	4 flutes	6 flutes
application/shape of bore	overhang	2 lands	2 lands	3 lands	4 lands	6 lands
	short	●	●	●	●	●
	long	○	●	◑	●	●
	short	◑	●	◑	●	●
	long	○	●	○	○	○
	short	◑	●	◑	○	○
	long	○	●	◑	○	○
	short	●	●	●	◑	○
	long	○	●	◑	◑	○

● First Choice ◑ Suitable with Limitations ○ Not Recommended

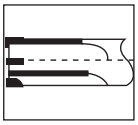
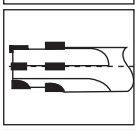
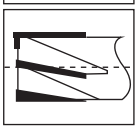
Cutting Grade, Tooling Design

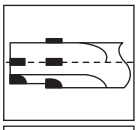
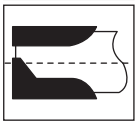
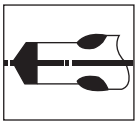
Select cutting data and tooling design based on stability and surface quality demands.

material	coolant	drilling	counterboring	reaming	milling	grade
Al <7%	MQL, emulsion	vc = 350–600 m/min fz = 0,1–0,4 mm/z	vc = 650–900 m/min fz = 0,1–0,8 mm/z	vc = 400–900 m/min fz = 0,1–0,4 mm/z	vc = 1.500–5.000 m/min fz = 0,1–0,25 mm/z	KD1415
Al <12%	MQL, emulsion	vc = 200–800 m/min fz = 0,1–0,4 mm/z	vc = 650–900 m/min fz = 0,1–0,25 mm/z	vc = 400–600 m/min fz = 0,1–0,25 mm/z	vc = 1.500–4.000 m/min fz = 0,1–0,25 mm/z	KD1415
Al <12%	emulsion	vc = 100–700 m/min fz = 0,1–0,3 mm/z	vc = 650–900 m/min fz = 0,1–0,25 mm/z	vc = 400–600 m/min fz = 0,1–0,25 mm/z	vc = 1.500–3000 m/min fz = 0,1–0,25 mm/z	KD1415
mg alloys	emulsion	vc = 350–1.000 m/min fz = 0,1–0,4 mm/z	vc = 650–900 m/min fz = 0,1–0,25 mm/z	vc = 400–600 m/min fz = 0,1–0,25 mm/z	vc = 1.500–6.000 m/min fz = 0,1–0,25 mm/z	KD1415
CFRP, GFRP	dry, air	vc = 350–1.800 m/min fz = 0,1–0,25 mm/z	vc = 650–900 m/min fz = 0,1–0,25 mm/z	vc = 60–200 m/min fz = 0,1–0,25 mm/z	vc = 1.500–4.000 m/min fz = 0,1–0,25 mm/z	KD1425

Quick-Ship Delivery • Tooling Ranges

Please contact us if this special service is available in your region.

		PCD tool		flutes[1]	chip flute length[2]	cutting diameter	max steps	through coolant	step difference
	non-centre cutting		reamer, corner tipped	2–6	max 5 x D		2	axial and radial	max 20%
			countersinker, corner tipped	2–4	max 5 x D	Ø 6–32	3		max 40%
			milling tool, corner tipped	1–6	max 5 x D		2		max 50%

		PCD tool		flutes[1]	chip flute length[2]	cutting diameter	max steps	through coolant	step difference
	centre cutting		drilling tool, corner tipped	2	max 20 x D	Ø 5–32	3	axial and radial	max 50%
			counter sinker, centre cut	2–4	max 10 x D				
			drilling tool, centre cut	2	max 12 x D	Ø 5–12			

NOTE: 310mm max overall
[1] Depending on the diameter [2] Based on the max diameter

Romicron™ Fine-Boring System

Primary Application

The Romicron PCD tooling portfolio has a diameter range of 4–213mm and reduces setup time and scrap rates while increasing your overall equipment efficiency. This premium fine-boring system can be used in most materials commonly found in metalcutting environments by applying the latest Kennametal Standard ISO Turning Inserts. Its closed loop boring (CLB) provides a unique possibility to automate the insert wear compensation with minimal investment due to the precise 2 µm diameter adjustment per increment. Romicron should be used where extremely close tolerances are critical to the overall process or where fast and easy diameter adjustments are needed.

Features and Benefits

Higher Productivity and Profitability

- Reduce scrap rates and setup time due to the backlash-free adjustment.
- Make use of the entire tool life of used inserts as diameter adjustment can be done inside of the machine, avoiding routine insert changes in the setup room.
- Avoid time-consuming control cuts or sister tooling.
- No training or experience is needed, resulting in less stress during adjustments.

Versatility

- Retrofit existing machines to automated wear compensation using the standard CLB pin without any electronic equipment needed besides a measuring device of holes produced.
- Use SVS00B-SVS6B prebalanced heads as the preferred solution for diameter 25–139mm
- SVUBB1 tooling for high-speed applications 4–16,5mm.
- Large diameter range of 6–100mm using SVUBB2 tooling.
- SVU65 and SVU92 for larger diameters of 71–213mm.

Ease of Adjustment

- No tools are needed so adjustment can take place on the machine tool. Eliminates the need to remove and return the boring head to the presetting area providing increased productivity.
- SEE, FEEL, and HEAR the adjustment mechanism for fail-safe size control.

Customisation

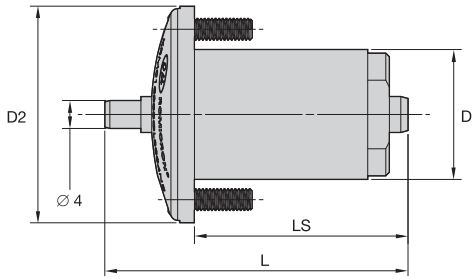
- Engineered solutions available for multistep or high length-to-diameter tooling.
- Anti-chatter devices and various non-standard machine spindle coupling sizes are available.

Boring range, coolant capacity, and maximum RPM features for all Romicron boring heads.

	head size	bore range
• 25,000 RPM max. • Balanceable. • 70 bar coolant capacity. • Movable zero reference.	**SVUBB1**	4mm – 16,5mm
• 10,000 RPM max. • Balanceable. • 70 bar coolant capacity. • Movable zero reference.	**SVUBB2**	6mm – 25,5mm
• 10,000 RPM. • Prebalanced. • 70 bar coolant capacity.	**SVS00B**	25mm – 32mm
• 8,000 RPM. • Prebalanced. • 15 bar coolant capacity.	**SVS0B**	31,5mm – 42,5mm
• 6,000 RPM. • Prebalanced. • 15 bar coolant capacity.	**SVS1B**	42mm – 53mm
• 6,000 RPM. • Prebalanced. • 15 bar coolant capacity.	**SVS2B**	52mm – 66mm
• 6,000 RPM. • Prebalanced. • 15 bar coolant capacity.	**SVS3B**	65mm – 79mm
• 4,500 RPM. • Prebalanced. • 20 bar coolant capacity.	**SVS4B**	78mm – 98mm
• 4,500 RPM. • Prebalanced. • 20 bar coolant capacity.	**SVS5B**	97mm – 117mm
• 3,500 RPM • Prebalanced. • 20 bar coolant capacity.	**SVS6B**	116mm – 139mm
• 6,000 RPM. • Balanceable. • 20 bar coolant capacity. • Movable zero reference.	**SVU65**	71mm – 111mm
• 6,000 RPM. • Balanceable. • 20 bar coolant capacity. • Movable zero reference.	**SVU92**	101mm – 213mm
• 6,000 RPM max. • Balanceable. • 20 bar coolant capacity. • Movable zero reference.	**SVU120**	139mm – 326mm

range mm	order number	catalogue number	content	
4,00–16,50	**4046076**	**SVUBB1KR32KIT**	KR32SVUBB1060M KRBB10FADRS102C KRBB10SCLDRS4060C KRBB10SCFPR06085C KRBB10SCFPR06110C KRBB10SCFPR06135C	
6,00–25,50	**4046077**	**SVUBB2KR32KITD025M**	KR32SVUBB2085M KRBB16SCLDRS4060A KRBB16SCFPR06085A KRBB16SCFPR06110A KRBB16SCFPR06135A KRBB16SCFPR06160A KRBB16SCFPR06190A KRBB16SCFPR06220A	
6,00–25,50	**4046078**	**SVUBB2KR50KITD025M**	KR50SVUBB2075M KRBB16SCLDRS4060A KRBB16SCFPR06085A KRBB16SCFPR06110A KRBB16SCFPR06135A KRBB16SCFPR06160A KRBB16SCFPR06190A KRBB16SCFPR06220A	
6,00–100,00	**4052608**	**SVUBB2KR32KITD100M**	KR32SVUBB2085M KRBB16SCLDRS4060A KRBB16SCFPR06085A KRBB16SCFPR06110A KRBB16SCFPR06135A KRBB16SCFPR06160A KRBB16SCFPR06190A KRBB16SCFPR06220A	KRDEA046AM KRDE025010M KRDE033010M KRDEA051AM KRDE043010M KRDEA012AM KRDE065012M KRCW032A	
6,00–100,00	**4052609**	**SVUBB2KR50KITD100M**	KR50SVUBB2075M KRBB16SCLDRS4060A KRBB16SCFPR06085A KRBB16SCFPR06110A KRBB16SCFPR06135A KRBB16SCFPR06160A KRBB16SCFPR06190A KRBB16SCFPR06220A	KRDEA046AM KRDE025010M KRDE033010M KRDEA051AM KRDE043010M KRDEA012AM KRDE065012M KRCW032A	
25,00–32,00	**.4046079**	**SVS00BKR32KIT**	KR32SVS00B072M KRCSCFPR061L KRCSCFPR062L KRCSCFPR063L	
31,50–42,50	**4046080**	**SVS0BKR32KIT**	KR32SVS0B093M KRCSCFPR061A KRCSCFPR062A KRCSCFPR063A	
42,00–53,00	**4046081**	**SVS1BKR32KIT**	KR32SVS1B076M KRCSCFPR061A KRCSCFPR062A KRCSCFPR063A	
52,00–66,00	**4046082**	**SVS2BKR32KIT**	KR32SVS2B085M KRCSCFPR061B KRCSCFPR062B KRCSCFPR063B	
65,00–79,00	**4046103**	**SVS3BKR32KIT**	KR32SVS3B085M KRCSCFPR061B KRCSCFPR062B KRCSCFPR063B	
78,00–98,00	**4046104**	**SVS4BKR50KIT**	KR50SVS4B094M KRCSCFPR061C KRCSCFPR062C KRCSCFPR063C	

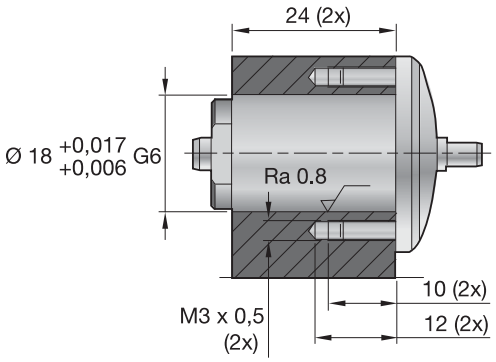
- For use with SVU CLB (Closed Loop Boring) heads.
- Retractable CLB pin is spring loaded.

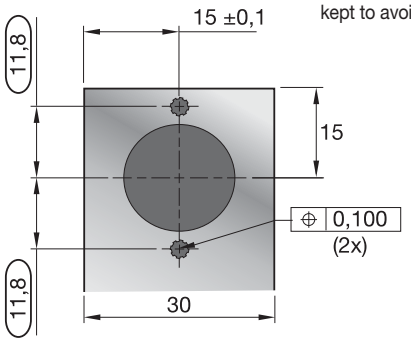


Romicron CLB Pin

order number	catalogue number	D mm	D2 mm	LS mm	L mm	kg
4052592	**KRM018030CLB004NE**	18,0	30,0	29,6	42,0	0,1

Mounting Dimensions of the Romicron CLB Pin

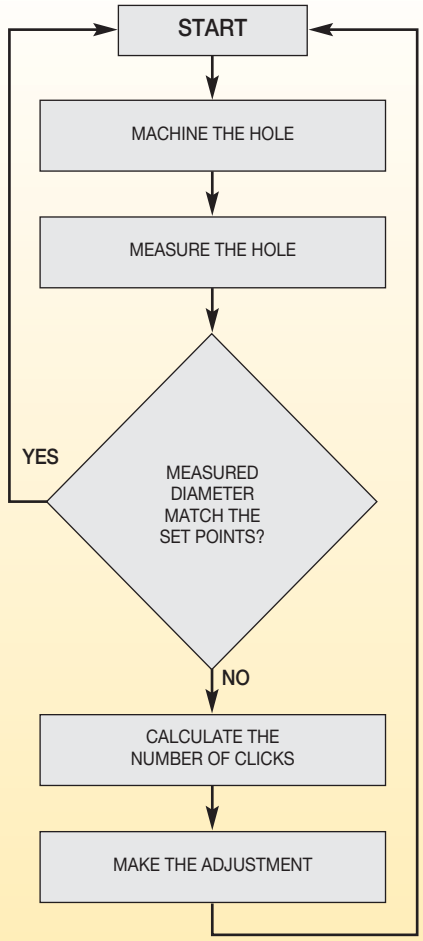




WARNING:
This position must be kept to avoid collisions.

The Romicron Closed Loop Boring Process

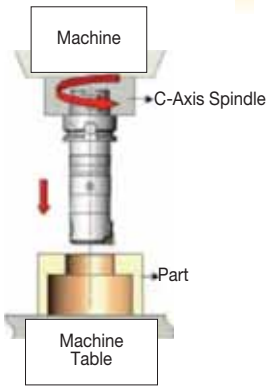
Closed Loop Boring (CLB) provides the unique possibility to automate the insert wear compensation with minimal investment due to the precise 2 µm adjustment in diameter of these tools per increment. Retrofit existing machines to automated wear compensation using the standard CLB pin without any electronic equipment needed besides a measuring device of holes produced.



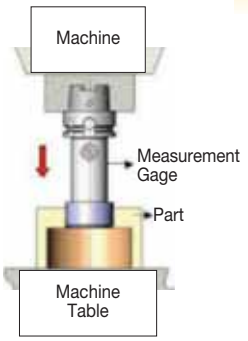
NOTE: This process is only possible with the Romicron system because it does not require tools to make the adjustment.

1. A precision system measures the holes after the machine process. The data is sent to the CNC.
2. The values are compared to the set points.
3. If the diameter is in the range of the specified set points, the machine goes to the next hole. Otherwise, the software calculates the necessary increment and automatically adjusts the Romicron using the CLB pin.

Step 1



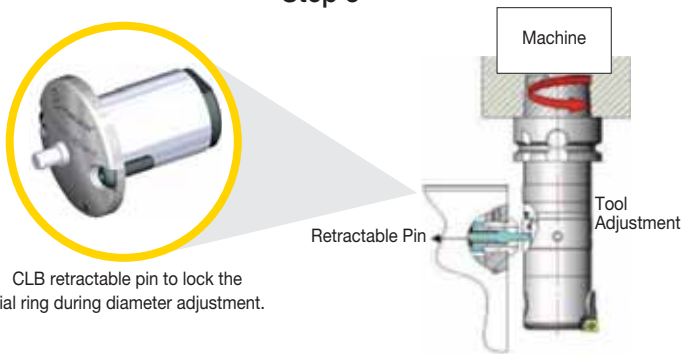
Step 2



CNC Machine Command

CNC calculates the correction and commands the tool.

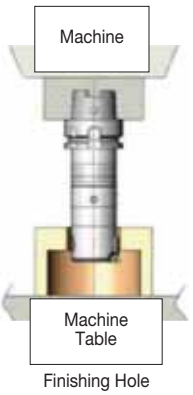
Step 3



CLB retractable pin to lock the dial ring during diameter adjustment.

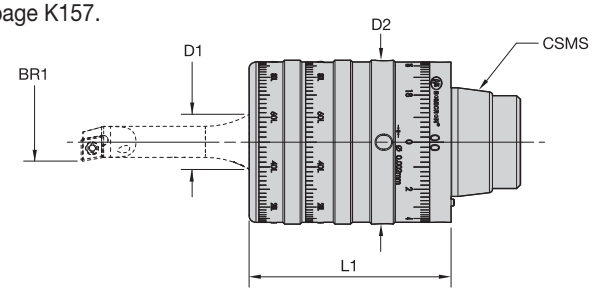
Step 4

Four CLB holes positioned at diameter dial ring.



Finishing Hole

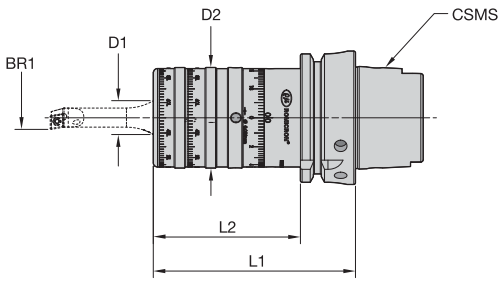
- For correct balance ring settings, see page K164.
- Order boring bar separately; see page K145.
- Order taper shank seperately; see page K157.



SVU BB1 • KR Boring Head with CLB Capability

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	Torx wrench	hex wrench	kg	lbs
4054737	**KR32SVUBB1060MCLB**	4,000-16,500	KR32	10,0	46,5	58,6	**KT8**	**170.000**	0,94	2.07

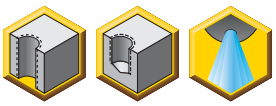
- For correct balance ring settings, see page K164.
- Order boring bar separately; see page K145.

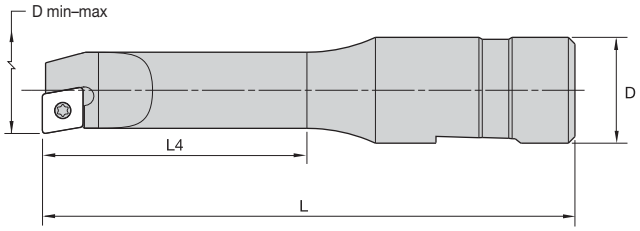


SVU BB1 • HSK Boring Head with CLB Capability

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	L2 mm	Torx wrench	radial adjusting screw	kg
4054734	**HSK63ASVUBB1095MCLB**	4,000-16,500	HSK63A	10,0	46,5	95,5	69,4	KT15	191.282	1,45

• Order inserts separately.



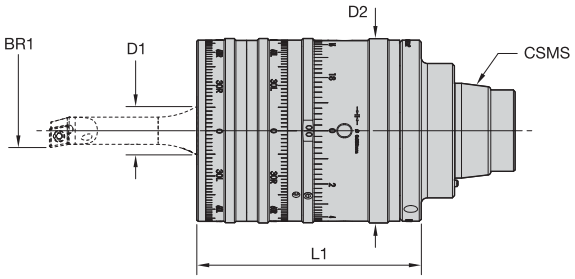


SVU BB1 • Universal Boring Bars

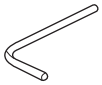
order number	catalogue number	D min mm	D max mm	D mm	L mm	L4 mm	gage insert	insert screw	Torx wrench	kg
2202438	**KRBB10FABDRS204C**	4,00	7,00	10	57	14	–	**–**	**–**	0,05
2202439	**KRBB10SCLDR4060C**	6,00	9,00	10	54	22	CD..S4T0../CD..1206..	**MS1454**	**FT5**	0,05
2202440	**KRBB10SCFPR06085C**	8,50	11,50	10	58	31	CP..0602../CP..215...	**MS1153**	**FT7**	0,08
2202450	**KRBB10SCFPR06110C**	11,00	14,00	10	60	33	CP..0602../CP..215...	**MS1153**	**FT7**	0,08
2202451	**KRBB10SCFPR06135C**	13,50	16,50	10	65	39	CP..0602../CP..215...	**MS1153**	**FT7**	0,09

NOTE: Carbide shank and customized boring bars are available upon request to meet your specific requirements.
Please contact Kennametal for a design and quotation.

- For correct balance ring settings, see page K166
- Order boring bar separately, see page K147.
- Order taper shank separately, see page K157.

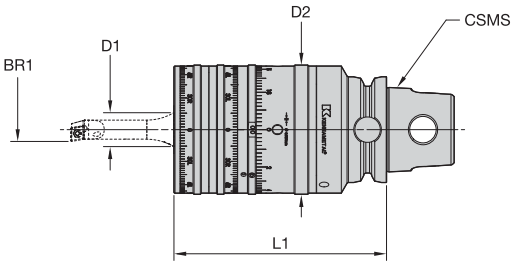


SVU BB2 • KR Boring Head with CLB Capability

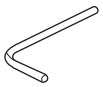


order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	Torx wrench	kg
4054738	**KR32SVUBB2085MCLB**	6,000-25,500	KR32	16,0	60,0	85,0	**KT27**	1,81
4054739	**KR50SVUBB2075MCLB**	6,000-25,500	KR50	16,0	60,0	75,0	**KT27**	1,61

- For correct balance ring settings, see page K166.
- Order boring bar separately, see page K147.

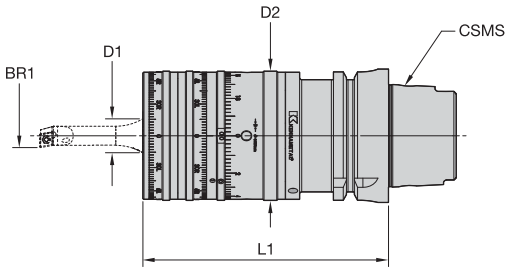


SVU BB2 • KM™ Boring Head with CLB Capability

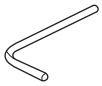


order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	Torx wrench	kg
4054736	**KM50TSSVUBB2100MCLB**	6,000-25,500	KM50TS	16,0	60,0	100,0	**KT27**	1,91

- For correct balance ring settings, see page K166.
- Order boring bar separately; see below.

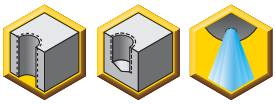


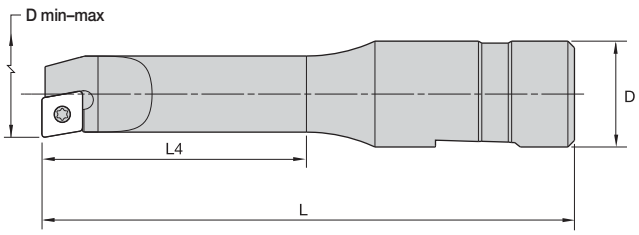
SVU BB2 • HSK Boring Head with CLB Capability



order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	Torx wrench	kg
4054735	**HSK63ASVUBB2116MCLB**	6,000-25,500	HSK63A	16,0	60,0	116,0	**KT27**	2,52
4054733	**HSK100ASVUBB2124MCLB**	6,000-25,500	HSK100A	16,0	60,0	124,4	**KT27**	4,21

- Order inserts separately.

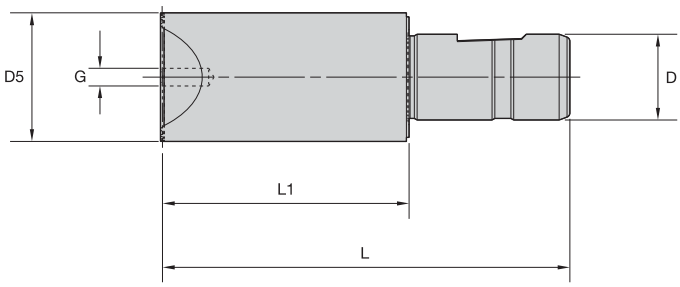




SVU BB2 • Universal Boring Bars

order number	catalogue number	D min mm	D max mm	D mm	L mm	L4 mm	gage insert	insert screw	Torx wrench	kg
1522062	**KRBB16SCLDRS406A**	6,00	9,50	16	62	20	CD..S4T0../CD..1206..	**MS1454**	**FT5**	0,06
1522063	**KRBB16SCFPR06085A**	8,60	12,00	16	68	26	CP..0602../CP..215...	**MS1153**	**FT7**	0,06
1522064	**KRBB16SCFPR0611A**	11,00	14,50	16	78	36	CP..0602../CP..215...	**MS1153**	**FT7**	0,08
1522068	**KRBB16SCFPR06135A**	13,50	17,00	16	80	40	CP..0602../CP..215...	**MS1153**	**FT7**	0,09
1522069	**KRBB16SCFPR0616A**	16,00	19,50	16	90	55	CP..0602../CP..215...	**MS1153**	**FT7**	0,11
1522070	**KRBB16SCFPR0619A**	19,00	22,50	16	90	60	CP..0602../CP..215...	**MS1153**	**FT7**	0,12
1522071	**KRBB16SCFPR0622A**	22,00	25,50	16	90	60	CP..0602../CP..215...	**MS1153**	**FT7**	0,15

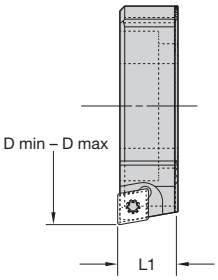
NOTE: Carbide shank and customized boring bars are available upon request to meet your specific requirements.
Please contact Kennametal for a design and quotation.



SVU BB2 • Universal Adaptors

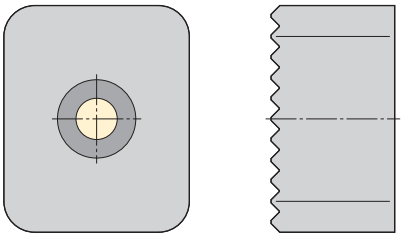
order number	catalogue number	BR1 bore range mm	D mm	D5 mm	G	L mm	L1 mm	kg
2541200	**KRDEA046AM**	25,500-43,500	16	24,0	M4X0.70	76,4	46,4	0,2
2541201	**KRDEA051AM**	43,000-65,000	16	25,0	M6X1.00	81,7	51,7	0,2
2541202	**KRDEA012AM**	65,000-100,000	16	63,5	M8X1.25	42,5	12,5	0,2

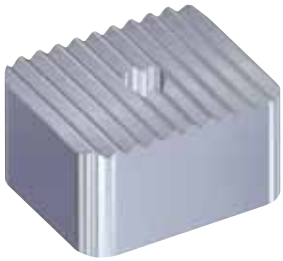
• Order inserts separately.



SVU BB2 • Universal Diameter Extenders

order number	catalogue number	D min mm	D max mm	L1 mm	gage insert	insert screw	Torx wrench	kg
2541213	**KRDE025010M**	25,50	33,50	10,0	CP..0602..	**MS1153**	**FT7**	0,02
2541214	**KRDE033010M**	33,50	43,50	10,0	CP..0602..	**MS1153**	**FT7**	0,02
2541215	**KRDE043010M**	43,00	65,00	10,0	CP..0602..	**MS1153**	**FT7**	0,03
2541216	**KRDE065012M**	65,00	100,00	12,0	CP..0602..	**MS1153**	**FT7**	0,05





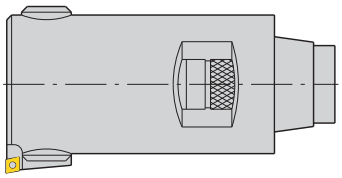
SVU BB2 • Counterweight

order number	catalogue number	L mm	kg
2541217	**KRCW032A**	12,0	0,04

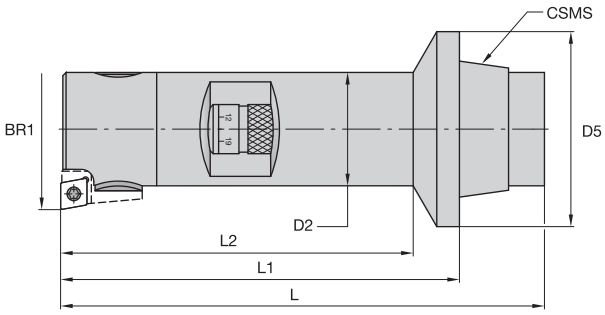
NOTE: Counterweight must be used with KRDEA012M adaptor and KRDEA065012M extender.

SVS System • Tooling Tree

cartridge range	cartridge size	bore range	head size
25–27,5mm	1L	25–32mm	SVS00B
27,25–29,75mm	2L		
29,5–32mm	3L		
31,5–35,5mm	1A	31,5–42,5mm	SVS0B
35–39mm	2A		
38,5–42,5mm	3A		
42–46mm	1A	42–53mm	SVS1B
45,5–49,5mm	2A		
49–53mm	3A		
52–57mm	1B	52–66mm	SVS2B
56,5–61,5mm	2B		
61–66mm	3B		
65–70mm	1B	65–79mm	SVS3B
69,5–74,5mm	2B		
74–79mm	3B		
78–85mm	1C	78–98mm	SVS4B
84,5–91,5mm	2C		
91–98mm	3C		
97–104mm	1C	97–117mm	SVS5B
103,5–110,5mm	2C		
110–117mm	3C		
116–124mm	1D	116–139mm	SVS6B
123,5–131,5mm	2D		
131–139mm	3D		



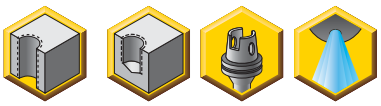
- Order cartridges separately; see page K151.
- Order taper shank separately; see page K157.

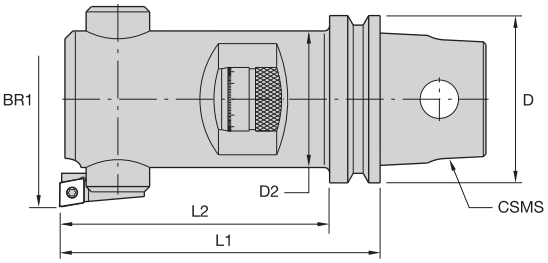


SVS • KR Boring Heads

order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	D5 mm	L mm	L1 mm	L2 mm	kg
1500262	KR32SVS00B072M	25,000-32,000	KR32	23,5	38,0	92,0	72,0	65,0	0,7
1501372	KR32SVS0B093M	31,500-43,500	KR32	30,0	47,0	113,0	93,0	85,0	0,8
1192277	KR32SVS1B076M	42,000-53,000	KR32	38,5	–	96,0	76,0	–	0,8
1192278	KR32SVS2B085M	52,000-66,000	KR32	47,0	–	105,0	85,0	–	1,2
1192279	KR32SVS3B085M	65,000-79,000	KR32	47,0	–	105,0	85,0	–	1,2
1192281	KR50SVS4B094M	78,000-98,000	KR50	65,0	–	119,0	94,0	–	2,4
1279787	KR50SVS5B094M	97,000-117,000	KR50	65,0	–	119,0	94,0	–	3,0
1279793	KR63SVS6B126M	116,000-139,000	KR63	85,0	–	162,0	126,0	–	5,7

- Order cartridges separately, see page K151.

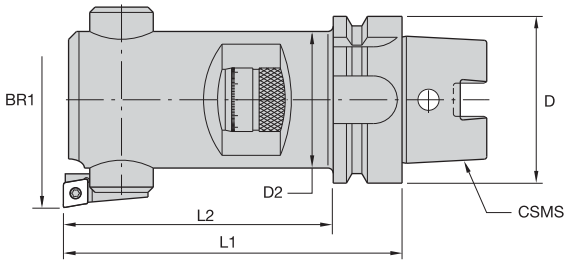




SVS • KM™ Boring Heads

order number	catalogue number	BR1 bore range mm	CSMS system size	D mm	D2 mm	L1 mm	L2 mm	kg
1763133	KM40SVS00B080M	25,000-32,000	KM40	40,000	23,5	80,0	65,0	0,7
1746909	KM50SVS00B083M	25,000-32,000	KM50	50,000	23,5	83,0	65,0	0,7
1763333	KM40SVS0B101M	31,500-42,500	KM40	40,000	30,0	101,0	85,0	0,8
1763334	KM50SVS0B103M	31,500-42,500	KM50	50,000	30,0	103,0	85,0	0,9
1763336	KM40SVS1B100M	42,000-53,000	KM40	40,000	38,0	100,0	88,0	1,1
1763338	KM50SVS1B105M	42,000-53,000	KM50	50,000	38,0	105,0	90,0	1,3
1763339	KM40SVS2B104M	52,000-66,000	KM40	40,000	47,0	104,0	92,0	1,5
1746981	KM50SVS2B107M	52,000-66,000	KM50	50,000	47,0	107,0	92,0	1,5
1763373	KM50SVS3B107M	65,000-79,000	KM50	50,000	47,0	107,0	92,0	1,9
1763374	KM63SVS3B107M	65,000-79,000	KM63	63,000	47,0	107,0	92,0	2,1
1763375	KM50SVS4B125M	78,000-98,000	KM50	50,000	65,0	125,0	110,0	2,2
1763378	KM50SVS5B125M	97,000-117,000	KM50	50,000	65,0	125,0	110,0	3,2
1763379	KM63SVS5B110M	97,000-117,000	KM63	63,000	65,0	110,0	92,0	3,2
1763376	KM63SVS4B110M	78,000-98,000	KM63	63,000	65,0	110,0	92,0	2,4
1763382	KM80SVS6B150M	116,000-139,000	KM80	80,000	85,0	150,0	128,0	7,8

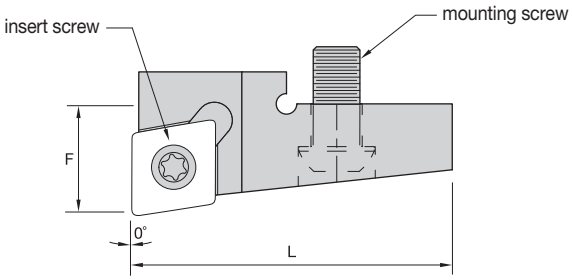
• Order cartridges separately.



SVS • HSK Boring Heads

order number	catalogue number	BR1 bore range mm	CSMS system size	D mm	D2 mm	L1 mm	L2 mm	kg
1763096	HSK63ASVS00B096M	25,000-32,000	HSK63A	63,0	23,5	96,0	66,0	1,1
1763098	HSK63ASVS0B117M	31,500-42,500	HSK63A	63,0	30,0	117,0	88,0	1,4
1763100	HSK63ASVS1B116M	42,000-53,000	HSK63A	63,0	38,0	116,0	88,0	1,6
1763114	HSK63ASVS3B121M	65,000-79,000	HSK63A	63,0	47,0	121,0	95,0	1,9
1763112	HSK63ASVS2B121M	52,000-66,000	HSK63A	63,0	47,0	121,0	95,0	1,9
1763118	HSK63ASVS5B139M	97,000-117,000	HSK63A	63,0	65,0	139,0	113,0	5,9
1763116	HSK63ASVS4B139M	78,000-98,000	HSK63A	63,0	65,0	139,0	113,0	3,6

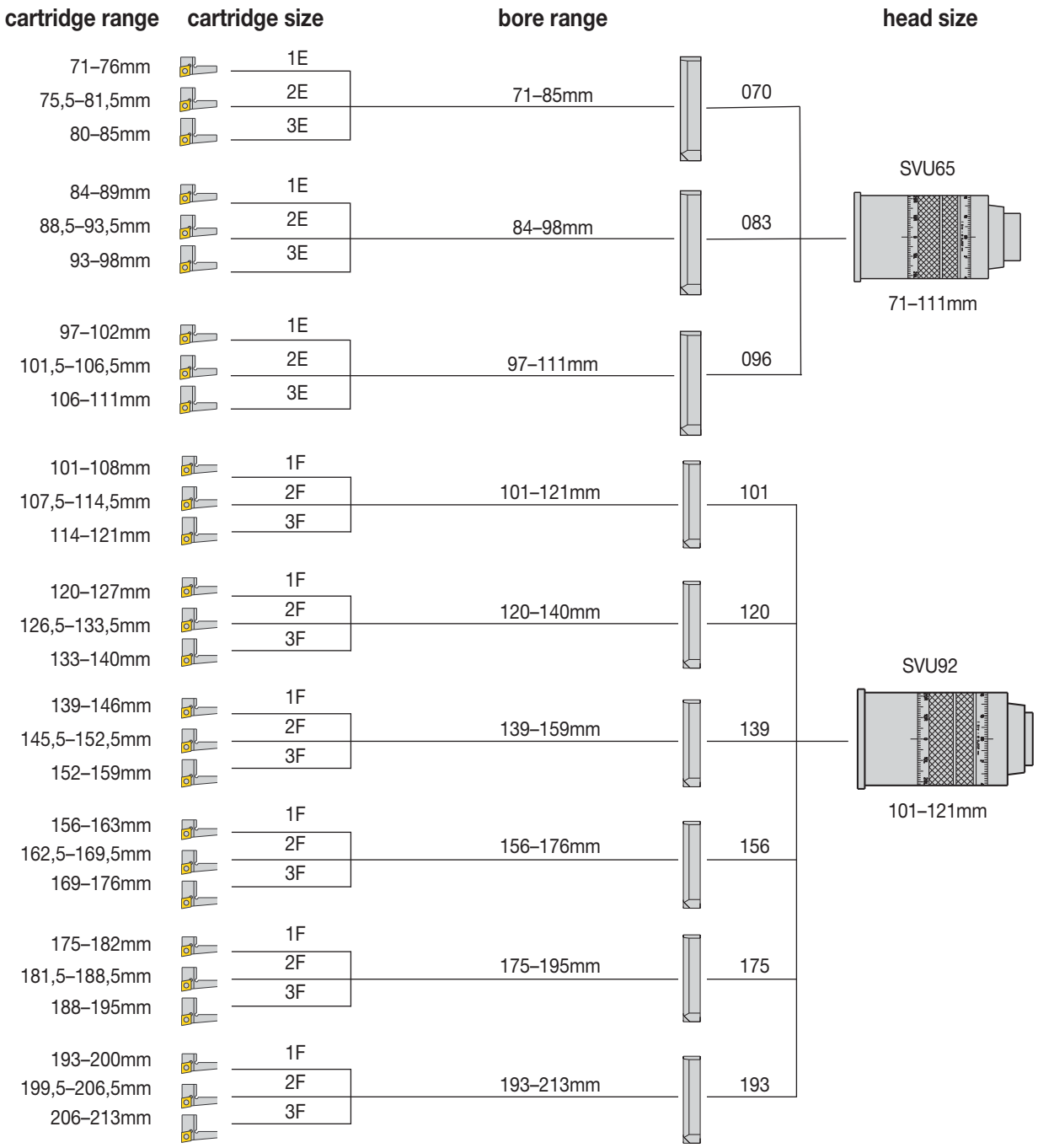
• Order inserts separately.



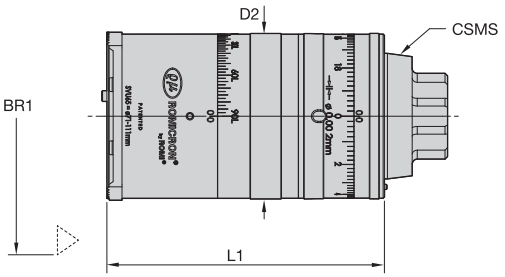
SVS • Cartridges SCF

order number	catalogue number	L mm	F mm	gage insert	reference head	cartridge size	kg
1501356	KRCSCFPR061L	19,15	4,76	CP..0602../CP..215...	SVS00B	1L.	0,01
1500650	KRCSCFPR062L	19,15	5,90	CP..0602../CP..215...	KRMSVS00M50049M,SVS00B	2L.	0,01
1501357	KRCSCFPR063L	19,15	7,01	CP..0602../CP..215...	SVS00B	3L.	0,01
1099162	KRCSCFPR061A	23,70	6,45	CP..0602../CP..215...	SVS1B,SVS0B	1A.	0,01
1099163	KRCSCFPR062A	23,70	8,20	CP..0602../CP..215...	SVS1B,SVS0B	2A.	0,01
1099164	KRCSCFPR063A	23,70	9,95	CP..0602../CP..215...	SVS1B,SVS0B	3A.	0,01
1099165	KRCSCFPR061B	24,70	6,45	CP..0602../CP..215...	SVS3B,SVS2B	1B.	0,01
1099166	KRCSCFPR062B	24,70	8,70	CP..0602../CP..215...	SVS3B,SVS2B	2B.	0,01
1099167	KRCSCFPR063B	24,70	10,95	CP..0602../CP..215...	SVS3B,SVS2B	3B.	0,02
1099168	KRCSCFPR061C	30,70	8,45	CP..0602../CP..215...	SVS5B,SVS4B	1C.	0,02
1099169	KRCSCFPR062C	30,70	11,70	CP..0602../CP..215...	SVS5B,SVS4B	2C.	0,03
1099170	KRCSCFPR063C	30,70	14,95	CP..0602../CP..215...	SVS5B,SVS4B	3C.	0,04
1099171	KRCSCFPR061D	38,70	8,45	CP..0602../CP..215...	SVS8B,SVS7B,SVS6B	1D.	0,03
1099172	KRCSCFPR062D	38,70	12,20	CP..0602../CP..215...	SVS8B,SVS7B,SVS6B	2D.	0,05
1099173	KRCSCFPR063D	38,70	15,95	CP..0602../CP..215...	SVS8B,SVS7B,SVS6B	3D.	0,06

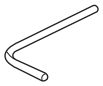
SVU System • Tooling Tree



- For correct balance ring settings, see page K172.
- Order diameter extenders, cartridges, and taper shanks separately.

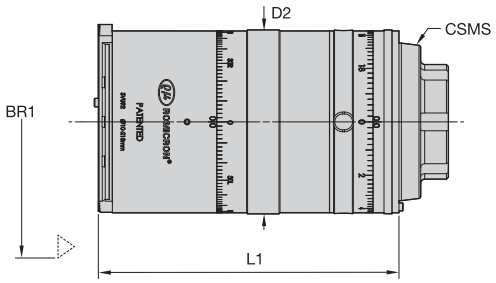


SVU65 • KR Boring Head with CLB Capability

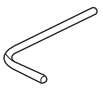


order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	Torx wrench	kg
1582600	**KR50SVU65110MCLB**	71,000-111,000	KR50	65,0	110,0	**KT27**	2,8

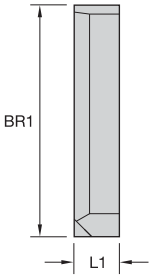
- For correct balance ring settings, see page K174
- Order diameter extenders, cartridges, and taper shanks separately.



SVU92 • KR Boring Head with CLB Capability



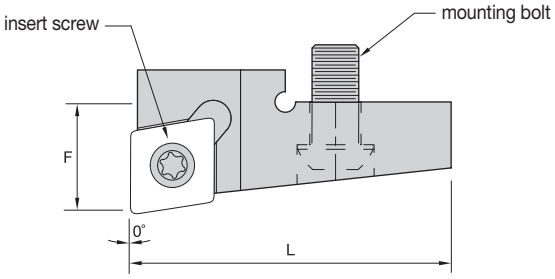
order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	Torx wrench	kg
4054740	**KR80SVU92152MCLB**	101,000-213,000	KR80	92,0	152,0	**KT27**	7,5



SVU 65/SVU 92 • Diameter Extenders

order number	catalogue number	BR1 bore range mm	L1 mm	kg
1279736	**KRDE070019M**	70,000-85,000	19,20	0,22
1279739	**KRDE083019M**	83,000-98,000	19,20	0,28
1279740	**KRDE096019M**	96,000-111,000	19,20	0,34
1279741	**KRDE101023M**	101,000-121,000	23,20	0,57
1279742	**KRDE120023M**	120,000-140,000	23,20	0,70
1279743	**KRDE139026M**	139,000-159,000	26,20	0,98
1279745	**KRDE156026M**	156,000-176,000	26,20	1,14
1279746	**KRDE175026M**	175,000-195,000	26,20	1,28
1279748	**KRDE193026M**	193,000-213,000	26,20	1,42

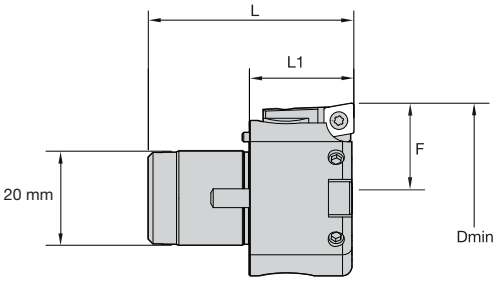
• Order inserts separately.



SVU • Cartridges SCF

order number	catalogue number	reference head	F mm	L mm	gage insert	insert screw	mounting screw	insert Torx wrench	Torx wrench	kg
1099174	**KRCSCFPR061E**	SVU65	6,75	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,01
1099175	**KRCSCFPR062E**	SVU65	9,00	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,01
1099176	**KRCSCFPR063E**	SVU65	11,25	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,01
1099177	**KRCSCFPR061F**	SVU92	6,75	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,01
1099178	**KRCSCFPR062F**	SVU92	10,00	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,01
1099179	**KRCSCFPR063F**	SVU92	13,25	19,70	CP..0602../CP..215...	**MS1375**	**MS1153**	**FT7**	**KT15**	0,02

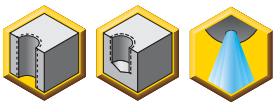
• Cartridge included.

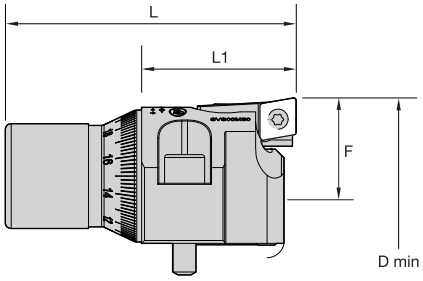


Axial Mount Modular Unit

order number	catalogue number	D min	L mm	L1 mm	F mm	kg
2541222	**KRMSVS00MF40039M**	40,000	43,70	22,20	20,20	0,20
2541223	**KRMSVS00MF60055M**	60,000	57,70	26,00	15,55	0,25

• Cartridge included.

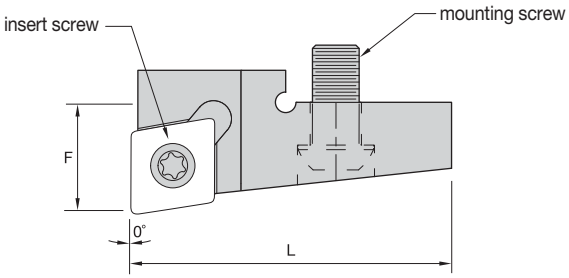




Radial Mount Modular Unit

order number	catalogue number	D min	L mm	L1 mm	F mm	kg	lbs
2541218	**KRMSVS00M50049M**	50,0	50,8	27,0	25,4	0,17	.40
2202444	**KRMSVS00M055M**	60,0	55,8	32,0	27,6	0,25	.55
2541219	**KRMSVS2M100080M**	100,0	80,0	47,7	48,0	0,97	2.10

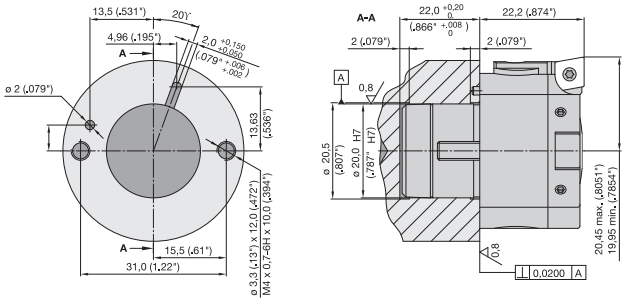
• Order inserts separately.



SVS • Cartridges SCF for Axial and Radial Mount Modular Units

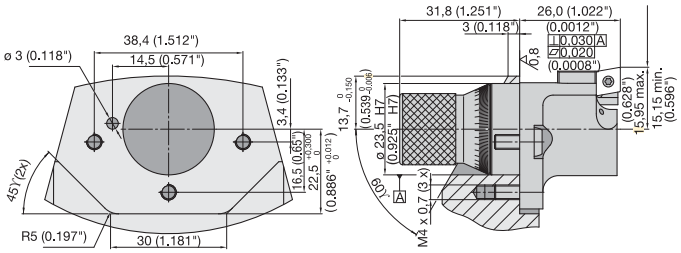
order number	catalogue number	reference head size	gage insert	mounting screw	insert screw	Torx wrench	Torx size	kg
2202449	**KRCSCFPR061M**	KRMSVS00MF60055M,KRMSVS00M055M,SVS00M	CP..0602../CP..215...	**MS2006PKG**	**MS2005PKG**	**FT7**	T7	0,02
2541220	**KRCSCFPR061N**	KRMSVS00M50049M	CP..0602../CP..215...	**MS2006PKG**	**MS1153**	**FT7**	T7	0,01
2541221	**KRCSCFPR061O**	KRMSVS2M100080M	CP..0602../CP..215...	**MS1897**	**MS1153**	**KT27**	T7	0,03
1500650	**KRCSCFPR062L**	KRMSVS00M50049M,SVS00B	CP..0602../CP..215...	**MS2006PKG**	**MS2005PKG**	**FT7**	T7	0,01

Mounting Dimensions – Axial model KRMSVS00MF40039M



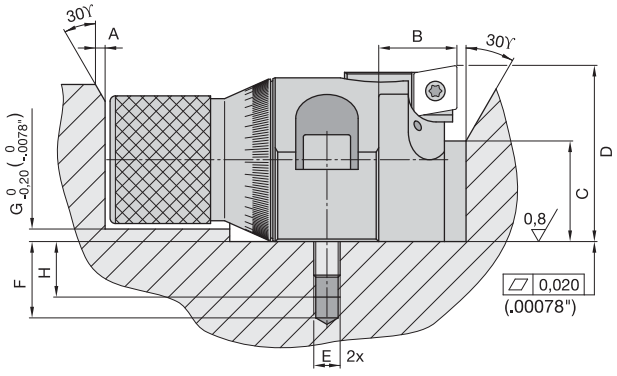
Dimensions in mm (inches)

Mounting Dimensions – Axial model KRMSVS00MF60055M

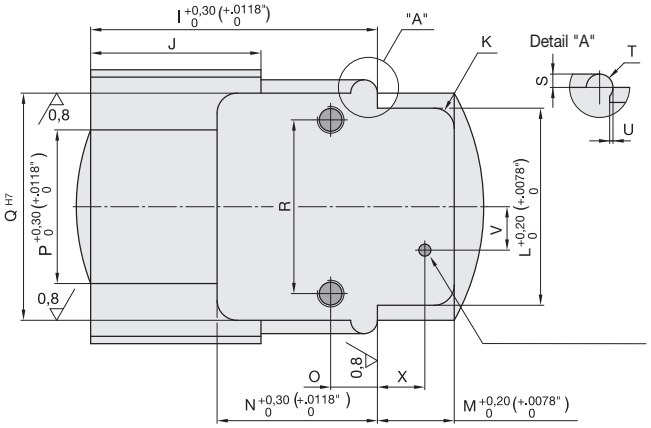


Dimensions in mm (inches)

Mounting Dimensions – Radial Models



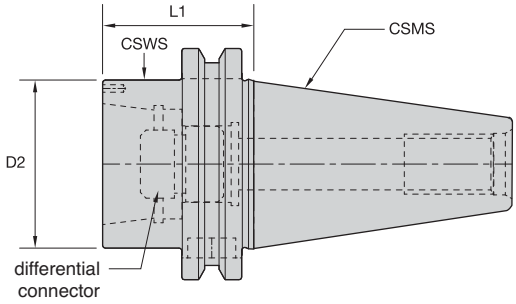
Dimensions in mm (inches)



Dimensions in mm (inches)

dimensions	KRMSVS00M50049M mm	KRMSVS00M055M mm	KRMSVS2M100080M mm
A	1,7	1,7	4,0
B	12,5	15,0	22,7
C	14,5	14,5	28,0
D (mean dimension)	25,4	27,6	48,0
E	M4 x 0,7	M4 x 0,7	M8 x 1,25
F	11,0	12,0	25,0
G	1,5	1,5	1,5
H	8,0	10,0	22,0
I	40,0	41,5	59,0
J	25,5	24,0	34,0
K	3,0	3,0	4,0
L	29,5	30,5	55,0
M	12,0	15,0	24,5
N	20,0	21,0	31,0
O	7,0	11,0	12,5
P	23,0	23,0	40,0
Q	34,0	40,0	65,0
R	26,0	30,5	50,0
S	2,0	1,5	4,0
T	2,0	3,0	4,0
U	0,0	0,5	0,0
V	6,5	7,0	10,5
X	7,1	10,0	15,7

• Differential connector included.



CV to KR Adaptors AD/B

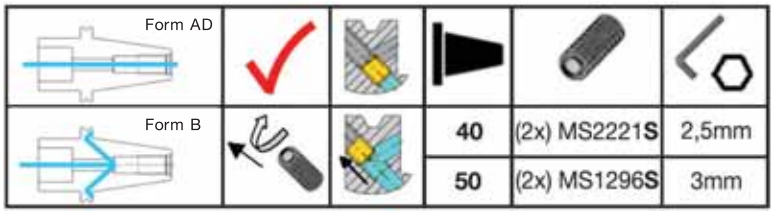
order number	catalogue number	CSMS system size	CSWS system size	D2 mm	L1 mm	differential connector	kg	reference head
3554366	CV40BKR32157	CV40	KR32	47	40	KRDCKR32M	1,08	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
3554367	CV40BKR50236	CV40	KR50	65	60	KRDCKR50M	1,23	SVS4B,5B,SVU65,SVUBB2
3554368	CV50BKR32157	CV50	KR32	50	40	KRDCKR32M	3,25	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
3554369	CV50BKR50157	CV50	KR50	65	40	KRDCKR50M	3,05	SVS4B,5B,SVU65,SVUBB2
3554370	CV50BKR63236	CV50	KR63	85	60	KRDCKR63M	3,50	SVS6B,7B,8B
3554371	CV50BKR80275	CV50	KR80	95	70	KRDCKR80M	4,28	SVU92,120

DV to KR DIN 69871 AD/B

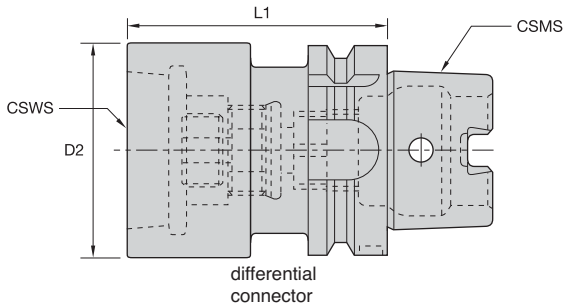
order number	catalogue number	CSMS system size	CSWS system size	D2 mm	L1 mm	differential connector	kg	reference head
1263815	DV40BKR32040M	DV40	KR32	44	40	KRDCKR32M	1,00	SVS0B, SVS2B, SVS3B
1539005	DV40BKR32041M	DV40	KR32	44	41	KRDCKR32M	1,00	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
1263816	DV40BKR50060M	DV40	KR50	65	60	KRDCKR50M	1,40	SVS4B,5B,SVU65,SVUBB2
1191970	DV50BKR32040M	DV50	KR32	50	40	KRDCKR32M	2,80	SVS0B, SVS2B, SVS3B
1528328	DV50BKR32041M	DV50	KR32	50	41	KRDCKR32M	2,80	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
1191971	DV50BKR50040M	DV50	KR50	65	40	KRDCKR50M	2,80	SVS4B,5B,SVU65,SVUBB2
1264135	DV50BKR63060M	DV50	KR63	85	60	KRDCKR63M	3,30	SVS6B,7B,8B
1264136	DV50BKR80070M	DV50	KR80	95	70	KRDCKR80M	4,10	SVU92,120

BT to KR JIS B6339 Adaptors AD/B

order number	catalogue number	CSMS system size	CSWS system size	D2 mm	L1 mm	differential connector	kg	reference head
3554372	BT40BKR32030M	BT40	KR32	50	30	KRDCKR32M	1,20	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
3554373	BT40BKR50050M	BT40	KR50	63	50	KRDCKR50M	1,26	SVS4B,5B,SVU65,SVUBB2
3554374	BT50BKR32040M	BT50	KR32	50	40	KRDCKR32M	3,90	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
3554375	BT50BKR50040M	BT50	KR50	65	40	KRDCKR50M	3,17	SVS4B,5B,SVU65,SVUBB2
3554376	BT50BKR63060M	BT50	KR63	85	60	KRDCKR63M	4,31	SVS6B,7B,8B
3554377	BT50BKR80060M	BT50	KR80	95	60	KRDCKR80M	4,53	SVU92,120



• Differential connector included.

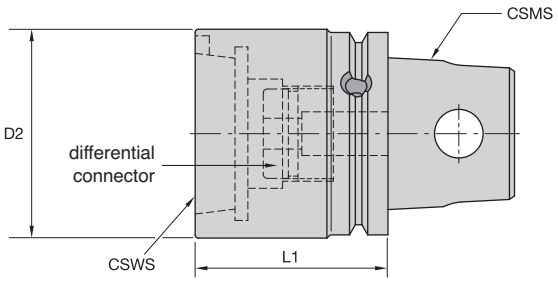


HSK Form A to KR Adaptors

order number	catalogue number	CSMS system size	CSWS system size	D2 mm	L1 mm	differential connector	kg	reference head
1153403	**HSK63AKR32075M**	HSK63A	KR32	50	75	**KRDCKR32M**	1,20	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
1153604	**HSK63AKR50080M**	HSK63A	KR50	65	80	**KRDCKR50M**	1,60	SVS4B,5B,SVU65,SVUBB2
1153606	**HSK100AKR32075M**	HSK100A	KR32	50	75	**KRDCKR32M**	2,20	SVS00B,0B,1B,2B,3B,SVUBB1,BB2
1107188	**HSK100AKR50085M**	HSK100A	KR50	65	85	**KRDCKR50M**	3,10	SVS4B,5B,SVU65,SVUBB2
1173988	**HSK100AKR63100M**	HSK100A	KR63	95	90	**KRDCKR63M**	4,40	SVS6B,7B,8B
1153612	**HSK100AKR80090M**	HSK100A	KR80	50	75	**KRDCKR80M**	2,60	SVU92,120

NOTE: Plug may need to be removed to access the differential screw drive through the HSK taper.

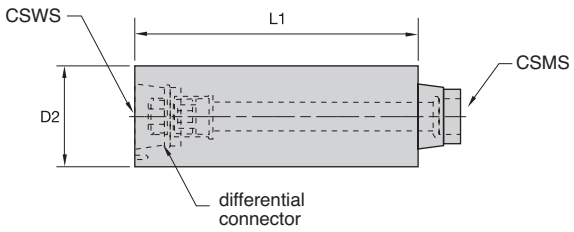
• Differential connector included.



KM63XMZ to KR Adaptors

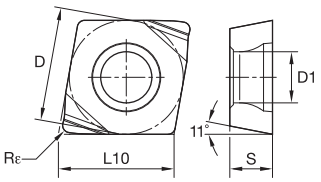
order number	catalogue number	CSMS system size	CSWS system size	D2 mm	L1 mm	differential connector	kg	reference head size
1831590	**KM63XMZKR5060Y**	KM63XMZ	KR50	65	60	**KRDCKR50M**	1,40	SVS4B,5B,SVU65,SVUBB2

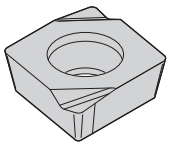
• Differential connector included.



Length Extenders and Spare Differential Connectors

order number	catalogue number	CSWS system size	CSMS system size	D2 mm	L1 mm	kg	reference head
1279772	**KR32KR32038050M**	KR32	KR32	38	50	0,45	SVS00B,1B
1192275	**KR32KR32038100M**	KR32	KR32	38	100	0,82	SVS00B,1B
1279775	**KR32KR32047050M**	KR32	KR32	47	50	0,69	SVS0B,2B,3B,SVUBB1
1192276	**KR32KR32047100M**	KR32	KR32	47	100	1,28	SVS0B,2B,3B,SVUBB1
1279783	**KR50KR50056050M**	KR50	KR50	56	50	0,82	SVS4B, SVS5B, SVU65, SVUBB2
1279785	**KR50KR50065050M**	KR50	KR50	65	50	1,16	SVS4B,5B,SVU65,SVUBB2
1192280	**KR50KR50065100M**	KR50	KR50	65	100	2,25	SVS4B,5B,SVU65,SVUBB2
1279791	**KR63KR63085050M**	KR63	KR63	85	50	2,00	SVS6B,7B,8B
1279792	**KR63KR63085100M**	KR63	KR63	85	100	4,02	SVS6B,7B,8B
1279797	**KR80KR80095050M**	KR80	KR80	95	50	2,50	SVU92,120
1279798	**KR80KR80095100M**	KR80	KR80	95	100	5,00	SVU92,120





● first choice
○ alternate choice

CPGT - FWL20

ISO catalogue number	ANSI catalogue number	D mm	D1 mm	L10 mm	S mm	Rε mm	KC5410
CPGT060204FWL20	**CPGT2151FWL20**	6,35	2,85	6,45	2,38	0,40	●

Romicron™ • Finishing • Metric

Material Group		Condition	Geometry -LF	-UF	-FP	-FW	Cutting Speed m/min min	Starting Value	max	Feed Rate mm/r -LF	-UF	-FP	-FW
P	1		KCP05			–	180	**435**	495	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	180	**435**	495	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	180	**400**	495	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	180	**395**	465	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	180	**395**	495	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				140	**280**	360	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	140	**280**	360	0,06 - 0,10	0,04 - 0,08	–	–
	2		KCP05			–	180	**265**	400	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	
			–	–	KTP10		180	**265**	400	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	190	**270**	390	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	180	**240**	330	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	180	**240**	330	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				145	**195**	320	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	145	**195**	320	0,06 - 0,10	0,04 - 0,08	–	–
	3		KCP05			–	180	**205**	275	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	180	**205**	275	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	180	**210**	275	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	160	**190**	250	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	155	**190**	240	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				135	**155**	225	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	135	**155**	225	0,06 - 0,10	0,04 - 0,08	–	–
	4		KCP05			–	90	**160**	220	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	90	**160**	220	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	90	**180**	220	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	90	**145**	195	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	90	**145**	195	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				75	**105**	180	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	75	**105**	180	0,06 - 0,10	0,04 - 0,08	–	–
	5		KCP05			–	150	**240**	315	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	150	**240**	315	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	150	**250**	315	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	150	**215**	300	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	150	**215**	300	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				120	**195**	255	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	120	**195**	255	0,06 - 0,10	0,04 - 0,08	–	–
	6		KCP05			–	140	**200**	300	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	140	**200**	300	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	**200**	300	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	120	**180**	275	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	120	**180**	225	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				105	**150**	225	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	105	**150**	225	0,06 - 0,10	0,04 - 0,08	–	–

Material Group		Condition	Geometry -LF	-UF	-FP	-FW	Cutting Speed m/min min	Starting Value	max	Feed Rate mm/r -LF	-UF	-FP	-FW
M	1		–	–	KTP10	–	140	**230**	315	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	**230**	315	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	**215**	245	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	105	**180**	240	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	105	**180**	240	0,06 - 0,12	–	–	0,08 - 0,16
	2		–	–	KTP10	–	140	**215**	295	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	**215**	295	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	**200**	245	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	105	**165**	250	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	100	**160**	230	0,06 - 0,12	–	–	0,08 - 0,16
	3		–	–	KTP10	–	140	**200**	300	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	**200**	300	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	**185**	230	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	115	**150**	255	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	110	**150**	230	0,06 - 0,12	–	–	0,08 - 0,16

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Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
K	1		KCK20	–	KCK20		200	300	540	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	165	275	490	0,06 - 0,25	–	–	0,08 - 0,30
			KC9315	–	–	–	110	275	450	0,06 - 0,25	–	–	–
			KC9320	–	–	–	100	240	400	0,06 - 0,12	–	–	–
	2		KCK20	–	KCK20		150	240	420	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	180	275	360	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010		–	KC5010	100	200	265	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			KC9315	–	–	–	145	260	360	0,06 - 0,25	–	–	–
			KC9320	–	–	–	140	240	330	0,06 - 0,12	–	–	–
	3		KCK20	–	KCK20		140	210	350	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	180	230	320	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010		–	KC5010	120	150	225	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			KC9315	–	–	–	145	215	275	0,06 - 0,25	–	–	–
			KC9320	–	–	–	140	210	260	0,06 - 0,12	–	–	–

Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-FWL20	–	–	min	Starting Value	max	-LF	-FWL20	–	–
N	1		KC5410		–	–	200	550	1000	0,10 - 0,40	0,20 - 0,50	–	–
			KC5410	–	–	–	200	550	1000	0,10 - 0,20	–	–	–
			–	–	KD1400	–	450	765	3000	–	–	0,06 - 0,15	–
	2		–	–	KD1425	–	375	580	1150	–	–	0,06 - 0,25	–
			–	–	KD1400	–	400	650	1250	–	–	0,06 - 0,15	–
	3		KC5410		–	–	125	275	525	0,10 - 0,40	0,20 - 0,50	–	–
			–	–	KD1425	–	250	500	875	–	–	0,06 - 0,25	–
			KC5410	–	–	–	125	275	525	0,10 - 0,20	–	–	–
			–	–	KD1400	–	375	520	1000	–	–	0,06 - 0,12	–
	5		KC5410	–	–	–	125	200	375	0,10 - 0,40	–	–	–
			KC5410	–	–	–	125	200	375	0,10 - 0,20	–	–	–

Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
S	1		–	–	KCU10	–	30	55	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	30	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	55	120	0,06 - 0,25	0,04 - 0,16		0,08 - 0,30
			–	–	KCU10	–	30	55	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	55	120	0,06 - 0,25	0,04 - 0,16		0,08 - 0,30
			–	–	KCU25	–	10	40	50	–	–	0,06 - 0,12	–
			KC5025	–	–	–	10	40	50	0,06 - 0,10	–	–	–
	2		–	–	KCU10	–	30	35	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	35	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	60	120	0,06 - 0,25	0,04 - 0,16		0,08 - 0,30
			–	–	KCU10	–	30	35	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	60	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	10	30	50	–	–	0,06 - 0,12	–
			KC5025	–	–	–	10	30	50	0,06 - 0,10	–	–	–
	3		–	–	KCU10	–	30	70	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	40	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	70	120	0,06 - 0,25	0,04 - 0,16		0,08 - 0,30
			–	–	KCU10	–	30	35	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	70	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	25	40	60	–	–	0,06 - 0,12	–
			KC5025	–	–	–	25	40	60	0,06 - 0,10	–	–	–
	4		–	–	KCU10	–	45	70	140	–	–	0,06 - 0,25	–
			K313	–	–	–	15	45	65	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	45	70	140	0,06 - 0,25	0,04 - 0,16		0,08 - 0,30
			–	–	KCU10	–	45	70	140	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	45	70	140	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	25	55	90	–	–	0,06 - 0,12	–
			KC5025	–	–	–	15	55	90	0,06 - 0,10	–	–	–

Romicron Assembly Instructions

The required parts for the adaptor assembly are identified on Figures 1 and 2. The SVS model is shown. The instructions are also valid to the SVU and SVUBB models

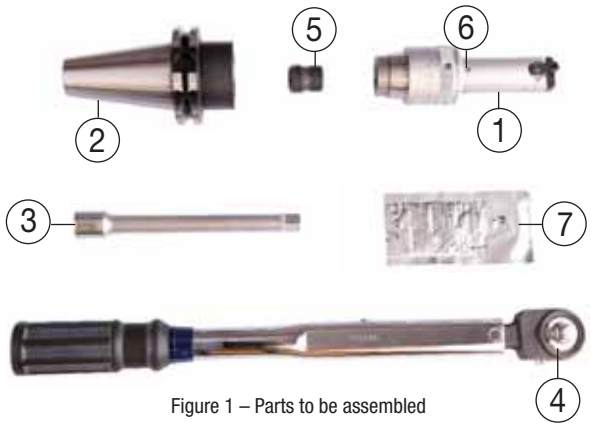


Figure 1 – Parts to be assembled

1	Boring head
2	Taper shank
3	Square extension (3/8" or 1/2")
4	Torque wrench
5	Differential connector
6	Positioning pin
7	Lubricant ASL-3G

WARNING:
Before starting the assembly procedure, ensure that all surfaces to be assembled together are free of dirt and completely clean.

Figure 2 – Assembled Tool

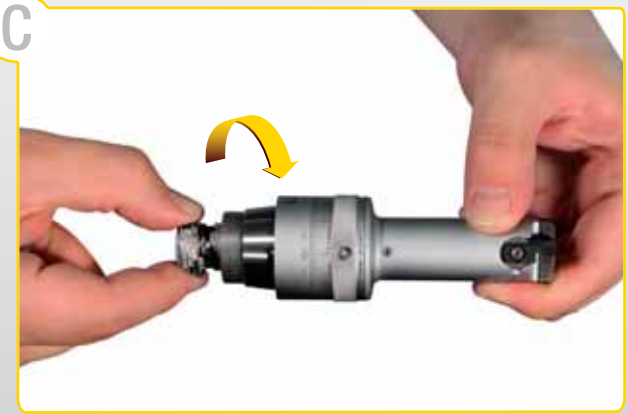
A

A. Remove the Differential Connector (5) from the Taper Shank (2).

B

B. Lubricate the thread on the Differential Connector (5) with Lubricant ASL-3G (7), supplied with the Taper Shank (2).

C



C. Screw the Differential Connector (5) into the rear thread on the Boring Head (1) until the end of the thread. At this time it is not necessary to tighten the Differential Connector (5). Remember that the Differential Connector (5) has two different screws, so there is no way to assemble the wrong side

Romicron Assembly Instructions

D

D. Screw the front end of the Taper Shank (2) onto the Differential Connector (5), now located at the back on the Boring Head (1). Screw carefully until the Positioning Pin (6) gently touches the Taper (2) face. Stop!

F

F. Insert the square end of the Extension (3) through the Taper Shank (2) and into the Differential Connector (5). Keeping the Positioning Pin (6) and the positioning slot aligned, turn the Extensions (3) counter-clockwise until you see that two Romicron faces are meshing. Ensure that the Positioning Pin (6) is inserted into the slot on the Taper Shank (2).

E

E. Unscrew the Taper Shank (2) a little bit until the Positioning Pin (6) is aligned with the positioning slot mark in the Taper Shank (2) face.

G

G. Tighten the Differential Connector (5) with the specified required torque, as shown on the table below. Use the Torque Wrench (4) to do this.

Tightening Torque Specifications

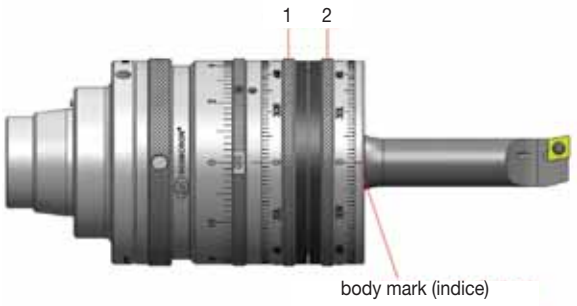
joint size	Torque Nm	drive square
KR32	30	3/8"
KR50	40	3/8"
KR63	55	1/2"
KR80	65	1/2"

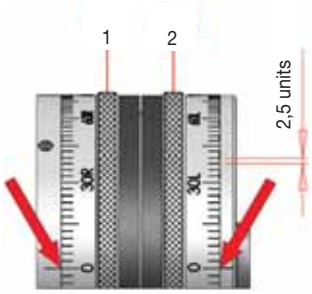
Following these procedures will result in a rigid surface contact between the taper and the boring head face.

1. The balancing dials are identified on the figure below.

2. Ensure that the zero mark of dial 02 is coincident with Romicron Body Mark, and the zero mark dial 01 is coincident with the zero mark on dial 02.

3. Read the position values of the dials 01 and 02 on the table. For example, to machine a 10mm diameter, the positions are 01 = 24R and 02 = 22R.





Balancing Table • SVU-BB1 Boring Head

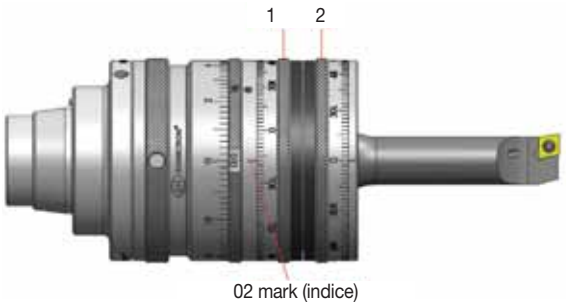
KRBB10FABDRS204C 4–6,4mm					KRBB10SCLDR4060C 6–9mm					KRBB10SCFPR06085C 8,5–11,5mm				
diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
4	40	L	58	L	6	34	L	66	L	8,5	34	L	66	L
4,1	42	L	58	L	6,1	36	L	66	L	8,6	36	L	68	L
4,2	42	L	54	L	6,2	36	L	64	L	8,7	36	L	64	L
4,3	44	L	54	L	6,3	38	L	62	L	8,8	38	L	62	L
4,4	44	L	50	L	6,4	38	L	62	L	8,9	36	L	60	L
4,5	46	L	50	L	6,5	40	L	60	L	9	40	L	60	L
4,6	46	L	48	L	6,6	40	L	58	L	9,1	40	L	58	L
4,7	46	L	46	L	6,7	40	L	56	L	9,2	42	L	56	L
4,8	46	L	42	L	6,8	40	L	54	L	9,3	40	L	54	L
4,9	46	L	40	L	6,9	42	L	52	L	9,4	42	L	52	L
5	22	R	20	R	7	42	L	54	L	9,5	42	L	50	L
5,1	32	R	26	R	7,1	54	R	60	R	9,6	40	L	46	L
5,2	40	R	32	R	7,2	54	R	60	R	9,7	38	L	42	L
5,3	44	R	34	R	7,3	60	R	60	R	9,8	30	L	32	L
5,4	48	R	36	R	7,4	70	R	72	R	9,9	24	R	22	R
5,5	50	R	36	R	7,5	42	R	40	R	10	24	R	22	R
5,6	52	R	34	R	7,6	48	R	44	R	10,1	26	R	22	R
5,7	54	R	34	R	7,7	50	R	42	R	10,2	44	R	38	R
5,8	56	R	32	R	7,8	50	R	42	R	10,3	48	R	38	R
5,9	58	R	32	R	7,9	52	R	40	R	10,4	52	R	38	R
6	60	R	30	R	8	54	R	40	R	10,5	52	R	38	R
6,1	62	R	30	R	8,1	54	R	38	R	10,6	56	R	36	R
6,2	64	R	28	R	8,2	56	R	38	R	10,7	56	R	36	R
6,3	66	R	28	R	8,3	58	R	36	R	10,8	58	R	34	R
6,4	68	R	24	R	8,4	58	R	34	R	10,9	58	R	32	R
–	–	–	–	–	8,5	60	R	36	R	11	62	R	32	R
–	–	–	–	–	8,6	62	R	34	R	11,1	60	R	30	R
–	–	–	–	–	8,7	62	R	32	R	11,2	62	R	28	R
–	–	–	–	–	8,8	62	R	32	R	11,3	62	R	28	R
–	–	–	–	–	8,9	66	R	28	R	11,4	68	R	26	R
–	–	–	–	–	9	66	R	28	R	11,5	68	R	26	R

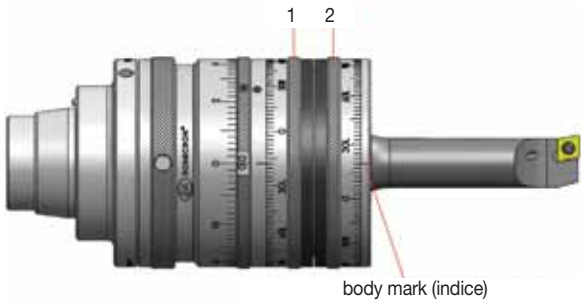
(continued)

(Balancing Table • SVU-BB1 Boring Head continued)

4. The dial 01 must be positioned first. Moving the dial, adjust the position of dial 01. Use the mark reference located on dial 02. The dial resolution is 2 units of table values.

5. Now adjust the position for dial 02. Use the mark reference located on the Romicron body. After the adjustment of dial 02, the Romicron is correctly balanced.



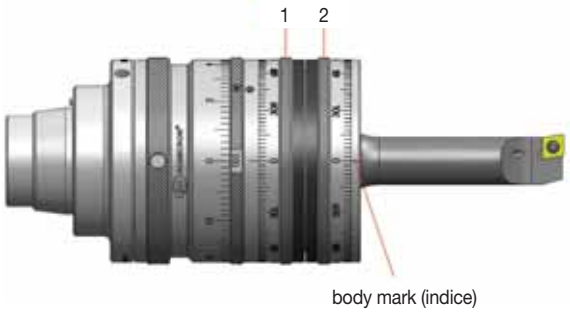


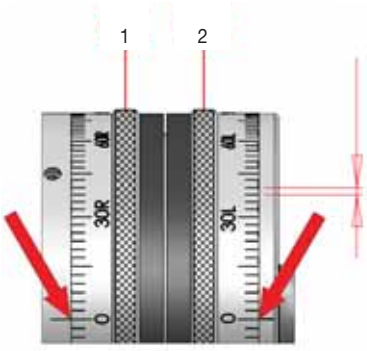
KRBB10SCFPR06110C 11–14mm					KRBB10SCFPR06135C 13,5–16,5mm				
diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
11	32	L	66	L	13,5	34	L	62	L
11,1	34	L	64	L	13,6	36	L	60	L
11,2	34	L	62	L	13,7	38	L	58	L
11,3	36	L	60	L	13,8	38	L	56	L
11,4	36	L	58	L	13,9	40	L	56	L
11,5	38	L	58	L	14	42	L	44	L
11,6	38	L	56	L	14,1	42	L	52	L
11,7	40	L	54	L	14,2	44	L	50	L
11,8	40	L	52	L	14,3	42	L	46	L
11,9	40	L	52	L	14,4	34	L	36	L
12	38	L	46	L	14,5	18	L	20	L
12,1	34	L	42	L	14,6	10	R	6	R
12,2	26	L	30	L	14,7	18	R	10	R
12,3	24	R	22	R	14,8	40	R	30	R
12,4	28	L	26	L	14,9	44	R	32	R
12,5	44	L	38	R	15	48	R	34	R
12,6	44	R	36	R	15,1	48	R	32	R
12,7	50	R	40	R	15,2	50	R	30	R
12,8	50	R	38	R	15,3	52	R	30	R
12,9	52	R	36	R	15,4	56	R	32	R
13	52	R	36	R	15,5	54	R	28	R
13,1	54	R	34	R	15,6	58	R	28	R
13,2	54	R	32	R	15,7	60	R	26	R
13,3	56	R	32	R	15,8	64	R	26	R
13,4	56	R	30	R	15,9	64	R	26	R
13,5	60	R	28	R	16	66	R	24	R
13,6	60	R	28	R	16,1	66	R	22	R
13,7	62	R	26	R	16,2	70	R	20	R
13,8	64	R	26	R	16,3	74	R	18	R
13,9	68	R	24	R	16,4	76	R	16	R
14	68	R	24	R	16,5	78	R	14	R

1. The balancing dials are identified on the figure below.

2. Ensure that the zero mark of dial 02 is coincident with Romicron Body Mark, and the zero mark dial 01 is coincident with the zero mark on dial 02.

3. Read the position values of the dials 01 and 02 on the table. For example, to machine a 10mm diameter, the positions are 01 = 17L and 02 = 20LR.





Balancing Table • SVU-BB2 Boring Head

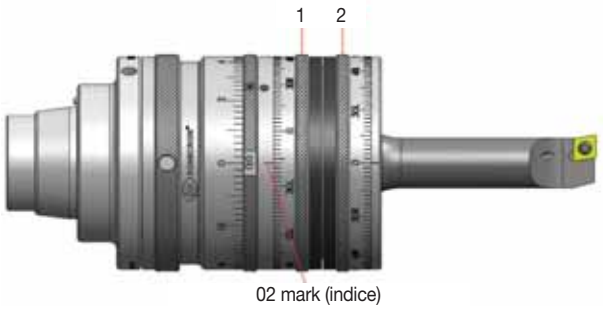
KRBB16SCLDRS406A 6–9,5mm					KRBB16SCFPR06085A 8,5–12mm					KRBB16SCFPR0611A 11–14,5mm					KRBB16SCFPR06135A 13,5–17mm				
diameter	ring 1		ring 2		diameter	ring 1		ring 2		diameter	ring 1		ring 2		diameter	ring 1		ring 2	
mm					mm					mm					mm				
6	67.5	L	67.5	L	8,5	67.5	L	67.5	L	11	67.5	L	70	L	13,5	65	L	70	L
6,1	62.5	L	62.5	L	8,6	62.5	L	62.5	L	11,1	60	L	62.5	L	13,6	60	L	65	L
6,2	57.5	L	57.5	L	8,7	57.5	L	57.5	L	11,2	57.5	L	60	L	13,7	55	L	60	L
6,3	55	L	55	L	8,8	52.5	L	55	L	11,3	52.5	L	55	L	13,8	50	L	55	L
6,4	50	L	50	L	8,9	50	L	50	L	11,4	47.5	L	50	L	13,9	47.5	L	52.5	L
6,5	47.5	L	47.5	L	9	47.5	L	47.5	L	11,5	45	L	47.5	L	14	42.5	L	47.5	L
6,6	45	L	45	L	9,1	42.5	L	45	L	11,6	42.5	L	45	L	14,1	40	L	45	L
6,7	40	L	40	L	9,2	40	L	40	L	11,7	37.5	L	42.5	L	14,2	35	L	42.5	L
6,8	37.5	L	37.5	L	9,3	37.5	L	37.5	L	11,8	35	L	37.5	L	14,3	32.5	L	40	L
6,9	35	L	35	L	9,4	35	L	35	L	11,9	32.5	L	35	L	14,4	30	L	37.5	L
7	32.5	L	32.5	L	9,5	30	L	32.5	L	12	30	L	32.5	L	14,5	25	L	35	L
7,1	30	L	30	L	9,6	27.5	L	30	L	12,1	27.5	L	30	L	14,6	22.5	L	32.5	L
7,2	27.5	L	27.5	L	9,7	25	L	27.5	L	12,2	25	L	27.5	L	14,7	20	L	30	L
7,3	25	L	25	L	9,8	22.5	L	25	L	12,3	22.5	L	25	L	14,8	17.5	L	27.5	L
7,4	22.5	L	22.5	L	9,9	20	L	22.5	L	12,4	17.5	L	25	L	14,9	15	L	25	L
7,5	20	L	20	L	10	17.5	L	20	L	12,5	15	L	22.5	L	15	10	L	25	L
7,6	17.5	L	17.5	L	10,1	15	L	17.5	L	12,6	12.5	L	20	L	15,1	7.5	L	22.5	L
7,7	15	L	15	L	10,2	12.5	L	15	L	12,7	10	L	17.5	L	15,2	2.5	L	22.5	L
7,8	12.5	L	12.5	L	10,3	10	L	15	L	12,8	5	L	17.5	L	15,3	2.5	R	22.5	L
7,9	10	L	12.5	L	10,4	7.5	L	12.5	L	12,9	2.5	L	15	L	15,4	7.5	R	22.5	L
8	7.5	L	10	L	10,5	5	L	10	L	13	2.5	R	15	L	15,5	17.5	R	27.5	L
8,1	5	L	7.5	L	10,6	0	L	10	L	13,1	10	R	17.5	L	15,6	37.5	R	42.5	L
8,2	2.5	L	5	L	10,7	5	R	10	L	13,2	25	R	30	L	15,7	85	L	90	R
8,3	2.5	R	5	L	10,8	45	R	45	L	13,3	62.5	L	65	R	15,8	35	L	42.5	R
8,4	10	L	12.5	R	10,9	10	L	15	R	13,4	17.5	L	22.5	R	15,9	17.5	L	27.5	R
8,5	0	R	5	R	11	2.5	L	10	R	13,5	5	L	15	R	16	7.5	L	22.5	R
8,6	2.5	R	7.5	R	11,1	2.5	R	10	R	13,6	0	R	15	R	16,1	2.5	L	22.5	R
8,7	7.5	R	7.5	R	11,2	5	R	12.5	R	13,7	5	R	15	R	16,2	2.5	R	22.5	R
8,8	10	R	10	R	11,3	10	R	12.5	R	13,8	7.5	R	17.5	R	16,3	7.5	R	22.5	R
8,9	12.5	R	12.5	R	11,4	12.5	R	15	R	13,9	10	R	20	R	16,4	10	R	25	R
9	12.5	R	15	R	11,5	15	R	17.5	R	14	15	R	20	R	16,5	15	R	25	R
9,1	15	R	17.5	R	11,6	17.5	R	20	R	14,1	17.5	R	22.5	R	16,6	17.5	R	27.5	R
9,2	17.5	R	20	R	11,7	20	R	22.5	R	14,2	20	R	25	R	16,7	20	R	30	R
9,3	20	R	22.5	R	11,8	22.5	R	25	R	14,3	22.5	R	27.5	R	16,8	22.5	R	32.5	R
9,4	22.5	R	25	R	11,9	25	R	27.5	R	14,4	25	R	30	R	16,9	27.5	R	35	R
9,5	25	R	27.5	R	12	27.5	R	30	R	14,5	27.5	R	32.5	R	17	30	R	37.5	R

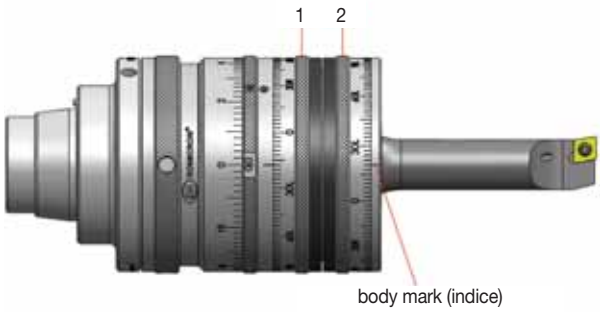
(continued)

(Balancing Table • SVU-BB2 Boring Head continued)

4. The dial 01 must be positioned first. Moving the dial, adjust the position of dial 01. Use the mark reference located on dial 02. The dial resolution is 2 units of table values.

5. Now adjust the position for dial 02. Use the mark reference located on the Romicron body. After the adjustment of dial 02, the Romicron is correctly balanced.





KRBB16SCFPR0616A 16–19,5mm					KRBB16SCFPR0619A 19–22,5mm					KRBB16SCFPR0622A 22–25,5mm				
diameter	ring 1		ring 2		diameter	ring 1		ring 2		diameter	ring 1		ring 2	
mm					mm					mm				
16	65	L	72.5	L	19	60	L	75	L	22	57.5	L	80	L
16,1	57.5	L	65	L	19,1	55	L	70	L	22,1	50	L	72.5	L
16,2	52.5	L	62.5	L	19,2	50	L	65	L	22,2	45	L	70	L
16,3	47.5	L	57.5	L	19,3	45	L	60	L	22,3	37.5	L	65	L
16,4	42.5	L	52.5	L	19,4	40	L	57.5	L	22,4	32.5	L	62.5	L
16,5	40	L	50	L	19,5	35	L	52.5	L	22,5	27.5	L	60	L
16,6	35	L	47.5	L	19,6	30	L	50	L	22,6	22.5	L	57.5	L
16,7	32.5	L	45	L	19,7	27.5	L	47.5	L	22,7	20	L	55	L
16,8	27.5	L	42.5	L	19,8	22.5	L	45	L	22,8	15	L	52.5	L
16,9	25	L	40	L	19,9	20	L	42.5	L	22,9	10	L	52.5	L
17	20	L	37.5	L	20	15	L	42.5	L	23	5	L	50	L
17,1	17.5	L	35	L	20,1	10	L	40	L	23,1	0	R	50	L
17,2	12.5	L	32.5	L	20,2	5	L	40	L	23,2	7.5	R	52.5	L
17,3	10	L	30	L	20,3	0	L	40	L	23,3	12.5	R	52.5	L
17,4	5	L	30	L	20,4	5	R	40	L	23,4	20	R	55	L
17,5	0	L	30	L	20,5	10	R	40	L	23,5	30	R	60	L
17,6	5	R	30	L	20,6	17.5	R	42.5	L	23,6	40	R	65	L
17,7	12.5	R	32.5	L	20,7	27.5	R	47.5	L	23,7	52.5	R	75	L
17,8	22.5	R	37.5	L	20,8	40	R	57.5	L	23,8	67.5	R	90	L
17,9	35	R	47.5	L	20,9	57.5	R	72.5	L	23,9	77.5	L	97.5	R
18	60	R	67.5	L	21	80	R	92.5	L	24	60	L	82.5	R
18,1	75	L	82.5	R	21,1	65	L	77.5	R	24,1	47.5	L	72.5	R
18,2	45	L	55	R	21,2	45	L	60	R	24,2	35	L	62.5	R
18,3	25	L	40	R	21,3	30	L	50	R	24,3	25	L	57.5	R
18,4	15	L	32.5	R	21,4	20	L	45	R	24,4	17.5	L	55	R
18,5	7.5	L	30	R	21,5	12.5	L	40	R	24,5	10	L	52.5	R
18,6	2.5	L	30	R	21,6	5	L	40	R	24,6	5	L	50	R
18,7	2.5	R	30	R	21,7	0	L	40	R	24,7	2.5	R	50	R
18,8	7.5	R	30	R	21,8	5	R	40	R	24,8	7.5	R	50	R
18,9	12.5	R	32.5	R	21,9	10	R	40	R	24,9	12.5	R	52.5	R
19	15	R	35	R	22	12.5	R	42.5	R	25	17.5	R	52.5	R
19,1	20	R	35	R	22,1	17.5	R	42.5	R	25,1	20	R	55	R
19,2	22.5	R	37.5	R	22,2	22.5	R	45	R	25,2	25	R	57.5	R
19,3	27.5	R	40	R	22,3	25	R	47.5	R	25,3	30	R	60	R
19,4	30	R	42.5	R	22,4	30	R	50	R	25,4	35	R	62.5	R
19,5	35	R	45	R	22.5	35	R	52.5	R	25,5	40	R	67.5	R

(continued)

(Balancing Table • Universal Applications SVU-BB2 Boring Head continued)

KRDEA046AM • KRDE025010M 25,5–34,4mm

diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
25,5	62.5	L	65	L	28,5	57.5	L	60	L	31,5	52.5	L	55	L
25,6	57.5	L	60	L	28,6	52.5	L	55	L	31,6	47.5	L	50	L
25,7	50	L	52.5	L	28,7	45	L	50	L	31,7	42.5	L	45	L
25,8	45	L	47.5	L	28,8	40	L	45	L	31,8	37.5	L	42.5	L
25,9	40	L	45	L	28,9	37.5	L	40	L	31,9	32.5	L	37.5	L
26,0	35	L	40	L	29,0	32.5	L	37.5	L	32,0	27.5	L	35	L
26,1	32.5	L	35	L	29,1	27.5	L	32.5	L	32,1	25	L	30	L
26,2	27.5	L	32.5	L	29,2	25	L	30	L	32,2	20	L	27.5	L
26,3	22.5	L	30	L	29,3	20	L	27.5	L	32,3	17.5	L	22.5	L
26,4	20	L	25	L	29,4	15	L	25	L	32,4	12.5	L	22.5	L
26,5	62.5	L	65	L	29,5	55	L	57.5	L	32,5	50	L	55	L
26,6	55	L	57.5	L	29,6	50	L	52.5	L	32,6	45	L	50	L
26,7	50	L	52.5	L	29,7	45	L	47.5	L	32,7	40	L	45	L
26,8	45	L	47.5	L	29,8	40	L	45	L	32,8	37.5	L	40	L
26,9	40	L	42.5	L	29,9	35	L	40	L	32,9	32.5	L	37.5	L
27,0	35	L	40	L	30,0	32.5	L	35	L	33,0	27.5	L	32.5	L
27,1	30	L	35	L	30,1	27.5	L	32.5	L	33,1	22.5	L	30	L
27,2	25	L	32.5	L	30,2	22.5	L	30	L	33,2	20	L	25	L
27,3	22.5	L	27.5	L	30,3	20	L	25	L	33,3	15	L	22.5	L
27,4	17.5	L	25	L	30,4	15	L	22.5	L	33,4	12.5	L	20	L
27,5	60	L	62.5	L	30,5	55	L	57.5	L	33,5	50	L	52.5	L
27,6	52.5	L	55	L	30,6	47.5	L	52.5	L	33,6	45	L	47.5	L
27,7	47.5	L	50	L	30,7	42.5	L	47.5	L	33,7	40	L	42.5	L
27,8	42.5	L	45	L	30,8	37.5	L	42.5	L	33,8	35	L	40	L
27,9	37.5	L	42.5	L	30,9	35	L	37.5	L	33,9	30	L	35	L
28,0	32.5	L	37.5	L	31,0	30	L	35	L	34,0	27.5	L	32.5	L
28,1	30	L	35	L	31,1	25	L	32.5	L	34,1	22.5	L	27.5	L
28,2	25	L	30	L	31,2	22.5	L	27.5	L	34,2	20	L	25	L
28,3	20	L	27.5	L	31,3	17.5	L	25	L	34,3	15	L	22.5	L
28,4	17.5	L	25	L	31,4	12.5	L	22.5	L	34,4	10	L	20	L

KRDEA046AM • KRDE033010M 33,5–44,4mm

diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
33,5	55	L	57.5	L	36,5	47.5	L	52.5	L	39,5	42.5	L	47.5	L	42,5	37.5	L	40	L
33,6	50	L	52.5	L	36,6	42.5	L	47.5	L	39,6	37.5	L	42.5	L	42,6	32.5	L	37.5	L
33,7	45	L	47.5	L	36,7	37.5	L	42.5	L	39,7	32.5	L	37.5	L	42,7	27.5	L	35	L
33,8	40	L	42.5	L	36,8	35	L	37.5	L	39,8	27.5	L	35	L	42,8	25	L	30	L
33,9	35	L	40	L	36,9	30	L	35	L	39,9	25	L	30	L	42,9	20	L	27.5	L
34,0	30	L	35	L	37,0	25	L	32.5	L	40,0	20	L	27.5	L	43,0	15	L	25	L
34,1	25	L	32.5	L	37,1	22.5	L	27.5	L	40,1	15	L	25	L	43,1	10	L	22.5	L
34,2	22.5	L	27.5	L	37,2	17.5	L	25	L	40,2	10	L	22.5	L	43,2	5	L	20	L
34,3	17.5	L	25	L	37,3	12.5	L	22.5	L	40,3	7.5	L	20	L	43,3	0	L	17.5	L
34,4	12.5	L	22.5	L	37,4	7.5	L	20	L	40,4	2.5	L	17.5	L	43,4	7.5	R	20	L
34,5	52.5	L	57.5	L	37,5	47.5	L	50	L	40,5	40	L	45	L	43,5	35	L	40	L
34,6	47.5	L	50	L	37,6	42.5	L	45	L	40,6	35	L	40	L	43,6	30	L	35	L
34,7	42.5	L	47.5	L	37,7	37.5	L	40	L	40,7	30	L	37.5	L	43,7	25	L	32.5	L
34,8	37.5	L	42.5	L	37,8	32.5	L	37.5	L	40,8	27.5	L	32.5	L	43,8	22.5	L	27.5	L
34,9	32.5	L	37.5	L	37,9	27.5	L	35	L	40,9	22.5	L	30	L	43,9	17.5	L	25	L
35,0	27.5	L	35	L	38,0	25	L	30	L	41,0	17.5	L	27.5	L	44,0	15	L	22.5	L
35,1	25	L	30	L	38,1	20	L	27.5	L	41,1	15	L	22.5	L	44,1	10	L	20	L
35,2	20	L	27.5	L	38,2	15	L	25	L	41,2	10	L	20	L	44,2	5	L	17.5	L
35,3	15	L	25	L	38,3	10	L	22.5	L	41,3	5	L	20	L	44,3	2.5	R	17.5	L
35,4	10	L	22.5	L	38,4	5	L	20	L	41,4	0	R	17.5	L	44,4	12.5	R	22.5	L
35,5	50	L	55	L	38,5	45	L	47.5	L	41,5	37.5	L	42.5	L	–	–	–	–	–
35,6	45	L	50	L	38,6	40	L	42.5	L	41,6	35	L	37.5	L	–	–	–	–	–
35,7	40	L	45	L	38,7	35	L	40	L	41,7	30	L	35	L	–	–	–	–	–
35,8	35	L	40	L	38,8	30	L	35	L	41,8	25	L	32.5	L	–	–	–	–	–
35,9	30	L	37.5	L	38,9	25	L	32.5	L	41,9	22.5	L	27.5	L	–	–	–	–	–
36,0	27.5	L	32.5	L	39,0	22.5	L	27.5	L	42,0	17.5	L	25	L	–	–	–	–	–
36,1	22.5	L	30	L	39,1	17.5	L	25	L	42,1	12.5	L	22.5	L	–	–	–	–	–
36,2	17.5	L	27.5	L	39,2	15	L	22.5	L	42,2	7.5	L	20	L	–	–	–	–	–
36,3	15	L	22.5	L	39,3	10	L	20	L	42,3	2.5	L	17.5	L	–	–	–	–	–
36,4	10	L	20	L	39,4	5	L	17.5	L	42,4	5	R	20	L	–	–	–	–	–

(continued)

(Balancing Table • Universal Applications SVU-BB2 Boring Head continued)

KRDEA051AM • KRDE043010M 43–65,9mm

diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
43,0	55	L	65	L	46,0	42.5	L	55	L	49,0	32.5	L	47.5	L	52,0	25	L	40	L
43,1	47.5	L	57.5	L	46,1	37.5	L	50	L	49,1	27.5	L	42.5	L	52,1	20	L	37.5	L
43,2	40	L	52.5	L	46,2	30	L	45	L	49,2	22.5	L	40	L	52,2	12.5	L	35	L
43,3	35	L	47.5	L	46,3	25	L	42.5	L	49,3	17.5	L	35	L	52,3	7.5	L	32.5	L
43,4	30	L	42.5	L	46,4	20	L	37.5	L	49,4	12.5	L	32.5	L	52,4	0	L	32.5	L
43,5	22.5	L	40	L	46,5	15	L	35	L	49,5	5	L	32.5	L	52,5	7.5	R	32.5	L
43,6	17.5	L	37.5	L	46,6	7.5	L	32.5	L	49,6	2.5	R	32.5	L	52,6	20	R	37.5	L
43,7	12.5	L	32.5	L	46,7	2.5	L	30	L	49,7	12.5	R	35	L	52,7	42.5	R	52.5	L
43,8	5	L	32.5	L	46,8	7.5	R	32.5	L	49,8	27.5	R	42.5	L	52,8	85	L	92.5	R
43,9	2.5	R	32.5	L	46,9	17.5	R	35	L	49,9	60	R	70	L	52,9	40	L	52.5	R
44,0	50	L	60	L	47,0	40	L	52.5	L	50,0	30	L	45	L	53,0	22.5	L	37.5	L
44,1	42.5	L	55	L	47,1	35	L	47.5	L	50,1	25	L	40	L	53,1	17.5	L	35	L
44,2	37.5	L	50	L	47,2	27.5	L	42.5	L	50,2	20	L	37.5	L	53,2	10	L	32.5	L
44,3	32.5	L	45	L	47.3	22.5	L	40	L	50,3	12.5	L	35	L	53,3	2.5	L	32.5	L
44,4	25	L	42.5	L	47,4	17.5	L	35	L	50,4	7.5	L	32.5	L	53,4	5	R	32.5	L
44,5	20	L	37.5	L	47,5	12.5	L	32.5	L	50,5	0	L	32.5	L	53,5	15	R	35	L
44,6	15	L	35	L	47,6	5	L	32.5	L	50,6	7.5	R	32.5	L	53,6	30	R	45	L
44,7	10	L	32.5	L	47,7	2.5	R	32.5	L	50,7	20	R	37.5	L	53,7	62.5	R	72.5	L
44,8	2.5	L	30	L	47,8	12.5	R	35	L	50,8	40	R	52.5	L	53,8	57.5	L	67.5	R
44,9	7.5	R	32.5	L	47,9	27.5	R	42.5	L	50,9	87.5	R	95	L	53,9	27.5	L	42.5	R
45,0	47.5	L	57.5	L	48,0	37.5	L	50	L	51,0	27.5	L	42.5	L	54,0	20	L	37.5	L
45,1	40	L	52.5	L	48,1	30	L	45	L	51,1	22.5	L	40	L	54,1	12.5	L	35	L
45,2	35	L	47.5	L	48,2	25	L	40	L	51,2	17.5	L	35	L	54,2	7.5	L	32.5	L
45,3	30	L	42.5	L	48,3	20	L	37.5	L	51,3	10	L	35	L	54,3	0	L	32.5	L
45,4	22.5	L	40	L	48,4	15	L	35	L	51,4	5	L	32.5	L	54,4	7.5	R	32.5	L
45,5	17.5	L	35	L	48,5	7.5	L	32.5	L	51,5	2.5	R	30	L	54,5	20	R	37.5	L
45,6	12.5	L	32.5	L	48,6	0	L	32.5	L	51,6	12.5	R	32.5	L	54,6	45	R	55	L
45,7	5	L	32.5	L	48,7	7.5	R	32.5	L	51,7	30	R	45	L	54,7	82.5	L	90	R
45,8	2.5	R	32.5	L	48,8	20	R	37.5	L	51,8	60	R	70	L	54,8	40	L	52.5	R
45,9	12.5	R	35	L	48,9	40	R	52.5	L	51,9	60	L	70	R	54,9	20	L	37.5	R
55,0	17.5	L	35	L	58,0	7.5	L	32.5	L	61,0	5	R	32.5	L	64,0	25	R	40	L
55,1	10	L	32.5	L	58,1	0	R	30	L	61,1	15	R	35	L	64,1	55	R	65	L
55,2	2.5	L	32.5	L	58,2	10	R	32.5	L	61,2	35	R	47.5	L	64,2	67.5	L	77.5	R
55,3	5	R	32.5	L	58,3	22.5	R	40	L	61,3	75	R	82.5	L	64,3	32.5	L	45	R
55,4	15	R	35	L	58,4	47.5	R	57.5	L	61,4	50	L	60	R	64,4	15	L	35	R
55,5	32.5	R	45	L	58,5	75	L	82.5	R	61,5	25	L	40	R	64,5	5	L	32.5	R
55,6	65	R	75	L	58,6	35	L	47.5	R	61,6	10	L	32.5	R	64,6	2.5	R	32.5	R
55,7	55	L	65	R	58,7	17.5	L	37.5	R	61,7	0	L	30	R	64,7	10	R	32.5	R
55,8	27.5	L	42.5	R	58,8	5	L	32.5	R	61,8	5	R	32.5	R	64,8	15	R	35	R
55,9	12.5	L	35	R	58,9	2.5	R	32.5	R	61,9	12.5	R	35	R	64,9	22.5	R	37.5	R
56,0	12.5	L	35	L	59,0	2.5	L	32.5	L	62,0	10	R	32.5	L	65,0	37.5	R	50	L
56,1	7.5	L	32.5	L	59,1	5	R	32.5	L	62,1	25	R	40	L	65,1	80	R	87.5	L
56,2	0	R	32.5	L	59,2	15	R	35	L	62,2	52.5	R	62.5	L	65,2	47.5	L	57.5	R
56,3	10	R	32.5	L	59,3	35	R	47.5	L	62,3	70	L	77.5	R	65,3	22.5	L	40	R
56,4	22.5	R	40	L	59,4	72.5	R	80	L	62,4	35	L	47.5	R	65,4	7.5	L	32.5	R
56,5	47.5	R	57.5	L	59,5	52.5	L	62.5	R	62,5	15	L	35	R	65,5	0	L	32.5	R
56,6	80	L	87.5	R	59,6	25	L	40	R	62,6	5	L	32.5	R	65,6	7.5	R	32.5	R
56,7	37.5	L	50	R	59,7	10	L	32.5	R	62,7	2.5	R	32.5	R	65,7	12.5	R	35	R
56,8	17.5	L	35	R	59,8	2.5	L	32.5	R	62,8	10	R	32.5	R	65,8	17.5	R	37.5	R
56,9	7.5	L	32.5	R	59,9	5	R	32.5	R	62,9	15	R	35	R	65,9	25	R	40	R
57,0	10	L	32.5	L	60,0	0	R	30	L	63,0	17.5	R	37.5	L	–	–	–	–	–
57,1	2.5	L	32.5	L	60,1	10	R	32.5	L	63,1	37.5	R	50	L	–	–	–	–	–
57,2	5	R	32.5	L	60,2	25	R	40	L	63,2	77.5	R	85	L	–	–	–	–	–
57,3	15	R	35	L	60,3	50	R	60	L	63,3	47.5	L	57.5	R	–	–	–	–	–
57,4	32.5	R	45	L	60,4	72.5	L	80	R	63,4	22.5	L	40	R	–	–	–	–	–
57,5	67.5	R	77.5	L	60,5	35	L	47.5	R	63,5	10	L	32.5	R	–	–	–	–	–
57,6	52.5	L	62.5	R	60,6	15	L	35	R	63,6	0	L	30	R	–	–	–	–	–
57,7	25	L	40	R	60,7	5	L	32.5	R	63,7	7.5	R	32.5	R	–	–	–	–	–
57,8	10	L	32.5	R	60,8	2.5	R	32.5	R	63,8	12.5	R	35	R	–	–	–	–	–
57,9	2.5	L	32.5	R	60,9	10	R	32.5	R	63,9	17.5	R	37.5	R	–	–	–	–	–

(continued)

(Balancing Table • Universal Applications SVU-BB2 Boring Head continued)

KRDEA012AM • KRDE065012M 65–82,9mm

diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
65,0	5	L	37.5	R	68,0	12.5	R	37.5	R	71,0	25	R	45	R
65,1	2.5	R	37.5	R	68,1	17.5	R	40	R	71,1	32.5	R	47.5	R
65,2	10	R	37.5	R	68,2	22.5	R	42.5	R	71,2	37.5	R	52.5	R
65,3	15	R	40	R	68,3	27.5	R	47.5	R	71,3	42.5	R	57.5	R
65,4	20	R	42.5	R	68,4	32.5	R	50	R	71,4	47.5	R	62.5	R
65,5	25	R	45	R	68,5	40	R	55	R	71,5	55	R	67.5	R
65,6	30	R	47.5	R	68,6	45	R	60	R	71,6	65	R	77.5	R
65,7	35	R	52.5	R	68,7	52.5	R	65	R	71,7	65	R	77.5	R
65,8	42.5	R	57.5	R	68,8	60	R	72.5	R	71,8	65	R	77.5	R
65,9	47.5	R	62.5	R	68,9	70	R	82.5	R	71,9	65	R	77.5	R
66,0	2.5	R	35	R	69,0	17.5	R	40	R	72,0	30	R	47.5	R
66,1	7.5	R	37.5	R	69,1	22.5	R	42.5	R	72,1	35	R	52.5	R
66,2	12.5	R	40	R	69,2	27.5	R	45	R	72,2	40	R	55	R
66,3	20	R	40	R	69,3	32.5	R	50	R	72,3	47.5	R	60	R
66,4	25	R	45	R	69,4	37.5	R	52.5	R	72,4	55	R	67.5	R
66,5	30	R	47.5	R	69,5	45	R	57.5	R	72,5	62.5	R	75	R
66,6	35	R	52.5	R	69,6	50	R	62.5	R	72,6	80	R	90	R
66,7	40	R	55	R	69,7	57.5	R	70	R	72,7	80	R	90	R
66,8	47.5	R	60	R	69,8	67.5	R	80	R	72,8	80	R	90	R
66,9	55	R	67.5	R	69,9	67.5	R	80	R	72,9	80	R	90	R
67,0	7.5	R	37.5	R	70,0	22.5	R	42.5	R	73,0	40	R	55	R
67,1	12.5	R	40	R	70,1	27.5	R	45	R	73,1	47.5	R	60	R
67,2	17.5	R	42.5	R	70,2	32.5	R	50	R	73,2	52.5	R	65	R
67,3	22.5	R	45	R	70,3	37.5	R	52.5	R	73,3	62.5	R	75	R
67,4	30	R	47.5	R	70,4	42.5	R	57.5	R	73,4	75	R	87.5	R
67,5	35	R	50	R	70,5	50	R	62.5	R	73,5	75	R	87.5	R
67,6	40	R	55	R	70,6	57.5	R	70	R	73,6	75	R	87.5	R
67,7	45	R	60	R	70,7	65	R	77.5	R	73,7	75	R	87.5	R
67,8	52.5	R	65	R	70,8	65	R	77.5	R	73,8	75	R	87.5	R
67,9	60	R	72.5	R	70,9	65	R	77.5	R	73,9	75	R	87.5	R
74,0	40	R	55	R	77,0	55	R	67.5	R	80,0	22.5	L	45	L
74,1	45	R	60	R	77,1	65	R	77.5	R	80,1	17.5	L	42.5	L
74,2	52.5	R	65	R	77,2	65	R	77.5	R	80,2	12.5	L	40	L
74,3	60	R	72.5	R	77,3	65	R	77.5	R	80,3	5	L	40	L
74,4	70	R	82.5	R	77,4	65	R	77.5	R	80,4	2.5	R	40	L
74,5	70	R	82.5	R	77,5	65	R	77.5	R	80,5	10	R	40	L
74,6	70	R	82.5	R	77,6	65	R	77.5	R	80,6	22.5	R	45	L
74,7	70	R	82.5	R	77,7	65	R	77.5	R	80,7	37.5	R	55	L
74,8	70	R	82.5	R	77,8	65	R	77.5	R	80,8	65	R	77.5	L
74,9	70	R	82.5	R	77,9	65	R	77.5	R	80,9	70	L	82.5	R
75,0	52.5	R	65	R	78,0	62.5	R	75	R	81,0	20	L	42.5	L
75,1	57.5	R	70	R	78,1	82.5	R	92.5	R	81,1	12.5	L	40	L
75,2	70	R	82.5	R	78,2	82.5	R	92.5	R	81,2	5	L	40	L
75,3	70	R	82.5	R	78,3	82.5	R	92.5	R	81,3	0	R	37.5	L
75,4	70	R	82.5	R	78,4	82.5	R	92.5	R	81,4	10	R	40	L
75,5	70	R	82.5	R	78,5	82.5	R	92.5	R	81,5	20	R	45	L
75,6	70	R	82.5	R	78,6	82.5	R	92.5	R	81,6	35	R	52.5	L
75,7	70	R	82.5	R	78,7	82.5	R	92.5	R	81,7	57.5	R	72.5	L
75,8	70	R	82.5	R	78,8	82.5	R	92.5	R	81,8	75	L	87.5	R
75,9	70	R	82.5	R	78,9	82.5	R	92.5	R	81,9	45	L	60	R
76,0	50	R	62.5	R	79,0	75	R	87.5	R	82,0	15	L	40	L
76,1	57.5	R	70	R	79,1	75	R	87.5	R	82,1	7.5	L	40	L
76,2	67.5	R	80	R	79,2	75	R	87.5	R	82,2	0	L	40	L
76,3	67.5	R	80	R	79,3	75	R	87.5	R	82,3	7.5	R	40	L
76,4	67.5	R	80	R	79,4	75	R	87.5	R	82,4	17.5	R	42.5	L
76,5	67.5	R	80	R	79,5	75	R	87.5	R	82,5	30	R	50	L
76,6	67.5	R	80	R	79,6	75	R	87.5	R	82,6	52.5	R	67.5	L
76,7	67.5	R	80	R	79,7	75	R	87.5	R	82,7	82.5	L	95	R
76,8	67.5	R	80	R	79,8	75	R	87.5	R	82,8	50	L	65	R
76,9	67.5	R	80	R	79,9	75	R	87.5	R	82,9	30	L	50	R

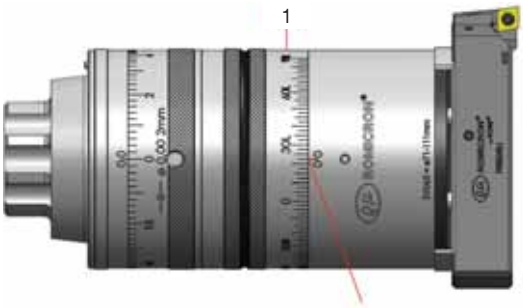
(continued)

(Balancing Table • Universal Applications SVU-BB2 Boring Head continued)

KRDEA012AM • KRDE065012M 83–100mm

diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2		diameter mm	ring 1		ring 2	
83,0	10	L	40	L	86,0	10	R	40	L	89,0	42.5	R	57.5	L
83,1	2.5	L	37.5	L	86,1	20	R	45	L	89,1	72.5	R	85	L
83,2	5	R	40	L	86,2	35	R	52.5	L	89,2	62.5	L	75	R
83,3	15	R	42.5	L	86,3	57.5	R	72.5	L	89,3	37.5	L	55	R
83,4	27.5	R	47.5	L	86,4	75	L	87.5	R	89,4	22.5	L	45	R
83,5	47.5	R	62.5	L	86,5	45	L	60	R	89,5	10	L	40	R
83,6	77.5	R	90	L	86,6	27.5	L	47.5	R	89,6	0	L	37.5	R
83,7	55	L	70	R	86,7	15	L	42.5	R	89,7	5	R	40	R
83,8	32.5	L	50	R	86,8	5	L	40	R	89,8	12.5	R	40	R
83,9	17.5	L	42.5	R	86,9	2.5	R	40	R	89,9	17.5	R	42.5	R
84,0	5	L	37.5	L	87,0	17.5	R	42.5	L	90,0	65	R	77.5	L
84,1	2.5	R	37.5	L	87,1	30	R	50	L	90,1	70	L	82.5	R
84,2	12.5	R	40	L	87,2	52.5	R	67.5	L	90,2	40	L	57.5	R
84,3	25	R	47.5	L	87,3	82.5	L	95	R	90,3	22.5	L	45	R
84,4	42.5	R	57.5	L	87,4	50	L	65	R	90,4	12.5	L	40	R
84,5	72.5	R	85	L	87,5	30	L	50	R	90,5	2.5	L	37.5	R
84,6	62.5	L	75	R	87,6	17.5	L	42.5	R	90,6	5	R	37.5	R
84,7	37.5	L	55	R	87,7	7.5	L	40	R	90,7	10	R	40	R
84,8	22.5	L	45	R	87,8	2.5	R	37.5	R	90,8	17.5	R	42.5	R
84,9	10	L	40	R	87,9	7.5	R	40	R	90,9	22.5	R	45	R
85,0	2.5	R	40	L	88,0	27.5	R	47.5	L	91,0	75	L	87.5	R
85,1	10	R	40	L	88,1	47.5	R	62.5	L	91,1	47.5	L	62.5	R
85,2	22.5	R	45	L	88,2	77.5	R	90	L	91,2	27.5	L	47.5	R
85,3	37.5	R	55	L	88,3	55	L	70	R	91,3	15	L	42.5	R
85,4	65	R	77.5	L	88,4	35	L	52.5	R	91,4	5	L	40	R
85,5	70	L	82.5	R	88,5	17.5	L	42.5	R	91,5	2.5	R	40	R
85,6	40	L	57.5	R	88,6	7.5	L	40	R	91,6	10	R	40	R
85,7	22.5	L	45	R	88,7	0	R	40	R	91,7	15	R	42.5	R
85,8	12.5	L	40	R	88,8	7.5	R	40	R	91,8	22.5	R	45	R
85,9	2.5	L	37.5	R	88,9	12.5	R	42.5	R	91,9	27.5	R	47.5	R
92,0	50	L	65	R	95,0	12.5	L	40	R	98,0	7.5	R	40	R
92,1	30	L	50	R	95,1	2.5	L	37.5	R	98,1	12.5	R	42.5	R
92,2	17.5	L	42.5	R	95,2	5	R	37.5	R	98,2	20	R	42.5	R
92,3	7.5	L	40	R	95,3	10	R	40	R	98,3	25	R	47.5	R
92,4	2.5	R	37.5	R	95,4	17.5	R	42.5	R	98,4	30	R	50	R
92,5	7.5	R	40	R	95,5	22.5	R	45	R	98,5	37.5	R	55	R
92,6	15	R	40	R	95,6	27.5	R	47.5	R	98,6	42.5	R	60	R
92,7	20	R	45	R	95,7	35	R	52.5	R	98,7	50	R	65	R
92,8	25	R	47.5	R	95,8	40	R	57.5	R	98,8	57.5	R	72.5	R
92,9	32.5	R	50	R	95,9	47.5	R	62.5	R	98,9	70	R	82.5	R
93,0	35	L	52.5	R	96,0	5	L	40	R	99,0	12.5	R	40	R
93,1	17.5	L	42.5	R	96,1	2.5	R	40	R	99,1	17.5	R	42.5	R
93,2	7.5	L	40	R	96,2	10	R	40	R	99,2	25	R	45	R
93,3	0	R	37.5	R	96,3	15	R	42.5	R	99,3	30	R	50	R
93,4	7.5	R	40	R	96,4	22.5	R	45	R	99,4	35	R	52.5	R
93,5	12.5	R	42.5	R	96,5	27.5	R	47.5	R	99,5	42.5	R	57.5	R
93,6	20	R	42.5	R	96,6	32.5	R	52.5	R	99,6	47.5	R	62.5	R
93,7	25	R	47.5	R	96,7	40	R	55	R	99,7	55	R	70	R
93,8	30	R	50	R	96,8	45	R	60	R	99,8	67.5	R	80	R
93,9	37.5	R	55	R	96,9	52.5	R	67.5	R	99,9	67.5	R	80	R
94,0	22.5	L	45	R	97,0	2.5	R	37.5	R	100,0	17.5	R	42.5	R
94,1	10	L	40	R	97,1	7.5	R	40	R	100,1	22.5	R	45	R
94,2	2.5	L	40	R	97,2	15	R	40	R	100,2	27.5	R	47.5	R
94,3	5	R	40	R	97,3	20	R	45	R	100,3	35	R	52.5	R
94,4	12.5	R	40	R	97,4	25	R	47.5	R	100,4	40	R	57.5	R
94,5	17.5	R	42.5	R	97,5	32.5	R	50	R	100,5	47.5	R	62.5	R
94,6	25	R	45	R	97,6	37.5	R	55	R	100,6	55	R	70	R
94,7	30	R	50	R	97,7	45	R	60	R	100,7	65	R	77.5	R
94,8	35	R	52.5	R	97,8	50	R	65	R	100,8	65	R	77.5	R
94,9	42.5	R	57.5	R	97,9	60	R	72.5	R	100,9	65	R	77.5	R

Balancing Table • SVU-65 Boring Head



reference mark for dial 01

2,5 units

1. The balancing dial 01 is identified on the figure below. The dial resolution is 2,5 units of table values.

2. Read the position value of the dial 01 on the table. For example, to machine a 76,2 mm diameter, the position is 01 = 22,5 L.

3. By moving dial 01, adjust its position, observing its proper reference mark, according to the read value.

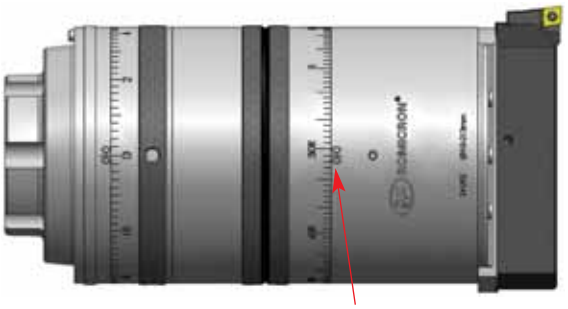
KRDE070019M									KRDE083019M					
KRCSCFPR061E 71–76mm			KRCSCFPR062E 75,5–81,5mm			KRCSCFPR063E 80–85mm			KRCSCFPR061E 84–89mm			KRCSCFPR062E 88,5–93,5mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
70,99	40	L	75,49	35	L	80,01	30	L	84,00	47.5	L	88,49	40	L
71,12	37.5	L	75,59	32.5	L	80,16	27.5	L	84,12	45	L	88,65	37.5	L
71,27	35	L	75,77	30	L	80,34	25	L	84,25	42.5	L	88,80	35	L
71,42	32.5	L	75,95	27.5	L	80,52	22.5	L	84,38	40	L	88,95	32.5	L
71,60	30	L	76,10	25	L	80,70	20	L	84,51	37.5	L	89,08	30	L
71,78	27.5	L	76,28	22.5	L	80,87	17.5	L	84,66	35	L	89,26	27.5	L
71,96	25	L	76,48	20	L	81,08	15	L	84,81	32.5	L	89,41	25	L
72,14	22.5	L	76,66	17.5	L	81,25	12.5	L	84,96	30	L	89,56	22.5	L
72,31	20	L	76,84	15	L	81,46	10	L	85,12	27.5	L	89,74	20	L
72,49	17.5	L	77,04	12.5	L	81,64	7.5	L	85,27	25	L	89,89	17.5	L
72,69	15	L	77,22	10	L	81,84	5	L	85,42	22.5	L	90,07	15	L
72,87	12.5	L	77,42	7.5	L	82,02	2.5	L	85,60	20	L	90,22	12.5	L
73,08	10	L	77,62	5	L	82,22	0	–	85,78	17.5	L	90,40	10	L
73,25	7.5	L	77,80	2.5	L	82,42	2.5	R	85,93	15	L	90,58	7.5	L
73,46	5	L	78,00	0	–	82,60	5	R	86,11	12.5	L	90,75	5	L
73,66	2.5	L	78,21	2.5	R	82,80	7.5	R	86,28	10	L	90,93	2.5	L
73,86	0	–	78,38	5	R	82,98	10	R	86,46	7.5	L	91,11	0	–
74,04	2.5	R	78,59	7.5	R	83,19	12.5	R	86,64	5	L	91,29	2.5	R
74,24	5	R	78,77	10	R	83,36	15	R	86,82	2.5	L	91,47	5	R
74,45	7.5	R	78,97	12.5	R	83,57	17.5	R	87,00	0	–	91,64	7.5	R
74,63	10	R	79,15	15	R	83,74	20	R	87,17	2.5	R	91,80	10	R
74,83	12.5	R	79,35	17.5	R	83,92	22.5	R	87,33	5	R	91,97	12.5	R
75,01	15	R	79,53	20	R	84,10	25	R	87,50	7.5	R	92,15	15	R
75,21	17.5	R	79,71	22.5	R	84,28	27.5	R	87,68	10	R	92,33	17.5	R
75,39	20	R	79,88	25	R	84,46	30	R	87,86	12.5	R	92,48	20	R
75,57	22.5	R	80,06	27.5	R	84,61	32.5	R	88,04	15	R	92,66	22.5	R
75,74	25	R	80,24	30	R	84,79	35	R	88,21	17.5	R	92,81	25	R
75,92	27.5	R	80,42	32.5	R	84,94	37.5	R	88,37	20	R	92,96	27.5	R
76,00	30	R	80,49	35	R	84,99	40	R	88,54	22.5	R	93,12	30	R
–	–	–	–	–	–	–	–	–	88,70	25	R	93,27	32.5	R
–	–	–	–	–	–	–	–	–	88,85	27.5	R	93,42	35	R
–	–	–	–	–	–	–	–	–	89,00	30	R	93,50	37.5	R

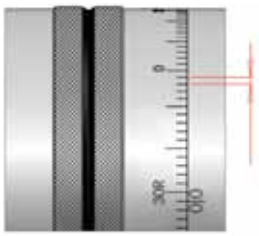
(continued)

(Balancing Table • SVU-65 Boring Head continued)

KRDE083019M			KRDE096019M								
KRCSCFPR063E 93–98mm			KRCSCFPR061E 97–102mm			KRCSCFPR062E 101,5–106,5mm			KRCSCFPR063E 106–111mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
92,99	35	L	97,00	55	L	101,50	45	L	105,99	37.5	L
93,14	32.5	L	97,05	52.5	L	101,60	42.5	L	106,17	35	L
93,29	30	L	97,16	50	L	101,73	40	L	106,32	32.5	L
93,45	27.5	L	97,28	47.5	L	101,85	37.5	L	106,45	30	L
93,60	25	L	97,38	45	L	101,98	35	L	106,58	27.5	L
93,78	22.5	L	97,51	42.5	L	102,13	32.5	L	106,73	25	L
93,93	20	L	97,61	40	L	102,26	30	L	106,88	22.5	L
94,11	17.5	L	97,74	37.5	L	102,41	27.5	L	107,04	20	L
94,26	15	L	97,87	35	L	102,54	25	L	107,19	17.5	L
94,44	12.5	L	98,02	32.5	L	102,69	22.5	L	107,34	15	L
94,62	10	L	98,15	30	L	102,84	20	L	107,49	12.5	L
94,79	7.5	L	98,30	27.5	L	103,00	17.5	L	107,65	10	L
94,95	5	L	98,45	25	L	103,15	15	L	107,82	7.5	L
95,12	2.5	L	98,58	22.5	L	103,30	12.5	L	107,98	5	L
95,30	0	–	98,73	20	L	103,48	10	L	108,13	2.5	L
95,48	2.5	R	98,88	17.5	L	103,63	7.5	L	108,31	0	–
95,66	5	R	99,06	15	L	103,78	5	L	108,46	2.5	R
95,83	7.5	R	99,21	12.5	L	103,96	2.5	L	108,61	5	R
96,01	10	R	99,36	10	L	104,11	0	–	108,79	7.5	R
96,19	12.5	R	99,52	7.5	L	104,27	2.5	R	108,94	10	R
96,34	15	R	99,70	5	L	104,44	5	R	109,09	12.5	R
96,52	17.5	R	99,85	2.5	L	104,60	7.5	R	109,25	15	R
96,67	20	R	100,03	0	–	104,75	10	R	109,40	17.5	R
96,85	22.5	R	100,18	2.5	R	104,90	12.5	R	109,55	20	R
97,00	25	R	100,33	5	R	105,08	15	R	109,70	22.5	R
97,16	27.5	R	100,51	7.5	R	105,23	17.5	R	109,86	25	R
97,31	30	R	100,66	10	R	105,38	20	R	110,01	27.5	R
97,46	32.5	R	100,81	12.5	R	105,54	22.5	R	110,13	30	R
97,61	35	R	100,97	15	R	105,69	25	R	110,29	32.5	R
97,76	37.5	R	101,14	17.5	R	105,82	27.5	R	110,41	35	R
97,89	40	R	101,30	20	R	105,97	30	R	110,54	37.5	R
97,99	42.5	R	101,45	22.5	R	106,10	32.5	R	110,67	40	R
–	–	–	101,57	25	R	106,25	35	R	110,79	42.5	R
–	–	–	101,73	27.5	R	106,38	37.5	R	110,90	45	R
–	–	–	104,39	30	R	106,43	40	R	111,00	47.5	R
–	–	–	102,01	32.5	R	106,53	42.5	R	–	–	–

Balancing Table • SVU-92 Boring Head





1. The balancing dial 01 is identified on the figure below. The dial resolution is 2,0 units of table values.

2. Read the position value of the dial 01 on the table. For example, to machine a 76,2 mm diameter, the position is 01 = 22,5 L.

3. By moving dial 01, adjust its position, observing its proper reference mark, according to the read value.

KRDE101023M									KRDE120023M					
KRCSCFPR061F 101–108mm			KRCSCFPR062F 107,5–114,5mm			KRCSCFPR063F 114–121mm			KRCSCFPR061F 120–127mm			KRCSCFPR062F 126,5–133,5mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
100,99	36	L	107,49	34	L	114,00	30	L	119,99	40	L	126,49	36	L
101,19	34	L	107,62	32	L	114,22	28	L	120,19	38	L	126,72	34	L
101,40	32	L	107,80	30	L	114,40	26	L	120,35	36	L	126,90	32	L
101,57	30	L	108,00	28	L	114,60	24	L	120,52	34	L	127,08	30	L
101,78	28	L	108,20	26	L	114,81	22	L	120,70	32	L	127,25	28	L
101,98	26	L	108,41	24	L	115,01	20	L	120,88	30	L	127,43	26	L
102,18	24	L	108,61	22	L	115,24	18	L	121,06	28	L	127,61	24	L
102,39	22	L	108,81	20	L	115,44	16	L	121,23	26	L	127,81	22	L
102,59	20	L	109,02	18	L	115,67	14	L	121,41	24	L	127,99	20	L
102,79	18	L	109,25	16	L	115,87	12	L	121,62	22	L	128,19	18	L
103,02	16	L	109,45	14	L	116,10	10	L	121,79	20	L	128,40	16	L
103,23	14	L	109,68	12	L	116,31	8	L	122,00	18	L	128,57	14	L
103,45	12	L	109,88	10	L	116,54	6	L	122,20	16	L	128,78	12	L
103,66	10	L	110,11	8	L	116,76	4	L	122,38	14	L	128,98	10	L
103,89	8	L	110,34	6	L	116,97	2	L	122,58	12	L	129,18	8	L
104,11	6	L	110,57	4	L	117,20	0	–	122,78	10	L	129,39	6	L
104,32	4	L	110,77	2	L	117,42	2	R	122,99	8	L	129,59	4	L
104,55	2	L	111,00	0	–	117,65	4	R	123,19	6	L	129,79	2	L
104,78	0	–	111,23	2	R	117,86	6	R	123,39	4	L	130,00	0	–
105,00	2	R	111,46	4	R	118,08	8	R	123,60	2	L	130,20	2	R
105,23	4	R	111,66	6	R	118,31	10	R	123,80	0	–	130,40	4	R
105,44	6	R	111,89	8	R	118,52	12	R	124,00	2	R	130,61	6	R
105,66	8	R	112,12	10	R	118,75	14	R	124,21	4	R	130,81	8	R
105,89	10	R	107,19	12	R	118,95	16	R	124,41	6	R	131,01	10	R
106,10	12	R	112,55	14	R	119,18	18	R	124,61	8	R	131,22	12	R
106,32	14	R	112,75	16	R	119,38	20	R	124,82	10	R	131,42	14	R
106,53	16	R	112,98	18	R	119,58	22	R	125,02	12	R	131,62	16	R
106,76	18	R	113,18	20	R	119,79	24	R	125,22	14	R	131,80	18	R
106,96	20	R	113,39	22	R	119,99	26	R	125,43	16	R	132,00	20	R
107,16	22	R	113,59	24	R	120,19	28	R	125,63	18	R	132,18	22	R
107,37	24	R	113,79	26	R	120,37	30	R	125,81	20	R	132,38	24	R
107,57	26	R	114,00	28	R	120,57	32	R	126,01	22	R	132,56	26	R
107,77	28	R	114,20	30	R	120,75	34	R	126,19	24	R	132,74	28	R
107,98	30	R	114,38	32	R	120,93	36	R	126,37	26	R	132,92	30	R
108,00	32	R	114,50	34	R	121,01	38	R	126,57	28	R	133,10	32	R
–	–	–	–	–	–	–	–	–	126,75	30	R	133,27	34	R
–	–	–	–	–	–	–	–	–	126,92	32	R	133,45	36	R
–	–	–	–	–	–	–	–	–	127,00	34	R	133,50	38	R

(continued)

(Balancing Table • SVU-92 Boring Head continued)

KRDE120023M			KRDE139026M								
KRCSCFPR063F 133–140mm			KRCSCFPR061F 139–146mm			KRCSCFPR062F 145,5–152,5mm			KRCSCFPR063F 152–159mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
132,99	34	L	138,99	50	L	145,49	44	L	151,99	40	L
133,10	32	L	139,09	48	L	145,67	42	L	152,12	38	L
133,27	30	L	139,22	46	L	145,80	40	L	152,27	36	L
133,45	28	L	139,34	44	L	145,95	38	L	152,40	34	L
133,63	26	L	139,47	42	L	146,08	36	L	152,55	32	L
133,81	24	L	139,60	40	L	146,23	34	L	152,70	30	L
133,99	22	L	139,73	38	L	146,35	32	L	152,86	28	L
134,19	20	L	139,88	36	L	146,51	30	L	153,01	26	L
134,37	18	L	140,00	34	L	146,66	28	L	153,16	24	L
134,57	16	L	140,16	32	L	146,81	26	L	153,31	22	L
134,77	14	L	140,31	30	L	146,99	24	L	153,49	20	L
134,98	12	L	140,46	28	L	147,14	22	L	153,64	18	L
135,18	10	L	140,61	26	L	147,29	20	L	153,82	16	L
135,36	8	L	140,77	24	L	147,47	18	L	153,97	14	L
135,56	6	L	140,92	22	L	147,62	16	L	154,15	12	L
135,76	4	L	141,10	20	L	147,80	14	L	154,33	10	L
135,97	2	L	141,25	18	L	147,96	12	L	154,48	8	L
136,17	0	–	141,43	16	L	148,13	10	L	154,66	6	L
136,37	2	R	141,58	14	L	148,31	8	L	154,84	4	L
136,58	4	R	141,76	12	L	148,49	6	L	155,02	2	L
162,18	6	R	141,94	10	L	148,64	4	L	155,19	0	–
136,98	8	R	142,11	8	L	148,82	2	L	155,35	2	R
137,19	10	R	142,27	6	L	149,00	0	–	155,52	4	R
137,39	12	R	142,44	4	L	149,17	2	R	155,70	6	R
137,59	14	R	142,62	2	L	149,35	4	R	155,88	8	R
137,80	16	R	142,80	0	–	149,53	6	R	156,03	10	R
137,97	18	R	142,98	2	R	149,68	8	R	156,21	12	R
138,18	20	R	143,15	4	R	149,86	10	R	156,39	14	R
138,38	22	R	143,31	6	R	150,04	12	R	156,54	16	R
138,56	24	R	143,48	8	R	150,19	14	R	156,72	18	R
138,73	26	R	143,66	10	R	150,37	16	R	156,87	20	R
138,91	28	R	143,84	12	R	150,55	18	R	157,05	22	R
139,09	30	R	143,99	14	R	150,70	20	R	157,20	24	R
139,27	32	R	144,17	16	R	150,85	22	R	157,35	26	R
139,45	34	R	144,32	18	R	151,03	24	R	157,51	28	R
139,60	36	R	144,50	20	R	151,18	26	R	157,66	30	R
139,78	38	R	144,65	22	R	151,33	28	R	157,81	32	R
139,93	40	R	144,83	24	R	151,49	30	R	157,96	34	R
140,00	42	R	144,98	26	R	151,64	32	R	158,09	36	R
–	–	–	145,14	28	R	151,79	34	R	158,24	38	R
–	–	–	145,29	30	R	151,92	36	R	158,37	40	R
–	–	–	145,44	32	R	152,07	38	R	158,50	42	R
–	–	–	145,57	34	R	152,20	40	R	158,62	44	R
–	–	–	145,72	36	R	152,32	42	R	158,75	46	R
–	–	–	145,87	38	R	152,45	44	R	158,88	48	R
–	–	–	145,97	40	R	152,50	46	R	158,98	50	R
–	–	–	146,00	42	R	–	–	–	159,00	52	R

(continued)

(Balancing Table • SVU-92 Boring Head continued)

KRDE156026M

KRCSCFPR061F 156–163mm			**KRCSCFPR062F** 162,5–169,5mm			**KRCSCFPR063F** 169–176mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
156,01	56	L	162,51	50	L	169,01	44	L
156,11	54	L	162,61	48	L	169,11	42	L
156,21	52	L	162,71	46	L	169,24	40	L
156,31	50	L	162,81	44	L	169,37	38	L
156,41	48	L	162,94	42	L	169,49	36	L
156,51	46	L	163,07	40	L	169,62	34	L
156,62	44	L	163,20	38	L	169,75	32	L
156,74	42	L	163,32	36	L	169,90	30	L
156,87	40	L	163,45	34	L	170,03	28	L
157,00	38	L	163,58	32	L	170,18	26	L
157,12	36	L	163,70	30	L	170,33	24	L
157,25	34	L	163,86	28	L	170,46	22	L
157,38	32	L	164,01	26	L	170,61	20	L
157,53	30	L	164,13	24	L	170,76	18	L
157,66	28	L	164,29	22	L	170,92	16	L
157,81	26	L	164,44	20	L	171,07	14	L
157,94	24	L	164,59	18	L	171,22	12	L
158,09	22	L	164,74	16	L	171,37	10	L
158,24	20	L	164,90	14	L	171,55	8	L
158,39	18	L	165,05	12	L	171,70	6	L
158,55	16	L	165,20	10	L	171,86	4	L
158,70	14	L	165,35	8	L	172,01	2	L
158,85	12	L	165,53	6	L	172,19	0	–
159,00	10	L	165,68	4	L	172,34	2	R
159,18	8	L	165,84	2	L	172,49	4	R
159,33	6	L	165,99	0	–	172,64	6	R
159,49	4	L	166,17	2	R	172,82	8	R
159,64	2	L	166,32	4	R	172,97	10	R
159,82	0	–	166,47	6	R	173,13	12	R
159,97	2	R	166,62	8	R	173,28	14	R
160,12	4	R	166,80	10	R	173,43	16	R
160,27	6	R	166,95	12	R	173,58	18	R
160,45	8	R	167,11	14	R	173,74	20	R
160,60	10	R	167,26	16	R	173,89	22	R
160,76	12	R	167,41	18	R	174,04	24	R
160,91	14	R	167,56	20	R	174,17	26	R
161,06	16	R	167,72	22	R	174,32	28	R
161,21	18	R	167,87	24	R	174,45	30	R
161,37	20	R	168,00	26	R	174,60	32	R
161,52	22	R	168,15	28	R	174,73	34	R
161,67	24	R	168,28	30	R	174,85	36	R
161,82	26	R	168,43	32	R	174,98	38	R
161,95	28	R	168,55	34	R	175,11	40	R
162,10	30	R	168,68	36	R	175,23	42	R
162,23	32	R	168,81	38	R	175,34	44	R
162,36	34	R	168,94	40	R	175,46	46	R
162,51	36	R	169,06	42	R	175,56	48	R
162,64	38	R	169,16	44	R	175,67	50	R
162,74	40	R	169,29	46	R	175,77	52	R
162,86	42	R	169,39	48	R	175,87	54	R
162,99	44	R	169,49	50	R	175,95	56	R
162,99	46	R	169,49	52	R	176,00	58	R

(continued)

(Balancing Table • SVU-92 Boring Head continued)

KRDE175026M

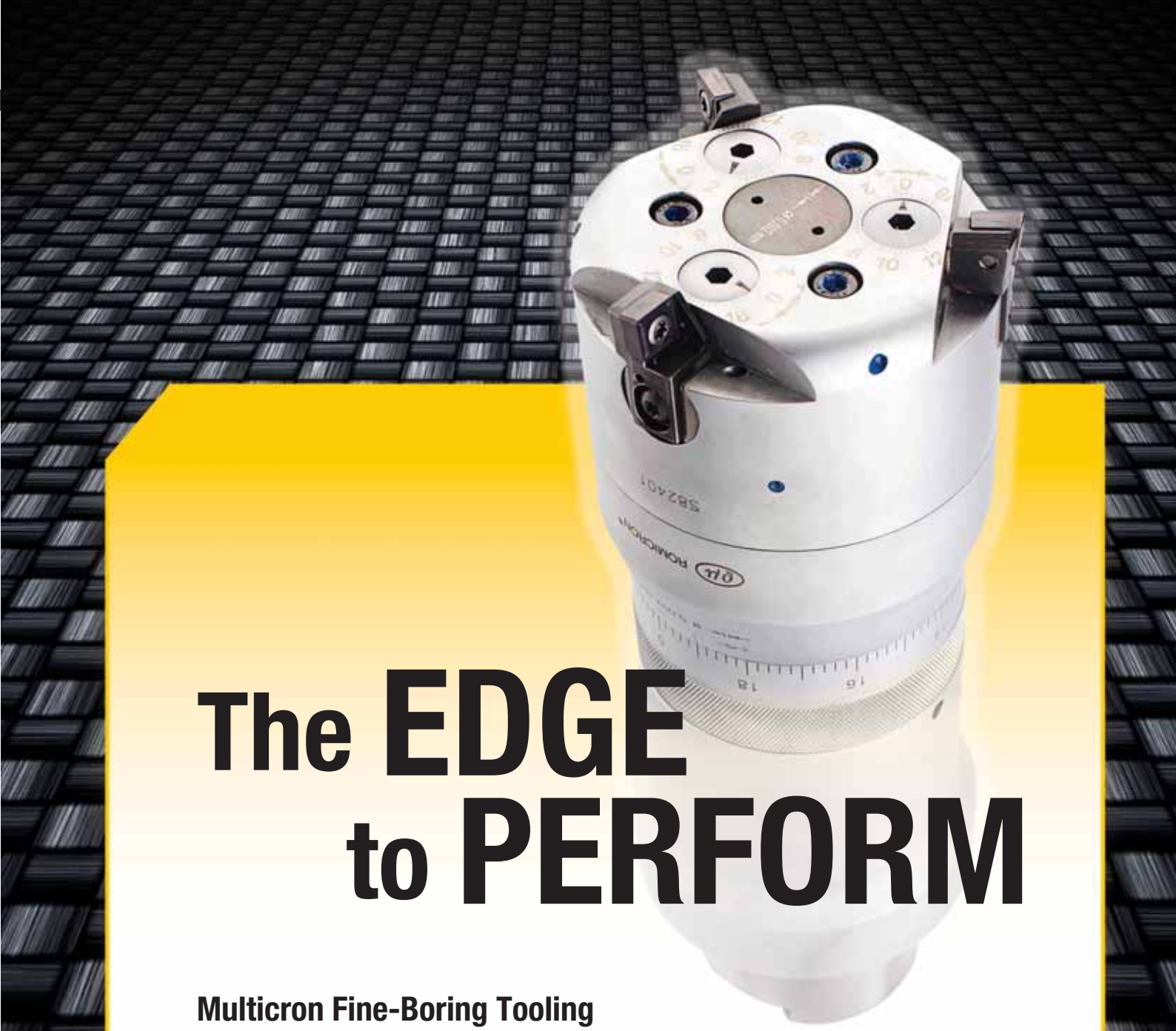
KRCSCFPR061F 175–182mm			**KRCSCFPR062F** 181,5–188,5mm			**KRCSCFPR063F** 188–195mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
175,01	64	L	181,51	56	L	188,0108	48	L
175,06	62	L	181,56	54	L	188,1124	46	L
175,13	60	L	181,64	52	L	188,214	44	L
175,21	58	L	181,74	50	L	188,3156	42	L
175,29	56	L	181,84	48	L	188,4426	40	L
175,36	54	L	181,94	46	L	188,5442	38	L
175,46	52	L	182,04	44	L	188,6712	36	L
175,56	50	L	182,14	42	L	188,7982	34	L
175,64	48	L	182,27	40	L	188,8998	32	L
175,74	46	L	182,37	38	L	189,0268	30	L
175,87	44	L	182,50	36	L	189,1792	28	L
175,97	42	L	182,63	34	L	189,3062	26	L
176,07	40	L	182,75	32	L	189,4332	24	L
176,20	38	L	182,88	30	L	189,5602	22	L
176,30	36	L	183,01	28	L	189,7126	20	L
176,43	34	L	183,13	26	L	189,8396	18	L
176,56	32	L	183,26	24	L	189,992	16	L
176,68	30	L	183,41	22	L	190,1444	14	L
176,81	28	L	183,54	20	L	190,2714	12	L
176,96	26	L	183,69	18	L	190,4238	10	L
177,09	24	L	183,82	16	L	114,3762	8	L
177,22	22	L	183,97	14	L	190,7286	6	L
177,37	20	L	184,12	12	L	190,8556	4	L
177,50	18	L	184,25	10	L	191,008	2	L
177,65	16	L	184,40	8	L	191,1604	0	–
177,80	14	L	184,56	6	L	191,3128	2	R
177,93	12	L	184,71	4	L	191,4652	4	R
178,08	10	L	184,86	2	L	191,6176	6	R
178,23	8	L	184,99	0	–	191,7446	8	R
178,38	6	L	185,14	2	R	191,897	10	R
178,54	4	L	185,29	4	R	192,0494	12	R
178,66	2	L	185,45	6	R	192,2018	14	R
178,82	0	–	185,60	8	R	192,3288	16	R
178,97	2	R	185,75	10	R	192,4812	18	R
179,12	4	R	185,88	12	R	192,6082	20	R
179,27	6	R	186,03	14	R	192,7606	22	R
179,43	8	R	186,18	16	R	192,8876	24	R
179,55	10	R	186,31	18	R	193,04	26	R
179,71	12	R	186,46	20	R	193,167	28	R
179,86	14	R	186,59	22	R	193,294	30	R
180,01	16	R	186,74	24	R	193,421	32	R
180,14	18	R	186,87	26	R	193,548	34	R
180,29	20	R	186,99	28	R	193,675	36	R
180,42	22	R	187,12	30	R	193,7766	38	R
180,57	24	R	187,25	32	R	193,9036	40	R
180,70	26	R	187,38	34	R	194,0052	42	R
180,82	28	R	187,50	36	R	194,1068	44	R
180,95	30	R	187,63	38	R	194,2338	46	R
181,08	32	R	187,73	40	R	194,3354	48	R
181,20	34	R	187,86	42	R	194,4116	50	R
181,33	36	R	187,96	44	R	194,5132	52	R
181,46	38	R	188,06	46	R	194,6148	54	R
181,56	40	R	188,16	48	R	194,691	56	R
181,69	42	R	188,26	50	R	194,7672	58	R
181,79	44	R	188,37	52	R	194,8434	60	R
181,89	46	R	188,44	54	R	194,9196	62	R
181,99	48	R	188,49	56	R	194,9958	64	R
181,99	50	R	–	–	–	194,9958	66	R

(continued)

(Balancing Table • SVU-92 Boring Head continued)

KRDE193026M

KRCSCFPR061F 193–200mm			**KRCSCFPR062F** 199,5–206,5mm			**KRCSCFPR063F** 206–213mm		
diameter mm	balancing ring setting		diameter mm	balancing ring setting		diameter mm	balancing ring setting	
192,99	64	L	199,49	54	L	205,994	46	L
193,07	62	L	199,62	52	L	206,1464	44	L
193,14	60	L	199,72	50	L	206,248	42	L
193,22	58	L	199,80	48	L	206,375	40	L
193,29	56	L	199,90	46	L	206,4766	38	L
193,37	54	L	200,03	44	L	206,6036	36	L
193,47	52	L	200,13	42	L	206,7306	34	L
193,57	50	L	200,23	40	L	206,8576	32	L
193,65	48	L	200,36	38	L	206,9846	30	L
193,75	46	L	200,48	36	L	207,1116	28	L
193,88	44	L	200,61	34	L	207,2386	26	L
193,98	42	L	200,71	32	L	207,391	24	L
194,08	40	L	200,86	30	L	207,518	22	L
194,21	38	L	200,99	28	L	207,6704	20	L
194,34	36	L	201,12	26	L	207,7974	18	L
194,46	34	L	201,24	24	L	207,9498	16	L
194,59	32	L	201,40	22	L	208,1022	14	L
194,72	30	L	201,52	20	L	208,2292	12	L
194,84	28	L	201,68	18	L	208,3816	10	L
194,97	26	L	201,80	16	L	208,534	8	L
195,10	24	L	201,96	14	L	208,6864	6	L
195,25	22	L	202,11	12	L	208,8388	4	L
195,38	20	L	202,26	10	L	208,9912	2	L
195,53	18	L	202,41	8	L	209,1182	0	–
195,68	16	L	202,54	6	L	209,2706	2	R
195,81	14	L	202,69	4	L	209,423	4	R
195,96	12	L	202,84	2	L	209,5754	6	R
196,11	10	L	203,00	0	–	209,7278	8	R
196,27	8	L	203,15	2	R	209,8802	10	R
196,42	6	L	203,30	4	R	210,0326	12	R
196,57	4	L	203,45	6	R	210,1596	14	R
196,70	2	L	203,61	8	R	210,312	16	R
196,85	0	–	203,76	10	R	210,4644	18	R
197,00	2	R	203,89	12	R	210,5914	20	R
197,15	4	R	204,04	14	R	210,7438	22	R
197,31	6	R	204,19	16	R	210,8708	24	R
197,46	8	R	204,32	18	R	210,9978	26	R
197,61	10	R	204,47	20	R	211,1502	28	R
197,76	12	R	204,60	22	R	211,2772	30	R
197,89	14	R	204,75	24	R	211,4042	32	R
198,04	16	R	204,88	26	R	211,5312	34	R
198,20	18	R	205,03	28	R	211,6582	36	R
198,32	20	R	205,16	30	R	211,7598	38	R
198,48	22	R	205,28	32	R	84,8868	40	R
198,60	24	R	205,41	34	R	211,9884	42	R
198,76	26	R	205,54	36	R	212,1154	44	R
198,88	28	R	205,64	38	R	212,217	46	R
199,01	30	R	205,77	40	R	212,3186	48	R
199,14	32	R	205,87	42	R	212,4202	50	R
199,26	34	R	205,99	44	R	212,4964	52	R
199,39	36	R	206,10	46	R	212,598	54	R
199,52	38	R	206,20	48	R	212,6742	56	R
199,62	40	R	206,30	50	R	212,7758	58	R
199,75	42	R	206,38	52	R	212,852	60	R
199,85	44	R	206,48	54	R	212,9028	62	R
199,95	46	R	206,50	56	R	212,979	64	R
200,00	48	R	–	–	–	213,0044	66	R



The EDGE to PERFORM

Multicron Fine-Boring Tooling

Multiple edges allow respective increase of feed rate to increase productivity and metal removal rate (MRR).

- Engineered solutions are available starting at diameter 78mm with two independent adjustable Romicron™ edges.
- Combination of semi-finishing and finishing cutting operations in one tool are also possible.
- Romicron edges can be set up independently and adjusted to compensate for insert wear with one central dial to enable CLB as well.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

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KENNAMETAL®

ModBORE™

One system from highly flexible roughing and fine-boring heads to large bridge tooling with optimum amount of tooling components.

Primary Application

This premium boring line enables rough to fine-boring operations using one system with a large diameter range from 9,75–2.205mm. ModBORE can be used in most materials commonly found in the metalcutting environment by applying the latest technology in Kennametal Standard ISO Turning Inserts.

Features and Benefits

Complete System

- Twin blade heads for roughing to semi-finishing operations starting from diameter 23,5mm.
- Fine-boring heads for finishing for diameters 9,75–2.205mm.
- Bridge tooling for large diameters up to 2.205mm standard with both roughing and fine-finishing heads.
- Through-coolant capability in all series.

Resolution

- Fine adjustable roughing heads.
- 0,01mm diameter adjustment respective 2 µm with easy-to-read large vernier scale with fine-boring heads.

Product Variety

- KM™ shanks for adaptation to all spindles via respective adaptors.
- HSK shanks for direct adaptation.
- Inch shanks as most economic variant for adaptation via respective adaptors.

Customisation

- Engineered solutions available.
- Anti-chatter devices available.
- Cartridges can be designed into standard boring heads for added versatility.

ModBORE™ Fine-Boring System

Based on KM™, HSK, and inch SSF couplings, match all spindle specifications direct or indirect via adaptors.
The ModBORE Fine-Boring System utilises standard ISO/ANSI turning inserts for maximum performance and flexibility.

RBHT • Twin Cutters for Rough and Semi-Finish Boring

- Diameters 23,5–153mm.
- KM, HSK, and inch straight shank back end versions available.
- Special preloaded serration and ground support face ensures very stable connection, minimises cutting vibration, and maximises position accuracy while enabling easy diameter adjustment.
- Large selection of blades sets:
  - — Staggered — efficient machining of large depths of cut.
  - — 70° — for challenging applications requiring stable corner radii and full utilisation of inserts.
  - — 90° — most precise machining results.
- Generous clearance and through coolant enables free chip flow and improves tool life.
- All insert holders allow positive standard turning inserts for lowest cutting forces. Starting with diameter 65,5mm, additional insert holders for negative standard turning inserts enable even higher feed rates for maximum metal removal rates.

FBHO • Offset Boring Bar Heads for Fine Finish

- Diameters 9,75–88,1mm.
- KM, HSK, and inch straight shank back end versions available.
- Use of a precision-ground micrometric screw enables fine adjustment of 2 µm via vernier scale. The large, TiN-coated dial is easy to adjust and easy to read. The force- and form-fixed adjustment mechanism is almost free of any backlash and play.
- Standard steel and carbide boring bars can be adjusted in length by pushing them deep into the body for maximum stability.
- Through coolant directed to the cutting edge improves tool life, surface finish, and chip evacuation.

FBHM • Offset Boring Bar and Cartridge Heads for Fine Finish

- Diameters 9,75–320mm.
- KM-TS, HSK, CV, DV, and BT steep taper back end versions available.
- Use of a precision-ground micrometric screw enables fine adjustment of 2 µm via vernier scale. The large, TiN-coated dial is easy to adjust and easy to read. The force- and form-fixed adjustment mechanism is almost free of any backlash and play.
- Standard steel and carbide boring bars adjust in length by pushing them deep into the body for maximum stability.
- Aluminium diameter extender with insert cartridges and counterweightare used for diameters starting at 86mm for maximum flexibility.
- Through coolant directed to the cutting edge improves tool life, surface finish, and chip evacuation.

FBHS • Cartridge Boring Heads for Fine Finish

- Diameters 23,5–153mm.
- KM™, HSK, and inch straight shank back end versions available.
- Use of a precision-ground micrometric screw enables fine adjustment of 2 µm via vernier scale. The large, TiN-coated dial is easy to adjust and easy to read. The force- and form-fixed adjustment mechanism is almost free of any backlash and play.
- Large selection of insert holders:
  - 95° — for use of Wiper turning inserts.
  - 90° regular diameter — for most efficient machining of large depths of cut.
  - 90° oversized diameter — for enhanced use of boring head diameter capabilities.
- Generous clearance and through coolant directed to the cutting edge improves tool life, surface finish, and chip evacuation.

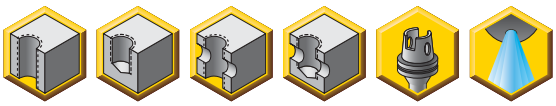
BT • Bridge Tools for Rough and Finish Boring

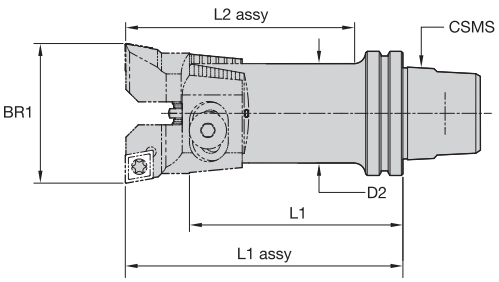
- Diameters 150–2.205mm.
- Highly sophisticated ground serration between consoles/slides and heads as well as T-style bolt clamping provides highest cutting force transmission capabilities, sensitive adjustment, and avoids diameter changes when heads are clamped.
- Only 10 bridge consoles are needed for diameters up to 655mm.
- KM, HSK, and various steep taper adaptors with console corresponding ground serration are available as standard. Through coolant to the cutting edge improves tool life and surface finish.
- Diameters 650–2.205mm are covered with only three aluminium-based consoles and two sets of steel slides for mounting rough and finish boring heads for direct spindle of shell mill adaptor clamping.
- 90° roughing head sets ensure precise height alignment and, by use of negative standard turning inserts, highest metal removal rates.
- New counterweight for better dynamic balancing supplements the fine-boring head with precision-ground micrometric screw enabling fine adjustment of 2 µm via vernier scale.

FBHM Fine-Boring Kits

range mm	order number	catalogue number	content	
9,75-164,0	**4057101**	**KM50TSFBHMKIT164M**	KM50TSFBHM1677 AFB09075SCFCR06 AFB13085SCFCR06 AFB17100SCFCR06 AFB21110SCFCR09 AFB24115SCFCR09	AFM29115 AFM47115 EBM8015086 AFM29SCFPR06 AFM47SCFPR09
9,75-164,0	**4057098**	**HSK63FBHMKIT164M**	HSK63FBHM1696 AFB09075SCFCR06 AFB13085SCFCR06 AFB17100SCFCR06 AFB21110SCFCR09 AFB24115SCFCR09	AFM29115 AFM47115 EBM8015086 AFM29SCFPR06 AFM47SCFPR09
9,75-164,0	**4057099**	**DV40FBHMKIT164M**	DV40FBHM1691 AFB09075SCFCR06 AFB13085SCFCR06 AFB17100SCFCR06 AFB21110SCFCR09 AFB24115SCFCR09	AFM29115 AFM47115 EBM8015086 AFM29SCFPR06 AFM47SCFPR09
9,75-164,0	**4057100**	**BT40FBHMKIT164M**	BT40FBHM1691 AFB09075SCFCR06 AFB13085SCFCR06 AFB17100SCFCR06 AFB21110SCFCR09 AFB24115SCFCR09	AFM29115 AFM47115 EBM8015086 AFM29SCFPR06 AFM47SCFPR09

• Order blade sets separately; see page K186.

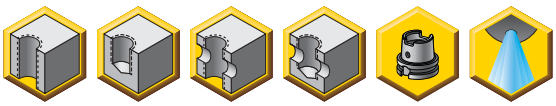


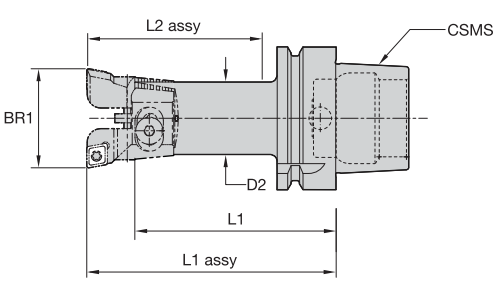


RBHT • KM™ Rough-Boring Twin Cutters

order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	L1 assy mm	L2 assy mm	blade screw	washer	pin
3586519	**KM32RBHT24**	23,500-30,500	KM32	20,0	75,4	90,0	76,0	**840.142.200**	**841.142.200**	**841.342.200**
3586520	**KM32RBHT30**	29,500-40,000	KM32	25,0	83,8	100,0	86,0	**840.142.250**	**841.142.250**	**841.342.200**
3586521	**KM40RBHT40**	39,500-50,500	KM40	32,0	68,8	90,0	74,0	**840.142.320**	**841.142.320**	**841.342.200**
3586522	**KM50RBHT50**	49,500-66,500	KM50	42,0	62,2	90,0	70,0	**840.142.420**	**841.142.200**	**841.342.420**
3586543	**KM50RBHT66**	65,500-87,500	KM50	55,0	63,0	100,0	100,0	**840.142.550**	**841.142.550**	**841.342.420**
3586544	**KM50RBHT87**	86,500-115,500	KM50	72,0	70,5	120,0	120,0	**840.142.720**	**841.142.720**	**841.342.420**
3586545	**KM63UTRBHT87**	86,500-115,500	KM63UT	72,0	70,5	120,0	120,0	**840.142.720**	**841.142.720**	**841.342.420**
3586546	**KM63UTRBHT115**	114,500-153,000	KM63UT	94,0	83,2	150,0	150,0	**840.142.940**	**841.142.940**	**841.342.420**

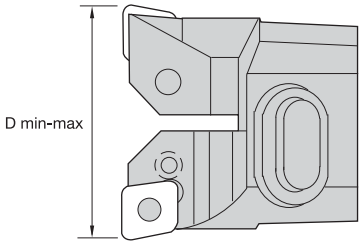
• Order blade sets separately; see page K186.

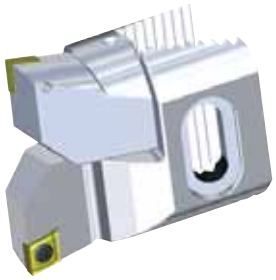




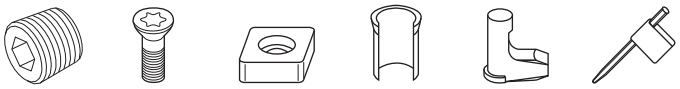
RBHT • HSK Rough-Boring Twin Cutters

order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	L1 assy mm	L2 assy mm	blade screw	washer	pin
3586547	**HSK63RBHT24**	23,500-30,500	HSK63A	20,0	75,4	90,0	64,1	**840.142.200**	**841.142.200**	**841.342.200**
3586548	**HSK63RBHT30**	29,500-40,000	HSK63A	25,0	88,8	105,0	79,1	**840.142.250**	**841.142.250**	**841.342.200**
3586549	**HSK63RBHT40**	39,500-50,500	HSK63A	32,0	92,2	110,0	84,1	**840.142.320**	**841.142.320**	**841.342.200**
3586550	**HSK63RBHT50**	49,500-66,500	HSK63A	42,0	92,2	120,0	94,1	**840.142.420**	**841.142.420**	**841.342.200**
3586551	**HSK63RBHT66**	65,500-87,500	HSK63A	55,0	95,5	125,0	125,0	**840.142.550**	**841.142.720**	**841.342.420**
3586563	**HSK63RBHT87**	86,500-115,500	HSK63A	72,0	95,5	145,0	145,0	**840.142.720**	**841.142.720**	**841.342.420**

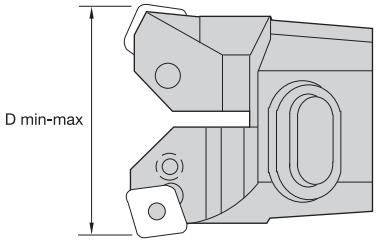




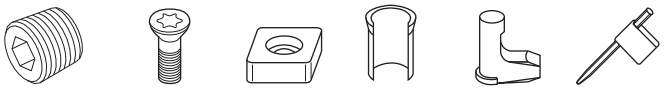
RBHT • 90° Blade Sets



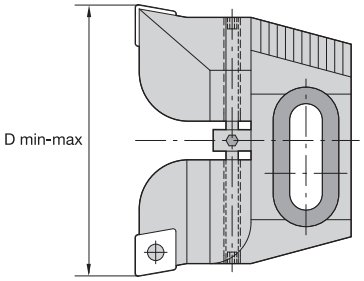
order number	catalogue number	D min mm	D max mm	gage insert	adjusting screw	insert screw	shim	shim pin	toggle lever	Torx wrench	Torx size
3556346	**MB24RBHT06F**	23,50	30,50	CC..0602..	**848.200.407**	**843.006.000**	**–**	**–**	**–**	**FT7**	T7
3556347	**MB30RBHT06F**	29,50	40,10	CC..0602..	**848.250.409**	**843.006.000**	**–**	**–**	**–**	**FT7**	T7
3556348	**MB40RBHT09F**	39,50	50,50	CC..09T3..	**848.320.413**	**843.009.000**	**–**	**–**	**–**	**FT15**	T15
3556349	**MB50RBHT09F**	49,50	66,50	CC..09T3..	**848.420.614**	**843.009.000**	**–**	**–**	**–**	**FT15**	T15
3556350	**MB66RBHT12F**	65,50	87,50	CC..1204..	**848.550.620**	**843.012.000**	**–**	**–**	**–**	**FT20**	T20
3556352	**MB66RBHT12LF**	65,50	87,50	CN..1204..	**847.012.000**	**–**	**845.012.000**	**844.012.000**	**846.012.000**	**–**	–
3556393	**MB87RBHT12F**	86,50	115,50	CC..1204..	**848.720.000**	**843.012.000**	**–**	**–**	**–**	**FT20**	T20
3556394	**MB87RBHT16LF**	86,50	115,50	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**	**–**	–
3556395	**MB115RBHT12F**	114,50	153,00	CC..1204..	**848.940.640**	**843.012.000**	**–**	**–**	**–**	**FT20**	T20
3556396	**MB115RBHT16LF**	114,50	153,00	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**	**–**	–



RBHT • 70° Blade Sets



order number	catalogue number	D min mm	D max mm	gage insert	adjusting screw	insert screw	shim	shim pin	toggle lever	Torx wrench	Torx size	hex size
3556397	**MB24RBHT06K**	23,50	30,50	CC..0602..	**848.200.407**	**843.006.000**	**–**	**–**	**–**	**FT7**	T7	–
3556398	**MB30RBHT06K**	29,50	40,10	CC..0602..	**848.250.409**	**843.006.000**	**–**	**–**	**–**	**FT7**	T7	–
3556399	**MB40RBHT09K**	39,50	50,50	CC..09T3..	**848.320.413**	**843.009.000**	**–**	**–**	**–**	**FT15**	T15	–
3556400	**MB50RBHT09K**	49,50	66,50	CC..09T3..	**848.420.614**	**843.009.000**	**–**	**–**	**–**	**FT15**	T15	–
3556401	**MB66RBHT12K**	65,50	87,50	CC..1204..	**848.550.620**	**843.012.000**	**–**	**–**	**–**	**FT20**	T20	–
3556402	**MB66RBHT12LK**	65,50	87,50	CN..1204..	**847.012.000**	**–**	**845.012.000**	**844.012.000**	**846.012.000**	**–**	–	3mm
3556403	**MB87RBHT12K**	86,50	115,50	CC..1204..	**848.720.000**	**843.012.000**	**–**	**–**	**–**	**FT20**	T20	–
3556404	**MB87RBHT16LK**	86,50	115,50	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**	**–**	–	3mm
3556405	**MB115RBHT16LK**	114,50	153,00	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**	**–**	–	3mm

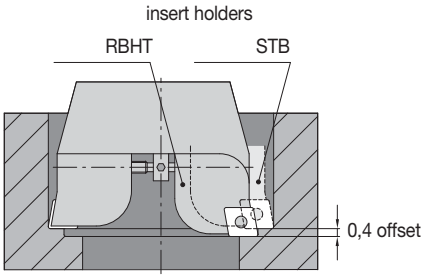


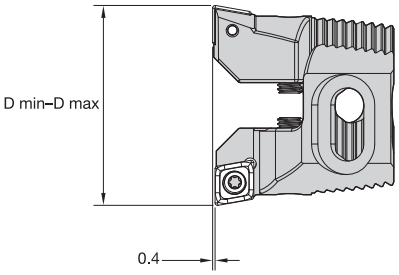
RBHT • 90° Simultaneous Adjusting Blade Sets

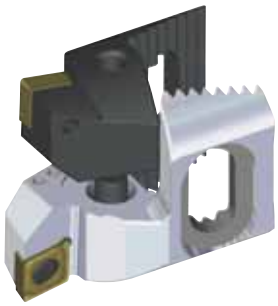
order number	catalogue number	D min mm	D max mm	gage insert	flat point socket set screw	insert screw	simultaneous adj spindle	shim	shim pin	toggle lever
2652965	**SYB24RBHT06F**	23,50	30,50	CC..0602..	**848.200.407**	**843.006.000**	**848.200.005**	**–**	**–**	**–**
2652967	**SYB30RBHT06F**	29,50	40,10	CC..0602..	**848.250.409**	**843.006.000**	**848.250.005**	**–**	**–**	**–**
2652968	**SYB40RBHT09F**	39,50	50,50	CC..09T3..	**848.320.413**	**843.009.000**	**848.320.005**	**–**	**–**	**–**
2652969	**SYB50RBHT09F**	49,50	66,50	CC..09T3..	**848.420.614**	**843.009.000**	**848.420.005**	**–**	**–**	**–**
2652971	**SYB66RBHT12LF**	65,50	87,50	CN..1204..	**847.012.000**	**–**	**848.550.005**	**845.012.000**	**844.012.000**	**846.012.000**
2652970	**SYB66RBHT12F**	65,50	87,50	CC..1204..	**843.012.000**	**–**	**848.550.005**	**–**	**–**	**–**
2652972	**SYB87RBHT12F**	86,50	115,50	CC..1204..	**843.012.000**	**–**	**848.720.005**	**–**	**–**	**–**
2652983	**SYB87RBHT16LF**	86,50	115,50	CN..1606..	**847.016.000**	**–**	**848.720.005**	**845.016.000**	**844.016.000**	**846.016.000**
2652984	**SYB115RBHT16LF**	114,50	153,00	CN..1606..	**847.016.000**	**–**	**848.720.005**	**845.016.000**	**844.016.000**	**846.016.000**

Reference Insert Blade Sets

BR1 mm	BR1 in	90° lead blade sets		70° lead blade sets		90° lead simultaneous adjusting blade sets		90° lead split depth-of-cut blade	
23.500–30.500	.9252–1.2008	**MB24RBHT06F**	**–**	**MB24RBHT06K**	**–**	**SYB24RBHT06F**	**–**	**SDB24RBHT06F**	**–**
29.500–40.000	1.1614–1.5748	**MB30RBHT06F**	**–**	**MB30RBHT06K**	**–**	**SYB30RBHT06F**	**–**	**SDB30RBHT06F**	**–**
39.500–50.500	1.5551–1.9882	**MB40RBHT09F**	**–**	**MB40RBHT09K**	**–**	**SYB40RBHT09F**	**–**	**SDB40RBHT09F**	**–**
49.500–66.500	1.9488–2.6181	**MB50RBHT09F**	**–**	**MB50RBHT09K**	**–**	**SYB50RBHT09F**	**–**	**SDB50RBHT09F**	**–**
65.500–87.500	2.5787–3.4449	**MB66RBHT12F**	**MB66RBHT12LF**	**MB66RBHT12K**	**MB66RBHT12LK**	**SYB66RBHT12F**	**SYB66RBHT12LF**	**SDB66RBHT12F**	**SDB66RBHT12LF**
86.500–115.500	3.4055–4.5472	**MB87RBHT12F**	**MB87RBHT16LF**	**MB87RBHT12K**	**MB87RBHT16LK**	**SYB87RBHT12F**	**SYB87RBHT16LF**	**SDB87RBHT12F**	**SDB87RBHT16LF**
114.500–153.000	4.5079–6.0236	**MB115RBHT12F**	**MB115RBHT16LF**	**–**	**MB115RBHT16LK**		**SYB115RBHT16LF**	**SDB115RBHT12F**	**SDB115RBHT16LF**



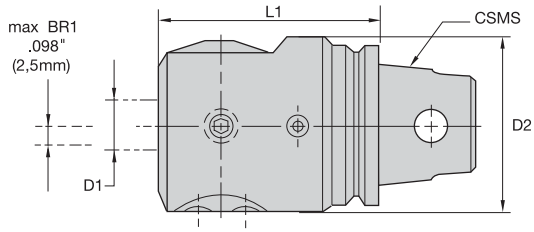




RBHT • 90° Split Depth of Cut Blade Sets

order number	catalogue number	D min mm	D max mm	gage insert	adjustment screw	insert screw	shim	shim pin	toggle lever
4063996	**SDB24RBHT06F**	23,50	30,50	CC..0602..	**848.200.407**	**843.006.000**	**–**	**–**	**–**
4063997	**SDB30RBHT06F**	29,50	40,10	CC..0602..	**848.250.409**	**843.006.000**	**–**	**–**	**–**
4063998	**SDB40RBHT09F**	39,50	50,50	CC..09T3..	**848.320.413**	**843.009.000**	**–**	**–**	**–**
4063999	**SDB50RBHT09F**	49,50	66,50	CC..09T3..	**848.420.614**	**843.009.000**	**–**	**–**	**–**
4064000	**SDB66RBHT12F**	65,50	87,50	CC..1204..	**848.550.620**	**843.012.000**	**–**	**–**	**–**
4064001	**SDB66RBHT12LF**	65,50	87,50	CN..1204..	**847.012.000**	**–**	**845.012.000**	**844.012.000**	**846.012.000**
4064002	**SDB87RBHT12F**	86,50	115,50	CC..1204..	**848.720.000**	**843.012.000**	**–**	**–**	**–**
4064203	**SDB87RBHT16LF**	86,50	115,50	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**
4064204	**SDB115RBHT16LF**	114,50	153,00	CN..1606..	**847.016.000**	**–**	**845.016.000**	**844.016.000**	**846.016.000**
4064205	**SDB115RBHT12F**	114,50	153,00	CC..1204..	**848.940.640**	**843.012.000**	**–**	**–**	**–**

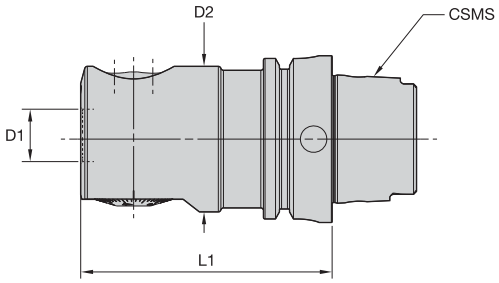
- Order boring bars separately for required diameter; see page K192.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.



FBHO • KM™ Offset Boring Head

order number	catalogue number	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHO parts package
1131111	**KM40FBHO1660**	KM40	16	55,0	60,0	**PKG7001**
1132036	**KM50FBHO1670**	KM50	16	55,0	70,0	**PKG7001**

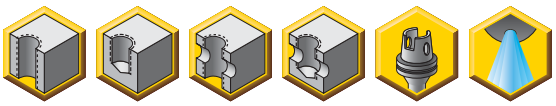
- Order boring bars separately for required diameter; see page K192.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.

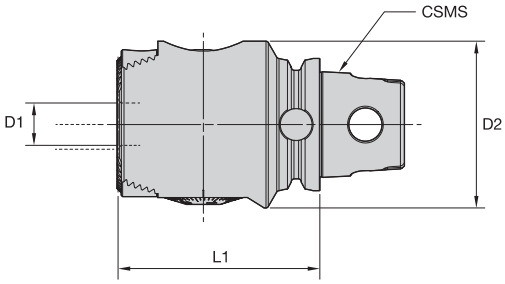


FBHO • HSK Boring Head

order number	catalogue number	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHO parts package
2651037	**HSK63FBHO1695**	HSK63A	16	55	95,0	**PKG7001**

- Order boring bars, diameter extension bridge, and cartridges separately.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.

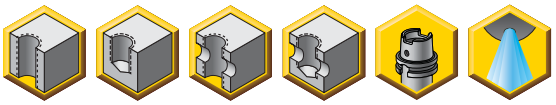


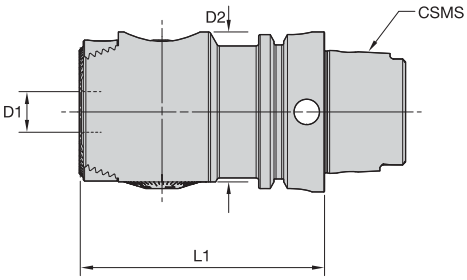


FBHM • KM™ Boring Head

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHS parts package	kg
4057060	**KM50TSFBHM1677**	9,750-164,000	KM50TS	16,0	63,0	76,6	**PKG-8001**	1,5

- Order boring bars, diameter extension bridge, and cartridges separately.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.

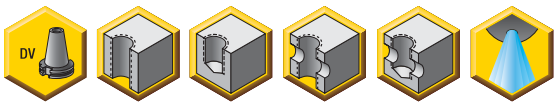


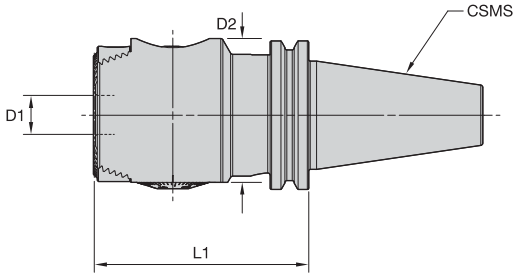


FBHM • HSK Boring Head

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHS parts package	kg
4057057	**HSK63FBHM1696**	9,750-164,000	HSK63A	16,0	63,0	95,0	**PKG-8001**	2,0

- Order boring bars, diameter extension bridge, and cartridges separately.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.

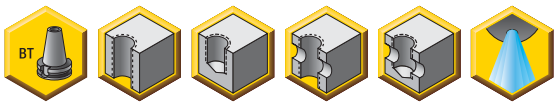


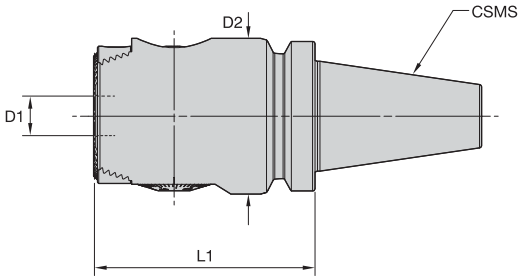


FBHM • DV40 Boring Head

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHS parts package	kg
4057058	**DV40FBHM1691**	9,750-154,000	DV40	—	63,0	90,0	**PKG-8001**	2,1

- Order boring bars, diameter extension bridge, and cartridges separately.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.

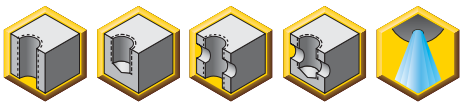


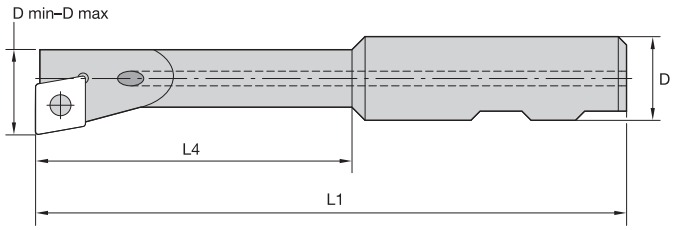


FBHM • BT40 Boring Head

order number	catalogue number	BR1 bore range mm	CSMS system size	D1 mm	D2 mm	L1 mm	ModBORE FBHS parts package	kg
4057059	**BT40FBHM1691**	9,750-164,000	BT40	16,0	63,0	90,0	**PKG-8001**	2,2

• Order inserts separately.

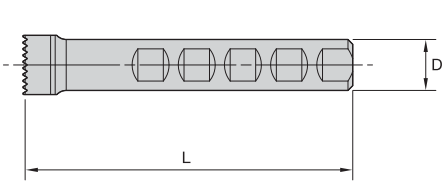


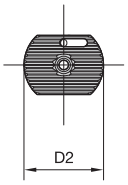


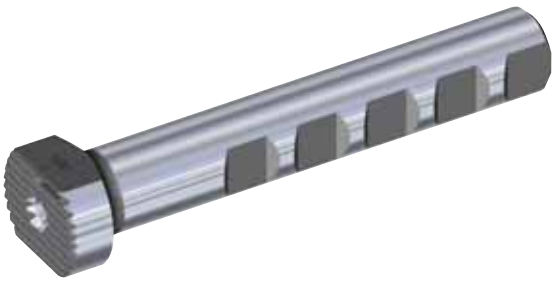
FBHO/FBHM • Universal Boring Bars

order number	catalogue number	D min mm	D max mm	D	L1 mm	L4 mm	gage insert	insert screw	Torx size
1125110	**AFB09075SCFCR06**	9,75	14,75	16	75,0	30,0	CC..0602../CC..215..	**PKG2025**	T7
1133883	**AFB13085SCFCR06**	13,75	18,75	16	85,0	40,0	CC..0602../CC..215..	**PKG2025**	T7
1133894	**AFB17100SCFCR06**	17,75	22,75	16	100,0	55,0	CC..0602../CC..215..	**PKG2025**	T7
1137835	**AFB21110SCFCR09**	21,75	26,75	16	110,0	60,0	CC..09T3../CC..325..	**PKG3242**	T15
1128324	**AFB24115SCFCR09**	24,75	29,75	16	115,0	65,0	CC..09T3../CC..325..	**PKG3242**	T15
1126838	**AFB27115SCFCR09**	27,75	32,75	16	115,0	70,0	CC..09T3../CC..325..	**PKG3242**	T15
1120731	**AFB31115SCFCR09**	31,75	36,75	16	115,0	70,0	CC..09T3../CC..325..	**PKG3242**	T15
1127271	**AFB34115SCFCR09**	34,75	39,75	16	115,0	70,0	CC..09T3../CC..325..	**PKG3242**	T15
2651038	**AFB38115SCFPR09**	38,75	44,10	16	115,0	85,0	CC..09T3../CC..325..	**PKG3242**	T15
2651039	**AFB42115SCFPR09**	42,75	48,10	16	115,0	85,0	CC..09T3../CC..325..	**PKG3242**	T15
2651040	**AFB47115SCFPR09**	47,75	53,10	16	115,0	85,0	CC..09T3../CC..325..	**PKG3242**	T15

• Order AFM insert cartridge separately.



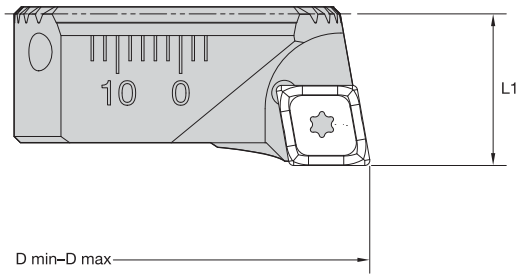




FBHO/FBHM • AFM Boring Bars

order number	catalogue number	BR1 bore range mm	D mm	D2 mm	L mm
4057061	**AFM29115**	29,8	16,0	25,0	103,000
4057062	**AFM47115**	47,8	16,0	44,0	101,580

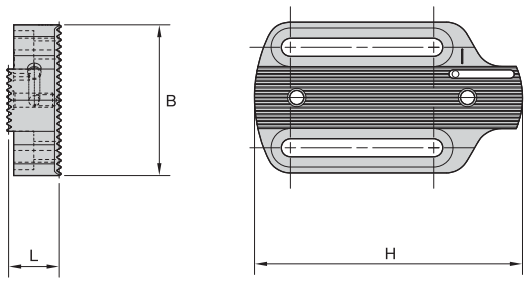
- For use with AFM boring bars.
- Order insert separately.

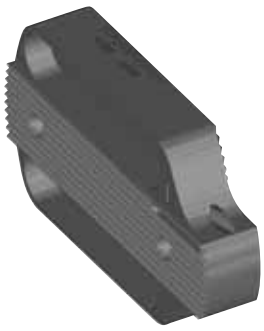


AFM • Insert Cartridges

order number	catalogue number	D min mm	D max mm	L1 mm	gage insert	ModBORE parts package	insert screw I.D. drive size
4057093	**AFM29SCFPR06**	30	48	12	CC..0602../CC..215..	**PKG2025**	T7
4057094	**AFM47SCFPR09**	48	88	14	CC..09T3../CC..325..	**PKG3242**	T15

- For use with FBHM insert holders and FBHM counterweight.
- Order AFM47SCFPR09 insert cartridge separately to achieve diameter range.

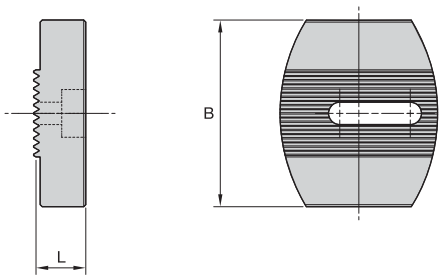




FBHM • Extension Bridge

order number	catalogue number	BR1 bore range mm	B mm	H mm	L mm
4057095	**EBM8015086**	86,000-164,000	45,0	80,0	15,0

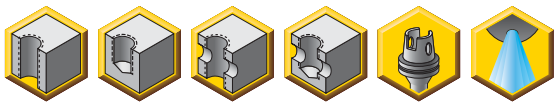
- For use with FBHM extension bridge.

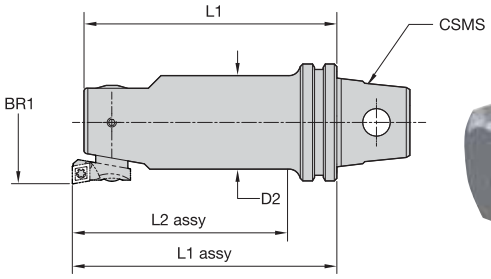


FBHM • Counterweight

order number	catalogue number	B mm	L mm
4057096	**886038045**	45	12

- 0,01mm diameter adjustment respective 2 µm with vernier scale.
- Internal coolant directed to indexable insert.
- Order insert cartridges separately for required bore range; see page K195.

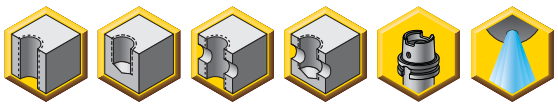


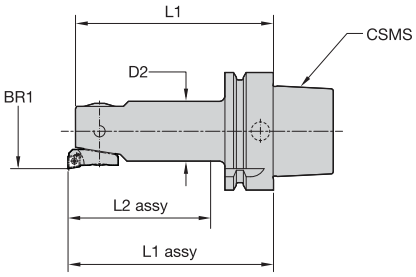


FBHS • KM™ Fine-Boring Single Cutters

order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	L1 assy mm	L2 assy mm	cartridge mounting screw	lock screw
3586572	KM32FBHS24	23,900-37,100	KM32	20,0	86,0	90,0	76,1	880.252.200	881.252.200
3586573	KM32FBHS31	30,900-47,100	KM32	25,0	96,0	100,0	86,1	880.252.250	881.252.250
3586574	KM40FBHS40	39,900-59,100	KM40	32,0	86,0	90,0	74,0	880.252.320	881.252.320
3586575	KM50FBHS51	50,900-81,100	KM50	42,0	86,0	90,0	70,0	880.252.420	881.252.420
3586576	KM50FBHS67	66,900-105,100	KM50	55,0	96,0	100,0	100,0	880.252.550	881.252.550
3586577	KM50FBHS87	86,900-154,100	KM50	72,0	116,0	120,0	120,0	880.252.550	881.252.720
3586578	KM63UTFBHS87	86,900-154,100	KM63UT	72,0	115,0	120,0	120,0	880.252.550	881.252.720
3586579	KM63UTFBHS116	115,900-191,100	KM63UT	96,0	145,0	150,0	150,0	880.252.550	881.252.940

- 0,01mm diameter adjustment respective 2 µm with vernier scale.
- Internal coolant directed to indexable insert.
- Order insert cartridges separately for required bore range; see page K195.





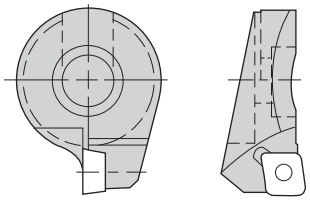
FBHS • HSK Fine-Boring Single Cutters

order number	catalogue number	BR1 bore range mm	CSMS system size	D2 mm	L1 mm	L1 assy mm	L2 assy mm	cartridge mounting screw	lock screw
3586580	HSK63FBHS24	23,900-37,100	HSK63A	20,0	86,0	90,0	61,1	880.252.200	881.252.200
3586581	HSK63FBHS31	30,900-47,100	HSK63A	25,0	101,0	105,0	76,1	880.252.250	881.252.250
3586582	HSK63FBHS40	39,900-59,100	HSK63A	32,0	106,0	110,0	81,1	880.252.320	881.252.320
3586583	HSK63FBHS51	50,900-81,100	HSK63A	42,0	116,0	120,0	91,1	880.252.420	881.252.420
3586584	HSK63FBHS67	66,900-105,100	HSK63A	55,0	121,0	125,0	99,1	880.252.550	881.252.550
3586585	HSK63FBHS87	86,900-154,100	HSK63A	72,0	141,0	145,0	145,0	880.252.550	881.252.720

Reference Insert Cartridges

BR1 mm	insert cartridges 90° lead		95° lead	
23,900-31,100	R24FBHS06	—	R24FBHS06LF	—
29,900-37,100	R30FBHS06	—	—	—
30,900-40,100	R31FBHS06	—	R31FBHS06LF	—
37,900-47,100	F38FBHS06	—	—	—
39,900-51,100	R40FBHS06	—	R40FBHS06LF	—
47,900-59,100	R48FBHS06	—	—	—
50,900-67,100	R51FBHS06	—	R51FBHS06LF	—
64,900-81,100	R65FBHS06	—	—	—
66,900-87,100	R67FBHS06	R67FBHS09	—	R67FBHS09LF
84,900-105,100	R85FBHS06	R85FBHS09	—	—
86,900-116,100	R67FBHS06	R67FBHS09	—	R67FBHS09LF
104,900-134,100	R85FBHS06	R85FBHS09	—	—
115,900-154,100	R67FBHS06	R67FBHS09	—	R67FBHS09LF
133,900-171,100	R85FBHS06	R85FBHS09	—	—
153,900-191,100	—	R125FBHS09	—	—

• Order inserts separately.



90° Lead • Insert Holders for FBHS Fine-Boring Heads

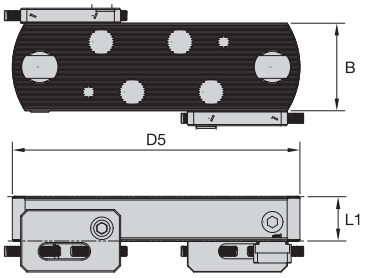
order number	catalogue number	gage insert	Torx size	insert screw
1137487	R24FBHS06	CC..0602../CC..215..	T7	843.006.000
2649548	R30FBHS06	CC..0602../CC..215..	T7	843.006.000
1133669	R31FBHS06	CC..0602../CC..215..	T7	843.006.000
2649549	R38FBHS06	CC..0602../CC..215..	T7	843.006.000
1135369	R40FBHS06	CC.0602../CC..215..	T7	843.006.000
2649550	R48FBHS06	CC..0602../CC..215..	T7	843.006.000
1137479	R51FBHS06	CC..0602../CC..215..	T7	843.006.000
2649551	R65FBHS06	CC..0602../CC..215..	T7	843.006.000
1834274	R67FBHS06	CC..0602../CC..215..	T7	843.006.000
1137505	R67FBHS09	CC..09T3../CC..325..	T15	843.009.000
2649552	R85FBHS06	CC..0602../CC..215..	T7	843.006.000
2649553	R85FBHS09	CC..09T3../CC..325..	T15	843.009.000
2649554	R125FBHS09	CC..09T3../CC..325..	T15	843.009.000

• Order inserts separately.

95° Lead • Insert Holders for FBHS

order number	catalogue number	gage insert	insert screw I.D. drive size	insert screw
2649555	R24FBHS06LF	CC..0602../CC..215..	T7	843.006.000
2649556	R31FBHS06LF	CC..0602../CC..215..	T7	843.006.000
2649557	R40FBHS06LF	CC..0602../CC..215..	T7	843.006.000
2649558	R51FBHS06LF	CC..0602../CC..215..	T7	843.006.000
2649559	R67FBHS09LF	CC..09T3../CC..325..	T15	843.009.000

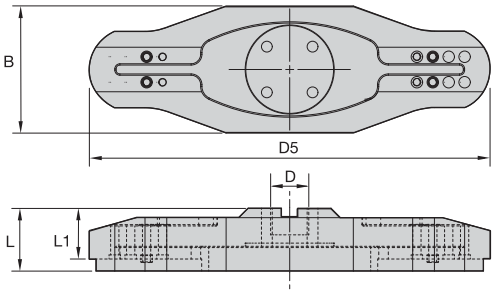
• Match extension bridge series to adaptor.



Small-Scale Extension Bridges

order number	catalogue number	BR1 bore range mm	max RPM	extension bridge series	B mm	D5 mm	L1 mm	spare parts package	hex size	kg
1133280	**EB13030150**	150,000-205,000	1250	A	70,0	130,0	30,0	**PKG156502**	8 mm	1,95
1125085	**EB18030200**	200,000-255,000	1000	A	70,0	180,0	30,0	**PKG156502**	8 mm	2,77
1132857	**EB23035250**	250,000-305,000	850	B	70,0	230,0	35,0	**PKG156502**	8 mm	4,00
1126830	**EB28035300**	300,000-355,000	700	B	70,0	280,0	35,0	**PKG156502**	8 mm	5,14
1121703	**EB33040350**	350,000-405,000	600	B	70,0	330,0	40,0	**PKG156502**	8 mm	6,86
1140602	**EB38040400**	400,000-455,000	530	C	70,0	380,0	40,0	**PKG156502**	8 mm	7,95
1121036	**EB43040450**	450,000-505,000	480	C	70,0	430,0	40,0	**PKG156502**	8 mm	9,23
1270619	**EB48040500**	500,000-550,000	440	C	70,0	480,0	40,0	**PKG156502**	8 mm	10,23
1270620	**EB53050550**	550,000-605,000	400	C	70,0	530,0	50,0	**PKG156502**	8 mm	13,91
1270621	**EB58050600**	600,000-655,000	370	C	70,0	580,0	50,0	**PKG156502**	8 mm	15,32

- For use with shell mill adaptors or direct connection to the machine spindle.
- Order bridge slides separately.



Large Scale Extension Bridge

order number	catalogue number	BR1 bore range mm	D mm	D5 mm	B mm	L mm	L1 mm	kg
4057204	**EB630128650**	650,000-1105,000	60,0	630,0	200,0	99,0	84,0	17,2
4057205	**EB10801281100**	1100,000-1655,000	60,0	1080,0	200,0	99,0	84,0	28,1
4057206	**EB16301281650**	1650,000-2205,000	60,0	1630,0	200,0	99,0	84,0	43,0

max RPMs

BR1 bore range (mm)	max RPM
650–705	300
700–755	285
750–805	270
800–855	255
850–905	240
900–955	225
950–1005	210
1000–1055	195
1050–1105	180

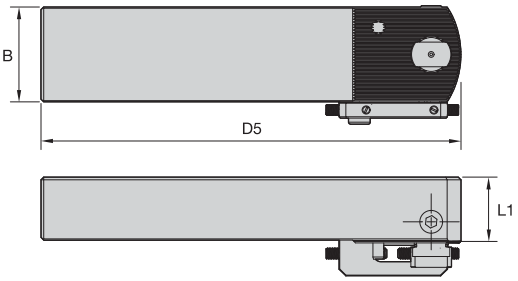
max RPMs

BR1 bore range (mm)	max RPM
1100–1155	170
1150–1205	163
1200–1255	156
1250–1305	149
1300–1355	142
1350–1405	135
1400–1455	128
1450–1505	121
1500–1555	114
1550–1605	107
1600–1655	100

max RPMs

BR1 bore range (mm)	max RPM
1650–1705	95
1700–1755	90
1750–1805	85
1800–1855	80
1850–1905	75
1900–1955	70
1950–2005	65
2000–2055	60
2050–2105	55
2100–2155	50
2150–2205	45

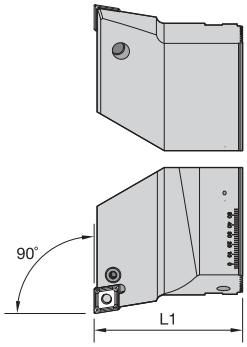
- For use with large-scale bridge extensions.
- Delivered as a set of two.

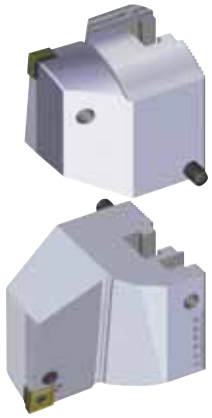


Bridge Slides

order number	catalogue number	BR1 bore range mm	B mm	D5 mm	L1 mm	spare parts package	kg
4057207	**EBSLD1105**	650,000-1105,000	70,0	310,0	48,0	**PKG156502**	7,0
4057208	**EBSLD2205**	1100,000-2205,000	70,0	360,0	48,0	**PKG156502**	7,9

- Packaged as a matched set of two to enable twin cutting operations.

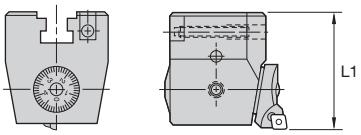




90° Lead • Bridge Tool Rough Boring Head

order number	catalogue number	L1 mm	gage insert	spare parts package	insert screw I.D. drive size	kg
1624878	**EBURF1975PKG**	75,0	CN..1906../CN..64..	**PKG7994**	4 mm	1,6

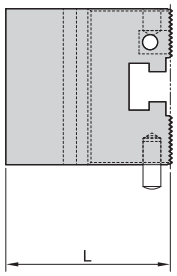
- Insert holder included.
- 0,01mm diameter adjustment respective 2 µm with vernier scale.
- Use with counterweight for balance.



90° Lead • Bridge Tool Fine-Boring Head

order number	catalogue number	L1 mm	cartridge	spare parts package	wrench size adjusting screw	kg
1135375	**EBUFF0975**	75,0	R67–FBHS-09	**PKG0002**	5 mm	2,1

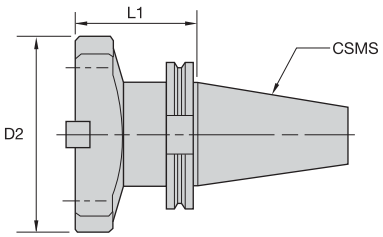
- Use to balance the extension bridge when using an EBUFF fine-boring head.



Bridge Tool Counterweight

order number	catalogue number	L mm	kg
4062443	**EBUCW0074**	74	2,1

- Extension bridge required.
- Order extension bridge separately; see page K196.
- Order coolant cartridge set separately; see page K200.
- Match adaptor and extension bridge series.



CV Bridge Tool Adaptors

order number	catalogue number	CSMS system size	extension bridge series	D1 mm	D1 max mm	D2 mm	L1 mm	spare parts package	socket-head cap screw
1122185	**CV50BT13069**	CV50	A,B,C	150	655	130,0	69,1	**PKG1565**	**MS1085PKG**

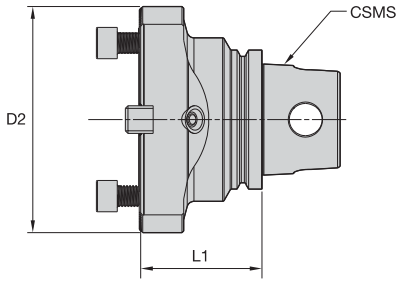
DV Bridge Tool Adaptors

order number	catalogue number	CSMS system size	extension bridge series	D1 mm	D1 max mm	D2 mm	L1 mm	spare parts package	socket-head cap screw
1263825	**DV40BT13069**	DV50	A	150	255	130	69	**PKG1565**	**MS1085PKG**
1133581	**DV50BT13069**	DV50	A,B,C	150	655	130	69	**PKG1565**	**MS1085PKG**

BT Bridge Tool Adaptors

order number	catalogue number	CSMS system size	extension bridge series	D1 mm	D1 max mm	D2 mm	L1 mm	spare parts package	socket-head cap screw
1121711	**BT50BT13088**	BT50	A,B,C	150	655	130	88	**PKG1565**	**MS1085PKG**

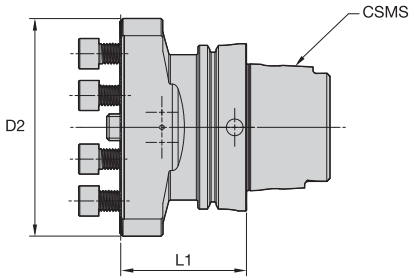
- Extension bridge required.
- Order extension bridge separately; see page K196.
- Match adaptor and extension bridge series.

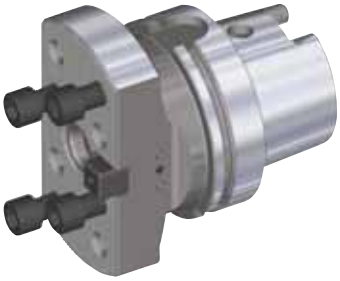


KM™ Bridge Tool Adaptors

order number	catalogue number	CSMS system size	extension bridge series	D1 mm	D1 max mm	D2 mm	L1 mm	spare parts package	socket-head cap screw
1135802	**KM63BT13065**	KM63	A	150	305	130,0	65,0	**PKG1565**	**MS1085PKG**
1197315	**KM80BT13070**	KM80	B,A	150	405	130,0	70,0	**PKG1565**	**MS1085PKG**

- Extension bridge required.
- Order extension bridge separately; see page K196.
- Match adaptor and extension bridge series.



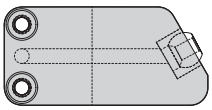


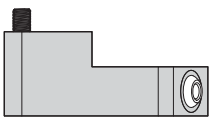
HSK Bridge Tool Adaptors

order number	catalogue number	CSMS system size	extension bridge series	D2 mm	L1 mm	spare parts package	socket-head cap screw
4062112	**HSK100BT13075**	HSK100A	A,B,C	130,0	75,0	**PKG1565**	**MS1085PKG**

Coolant Cartridge for Bridge Tool Adaptor

- Use at bridge tool adaptor to direct the coolant towards the insert.
- Delivered as a set of two with mounting screws.





Coolant Cartridge

order number	catalogue number
4062111	**920028015**

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Material Group		Condition	Geometry			Cutting Speed m/min			Feed Rate mm/r		
			-MP	-MN	-MF	min	Starting Value	max	-MP	-MN	-MF
P	1		–	KCP05	–	180	**435**	495	–	0,16 - 0,63	–
			KCP10			180	**395**	360	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		180	**395**	360	–	0,16 - 0,63	0,10 - 0,40
			KCP25			125	**275**	360	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		155	**280**	360	–	0,16 - 0,31	0,10 - 0,20
	2		–	KCP05	–	180	**265**	400	–	0,16 - 0,63	–
			KCP10			180	**240**	470	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		180	**250**	340	–	0,16 - 0,63	0,10 - 0,40
			KCP25			125	**195**	280	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		140	**200**	295	–	0,16 - 0,31	0,10 - 0,20
	3		–	KCP05	–	180	**205**	275	–	0,16 - 0,63	–
			KCP10			160	**190**	350	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		155	**190**	235	–	0,16 - 0,63	0,10 - 0,40
			KCP25			135	**155**	225	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		135	**155**	225	–	0,16 - 0,31	0,10 - 0,20
	4		–	KCP05	–	90	**160**	220	–	0,16 - 0,63	–
			KCP10			90	**145**	235	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		90	**145**	195	–	0,16 - 0,63	0,10 - 0,40
			KCP25			75	**105**	180	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		75	**110**	175	–	0,16 - 0,31	0,10 - 0,20
	5		–	KCP05	–	150	**240**	315		0,16 - 0,63	–
			KCP10			150	**215**	300	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		150	**215**	300	–	0,16 - 0,63	0,10 - 0,40
			KCP25			120	**195**	260	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		120	**195**	260	–	0,16 - 0,31	0,10 - 0,20
	6		–	KCP05	–	140	**200**	300	–	0,16 - 0,63	–
			KCP10			110	**180**	270	0,10 - 0,40	0,16 - 0,63	0,10 - 0,40
			–	KC9110		120	**180**	225	–	0,16 - 0,63	0,10 - 0,40
			KCP25			105	**150**	225	0,10 - 0,20	0,16 - 0,31	0,10 - 0,20
			–	KC9125		105	**150**	225	–	0,16 - 0,31	0,10 - 0,20

Material Group		Condition	Geometry			Cutting Speed m/min			Feed Rate mm/r		
			-MP	-MF	–	min	Starting Value	max	-MP	-MF	–
M	1		KCM15		–	100	**180**	240	0,10 - 0,40	0,08 - 0,30	–
			KC5010	–	–	130	**215**	250	0,10 - 0,40	–	–
			KC9225		–	175	**185**	250	0,10 - 0,40	0,08 - 0,30	–
			KCM25		–	90	**150**	200	0,10 - 0,20	0,08 - 0,15	–
			KC9240		–	90	**120**	135	0,10 - 0,20	0,08 - 0,15	–
	2		KCM15		–	110	**165**	250	0,10 - 0,40	0,08 - 0,30	–
			KC5010	–	–	125	**200**	250	0,10 - 0,40	–	–
			KC9225		–	110	**170**	230	0,10 - 0,40	0,08 - 0,30	–
			KCM25		–	90	**150**	225	0,10 - 0,20	0,08 - 0,15	–
			KC9240		–	80	**105**	135	0,10 - 0,20	0,08 - 0,15	–
	3		KCM15		–	110	**150**	250	0,10 - 0,40	0,08 - 0,30	–
			KC5010	–	–	110	**150**	230	0,10 - 0,40	–	–
			KC9225		–	110	**150**	230	0,10 - 0,40	0,08 - 0,30	–
			KCM25		–	90	**120**	200	0,10 - 0,20	0,08 - 0,15	–
			KC9240		–	80	**90**	135	0,10 - 0,20	0,08 - 0,15	–

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Material Group		Condition	Geometry -MP	Geometry -MW	Geometry –	Cutting Speed m/min min	Cutting Speed m/min Starting Value	Cutting Speed m/min max	Feed Rate mm/r -MP	Feed Rate mm/r -MW	Feed Rate mm/r –
K	1		KCK20		–	220	**300**	540	0,10 - 0,40	0,16 - 1,00	–
			–	KT315	–	160	**275**	490	–	0,16 - 1,00	–
			KCK20		–	220	**275**	350	0,10 - 0,40	0,16 - 1,00	–
			–	KC9315	–	150	**275**	350	–	0,16 - 1,00	–
			KCK20			140	**210**	340	0,10 - 0,20	0,16 - 0,45	–
			–	KC9325	–	70	**210**	340	–	0,16 - 0,45	–
	2		KCK20		–	220	**275**	350	0,10 - 0,40	0,16 - 1,00	–
			–	KT315	–	180	**275**	360	–	0,16 - 1,00	–
			KCK20		–	220	**275**	350	0,10 - 0,40	0,16 - 1,00	–
			–	KC9315	–	130	**260**	340	–	0,16 - 1,00	–
			KCK20		–	220	**275**	350	0,10 - 0,20	0,16 - 0,45	–
	3		KCK20		–	110	**150**	230	0,10 - 0,40	0,16 - 1,00	–
			–	KT315	–	170	**230**	360	–	0,16 - 1,00	–
			KCK20		–	110	**150**	230	0,10 - 0,40	0,16 - 1,00	–
			–	KC9315	–	130	**215**	350	–	0,16 - 1,00	–
			KCK20		–	110	**150**	230	0,10 - 0,20	0,16 - 0,45	–

Material Group		Condition	Geometry -HP	Geometry –	Geometry –	Cutting Speed m/min min	Cutting Speed m/min Starting Value	Cutting Speed m/min max	Feed Rate mm/r -HP	Feed Rate mm/r –	Feed Rate mm/r –
N	1		KC5410	–	–	200	**550**	1000	0,16 - 0,63	–	–
			–	KD1400	–	450	**765**	2500	–	0,25 - 0,63	–
			KC5410	–	–	200	**550**	1000	0,16 - 0,31	–	–
	2		–	KD1425	–	300	**520**	900	–	0,25 - 0,63	–
			–	KD1425	–	300	**520**	900	–	0,25 - 0,40	–
	3		KC5410	–	–	100	**275**	500	0,16 - 0,63	–	–
			K313	–	–	120	**260**	490	0,16 - 0,63	–	–
			KC5410	–	–	100	**275**	500	0,16 - 0,31	–	–
	5		KC5410	–	–	100	**200**	350	0,16 - 0,63	–	–
			KC5410	–	–	100	**200**	350	0,16 - 0,31	–	–

Material Group		Condition	Geometry -MP	Geometry -FP	Geometry -UP	Cutting Speed m/min min	Cutting Speed m/min Starting Value	Cutting Speed m/min max	Feed Rate mm/r -MP	Feed Rate mm/r -FP	Feed Rate mm/r -UP
S	1		KCU10		–	30	**55**	115	0,10 - 0,40	0,06 - 0,25	–
			KC5010			30	**55**	115	0,10 - 0,40	0,06 - 0,25	0,16 - 0,50
			KCU25		–	10	**40**	55	0,10 - 0,20	0,06 - 0,12	–
			KC9240	–	KC9240	10	**40**	60	0,10 - 0,20	–	0,16 - 0,27
	2		KCU10		–	30	**60**	120	0,10 - 0,40	0,06 - 0,25	–
			KC5010			30	**60**	115	0,10 - 0,40	0,06 - 0,25	0,16 - 0,50
			KCU25		–	10	**30**	55	0,10 - 0,20	0,06 - 0,12	–
			KC9240	–	KC9240	10	**30**	55	0,10 - 0,20	–	0,16 - 0,27
	3		KCU10		–	30	**70**	115	0,10 - 0,40	0,06 - 0,25	–
			KC5010			30	**70**	115	0,10 - 0,40	0,06 - 0,25	0,16 - 0,50
			KCU25		–	20	**40**	55	0,10 - 0,20	0,06 - 0,12	–
			KC9240	–	KC9240	20	**40**	60	0,10 - 0,20	–	0,16 - 0,27
	4		KCU10		–	45	**70**	140	0,10 - 0,40	0,06 - 0,25	–
			KC5010			45	**70**	170	0,10 - 0,40	0,06 - 0,25	0,16 - 0,50
			KCU25		–	20	**55**	90	0,10 - 0,20	0,06 - 0,12	–
			KC9240	–	KC9240	15	**55**	90	0,10 - 0,20	–	0,16 - 0,27

Condition: S = Stable cutting conditions; U = Unstable cutting conditions; I = Interrupted cutting conditions
Pocket seat: I = Inboard insert; O = Outboard insert

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Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
P	1		KCP05			–	180	435	495	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	180	435	495	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	180	400	495	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	180	395	465	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	180	395	495	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				140	280	360	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	140	280	360	0,06 - 0,10	0,04 - 0,08	–	–
	2		KCP05			–	180	265	400	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	180	265	400	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	190	270	390	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	180	240	330	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	180	240	330	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				145	195	320	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	145	195	320	0,06 - 0,10	0,04 - 0,08	–	–
	3		KCP05			–	180	205	275	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	180	205	275	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	180	210	275	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	160	190	250	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	155	190	240	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				135	155	225	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	135	155	225	0,06 - 0,10	0,04 - 0,08	–	–
	4		KCP05			–	90	160	220	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	90	160	220	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	90	180	220	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	90	145	195	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	90	145	195	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				75	105	180	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	75	105	180	0,06 - 0,10	0,04 - 0,08	–	–
	5		KCP05			–	150	240	315	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	150	240	315	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	150	250	315	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	150	215	300	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	150	215	300	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				120	195	255	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	120	195	255	0,06 - 0,10	0,04 - 0,08	–	–
	6		KCP05			–	140	200	300	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			–	–	KTP10	–	140	200	300	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	200	300	0,06 - 0,25	–	–	0,08 - 0,30
			KCP10			–	120	180	275	0,06 - 0,25	0,04 - 0,16	0,06 - 0,25	–
			KC9110		–	–	120	180	225	0,06 - 0,25	0,04 - 0,16	–	–
			KCP25				105	150	225	0,06 - 0,10	0,04 - 0,08	0,06 - 0,12	0,08 - 0,16
			KC9125		–	–	105	150	225	0,06 - 0,10	0,04 - 0,08	–	–

Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
M	1		–	–	KTP10	–	140	230	315	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	230	315	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	215	245	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	105	180	240	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	105	180	240	0,06 - 0,12	–	–	0,08 - 0,16
	2		–	–	KTP10	–	140	215	295	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	215	295	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	200	245	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	105	165	250	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	100	160	230	0,06 - 0,12	–	–	0,08 - 0,16
	3		–	–	KTP10	–	140	200	300	–	–	0,06 - 0,25	–
			KT315	–	–	KT315	140	200	300	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010	–	–	KC5010	130	185	230	0,06 - 0,25	–	–	0,08 - 0,30
			KCM15	–	KCM15	–	115	150	255	0,06 - 0,12	–	0,06 - 0,12	–
			KC9225	–	–	KC9225	110	150	230	0,06 - 0,12	–	–	0,08 - 0,16

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Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
K	1		KCK20	–	KCK20		200	**300**	540	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	165	**275**	490	0,06 - 0,25	–	–	0,08 - 0,30
			KC9315	–	–	–	110	**275**	450	0,06 - 0,25	–	–	–
			KC9320	–	–	–	100	**240**	400	0,06 - 0,12	–	–	–
	2		KCK20	–	KCK20		150	**240**	420	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	180	**275**	360	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010		–	KC5010	100	**200**	265	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			KC9315	–	–	–	145	**260**	360	0,06 - 0,25	–	–	–
			KC9320	–	–	–	140	**240**	330	0,06 - 0,12	–	–	–
	3		KCK20	–	KCK20		140	**210**	350	0,06 - 0,25	–	0,06 - 0,25	0,08 - 0,30
			KT315	–	–	KT315	180	**230**	320	0,06 - 0,25	–	–	0,08 - 0,30
			KC5010		–	KC5010	120	**150**	225	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			KC9315	–	–	–	145	**215**	275	0,06 - 0,25	–	–	–
			KC9320	–	–	–	140	**210**	260	0,06 - 0,12	–	–	–

Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	–	–	–	min	Starting Value	max	-LF	–	–	–
N	1		KC5410	–	–	–	200	**550**	1000	0,10 - 0,40	–	–	–
			KC5410	–	–	–	200	**550**	1000	0,10 - 0,20	–	–	–
			–	KD1400	–	–	450	**765**	3000	–	0,06 - 0,15	–	–
	2		–	KD1425	–	–	375	**580**	1150	–	0,06 - 0,25	–	–
			–	KD1400	–	–	400	**650**	1250	–	0,06 - 0,15	–	–
	3		KC5410	–	–	–	125	**275**	525	0,10 - 0,40	–	–	–
			–	KD1425	–	–	250	**500**	875	–	0,06 - 0,25	–	–
			KC5410	–	–	–	125	**275**	525	0,10 - 0,20	–	–	–
			–	KD1400	–	–	375	**520**	1000	–	0,06 - 0,12	–	–
	5		KC5410	–	–	–	125	**200**	375	0,10 - 0,40	–	–	–
			KC5410	–	–	–	125	**200**	375	0,10 - 0,20	–	–	–

Material Group		Condition	Geometry				Cutting Speed m/min			Feed Rate mm/r			
			-LF	-UF	-FP	-FW	min	Starting Value	max	-LF	-UF	-FP	-FW
S	1		–	–	KCU10	–	30	**55**	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	**30**	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	**55**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU10	–	30	**55**	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	**55**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	10	**40**	50	–	–	0,06 - 0,12	–
			KC5025	–	–	–	10	**40**	50	0,06 - 0,10	–	–	–
	2		–	–	KCU10	–	30	**35**	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	**35**	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	**60**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU10	–	30	**35**	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	**60**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	10	**30**	50	–	–	0,06 - 0,12	–
			KC5025	–	–	–	10	**30**	50	0,06 - 0,10	–	–	–
	3		–	–	KCU10	–	30	**70**	125	–	–	0,06 - 0,25	–
			K313	–	–	–	10	**40**	60	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	30	**70**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU10	–	30	**35**	125	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	30	**70**	120	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	25	**40**	60	–	–	0,06 - 0,12	–
			KC5025	–	–	–	25	**40**	60	0,06 - 0,10	–	–	–
	4		–	–	KCU10	–	45	**70**	140	–	–	0,06 - 0,25	–
			K313	–	–	–	15	**45**	65	0,06 - 0,25	–	–	–
			KC5010		–	KC5010	45	**70**	140	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU10	–	45	**70**	140	–	–	0,06 - 0,25	–
			KC5010		–	KC5010	45	**70**	140	0,06 - 0,25	0,04 - 0,16	–	0,08 - 0,30
			–	–	KCU25	–	25	**55**	90	–	–	0,06 - 0,12	–
			KC5025	–	–	–	15	**55**	90	0,06 - 0,10	–	–	–

Application Data • Maximum RPM

	Application Diameter D1 min (mm)	Application Diameter D1 max (mm)	Application Diameter D1 min (in)	Application Diameter D1 max (in)	RPM max	
ModBORE™ RBHT	24	31	0.9449	1.2205	12000	
	31	40	1.2205	1.5748	10000	
	40	51	1.5748	2.0079	8000	
	51	67	2.0079	2.6378	6500	
	67	87	2.6378	3.4252	5000	
	87	116	3.4252	4.5669	4000	
	116	153	4.5669	6.0236	3000	
ModBORE FBHS					**balanced**	**unbalanced**
	24	31	0.9449	1.2205	12000	9000
	31	40	1.2205	1.5748	10000	7500
	40	51	1.5748	2.0079	8000	5250
	51	67	2.0079	2.6378	6500	4000
	67	87	2.6378	3.4252	5000	3000
	87	116	3.4252	4.5669	4000	2500
	116	171	4.5669	6.7323	3000	1750
ModBORE FBHO					**boring bar out of center**	
					max 0,5mm (.02")	**0,5–2,5mm (.02–.1")**
	3	20	0.1181	0.7874	16000	6000
	20	48	0.7874	1.8898	12000	4000
	48	88	1.8898	3.4646	8000	2000
ModBORE FBHM					**boring bar out of center**	
					max 0,5mm (.02")	**0,5–2,5mm (.02–.1")**
	3	20	0.1181	0.7874	16000	6000
	20	48	0.7874	1.8898	12000	4000
	48	88	1.8898	3.4646	8000	2000
	86	164	3.3858	6.4567	1000	–
	164	320	6.4567	12.5984	500	–
	–	–	0.0000	0.0000	–	–
	–	–	0.0000	0.0000	–	–
ModBORE Bridge Tools	150	205	5.9055	8.0709	1250	
	200	255	7.8740	10.0394	1000	
	250	305	9.8425	12.0079	850	
	300	355	11.8110	13.9764	700	
	350	405	13.7795	15.9449	600	
	400	455	15.7480	17.9134	530	
	450	505	17.7165	19.8819	480	
	500	555	19.6850	21.8504	440	
	550	605	21.6535	23.8189	400	
	600	655	23.6220	25.7874	380	

High-Performance Taps

Beyond High-Performance Solid Carbide Taps L2–L29

Tool Selection Guide L4–L5

Taps L10–L21

Application Data L22

Cross Reference Charts • Taps and Drills L24–L29

High-Performance HSS-E-PM Taps L30–L79

Tool Selection Guide L32–L33

Taps L36–L57

Wind Energy Taps L58–L63

Application Data L64

Cross Reference Charts L66–L79

High-Performance Solid Carbide Thread Mills L80–L97

Solid Thread Mills Selection Guide L82

Thread Mills L86–L90

Application Data L91–L92

CNC Programming L93–L97

Taps and Thread Milling Technical Information L98–L114

Informational Icons L115–L116

Beyond™ High-Performance Solid Carbide Taps

Primary Application

Solid carbide taps offer higher productivity and outstanding performance in a wider range of materials than formerly possible. Get more production from a single tool and superior accuracy of product thread that surpasses the competition. Kennametal High-Performance Solid Carbide Taps are available in various specifications with enhanced precision and design, which translates into longer tool life, excellent performance, and exceptional wear resistance.

- High performance to surpass competitive taps.
- More production from a single tool.
- Available in various specifications.

Features and Benefits

Advanced Technology

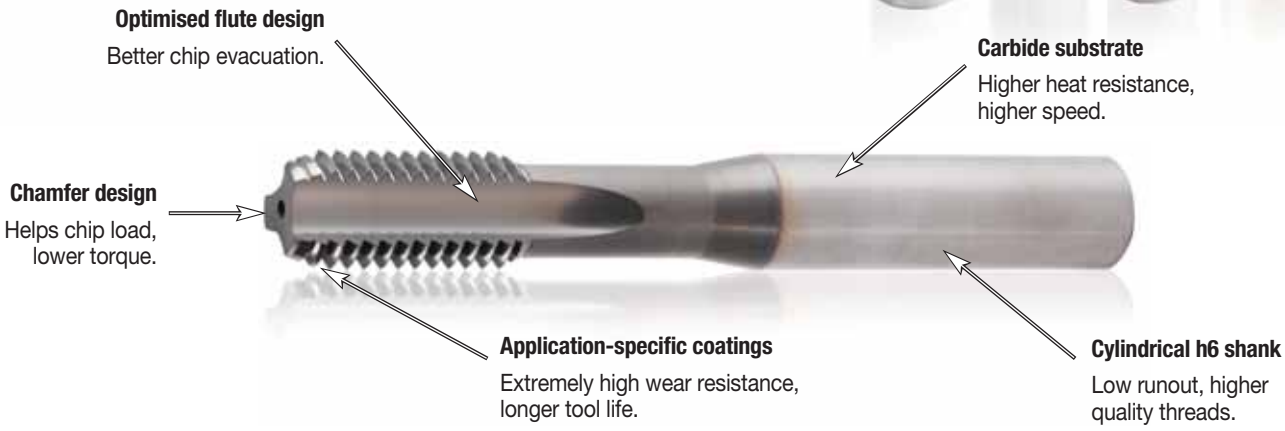
- Manufactured with micrograin carbide for exceptional wear life.
- Ideal for long production runs where fewer tool changes equate to greater productivity.
- Designed for outstanding tool life in steel, cast iron, aluminium, and hardened materials.
- Runs 4x faster and lasts 4x longer than conventional taps.
- Tap runout less than 10 microns (.0004").
- PVD nanolayer TiAlN/TiN coated carbide grade.

Customisation

- Engineered solutions available upon request.
- Available in various specifications.

Application Information

- Maximum chip control and free cutting in through holes.
- For use on CNC machines with synchronous or rigid tapping control and precision toolholders.
- Straight-flute taps for sizes M4 and larger for ductile or cast iron.
- Can be factory reconditioned to original specifications and tolerances.



*To learn more, **scan here**.*
For instructions on how to scan, please see page xxix.

Beyond™ Series HP Solid Carbide Taps and Solid Carbide Forming Taps • Metric

● first choice
○ alternate choice

Beyond HP Solid Carbide Taps

	series	grade	shank/dimension	P	M	K	N	S	H
	T320	KC7542	6535 HA	●		○			
	T321	KC7542	6535 HA	●		○			
	T331	KC7542	6535 HA	●		○			
	T340	KC7542	6535 HA			●			
	T351	KC7542	6535 HA			●			
	T410	KCU36	DIN 371, 374, 376 HA						●
	T461	KC7512	6535				●		
	T471	KC7512	6535 HA				●		

Beyond HP Solid Carbide Forming Taps

	series	grade	shank/dimension	P	M	K	N	S	H
	T381	KC7542	6535 HA	●					
	T391	KC7542	6535 HA	●					
	T481	KC7512	6535 HA				●		
	T491	KC7512	6535 HA				●		

* Through coolant 1/4" and larger.

size range (inch and metric) size min–max	through hole	blind hole	chamfer form	helix angle	external coolant	internal coolant	page(s)	recommended cutting parameters
M6–M16							L10	L22
M6–M16							L11	L22
M6–M16							L12	L22
M4–M20							L13	L22
M4*–M16							L14	L22
M3–M16							L17	L22
M6–M16							L18	L22
M6–M16							L19	L22
M4*–M10							L15	L22
M4*–M10							L16	L22
M4*–M12							L20	L22
M4*–M12							L21	L22

Carbide Tap Identification System

T320MF120X150R6HX
T320NC06250-11R3BX

Metric

T320	MF	120	X	150	R	6HX

Inch

T320	NC	06250	-	11	R	3BX
Tap Design	Type of Thread	Nominal Diameter of Thread		Pitch	Cutting Direction	Tolerance Class
		mm or inch (depending on type)		mm or TPI (depending on type)		

M = Metric coarse-pitch thread (ISO form)

MF = Metric fine-pitch thread (ISO form)

NC = Unified coarse series thread

NF = Unified fine series thread

Style

T320 = Steel, through holes, LHSF
T321 = Steel, through holes, LHSF coolant
T331 = Steel, blind holes, RHSF coolant
T340 = Cast iron and cast aluminium, through holes, STFL
T351 = Cast iron and cast aluminium, blind holes, STFL coolant
T381 = Steel, through holes, forming FT, coolant
T391 = Steel, blind holes, forming FT, coolant
T410 = Hard materials, up to 63 HRC
T461 = Aluminium, through holes, STFL, coolant
T471 = Aluminium, blind holes, STFL, coolant
T481 = Aluminium, through holes, forming FT, coolant
T491 = Aluminium, blind holes, forming FT, coolant

The SPEED to EXCEED

Solid Carbide Taps

The Kennametal Solid Carbide Taps deliver the accuracy you demand at up to four times the speed of HSS taps. Longer tool life, exceptional thread quality, and an array of sizes for ferrous and non-ferrous materials make our taps the most trusted and productive tools in the industry.

- Reduce your operating costs by up to 65%.
- Workpiece-specific grades: KC7542™ for steels and cast irons, KC7512™ for aluminium.
- Go 4x faster with 4x the service life of conventional HSS offerings.
- Wide array of styles and sizes for through or blind hole applications.

Tap into something great at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

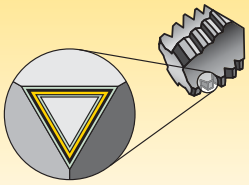
KENNAMETAL®

Through Holes

Blind Holes

		Through Holes				Blind Holes			
		Cutting		Forming		Cutting		Forming	
		Internal Coolant	Flood	Internal Coolant	Flood	Internal Coolant	Flood	Internal Coolant	Flood
P	<32 HRC	**T321_KC7542** T621_KP6525	**T320_KC7542** T620_KP6525	**T381_KC7542** T623_KSP21	T622_KSP21	**T331_KC7542** T631_KP6525 T633_KP6525 T651_KP6525	T630_KP6525 T630_KP6505 T632_KP6525 T650_KP6525	**T391_KC7542** T623_KSP21	T622_KSP21
P	32–44 HRC	—	T600_KSP2	—	—	—	T602_KSP21 T604_KSH26	—	—
M		T621_KM6515	T620_KM6515	—	—	T631_KM6515	T630_KM6515	—	—
K		T641_KP6525	**T340_KC7542** T640_KP6525	—	—	**T351_KC7542** T641_KP6525 T643_KP6525	T640_KP6525 T642_KP6525	—	—
N	Wrought, Low Si	—	T670_KSN38	**T481_KC7512** T623_KSN28	T622_KSN28	—	T680_KSN38	**T491_KC7512** T623_KSN28	T622_KSN28
N	Cast, Si<12%	**T461_KC7512** T641_KP6525	T640_KP6525	**T481_KC7512** T623_KSN28	T622_KSN28	**T471_KC7512** T641_KP6525 T643_KP6525	T640_KP6525 T642_KP6525	**T491_KC7512** T623_KSN28	T622_KSN28
S	Titanium Alloys	—	T614_KSN25	—	—	—	T616_KSN25	—	—
S	Ni and Co Alloys	—	T610_KSSH22	—	—	—	T612_KSSH22	—	—
H	44–55 HRC	—	T606_KSSH22	—	—	—	T606_KSSH22	—	—
H	55–63 HRC	—	**T410_KCU36**	—	—	—	**T410_KCU36**	—	—

Solid Carbide = **bold**
HSS-E-PM = regular



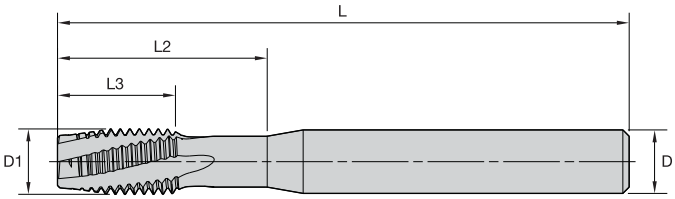
Coatings provide high-speed capability and are engineered for finishing to light roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade	Coating	Grade Description	05	10	15	20	25	30	35	40	45
	KC7542	Coated carbide. PVD — multilayer coating with TiAlN and TiN over a high-strength carbide substrate specifically designed for tap application. Use in steel up to 32 HRC and cast iron at four times faster speeds than HSS-E-PM taps.	P	P	P						
			K	K	K						
	KC7512	Coated carbide. PVD — two-layer coating over fine-grain carbide. Coating consists of low friction CrC/C over wear-resistant TiN. CrC/C resists galling of non-ferrous materials to the tap. Provides superior performance for tapping cast aluminium and other non-ferrous materials.	N	N	N						
NEW!	KCU36	Coated carbide. PVD — two-layer coating with heat-resistant TiAlN base layer and low-friction MoS_2 top layer over carbide substrate. Use in hardened steel 55–63 HRC.	H			H	H	H			
NEW!	KP6525	Coated HSS-E-PM. PVD — heat- and wear-resistant high vanadium — cobalt powder metal HSS substrate coated with wear-resistant TiCN base layer and low-friction TiN top layer. Use in steel, cast iron, and cast aluminium with silicon.	P			P	P	P			
			K				K	K	K		
NEW!	KSP21	Coated HSS-E-PM. PVD — powder metal HSS-E substrate with TiN coating. Use for tapping steel 32–44 HRC and for forming threads in steel 32 HRC.	P					P	P	P	
NEW!	KSH26	Coated HSS-E-PM. PVD — powder metal HSS-E substrate coated with TiN base layer and low-friction MoS_2 top layer. Use in deep blind steel holes 32–44 HRC.	P					P	P	P	
NEW!	KM6515	Coated HSS-E-PM. PVD — heat- and wear-resistant high vanadium — cobalt powder metal HSS substrate. Coating consists of low-friction CrC/C over wear-resistant TiN base layer. Use for tapping stainless steel and non-ferrous materials.	M			M	M	M			
			N				N	N	N		
NEW!	KSN28	Coated HSS-E-PM. PVD — powder metal HSS-E substrate with DLC coating. Use for form tapping aluminium. Not recommended for steel.	N				N	N	N		
NEW!	KSN38	Coated HSS-E. PVD — lower vanadium HSS-E substrate with DLC coating. Use for tapping non-ferrous materials with low cutting temperatures like wrought aluminium. Not recommended for steel.	N					N	N	N	
NEW!	KSN25	Coated HSS-E-PM. PVD — powder metal HSS-E substrate with two-layer coating. TiN base layer and DLC top layer that resists galling of non-ferrous materials to the tap. Use for tapping titanium. Not recommended for steel.	S			S	S	S			
NEW!	KSSH22	Coated HSS-E-PM. PVD — heat- and wear-resistant high vanadium — cobalt powder metal HSS substrate with high hardness TiCN coating. Use when tapping heat-treated steel 44–55 HRC and cobalt- or nickel-based heat-resistant alloys.	S		S	S	S				
			H		H	H	H				

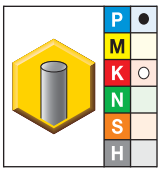
Taps



beyond

KC7542 TiAlN + TiN for steel.

T320 • Form D Plug Chamfer • Metric



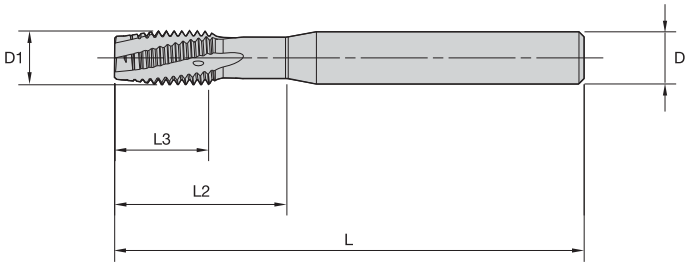
● first choice
○ alternate choice

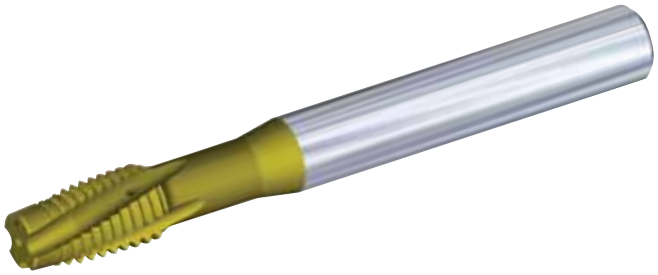
KC7542	D1 size	L	L3	L2	D	number of flutes	class of fit
T320M060X100R6HX	M6 x 1	70	12	23	6,0	3	6HX
T320M080X125R6HX	M8 x 1,25	80	15	28	8,0	3	6HX
T320M100X150R6HX	M10 x 1,5	90	18	33	10,0	4	6HX
T320MF120X150R6HX	M12 x 1,5	100	21	40	12,0	4	6HX
T320M120X175R6HX	M12 x 1,75	100	21	40	12,0	4	6HX
T320MF140X150R6HX	M14 x 1,5	110	24	47	12,0	4	6HX
T320M140X200R6HX	M14 x 2	110	24	47	12,0	4	6HX
T320M160X200R6HX	M16 x 2	110	24	53	14,0	4	6HX

NOTE: Proprietary technology.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

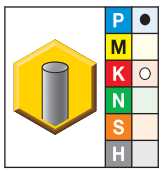




beyond

KC7542 TiAlN + TiN for steel.

T321 • Form D Plug Chamfer • Through Coolant • Metric



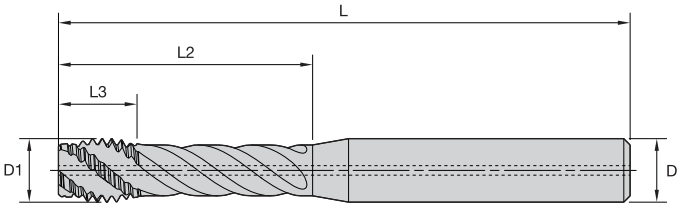
● first choice
○ alternate choice

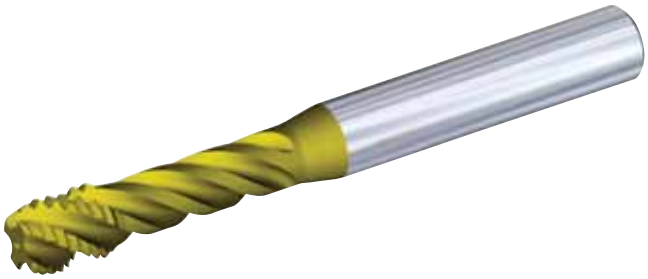
KC7542	D1 size	L	L3	L2	D	number of flutes	class of fit
T321M100X150R6HX	M10 x 1,5	90	18	33	10,0	4	6HX
T321MF120X150R6HX	M12 x 1,5	100	21	40	12,0	4	6HX
T321M120X175R6HX	M12 x 1,75	100	21	40	12,0	4	6HX
T321MF140X150R6HX	M14 x 1,5	110	24	47	12,0	4	6HX
T321M140X200R6HX	M14 x 2	110	24	47	12,0	4	6HX
T321M160X200R6HX	M16 x 2	110	24	53	14,0	4	6HX

NOTE: Proprietary technology.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

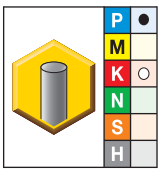




beyond

KC7542 TiAlN + TiN for steel.

T331 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric



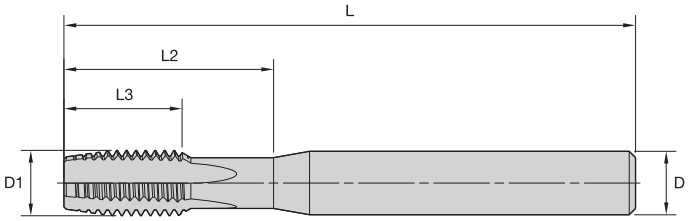
● first choice
○ alternate choice

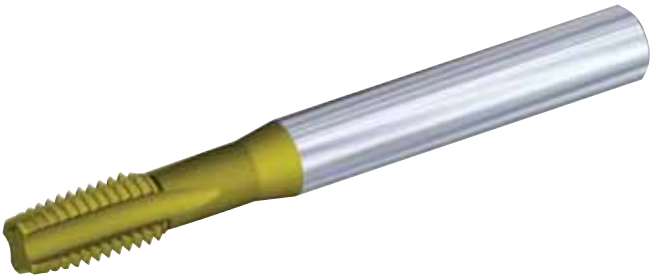
KC7542	D1 size	L	L3	L2	D	number of flutes	class of fit
T331M060X100R6HX	M6 x 1	70	8	24	6,0	3	6HX
T331M080X125R6HX	M8 x 1,25	80	10	32	8,0	3	6HX
T331MF100X100R6HX	M10 x 1	90	12	40	10,0	4	6HX
T331M100X150R6HX	M10 x 1,5	90	12	40	10,0	4	6HX
T331MF120X150R6HX	M12 x 1,5	100	14	48	12,0	4	6HX
T331M120X175R6HX	M12 x 1,75	100	14	48	12,0	4	6HX
T331MF140X150R6HX	M14 x 1,5	110	16	56	12,0	4	6HX
T331M140X200R6HX	M14 x 2	110	16	56	12,0	4	6HX
T331M160X200R6HX	M16 x 2	110	16	64	14,0	4	6HX

NOTE: Proprietary technology.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

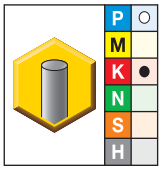




beyond

KC7542 TiAlN + TiN for cast iron.

T340 • Form D Plug Chamfer • Metric



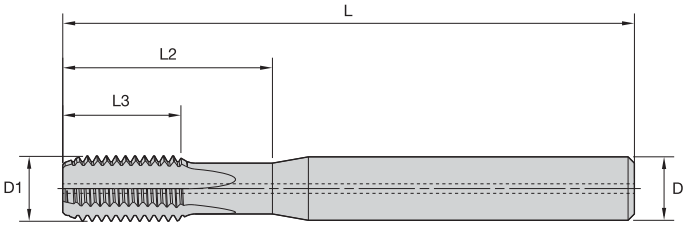
● first choice
○ alternate choice

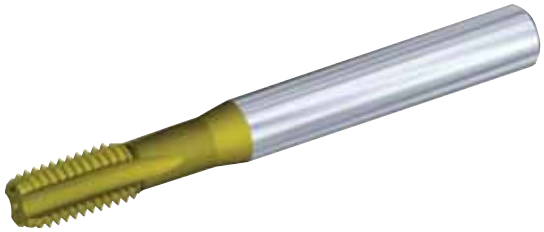
KC7542	D1 size	L	L3	L2	D	number of flutes	class of fit
T340M040X070R6HX	M4 x 0,7	60	6	16	6,0	3	6HX
T340M050X080R6HX	M5 x 0,8	60	7	20	6,0	3	6HX
T340M060X100R6HX	M6 x 1	70	12	23	6,0	4	6HX
T340M080X125R6HX	M8 x 1,25	80	15	28	8,0	4	6HX
T340M100X150R6HX	M10 x 1,5	90	18	33	10,0	4	6HX
T340MF100X100R6HX	M10 x 1	90	18	33	10,0	4	6HX
T340MF120X150R6HX	M12 x 1,5	100	21	40	12,0	4	6HX
T340M120X175R6HX	M12 x 1,75	100	21	40	12,0	4	6HX
T340M140X200R6HX	M14 x 2	110	24	47	12,0	4	6HX
T340MF140X150R6HX	M14 x 1,5	110	24	47	12,0	4	6HX
T340M160X200R6HX	M16 x 2	110	24	53	14,0	4	6HX
T340M180X250R6HX	M18 x 2,5	125	30	59	16,0	5	6HX
T340M200X250R6HX	M20 x 2,5	140	30	66	18,0	5	6HX

NOTE: Proprietary technology.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

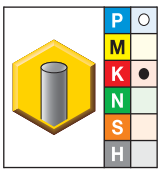




beyond

KC7542 TiAlN + TiN for cast iron.

T351 • Form E Bottoming Chamfer • Through Coolant M6 and Larger • Metric



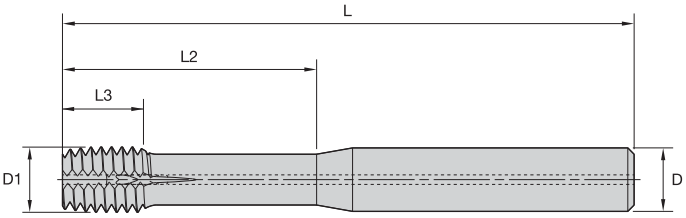
● first choice
○ alternate choice

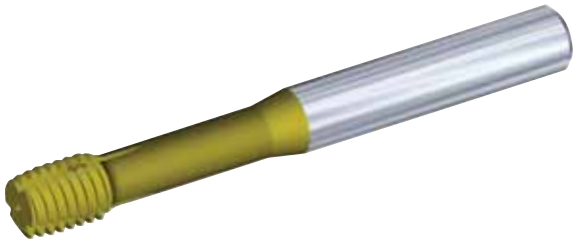
KC7542	D1 size	L	L3	L2	D	number of flutes	class of fit
T351M040X070R6HX	M4 x 0,7	60	6	16	6,0	3	6HX
T351M050X080R6HX	M5 x 0,8	60	7	20	6,0	3	6HX
T351M060X100R6HX	M6 x 1	70	12	23	6,0	4	6HX
T351M080X125R6HX	M8 x 1,25	80	15	28	8,0	4	6HX
T351MF100X100R6HX	M10 x 1	90	18	33	10,0	4	6HX
T351M100X150R6HX	M10 x 1,5	90	18	33	10,0	4	6HX
T351MF120X150R6HX	M12 x 1,5	100	21	40	12,0	4	6HX
T351M120X175R6HX	M12 x 1,75	100	21	40	12,0	4	6HX
T351MF140X150R6HX	M14 x 1,5	110	24	47	12,0	4	6HX
T351M140X200R6HX	M14 x 2	110	24	47	12,0	4	6HX
T351M160X200R6HX	M16 x 2	110	24	53	14,0	4	6HX
T351M200X250R6HX	M20 x 2,5	140	30	66	18,0	5	6HX

NOTE: Proprietary technology.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

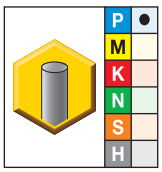




beyond

KC7542 TiAlN + TiN for steel.

T381 • Form D Plug Entry Taper • Through Coolant M6 and Larger • Metric



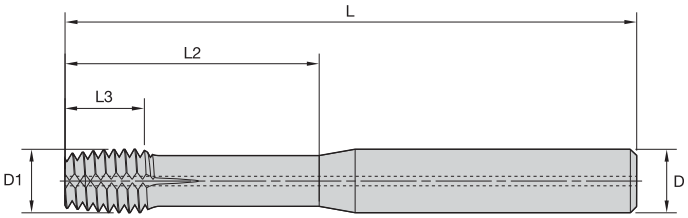
● first choice
○ alternate choice

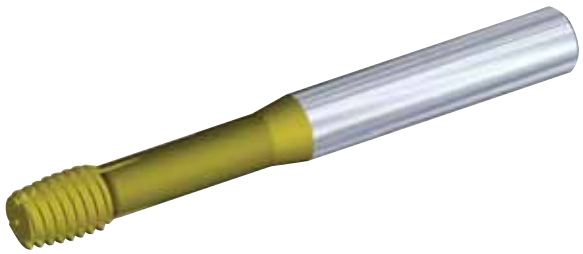
KC7542	D1 size	L	L3	L2	D	number of lube grooves	class of fit
T381M040X070R6HX	M4 x 0,7	60	6	16	6,0	2	6HX
T381M050X080R6HX	M5 x 0,8	60	7	20	6,0	2	6HX
T381M060X100R6HX	M6 x 1	70	8	24	6,0	2	6HX
T381M080X125R6HX	M8 x 1,25	80	10	32	8,0	2	6HX
T381M100X150R6HX	M10 x 1,5	90	12	40	10,0	3	6HX

NOTE: Proprietary technology.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

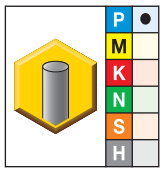




beyond

KC7542 TiAlN + TiN for steel.

T391 • Form E Bottoming Entry Taper • Through Coolant M6 and Larger • Metric



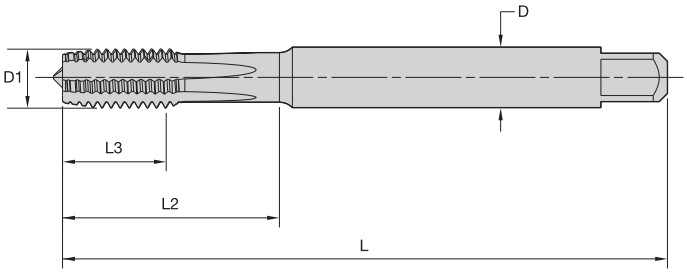
● first choice
○ alternate choice

KC7542	D1 size	L	L3	L2	D	number of lube grooves	class of fit
T391M040X070R6HX	M4 x 0,7	60	6	16	6,0	2	6HX
T391M050X080R6HX	M5 x 0,8	60	7	20	6,0	2	6HX
T391M060X100R6HX	M6 x 1	70	8	24	6,0	2	6HX
T391M080X125R6HX	M8 x 1,25	80	10	32	8,0	2	6HX
T391M100X150R6HX	M10 x 1,5	90	12	40	10,0	3	6HX

NOTE: Proprietary technology.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.

Shank Tolerance

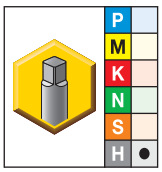
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



beyond

KCU36 • TiAlN/MoS_2 for tapping steel 55–63 HRC.

T410 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric

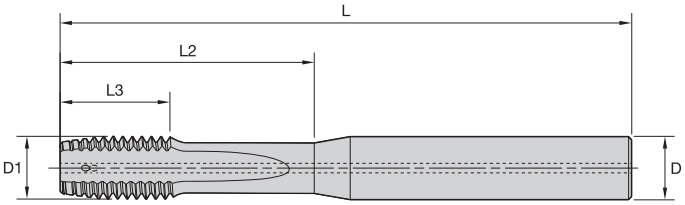


● first choice
○ alternate choice

KCU36	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T410M030X050R6HX-D1	M3 x 0,5	63	6	18	4,5	4	DIN 371	6HX
T410M040X070R6HX-D1	M4 x 0,7	63	8	20	4,5	4	DIN 371	6HX
T410M050X080R6HX-D1	M5 x 0,8	70	10	26	6,0	4	DIN 371	6HX
T410M060X100R6HX-D1	M6 x 1	80	12	28	6,0	4	DIN 371	6HX
T410MF080X100R6HX-D4	M8 x 1	90	15	35	8,0	5	DIN 374	6HX
T410M080X125R6HX-D1	M8 x 1,25	90	15	35	8,0	5	DIN 371	6HX
T410MF100X100R6HX-D4	M10 x 1	100	18	38	10,0	5	DIN 374	6HX
T410M100X150R6HX-D1	M10 x 1,5	100	18	38	10,0	5	DIN 371	6HX
T410MF120X150R6HX-D4	M12 x 1,5	110	21	41	12,0	5	DIN 374	6HX
T410M120X175R6HX-D6	M12 x 1,75	110	21	41	12,0	5	DIN 376	6HX
T410MF140X150R6HX-D4	M14 x 1,5	110	24	44	14,0	5	DIN 374	6HX
T410M140X200R6HX-D6	M14 x 2	110	24	44	14,0	6	DIN 376	6HX
T410MF160X150R6HX-D4	M16 x 1,5	110	24	44	16,0	5	DIN 374	6HX

Shank Tolerance

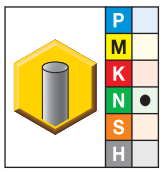
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



beyond

KC7512 TiN + CrC/C for aluminium.

T461 • Form D Plug Chamfer • Through Coolant M6 and Larger • Metric



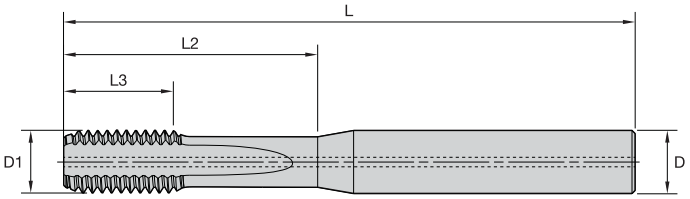
● first choice
○ alternate choice

KC7512	D1 size	L	L3	L2	D	number of flutes	class of fit
T461M060X100R6HX	M6 x 1	70	12	24	6,0	3	6HX
T461M080X125R6HX	M8 x 1,25	80	15	32	8,0	3	6HX
T461MF100X100R6HX	M10 x 1	90	18	40	10,0	3	6HX
T461M100X150R6HX	M10 x 1,5	90	18	40	10,0	3	6HX
T461MF120X150R6HX	M12 x 1,5	100	21	48	12,0	3	6HX
T461M120X175R6HX	M12 x 1,75	100	21	48	12,0	3	6HX
T461MF140X150R6HX	M14 x 1,5	110	24	56	12,0	4	6HX
T461M140X200R6HX	M14 x 2	110	24	56	12,0	4	6HX
T461MF160X150R6HX	M16 x 1,5	110	24	64	14,0	4	6HX
T461M160X200R6HX	M16 x 2	110	24	64	14,0	4	6HX

NOTE: Proprietary technology.

Shank Tolerance

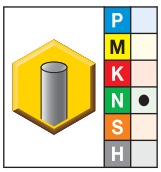
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



beyond

KC7512 TiN + CrC/C for aluminium.

T471 • Form E Bottoming Chamfer • Through Coolant M6 and Larger • Metric



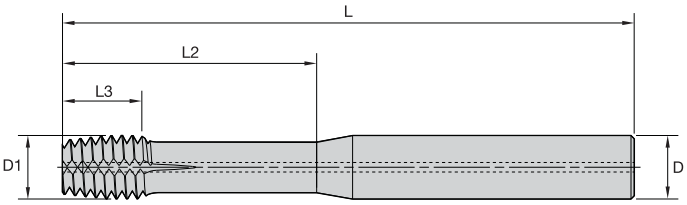
● first choice
○ alternate choice

KC7512	D1 size	L	L3	L2	D	number of flutes	class of fit
T471M060X100R6HX	M6 x 1	70	12	24	6,0	3	6HX
T471M080X125R6HX	M8 x 1,25	80	15	32	8,0	3	6HX
T471MF100X100R6HX	M10 x 1	90	18	40	10,0	3	6HX
T471M100X150R6HX	M10 x 1,5	90	18	40	10,0	3	6HX
T471MF120X150R6HX	M12 x 1,5	100	21	48	12,0	3	6HX
T471M120X175R6HX	M12 x 1,75	100	21	48	12,0	3	6HX
T471MF140X150R6HX	M14 x 1,5	110	24	56	12,0	4	6HX
T471M140X200R6HX	M14 x 2	110	24	56	12,0	4	6HX
T471MF160X150R6HX	M16 x 1,5	110	24	64	14,0	4	6HX
T471M160X200R6HX	M16 x 2	110	24	64	14,0	4	6HX

NOTE: Proprietary technology.

Shank Tolerance

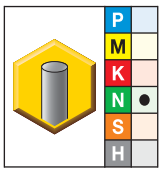
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



beyond

KC7512 TiN + CrC/C for aluminium.

T481 • Form D Plug Entry Taper • Through Coolant M6 and Larger • Metric



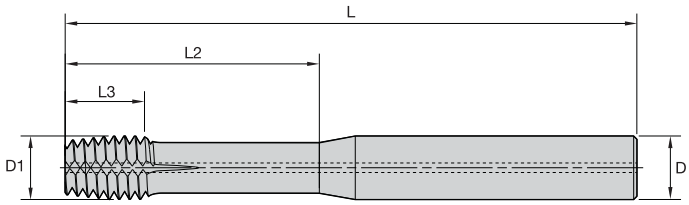
● first choice
○ alternate choice

KC7512	D1 size	L	L3	L2	D	number of lube grooves	class of fit
T481M040X070R6HX	M4 x 0,7	60	6	16	6,0	2	6HX
T481M050X080R6HX	M5 x 0,8	60	7	20	6,0	2	6HX
T481M060X100R6HX	M6 x 1	70	8	24	6,0	2	6HX
T481M080X125R6HX	M8 x 1,25	80	10	32	8,0	2	6HX
T481MF100X100R6HX	M10 x 1	90	12	40	10,0	3	6HX
T481M100X150R6HX	M10 x 1,5	90	12	40	10,0	3	6HX
T481MF120X150R6HX	M12 x 1,5	100	14	48	12,0	3	6HX
T481M120X175R6HX	M12 x 1,75	100	14	48	12,0	3	6HX

NOTE: Proprietary technology.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.

Shank Tolerance

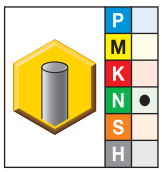
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



beyond

KC7512 TiN + CrC/C for aluminium.

T491 • Form E Bottoming Entry Taper • Through Coolant M6 and Larger • Metric



● first choice
○ alternate choice

KC7512	D1 size	L	L3	L2	D	number of lube grooves	class of fit
T491M040X070R6HX	M4 x 0,7	60	6	16	6,0	2	6HX
T491M050X080R6HX	M5 x 0,8	60	7	20	6,0	2	6HX
T491M060X100R6H	M6 x 1	70	8	24	6,0	2	6HX
T491M080X125R6HX	M8 x 1,25	80	10	32	8,0	2	6HX
T491MF100X100R6H	M10 x 1	90	12	40	10,0	3	6HX
T491M100X150R6HX	M10 x 1,5	90	12	40	10,0	3	6HX
T491MF120X150R6HX	M12 x 1,5	100	14	48	12,0	3	6HX
T491M120X175R6HX	M12 x 1,75	100	14	48	12,0	3	6HX

NOTE: Proprietary technology.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

Metric

Material Group		Through Holes					Blind Holes				
				Range — m/min					Range — m/min		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
P	1	T320, T381	KC7542	80	**100**	130	T331, T381	KC7542	50	**70**	90
	2	T320, T381	KC7542	70	**90**	120	T331, T381	KC7542	50	**60**	80
	3	T320, T381	KC7542	60	**80**	100	T331, T381	KC7542	50	**60**	80
K	1	T340	KC7542	80	**105**	140	T351	KC7542	50	**70**	90
	2	T340	KC7542	80	**100**	130	T351	KC7542	50	**70**	90
	3	T340	KC7542	70	**90**	120	T351	KC7542	50	**60**	80
N	1	T461, T481	KC7512	90	**120**	160	T471, T491	KC7512	60	**80**	100
	2	T461, T481	KC7512	80	**100**	130	T471, T491	KC7512	50	**70**	90
	4	T461, T481	KC7512	70	**85**	110	T471, T491	KC7512	50	**60**	80
H	3	T410	KCU36	1,2	**1,5**	2,0	T410	KCU36	0,8	**1,1**	1,4
	4	T410	KCU36	0,6	**0,8**	1,0	T410	KCU36	0,4	**0,5**	0,7

NOTE: Increase speed of T321 coolant taps by up to 25% of speeds listed for non-coolant T320 taps.

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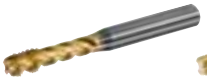
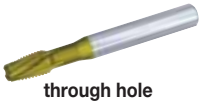
KENNAMETAL®

Steel

typical thread sizes				required tap drill diameter				P Solid Carbide Taps		
										
cutting taps metric	cutting taps inch	forming taps metric	forming taps inch	mm	inch	fraction	wire	blind hole with coolant T331_ KC7542	through hole T320_ KC7542	through hole with coolant T321_ KC7542
—	—	—	6-32	3.175	.1250	1/8	—	—	—	—
M4,5 x 0,75	—	M4 x 0,70	—	3.700	.1457	—	—	—	—	—
—	—	—	8-32	3.797	.1495	—	25	—	—	—
—	—	—	10-24	4.366	.1719	11/64	—	—	—	—
—	12-24	—	10-32	4.496	.1770	—	16	—	—	—
—	—	M5 x 0,80	—	4.700	.1850	—	13	—	—	—
M6 x 1,00	—	—	—	5.000	.1969	—	—	T331M060X100R6HX	T320M060X100R6HX	—
—	1/4-20	—	12-28	5.106	.2010	—	7	T331NC2500-20R3BX	T320NC02500-20R3BX	—
—	1/4-28	—	—	5.410	.2130	—	3	T331NF2500-28R3BX	T320NF02500-28R3BX	—
—	—	M6 x 1,00	—	5.600	.2205	—	—	—	—	—
—	—	—	1/4-20	5.791	.2280	—	1	—	—	—
—	—	—	1/4-28	5.944	.2340	—	A	—	—	—
—	5/16-18	—	—	6.528	.2570	—	F	T331NC3125-18R3BX	T320NC03125-18R3BX	—
M8 x 1,25	—	—	—	6.700	.2638	—	—	T331M080X125R6HX	T320M080X125R6HX	—
—	5/16-24	—	—	6.909	.2720	—	I	—	T320NF03125-24R3BX	—
—	—	—	5/16-18	7.366	.2900	—	L	—	—	—
—	—	M8 x 1,25	—	7.400	.2913	—	—	—	—	—
—	3/8-16	—	—	7.938	.3125	5/16	—	T331NC3750-16R3BX	T320NC03750-16R3BX	—
—	3/8-24	—	—	8.433	.3320	—	Q	—	T320NF03750-24R3BX	—
M10 x 1,50	—	—	—	8.500	.3346	—	—	T331M100X150R6HX	T320M100X150R6HX	T321M100X150R6HX
M10 x 1,00	—	—	—	9.000	.3543	—	—	T331MF100X100R6HX	—	—
—	—	—	3/8-16	8.839	.3480	—	S	—	—	—
—	7/16-14	—	3/8-24	9.093	.3580	—	T	T331NC4375-14R3BX	T320NC04375-14R3BX	—
—	—	M10 x 1,50	—	9.400	.3701	—	—	—	—	—
M12 x 1,75	—	—	—	10.200	.4016	—	—	T331M120X175R6HX	T320M120X175R6HX	T321M120X175R6HX
M12 x 1,50	—	—	—	10.500	.4134	—	—	T331MF120X150R6HX	T320MF120X150R6HX	T321MF120X150R6HX
—	1/2-13	—	—	10.716	.4219	27/64	—	T331NC5000-13R3BX	T320NC05000-13R3BX	—
—	1/2-20	—	—	11.509	.4531	29/64	—	—	T320NF0500020R3BX	—
M14 x 2,00	—	—	—	12.000	.4724	—	—	T331M140X200R6HX	T320M140X200R6HX	T321M140X200R6HX
—	9/16-12	—	—	12.304	.4844	31/64	—	T331NC5625-12R3BX	T320NC05625-12R3BX	—
M14 x 1,50	—	—	—	12.500	.4921	—	—	T331MF140X150R6HX	T320MF140X150R6HX	T321MF140X150R6HX
—	5/8-11	—	9/16-12	13.495	.5313	17/32	—	T331NC6250-11R3BX	T320NC06250-11R3BX	—
M16 x 2,00	—	—	—	14.000	.5512	—	—	T331M160X200R6HX	T320M160X200R6HX	T321M160X200R6HX

		P		All Materials	
Solid Carbide Taps		Recommended SC Drill		Alternate Tap Drill	
forming blind hole with coolant T391_KC7542	forming through hole with coolant T381_ KC7542	approximately 3 x D with coolant B224_ HP KCPK15	approximately 5 x D with coolant B225_ HP KCPK15	approximately 3 x D with coolant B976_ KC7315	approximately 5 x D with coolant B977_ KC7315
T391NC#6-32R3BX	T381NC#6-32R3BX	B224A03175HP	B225A03175HP	B976A03175	B977A03175
T391M040X070R6HX	T381M040X070R6HX	B224A03700HP	B225A03700HP	B976A03700	B977A03700
T391NC#8-32R3BX	T381NC#8-32R3BX	B224A03797HP	B225A03797HP	B976A03797	B977A03797
T391NC#10-24R3BX	T381NC#10-24R3BX	B224A04366HP	B225A04366HP	B976A04366	B977A04366
T391NF#10-32R3BX	T381NF#10-32R3BX	B224A04496HP	B225A04496HP	B976A04496	B977A04496
T391M050X080R6HX	T381M050X080R6HX	B224A04700HP	B225A04700HP	B976A04700	B977A04700
–	–	B224A05000HP	B225A05000HP	B976A05000	B977A05000
–	–	B224A05106HP	B225A05106HP	B976A05106	B977A05106
–	–	B224A05410HP	B225A05410HP	B976A05410	B977A05410
T391M060X100R6HX	T381M060X100R6HX	B224A05600HP	B225A05600HP	B976A05600	B977A05600
T391NC2500-20R3BX	T381NC2500-20R3BX	B224A05791HP	B225A05791HP	B976A05791	B977A05791
T391NF2500-28R3BX	T381NF2500-28R3BX	B224A05944HP	B225A05944HP	B976A05944	B977A05944
–	–	B224A06528HP	B225A06528HP	B976A06528	B977A06528
–	–	B224A06700HP	B225A06700HP	B976A06700	B977A06700
–	–	B224A06909HP	B225A06909HP	B976A06909	B977A06909
T391NC3125-18R3BX	T381NC3125-18R3BX	B224A07366HP	B225A07366HP	B976A07366	B977A07366
T391M080X125R6HX	T381M080X125R6HX	B224A07400HP	B225A07400HP	B976A07400	B977A07400
–	–	B224A07938HP	B225A07938HP	B976A07938	B977A07938
–	–	B224A08433HP	B225A08433HP	B976A08433	B977A08433
–	–	B224A08500HP	B225A08500HP	B976A08500	B977A08500
–	–	B224A09000HP	B225A09000HP	B976A09000	B977A09000
T391NC3750-16R3BX	T381NC3750-16R3BX	B224A08839HP	B225A08839HP	B976A08839	B977A08839
–	–	B224A09093HP	B225A09093HP	B976A09093	B977A09093
T391M100X150R6HX	T381M100X150R6HX	B224A09400HP	B225A09400HP	B976A09400	B977A09400
–	–	B224A10200HP	B225A10200HP	B976A10200	B977A10200
–	–	B224A10500HP	B225A10500HP	B976A10500	B977A10500
–	–	B224A10716HP	B225A10716HP	B976A10716	B977A10716
–	–	B224A11509HP	B225A11509HP	B976A11509	B977A11509
–	–	B224A12000HP	B225A12000HP	B976A12000	B977A12000
–	–	B224A12304HP	B225A12304HP	B976A12304	B977A12304
–	–	B224A12500HP	B225A12500HP	B976A12500	B977A12500
–	–	B224A13495HP	B225A13495HP	B976A13495	B977A13495
–	–	B224A14000HP	B225A14000HP	B976A14000	B977A14000

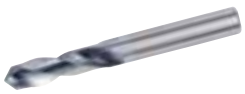
Cast Iron

typical thread sizes		required tap drill diameter				K Solid Carbide Taps	
cutting taps						blind hole with coolant	through hole
metric	inch	mm	inch	fraction	wire	T351_ KC7542	T340_ KC7542
–	6-32	2.705	.1065	–	36	T351NC#6-32R3BX	–
M4 x 0,70	–	3.300	.1299	–	–	T351M040X070R6HX	T340M040X070R6HX
–	8-32 /8-36	3.454	.1360	–	29	T351NC#8-32R3BX	–
–	10-24	3.734	.1470	–	26	T351NC#10-24R3BX	–
–	10-32	4.039	.1590	–	21	T351NF#10-32R3BX	–
M5 x 0,80	–	4.200	.1654	–	–	T351M050X080R6HX	T340M050X080R6HX
M6 x 1,00	–	5.000	.1969	–	–	T351M060X100R6HX	T340M060X100R6HX
–	1/4-20	5.106	.2010	–	7	T351NC2500-20R3BX	T340NC2500-20R3BX
–	1/4-28	5.410	.2130	–	3	T351NF2500-28R3BX	T340NF2500-28R3BX
–	5/16-18	6.528	.2570	–	F	T351NC3125-18R3BX	T340NC3125-18R3BX
M8 x 1,25	–	6.700	.2638	–	–	T351M080X125R6HX	T340M080X125R6HX
–	3/8-16	7.938	.3125	5/16	–	T351NC3750-16R3BX	T340NC03750-16R3BX
–	3/8-24	8.433	.3320	–	Q	–	T340NF03750-24R3BX
M10 x 1,50	–	8.500	.3346	–	–	T351M100X150R6HX	T340M100X150R6HX
M10 x 1,00	–	9.000	.3543	–	–	T351MF100X100R6HX	T340MF100X100R6HX
–	7/16-14	9.093	.3580	–	T	T351NC4375-14R3BX	T340NC04375-14R3BX
M12 x 1,75	–	10.200	.4016	–	–	T351M120X175R6HX	T340M120X175R6HX
M12 x 1,50	–	10.500	.4134	–	–	T351MF120X150R6HX	T340MF120X150R6HX
–	1/2-13	10.716	.4219	27/64	–	T351NC5000-13R3BX	T340NC05000-13R3BX
–	1/2-20	11.509	.4531	29/64	–	–	T340NF05000-20R3BX
M14 x 2,00	–	12.000	.4724	–	–	T351M140X200R6HX	T340M140X200R6HX
–	9/16-12	12.304	.4844	31/64	–	T351NC5625-12R3BX	T340NC05625-12R3BX
M14 x 1,50	–	12.500	.4921	–	–	T351MF140X150R6HX	T340MF140X150R6HX
–	5/8-11	13.495	.5313	17/32	–	T351NC6250-11R3BX	T340NC06250-11R3BX
M16 x 2,00	–	14.000	.5512	–	–	T351M160X200R6HX	T340M160X200R6HX
M18 x 2,50	–	15.500	.6102	–	–	–	T340M180X250R6HX
–	3/4-10	16.670	.6563	21/32	–	T351NC7500-10R3BX	T340NC07500-10R3BX
M20 x 2,50	–	17.500	.6890	–	–	T351M200X250R6HX	T340M200X250R6HX

K		All Materials	
Recommended SC Drill		Alternate Tap Drill	
approximately 3 x D with coolant B254_YPC KCK10	approximately 5 x D with coolant B254_YPC KCK10	approximately 3 x D with coolant B976_ KC7315	approximately 5 x D with coolant B977_ KC7315
B254Z02705YPC	B255Z02705YPC	–	B051A02705CPG
B254A03300YPC	B255A03300YPC	B976A03300	B977A03300
B254A03454YPC	B255A03454YPC	B976A03454	B977A03454
B254A03734YPC	B255A03734YPC	B976A03734	B977A03734
B254A04039YPC	B255A04039YPC	B976A04039	B977A04039
B254A04200YPC	B255A04200YPC	B976A04200	B977A04200
B254A05000YPC	B255A05000YPC	B976A05000	B977A05000
B254A05106YPC	B255A05106YPC	B976A05106	B977A05106
B254A05410YPC	B255A05410YPC	B976A05410	B977A05410
B254A06528YPC	B255A06528YPC	B976A06528	B977A06528
B254A06700YPC	B255A06700YPC	B976A06700	B977A06700
B254A07938YPC	B255A07938YPC	B976A07938	B977A07938
B254A08433YPC	B255A08433YPC	B976A08433	B977A08433
B254A08500YPC	B255A08500YPC	B976A08500	B977A08500
B254A09000YPC	B255A09000YPC	B976A09000	B977A09000
B254A09093YPC	B255A09093YPC	B976A09093	B977A09093
B254A10200YPC	B255A10200YPC	B976A10200	B977A10200
B254A10500YPC	B255A10500YPC	B976A10500	B977A10500
B254A10716YPC	B255A10716YPC	B976A10716	B977A10716
B254A11509YPC	B255A11509YPC	B976A11509	B977A11509
B254A12000YPC	B255A12000YPC	B976A12000	B977A12000
B254A12304YPC	B255A12304YPC	B976A12304	B977A12304
B254A12500YPC	B255A12500YPC	B976A12500	B977A12500
B254A13495YPC	B255A13495YPC	B976A13495	B977A13495
B254A14000YPC	B255A14000YPC	B976A14000	B977A14000
B254A15500YPC	B255A15500YPC	B976A15500	B977A15500
B254A16670YPC	B255A16670YPC	B976A16670	B977A16670
B254A17500YPC	B255A17500YPC	B976A17500	B977A17500

Aluminium

typical thread sizes				required tap drill diameter				N		
								Solid Carbide Taps		Solid Carbide Taps
cutting taps		forming taps						blind hole with coolant T471_ KC7512	through hole with coolant T461_ KC7512	forming blind hole with coolant T491_ KC7512
metric	inch	metric	inch	mm	inch	fraction	wire			
–	–	–	6-32	3.175	.1250	1/8	–	–	–	T491NC#6–32R3B
M4,5 x 0,75	–	M4 x 0,70	–	3.700	.1457	–	–	–	–	T491M040X070R6H
–	–	–	8-32	3.797	.1495	–	25	–	–	T491NC#8–32R3B
–	–	–	10-24	4.366	.1719	11/64	–	–	–	T491NC#10–24R3B
–	12-24	–	10-32	4.496	.1770	–	16	–	–	T491NF#10–32R3B
–	–	M5 x 0,80	–	4.700	.1850	–	13	–	–	T491M050X080R6H
M6 x 1,00	–	–	–	5.000	.1969	–	–	T471M060X100R6H	T461M060X100R6H	–
–	1/4-20	–	12-28	5.106	.2010	–	7	T471NC2500–20R3B	T461NC2500–20R3B	–
–	1/4-28	–	–	5.410	.2130	–	3	T471NF2500–28R3B	T461NF2500–28R3B	–
–	–	M6 x 1,00	–	5.600	.2205	–	–	–	–	T491M060X100R6H
–	–	–	1/4-20	5.791	.2280	–	1	–	–	T491NC2500–20R3B
–	–	–	1/4-28	5.944	.2340	–	A	–	–	T491NF2500–28R3B
–	5/16-18	–	–	6.528	.2570	–	F	T471NC3125–18R3B	T461NC3125–18R3B	–
M8 x 1,25	–	–	–	6.700	.2638	–	–	T471M080X125R6H	T461M080X125R6H	–
–	–	–	5/16-18	7.366	.2900	–	L	–	–	T491NC3125–18R3B
–	–	M8 x 1,25	–	7.400	.2913	–	–	–	–	T491M080X125R6H
–	3/8-16	–	–	7.938	.3125	5/16	–	T471NC3750–16R3B	T461NC3750–16R3B	–
M10 x 1,50	–	–	–	8.500	.3346	–	–	T471M100X150R6H	T461M100X150R6H	–
M10 x 1,00	–	–	–	9.000	.3543	–	–	T471MF100X100R6H	T461MF100X100R6H	–
–	–	–	3/8-16	8.839	.3480	–	S	–	–	T491NC3750–16R3B
–	7/16-14	–	3/8-24	9.093	.3580	–	T	T471NC4375–14R3B	T461NC4375–14R3B	–
–	–	M10 x 1,50	–	9.400	.3701	–	–	–	–	T491M100X150R6H
–	–	M10 x 1,00	–	9.500	.3740	–	–	–	–	T491MF100X100R6H
–	7/16-20	–	–	9.921	.3906	25/64	–	–	–	–
M12 x 1,75	–	–	–	10.200	.4016	–	–	T471M120X175R6H	T461M120X175R6H	–
–	–	–	7/16-14	10.262	.4040	–	Y	–	–	T491NC4375–14R3B
M12 x 1,50	–	–	–	10.500	.4134	–	–	T471MF120X150R6H	T461MF120X150R6H	–
–	1/2-13	–	–	10.716	.4219	27/64	–	T471NC5000–13R3B	T461NC5000–13R3B	–
–	–	M12 x 1,75	–	11.300	.4449	–	–	–	–	T491M120X175R6H
–	–	M12 x 1,50	–	11.300	.4449	–	–	–	–	T491MF120X150R6H
–	–	–	1/2-13	11.908	.4688	15/32	–	–	–	T491NC5000–13R3B
M14 x 2,00	–	–	–	12.000	.4724	–	–	T471M140X200R6H	T461M140X200R6H	–
–	9/16-12	–	–	12.304	.4844	31/64	–	T471NC5625–12R3B	T461NC5625–12R3B	–
M14 x 1,50	–	–	–	12.500	.4921	–	–	T471MF140X150R6H	T461MF140X150R6H	–
–	5/8-11	–	9/16-12	13.495	.5313	17/32	–	T471NC6250–11R3B	T461NC6250–11R3B	–
M16 x 2,00	–	–	–	14.000	.5512	–	–	T471M160X200R6H	T461M160X200R6H	–
M16 x 1,50	–	–	–	14.500	.5709	–	–	T471MF160X150R6H	T461MF160X150R6H	–

	N		All Materials	
Solid Carbide Taps	Recommended SC Drill		Alternate Tap Drill	
				
forming through hole with coolant T481_ KC7512	approximately 3 x D with coolant B284_(HP) K715	approximately 5 x D with coolant B411 KF1	approximately 3 x D with coolant B976_ KC7315	approximately 5 x D with coolant B977_ KC7315
T481NC#6—32R3B	–	–	B976A03175	B977A03175
T481M040X070R6H	–	–	B976A03700	B977A03700
T481NC#8—32R3B	–	–	B976A03797	B977A03797
T481NC#10—24R3B	–	–	B976A04366	B977A04366
T481NF#10—32R3B	–	–	B976A04496	B977A04496
T481M050X080R6H	–	–	B976A04700	B977A04700
–	B284A05000	B411A05000	B976A05000	B977A05000
–	–	–	B976A05106	B977A05106
–	–	–	B976A05410	B977A05410
T481M060X100R6H	–	B411A05600	B976A05600	B977A05600
T481NC2500—20R3B	–	–	B976A05791	B977A05791
T481NF2500—28R3B	–	–	B976A05944	B977A05944
–	–	–	B976A06528	B977A06528
–	–	–	B976A06700	B977A06700
T481NC3125—18R3B	–	–	B976A07366	B977A07366
T481M080X125R6H	–	B411A07400	B976A07400	B977A07400
–	–	–	B976A07938	B977A07938
–	–	B411A08500	B976A08500	B977A08500
–	–	B411A09000	B976A09000	B977A09000
T481NC3750—16R3B	–	–	B976A08839	B977A08839
–	–	–	B976A09093	B977A09093
T481M100X150R6H	–	–	B976A09400	B977A09400
T481MF100X100R6H	–	B411A09500	B976A09500	B977A09500
–	K284A03906	–	B976A09921	B977A09921
–	–	B411A10200	B976A10200	B977A10200
T481NC4375—14R3B	–	–	B976A10262	B977A10262
–	–	B411A10500	B976A10500	B977A10500
–	–	–	B976A10716	B977A10716
T481M120X175R6H	–	–	B976A11300	B977A11300
T481MF120X150R6H	–	–	B976A11300	B977A11300
T481NC5000—13R3B	K284A04688	–	B976A11908	B977A11908
–	–	B411A12000	B976A12000	B977A12000
–	–	–	B976A12304	B977A12304
–	–	B411A12500	B976A12500	B977A12500
–	–	–	B976A13495	B977A13495
–	–	B411A14000	B976A14000	B977A14000
–	–	B411A14500	B976A14500	B977A14500

High-Performance HSS-E-PM Taps

Primary Application

The High-Performance High-Speed Steel (HSS-E-PM) Taps are manufactured to both ANSI and DIN standards from powder metal, offering high productivity and reliable thread quality and are engineered for greater wear and heat resistance. HSS-E-PM tools can be used on conventional non-rigid and CNC-synchronous tapping machines for tapping through and blind holes in a variety of materials and is particularly efficient in tapping soft steel and aluminium.

The precision h6 shank enables usage in either conventional square drive tap holders or in precision round toolholders.

Features and Benefits

Improved Performance, Wide Range of Choices

- Higher strength and wider range of applications versus carbide taps.
- Higher tapping speed capability and longer life than conventional HSS-E taps.
- Can be used on either conventional or synchronous tapping machines.
- Forming taps for soft steel and aluminium.
- Selection of taps for all materials:
  - Steel
  - Stainless steel
  - Iron
  - Aluminium, cast and wrought
  - Aerospace
  - Hard steel

Customisation

- Customised taps are available with short lead times from semi-finished blanks.

Beyond™ High-Performance HSS-E-PM Taps • DIN Metric

● first choice
○ alternate choice

Beyond High-Performance HSS-E-PM	series	grade	shank/dimension	P	M	K	N	S	H
	T600	KSP21	DIN 371, 374, 376	●	○			○	
	T602	KSP21	DIN 371, 374, 376	●				○	
	T604	KSH26	DIN 371, 374, 376	●					
	T606	KSSH22	DIN 371, 374, 376						●
	T610	KSSH22	DIN 371, 374, 376					●	
	T612	KSSH22	DIN 371, 374, 376					●	
	T614	KSN25	DIN 371, 376				○	●	
	T616	KSN25	DIN 371				○	●	
	T620	KP6525	DIN 371, 374, 376, XL	●				○	
	T620	KM6515	DIN 371, 374, 376		●		○	○	
	T621	KP6525	DIN 371, 376	●				○	
	T621	KM6515	DIN 371, 376		●		○	○	
	T622	KSP21	DIN 371, 374, 376	●					
	T622	'KSN28	DIN 371, 374, 376				●		
	T623	KSP21	DIN 371, 374, 376	●					
	T623	KSN28	DIN 371, 374, 376				●		
	T630	KP6525	DIN 371, 374, 376, XL	●				○	
	T630	KM6515	DIN 371, 374, 376		●		○	○	
	T630	KP6505	DIN 371, 376	●					
	T631	KP6525	DIN 371, 376, XL	●				○	
	T631	KM6515	DIN 371, 376		●		○	○	
	T632	KP6525	DIN 371, 374, 376	●				○	
	T633	KP6525	DIN 371, 374, 376	●					
	T640	KP6525	DIN 371, 376			●	●		
	T641	KP6525	DIN 371, 376			●	●		
	T642	KP6525	DIN 371, 374, 376			●	●		
	T643	KP6525	DIN 371, 374, 376			●	●		
	T650	KP6525	DIN 376, XL	●	○				
	T651	KP6525	DIN 376, XL	●	○				
	T670	KSN38	DIN 371, 376				●		
	T680	KSN38	DIN 371, 376				●		

size range (metric) size min–max	through hole	blind hole	chamfer form	helix angle	external coolant	internal coolant	page(s)	recommended cutting parameters
M3–M20							L36	L64
M3–M20							L37	L64
M3–M20							L38	L64
M6–M16							L39	L64
M3–M20							L40	L64
M3–M20							L41	L64
M3–M12							L42	L64
M3–M12							L43	L64
M3–M42							L44, L59	L64
M3–M20							L44	L64
M5–M14							L45	L64
M5–M14							L45	L64
M3–M16							L46	L64
M3–M16							L46	L64
M5–M16							L47	L64
M5–M16							L47	L64
M3–M42							L48, L60	L64
M3–M24							L48	L64
M3–M16							L48	L64
M5–M42							L49, L61	L64
M5–M16							L49	L64
M5–M16							L50	L64
M5–M16							L51	L64
M4–M22							L52	L64
M4–M20							L53	L64
M5–M16							L54	L64
M5–M16							L55	L64
M24–M42							L62	L64
M24–M42							L63	L64
M3–M16							L56	L64
M3–M20							L57	L64

HSS Taps Identification System

T620MF120X150R6HX-D4
T620NC06250-11R3BX-A

Metric

T620	MF	120	X	150	R	6HX	-D4

Inch

T620	NC	06250	-	11	R	3BX	-A
Tap Design	Type of Thread	Nominal Diameter of Thread		Pitch	Cutting Direction	Tolerance Class	Taps Dimension
		mm or inch (depending on type)		mm or TPI (depending on type)			

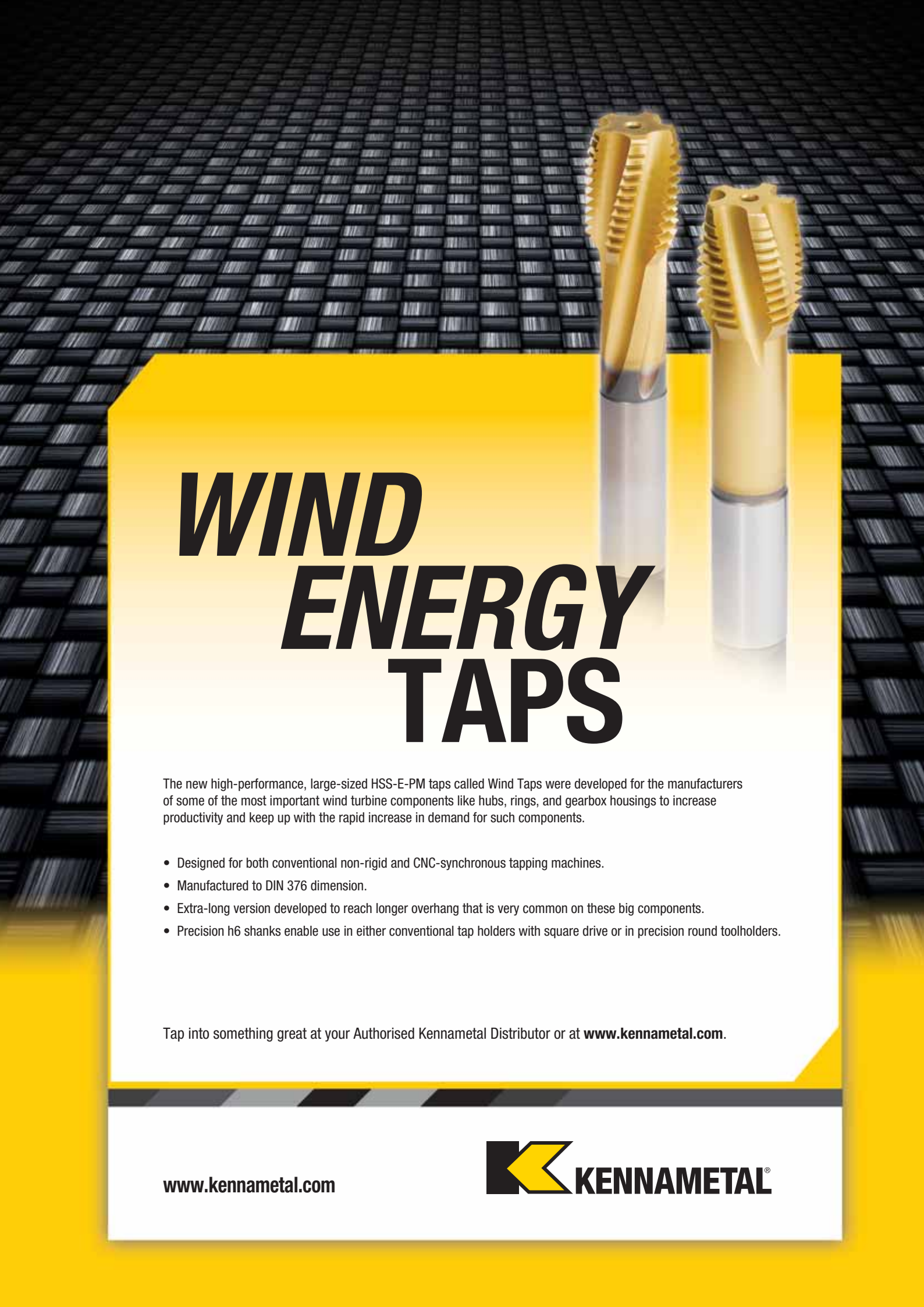
M = Metric coarse-pitch thread (ISO form)
MF = Metric fine-pitch thread (ISO form)
NC = Unified coarse series thread
NF = Unified fine series thread

A = ANSI
D1 = DIN 371
D4 = DIN 374
D6 = DIN 376
D74 = DIN 3174
J = JIS
XL = DIN extra length

Style

T620 = Steel and stainless steel, through holes, LH spiral flute, solid
T621 = Steel and stainless steel, through holes, LH spiral flute, coolant
T630 = Steel and stainless steel, blind holes, RH spiral flute, solid
T631 = Steel and stainless steel, blind holes, RH spiral flute, coolant
T640 = Cast iron, through and blind holes, straight flute, solid
T641 = Cast iron, through and blind holes, straight flute, coolant

NOTE: Other taps styles, see page L31.



WIND ENERGY TAPS

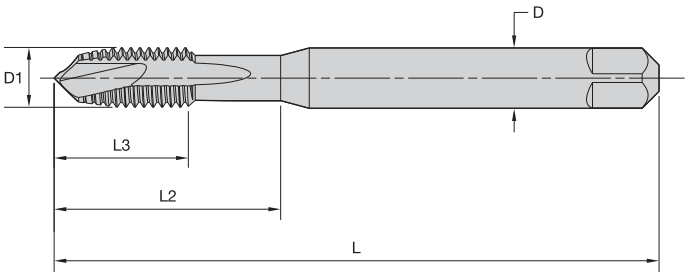
The new high-performance, large-sized HSS-E-PM taps called Wind Taps were developed for the manufacturers of some of the most important wind turbine components like hubs, rings, and gearbox housings to increase productivity and keep up with the rapid increase in demand for such components.

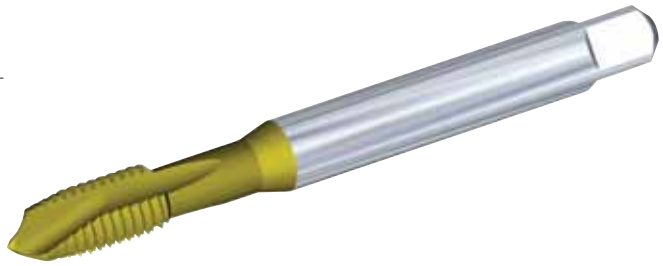
- Designed for both conventional non-rigid and CNC-synchronous tapping machines.
- Manufactured to DIN 376 dimension.
- Extra-long version developed to reach longer overhang that is very common on these big components.
- Precision h6 shanks enable use in either conventional tap holders with square drive or in precision round toolholders.

Tap into something great at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

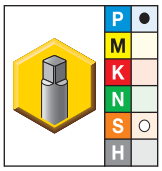
KENNAMETAL®





KSP21• TiN for tapping steel 32–44 HRC.

T600 • DIN 371, 374, and 376 • Form B Plug Chamfer • Metric

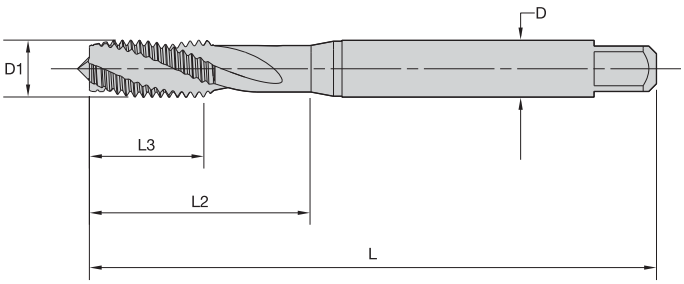


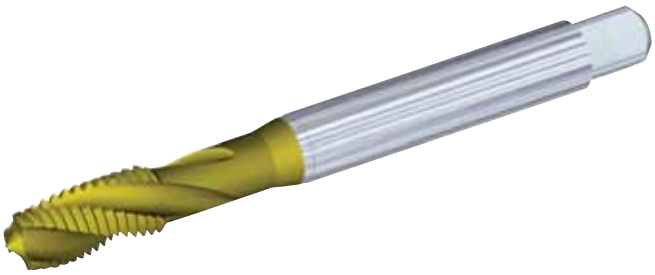
● first choice
○ alternate choice

KSP21	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T600M030X050R6HX-D1	M3 x 0,5	56	11	18	3,5	2	DIN 371	6HX
T600M040X070R6HX-D1	M4 x 0,7	63	13	21	4,5	2	DIN 371	6HX
T600M050X080R6HX-D1	M5 x 0,8	70	15	25	6,0	2	DIN 371	6HX
T600M060X100R6HX-D1	M6 x 1	80	17	30	6,0	3	DIN 371	6HX
T600MF080X100R6HX-D4	M8 x 1	90	17	—	6,0	3	DIN 374	6HX
T600M080X125R6HX-D1	M8 x 1,25	90	20	35	8,0	3	DIN 371	6HX
T600MF100X100R6HX-D4	M10 x 1	90	18	—	7,0	3	DIN 374	6HX
T600MF100X125R6HX-D4	M10 x 1,25	100	22	—	7,0	3	DIN 374	6HX
T600M100X150R6HX-D1	M10 x 1,5	100	22	39	10,0	3	DIN 371	6HX
T600MF120X125R6HX-D4	M12 x 1,25	100	22	—	9,0	3	DIN 374	6HX
T600MF120X150R6HX-D4	M12 x 1,5	100	22	—	9,0	3	DIN 374	6HX
T600M120X175R6HX-D6	M12 x 1,75	110	24	—	9,0	3	DIN 376	6HX
T600MF140X150R6HX-D4	M14 x 1,5	100	22	—	11,0	3	DIN 374	6HX
T600M140X200R6HX-D6	M14 x 2	110	26	—	11,0	3	DIN 376	6HX
T600MF160X150R6HX-D4	M16 x 1,5	100	22	—	12,0	4	DIN 374	6HX
T600M160X200R6HX-D6	M16 x 2	110	27	—	12,0	4	DIN 376	6HX
T600M180X250R6HX-D6	M18 x 2	125	30	—	14,0	4	DIN 376	6HX
T600M200X250R6HX-D6	M20 x 2,5	140	32	—	16,0	4	DIN 376	6HX

Shank Tolerance

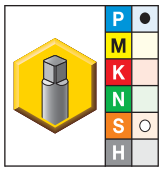
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043





KSP21 • TiN for tapping steel 32–44 HRC (2 x D).

T602 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric

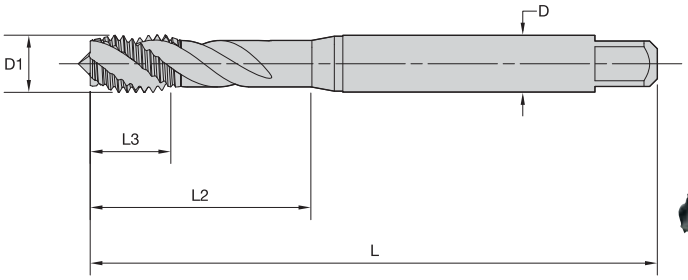


● first choice
○ alternate choice

KSP21	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T602M030X050R6H-D1	M3 x 0,5	56	11	18	3,5	3	DIN 371	6H
T602M040X070R6H-D1	M4 x 0,7	63	13	21	4,5	3	DIN 371	6H
T602M050X080R6H-D1	M5 x 0,8	70	15	25	6,0	3	DIN 371	6H
T602M060X100R6H-D1	M6 x 1	80	17	30	6,0	3	DIN 371	6H
T602MF080X100R6H-D4	M8 x 1	90	17	–	6,0	3	DIN 374	6H
T602M080X125R6H-D1	M8 x 1,25	90	20	35	8,0	3	DIN 371	6H
T602MF100X100R6H-D4	M10 x 1	90	18	–	7,0	3	DIN 374	6H
T602MF100X125R6H-D4	M10 x 1,25	100	22	–	7,0	3	DIN 374	6H
T602M100X150R6H-D1	M10 x 1,5	100	22	39	10,0	3	DIN 371	6H
T602MF120X125R6H-D4	M12 x 1,25	100	22	–	9,0	3	DIN 374	6H
T602MF120X150R6H-D4	M12 x 1,5	100	22	–	9,0	3	DIN 374	6H
T602M120X175R6H-D6	M12 x 1,75	110	24	44	12,0	3	DIN 376	6H
T602MF140X150R6H-D4	M14 x 1,5	100	22	–	11,0	3	DIN 374	6H
T602M140X200R6H-D6	M14 x 2	110	26	52	11,0	3	DIN 376	6H
T602MF160X150R6H-D4	M16 x 1,5	100	22	–	12,0	3	DIN 374	6H
T602M160X200R6H-D6	M16 x 2	110	27	–	12,0	3	DIN 376	6H
T602M180X250R6H-D6	M18 x 2	125	30	–	14,0	4	DIN 376	6H
T602M200X250R6H-D6	M20 x 2,5	140	32	–	16,0	4	DIN 376	6H

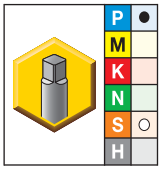
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSH26 • TiAlN/MoS_2 for tapping steel 32–44 HRC (3 x D).

T604 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric

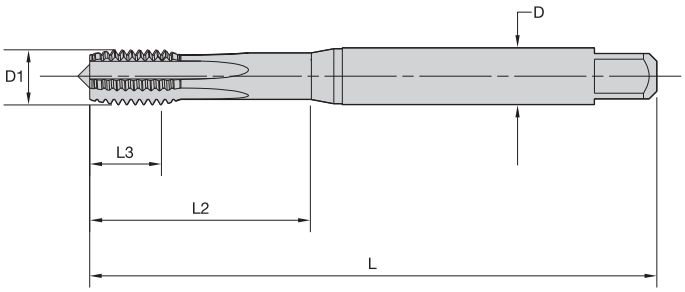


● first choice
○ alternate choice

KSH26	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T604M030X050R6H-D1	M3 x 0,5	56	6	18	3,5	3	DIN 371	6H
T604M040X070R6H-D1	M4 x 0,7	63	7	21	4,5	3	DIN 371	6H
T604M050X080R6H-D1	M5 x 0,8	70	8	25	6,0	3	DIN 371	6H
T604M060X100R6H-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6H
T604MF080X100R6H-D4	M8 x 1	90	10	—	6,0	3	DIN 374	6H
T604M080X125R6H-D1	M8 x 1,25	90	14	35	8,0	3	DIN 371	6H
T604MF100X100R6H-D4	M10 x 1	90	10	—	7,0	3	DIN 374	6H
T604MF100X125R6H-D4	M10 x 1,25	100	16	—	7,0	3	DIN 374	6H
T604M100X150R6H-D1	M10 x 1,5	100	16	39	10,0	3	DIN 371	6H
T604MF120X125R6H-D4	M12 x 1,25	100	15	—	9,0	4	DIN 374	6H
T604MF120X150R6H-D4	M12 x 1,5	100	15	—	9,0	4	DIN 374	6H
T604M120X175R6H-D6	M12 x 1,75	110	18	—	9,0	4	DIN 376	6H
T604MF140X150R6H-D4	M14 x 1,5	100	15	—	11,0	4	DIN 374	6H
T604M140X200R6H-D6	M14 x 2	110	20	—	11,0	4	DIN 376	6H
T604MF160X150R6H-D4	M16 x 1,5	100	15	—	12,0	4	DIN 374	6H
T604M160X200R6H-D6	M16 x 2	110	22	—	12,0	4	DIN 376	6H
T604M180X250R6H-D6	M18 x 2	125	25	—	14,0	4	DIN 376	6H
T604M200X250R6H-D6	M20 x 2,5	140	25	—	16,0	4	DIN 376	6H

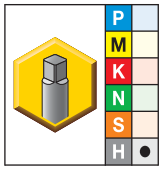
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSSH22 • TiCN for tapping steel 44–55 HRC.

T606 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric

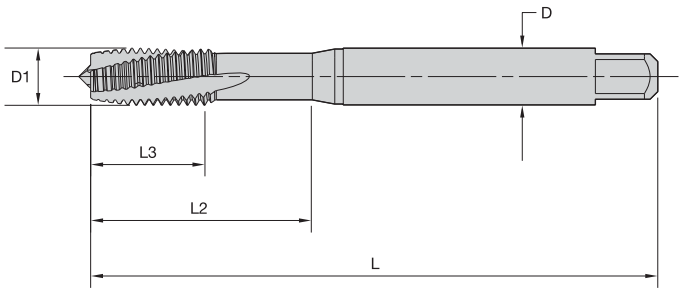


● first choice
○ alternate choice

KSSH22	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T606M060X100R6HX-D1	M6 x 1	80	10	30	6,0	4	DIN 371	6HX
T606MF080X100R6HX-D4	M8 x 1	90	10	35	8,0	5	DIN 374	6HX
T606M080X125R6HX-D1	M8 x 1,25	90	14	35	8,0	5	DIN 371	6HX
T606MF100X100R6HX-D4	M10 x 1	90	10	35	10,0	5	DIN 374	6HX
T606M100X150R6HX-D1	M10 x 1,5	100	16	39	10,0	5	DIN 371	6HX
T606MF120X150R6HX-D4	M12 x 1,5	100	15	—	9,0	5	DIN 374	6HX
T606M120X175R6HX-D6	M12 x 1,75	110	18	—	9,0	5	DIN 376	6HX
T606MF140X150R6HX-D4	M14 x 1,5	100	15	—	11,0	6	DIN 374	6HX
T606MF160X150R6HX-D4	M16 x 1,5	100	15	—	12,0	6	DIN 374	6HX
T606M160X200R6HX-D6	M16 x 2	110	22	—	12,0	6	DIN 376	6HX

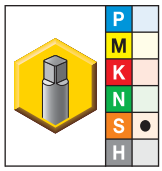
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSSH22 • TiCN for tapping cobalt and nickel alloys.

T610 • DIN 371 and 376 • Form D Plug Chamfer • Metric

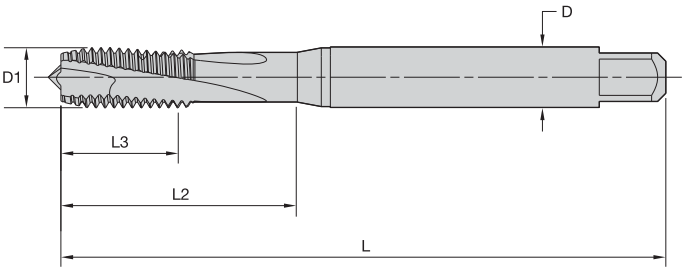


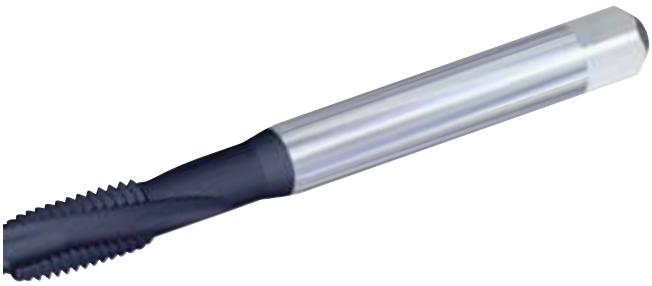
● first choice
○ alternate choice

KSSH22	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T610M030X050R6HX-D1	M3 x 0,5	56	11	18	3,5	2	DIN 371	6HX
T610M040X070R6HX-D1	M4 x 0,7	63	13	21	4,5	3	DIN 371	6HX
T610M050X080R6HX-D1	M5 x 0,8	70	15	25	6,0	3	DIN 371	6HX
T610M060X100R6HX-D1	M6 x 1	80	17	30	6,0	3	DIN 371	6HX
T610M080X125R6HX-D1	M8 x 1,25	90	20	35	8,0	3	DIN 371	6HX
T610M100X150R6HX-D1	M10 x 1,5	100	22	39	10,0	3	DIN 371	6HX
T610M120X175R6HX-D6	M12 x 1,75	110	24	—	9,0	3	DIN 376	6HX
T610M140X200R6HX-D6	M14 x 2	110	26	—	11,0	3	DIN 376	6HX
T610M160X200R6HX-D6	M16 x 2	110	27	—	12,0	3	DIN 376	6HX
T610M200X250R6HX-D6	M20 x 2,5	140	32	—	16,0	3	DIN 376	6HX

Shank Tolerance

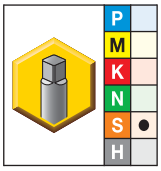
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043





KSSH22 • TiCN for tapping cobalt and nickel alloys.

T612 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Metric

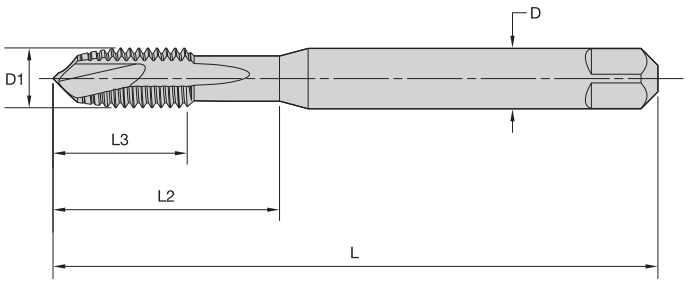


● first choice
○ alternate choice

KSSH22	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T612M030X050R6HX-D1	M3 x 0,5	56	11	18	3,5	2	DIN 371	6HX
T612M040X070R6HX-D1	M4 x 0,7	63	13	21	4,5	3	DIN 371	6HX
T612M050X080R6HX-D1	M5 x 0,8	70	15	25	6,0	3	DIN 371	6HX
T612M060X100R6HX-D1	M6 x 1	80	17	30	6,0	3	DIN 371	6HX
T612M080X125R6HX-D1	M8 x 1,25	90	20	35	8,0	3	DIN 371	6HX
T612M120X175R6HX-D6	M12 x 1,75	110	24	—	9,0	3	DIN 376	6HX
T612M100X150R6HX-D1	M10 x 1,5	100	22	39	10,0	3	DIN 371	6HX
T612M140X200R6HX-D6	M14 x 2	110	26	—	11,0	3	DIN 376	6HX
T612M160X200R6HX-D6	M16 x 2	110	27	—	12,0	3	DIN 376	6HX
T612M200X250R6HX-D6	M20 x 2,5	140	32	—	16,0	3	DIN 376	6HX

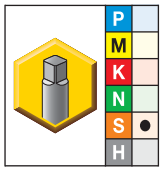
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSN25 • TiN/DLC for tapping titanium and titanium alloys.

T614 • DIN 371 and 376 • Form D Plug Chamfer • Metric

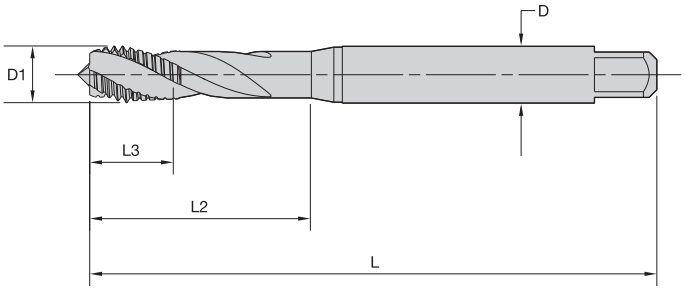


● first choice
○ alternate choice

KSN25	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T614M030X050R6HX-D1	M3 x 0,5	56	11	18	3,5	3	DIN 371	6HX
T614M040X070R6HX-D1	M4 x 0,7	63	13	21	4,5	3	DIN 371	6HX
T614M050X080R6HX-D1	M5 x 0,8	70	15	25	6,0	3	DIN 371	6HX
T614M060X100R6HX-D1	M6 x 1	80	17	30	6,0	3	DIN 371	6HX
T614M080X125R6HX-D1	M8 x 1,25	90	20	35	8,0	3	DIN 371	6HX
T614M100X150R6HX-D1	M10 x 1,5	100	22	39	10,0	3	DIN 371	6HX
T614M120X175R6HX-D6	M12 x 1,75	110	24	—	9,0	3	DIN 376	6HX

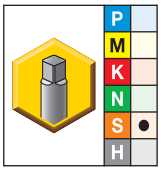
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSN25 • TiN/DLC for tapping titanium and titanium alloys.

T616 • DIN 371 • Form C Semi-Bottoming Chamfer • Metric

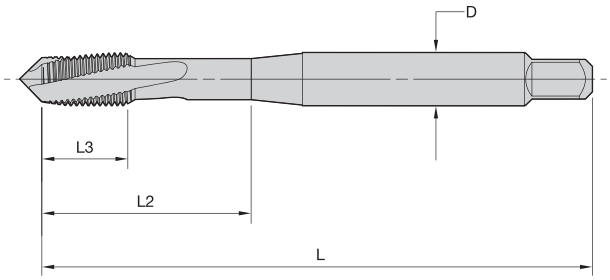


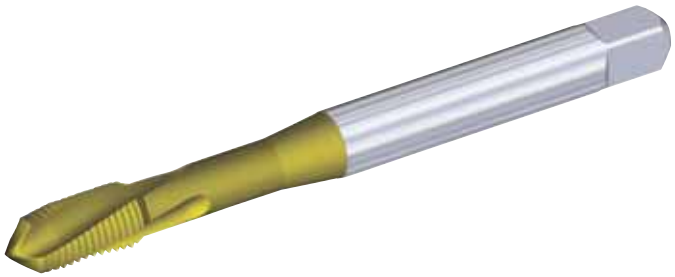
● first choice
○ alternate choice

KSN25	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T616M030X050R6HX-D1	M3 x 0,5	56	6	18	3,5	3	DIN 371	6HX
T616M040X070R6HX-D1	M4 x 0,7	63	7	21	4,5	3	DIN 371	6HX
T616M050X080R6HX-D1	M5 x 0,8	70	8	25	6,0	3	DIN 371	6HX
T616M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T616M080X125R6HX-D1	M8 x 1,25	90	14	35	8,0	3	DIN 371	6HX
T616M100X150R6HX-D1	M10 x 1,5	100	16	39	10,0	3	DIN 371	6HX
T616M120X175R6HX-D1	M12 x 1,75	110	18	44	12,0	3	DIN 371	6HX

Shank Tolerance

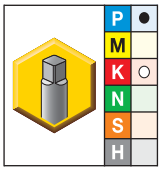
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043

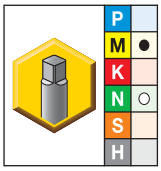




KM6515 • TiN + CrC/C for stainless steel.
KP6525 • TiCN+ TiN for steel.

T620 • DIN 371, 374, and 376 • Form D Plug Chamfer • Metric



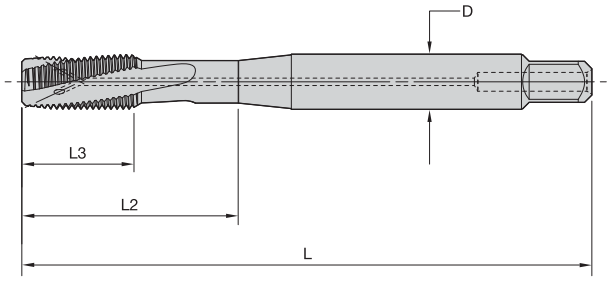


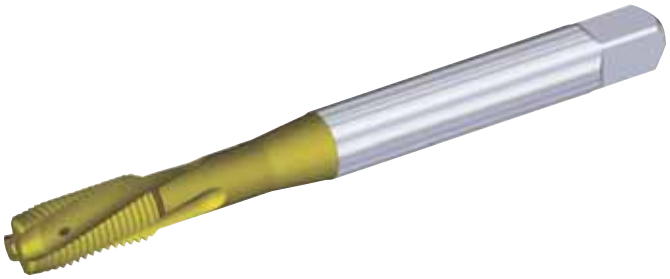
● first choice
○ alternate choice

KP6525	KM6515	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T620M030X050R6HX-D1	T620M030X050R6HX-D1	M3 x 0,5	56	8	18	3,5	3	DIN 371	6HX
T620M040X070R6HX-D1	T620M040X070R6HX-D1	M4 x 0,7	63	10	21	4,5	3	DIN 371	6HX
T620M050X080R6HX-D1	T620M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T620M060X100R6HX-D1	T620M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T620MF080X100R6HX-D4	T620MF080X100R6HX-D4	M8 x 1	90	13	35	6,0	3	DIN 374	6HX
T620M080X125R6HX-D1	T620M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T620MF100X100R6HX-D4	T620MF100X100R6HX-D4	M10 x 1	90	10	35	7,0	3	DIN 374	6HX
T620MF100X125R6HX-D4	–	M10 x 1,25	100	15	39	7,0	3	DIN 374	6HX
T620M100X150R6HX-D1	T620M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T620MF120X150R6HX-D4	T620MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	3	DIN 374	6HX
T620M120X175R6HX-D6	T620M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	3	DIN 376	6HX
T620MF140X150R6HX-D4	T620MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T620M140X200R6HX-D6	T620M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T620MF160X150R6HX-D4	T620MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX
T620M160X200R6HX-D6	T620M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T620MF180X150R6HX-D4	T620MF180X150R6HX-D4	M18 x 1,5	110	15	50	14,0	4	DIN 374	6HX
T620M200X250R6HX-D6	T620M200X250R6HX-D6	M20 x 2,5	140	25	64	16,0	4	DIN 376	6HX

Shank Tolerance

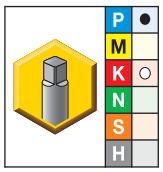
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

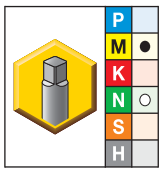




KM6515 • TiN + CrC/C for stainless steel.
KP6525 • TiCN+ TiN for steel.

T621 • DIN 371, 374, and 376 • Form D Plug Chamfer • Through Coolant • Metric



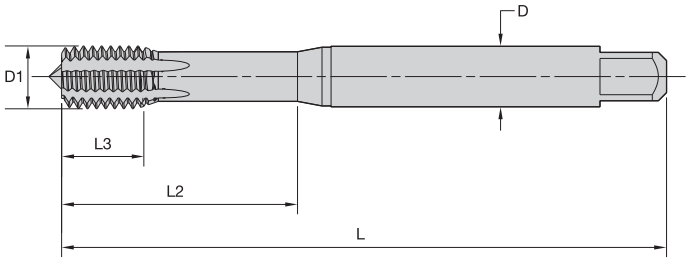


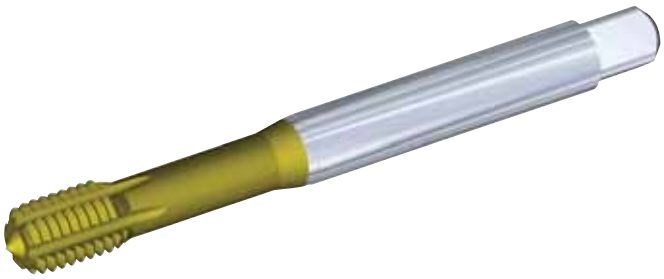
● first choice
○ alternate choice

KP6525	KM6515	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T621M050X080R6HX-D1	T621M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	2	DIN 371	6HX
T621M060X100R6HX-D1	T621M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T621MF080X100R6HX-D4	T621MF080X100R6HX-D4	M8 x 1	90	13	35	6,0	3	DIN 374	6HX
T621M080X125R6HX-D1	T621M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T621MF100X100R6HX-D4	T621MF100X100R6HX-D4	M10 x 1	90	10	35	7,0	3	DIN 374	6HX
T621MF100X125R6HX-D4	T621MF100X125R6HX-D4	M10 x 1,25	100	15	39	7,0	3	DIN 374	6HX
T621M100X150R6HX-D1	T621M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T621MF120X125R6HX-D4	–	M12 x 1,25	100	15	39	9,0	3	DIN 374	6HX
T621MF140X125R6HX-D4	–	M14 x 1,25	100	15	47	11,0	4	DIN 374	6HX
T621MF120X150R6HX-D4	T621MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	3	DIN 374	6HX
T621M120X175R6HX-D6	T621M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	3	DIN 376	6HX
T621MF140X150R6HX-D4	T621MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T621M140X200R6HX-D6	T621M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T621MF160X150R6HX-D4	T621MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX
T621M160X200R6HX-D6	T621M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T621MF180X150R6HX-D4	T621MF180X150R6HX-D4	M18 x 1,5	110	15	50	14,0	4	DIN 374	6HX
T621M180X250R6HX-D6	T621M180X250R6HX-D6	M18 x 2,5	125	25	58	14,0	4	DIN 376	6HX

Shank Tolerance

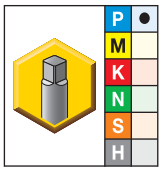
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

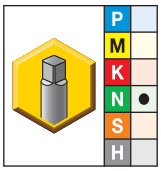




KSP21• TiN for tapping steel.
KSN28 • DLC for tapping aluminium.

T622 • DIN 2174 • Form C Semi-Bottoming Entry Taper • Metric



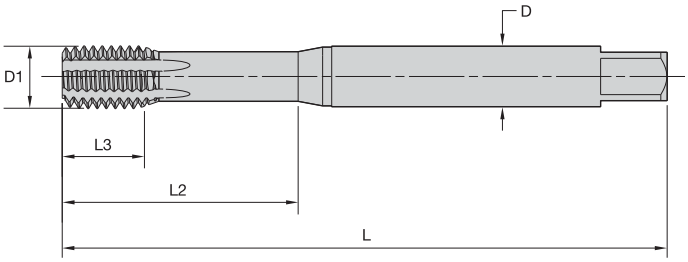


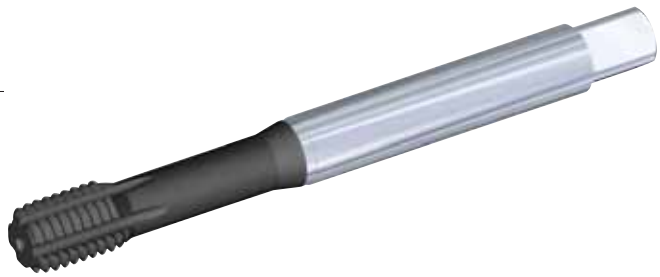
● first choice
○ alternate choice

KSP21	KSN28	D1 size	L	L3	L2	D	number of lube grooves	dimension standard	class of fit
T622M030X050R6HX-D74	**T622M030X050R6HX-D74**	M3 x 0,5	56	6	18	3,5	4	DIN 2174	6HX
T622M040X070R6HX-D74	**T622M040X070R6HX-D74**	M5 x 0,7	63	7	21	4,5	4	DIN 2174	6HX
T622M050X080R6HX-D74	**T622M050X080R6HX-D74**	M5 x 0,8	70	8	25	6,0	4	DIN 2174	6HX
T622M060X100R6HX-D74	**T622M060X100R6HX-D74**	M6 x 1	80	10	30	6,0	5	DIN 2174	6HX
T622MF080X100R6HX-D74	**T622MF080X100R6HX-D74**	M8 x 1	90	10	35	8,0	5	DIN 2174	6HX
T622M080X125R6HX-D74	**T622M080X125R6HX-D74**	M8 x 1,25	90	14	35	8,0	5	DIN 2174	6HX
T622MF100X100R6HX-D74	**T622MF100X100R6HX-D74**	M10 x 1	90	10	35	10,0	5	DIN 2174	6HX
T622MF100X125R6HX-D74	**T622MF100X125R6HX-D74**	M10 x 1,25	100	16	69	10,0	5	DIN 2174	6HX
T622M100X150R6HX-D74	**T622M100X150R6HX-D74**	M10 x 1,5	100	16	39	10,0	5	DIN 2174	6HX
T622MF120X125R6HX-D74	**T622MF120X125R6HX-D74**	M12 x 1,25	100	15	27	9,0	6	DIN 2174	6HX
T622MF120X150R6HX-D74	**T622MF120X150R6HX-D74**	M12 x 1,5	100	15	27	9,0	6	DIN 2174	6HX
T622M120X175R6HX-D74	**T622M120X175R6HX-D74**	M12 x 1,75	110	—	—	9,0	6	DIN 2174	6HX
T622MF140X150R6HX-D74	**T622MF140X150R6HX-D74**	M14 x 1,5	100	—	—	11,0	6	DIN 2174	6HX
T622MF160X150R6HX-D74	**T622MF160X150R6HX-D74**	M16 x 1,5	100	—	—	12,0	6	DIN 2174	6HX
T622M160X200R6HX-D74	**T622M160X200R6HX-D74**	M16 x 2	110	—	—	12,0	6	DIN 2174	6HX

Shank Tolerance

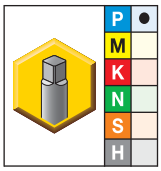
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043

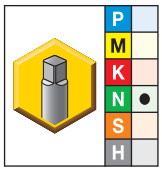




KSP21• TiN for tapping steel.
KSP28 • DLC for tapping aluminium.

T623 • DIN 2174 • Form C Semi-Bottoming Entry Taper • Through Coolant • Metric



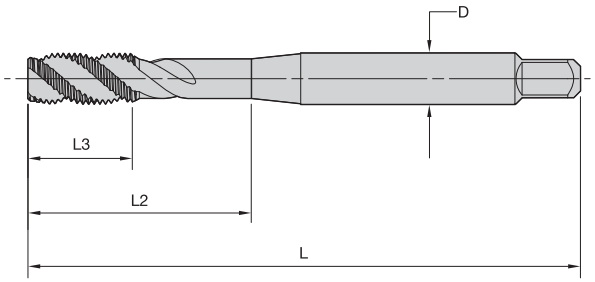


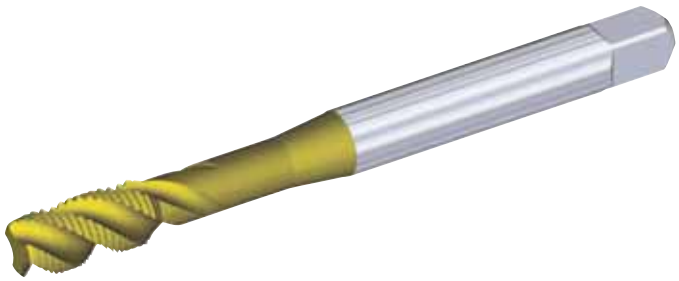
● first choice
○ alternate choice

KSP21	KSN28	D1 size	L	L3	L2	D	number of lube grooves	dimension standard	class of fit
T623M050X080R6HX-D74	**T623M050X080R6HX-D74**	M5 x 0,8	70	8	25	6,0	4	DIN 2174	6HX
T623M060X100R6HX-D74	**T623M060X100R6HX-D74**	M6 x 1	80	10	30	6,0	5	DIN 2174	6HX
T623MF080X100R6HX-D74	**T623MF080X100R6HX-D74**	M8 x 1	90	10	35	8,0	5	DIN 2174	6HX
T623M080X125R6HX-D74	**T623M080X125R6HX-D74**	M8 x 1,25	90	14	35	8,0	5	DIN 2174	6HX
T623MF100X100R6HX-D74	**T623MF100X100R6HX-D74**	M10 x 1	90	10	35	10,0	5	DIN 2174	6HX
T623M100X150R6HX-D74	**T623M100X150R6HX-D1**	M10 x 1,5	100	16	39	10,0	5	DIN 2174	6HX
T623MF120X150R6HX-D74	**T623MF120X150R6HX-D74**	M12 x 1,5	100	15	27	9,0	6	DIN 2174	6HX
T623M120X175R6HX-D74	**T623M120X175R6HX-D74**	M12 x 1,75	110	18	30	9,0	6	DIN 2174	6HX
T623MF140X150R6HX-D74	**T623MF140X150R6HX-D74**	M14 x 1,5	100	15	—	11,0	6	DIN 2174	6HX
T623MF160X150R6HX-D74	**T623MF160X150R6HX-D74**	M16 x 1,5	100	15	—	12,0	6	DIN 2174	6HX
T623M160X200R6HX-D74	**T623M160X200R6HX-D74**	M16 x 2	110	22	—	12,0	6	DIN 2174	6HX

Shank Tolerance

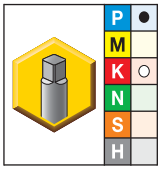
D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043

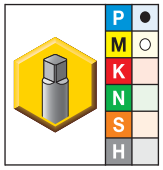


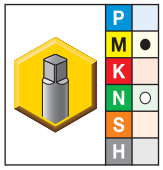


KM6515 • TiN + CrC/C for stainless steel.
KP6525 • TiCN+ TiN for steel.
KP6505 • Steam oxide for steel.

T630 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric





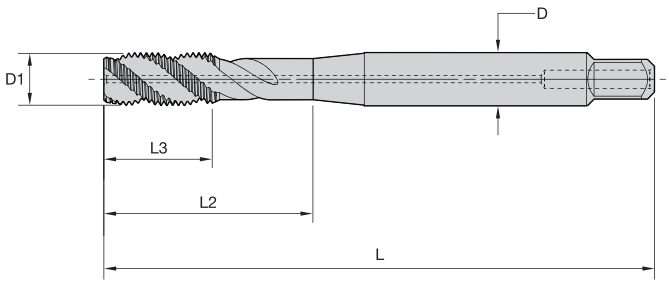


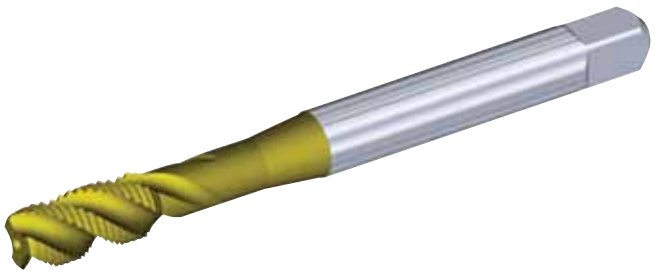
● first choice
○ alternate choice

KP6525	KP6505	KM6515	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T630M030X050R6HX-D1	T630M030X050R6HX-D1	T630M030X050R6HX-D1	M3 x 0,5	56	8	18	3,5	3	DIN 371	6HX
T630M040X070R6HX-D1	T630M040X070R6HX-D1	T630M040X070R6HX-D1	M4 x 0,7	63	10	21	4,5	3	DIN 371	6HX
T630M050X080R6HX-D1	T630M050X080R6HX-D1	T630M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T630M060X100R6HX-D1	T630M060X100R6HX-D1	T630M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T630MF080X100R6HX-D4	–	T630MF080X100R6HX-D4	M8 x 1	90	13	35	6,0	3	DIN 374	6HX
T630M080X125R6HX-D1	T630M080X125R6HX-D1	T630M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T630MF100X100R6HX-D4	–	T630MF100X100R6HX-D4	M10 x 1	90	10	35	7,0	3	DIN 374	6HX
T630MF100X125R6HX-D4	–	T630MF100X125R6HX-D4	M10 x 1,25	100	15	39	7,0	3	DIN 374	6HX
T630M100X150R6HX-D1	T630M100X150R6HX-D1	T630M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T630MF120X150R6HX-D4	–	T630MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	3	DIN 374	6HX
T630M120X175R6HX-D6	T630M120X175R6HX-D6	T630M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	3	DIN 376	6HX
T630MF140X150R6HX-D4	–	T630MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T630M140X200R6HX-D6	T630M140X200R6HX-D6	T630M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T630MF160X150R6HX-D4	–	T630MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX
T630M160X200R6HX-D6	T630M160X200R6HX-D6	T630M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T630MF180X150R6HX-D4	–	T630MF180X150R6HX-D4	M18 x 1,5	110	15	50	14,0	4	DIN 374	6HX
T630M180X250R6HX-D6	T630M180X250R6HX-D6	T630M180X250R6HX-D6	M18 x 2,5	125	25	58	14,0	4	DIN 376	6HX
–	T630M200X250R6HX-D6	–	M20 x 2,5	140	25	64	16,0	4	DIN 376	6HX

Shank Tolerance

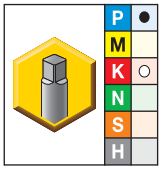
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011

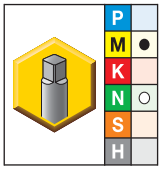




KM6515 • TiN + CrC/C for stainless steel.
KP6525 • TiCN+ TiN for steel.

T631 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric



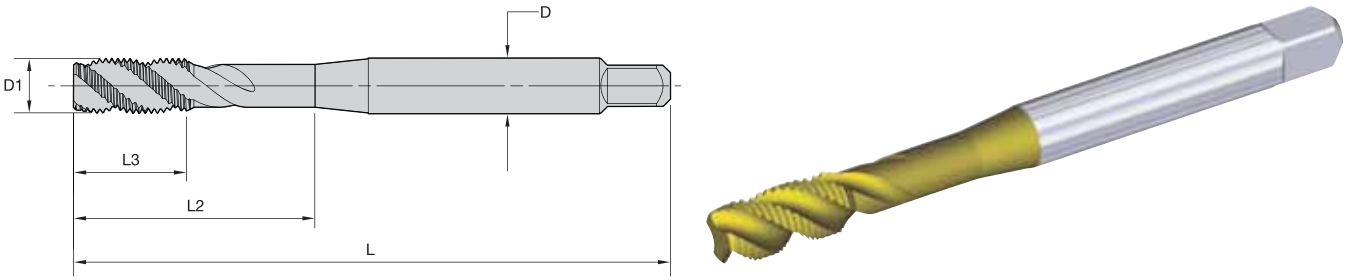


● first choice
○ alternate choice

KP6525	KM6515	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T631M050X080R6HX-D1	T631M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T631M060X100R6HX-D1	T631M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T631MF080X100R6HX-D4	T631MF080X100R6HX-D4	M8 x 1	90	13	35	6,0	3	DIN 374	6HX
T631M080X125R6HX-D1	T631M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T631MF100X100R6HX-D4	T631MF100X100R6HX-D4	M10 x 1	90	10	35	7,0	3	DIN 374	6HX
T631MF100X125R6HX-D4	T631MF100X125R6HX-D4	M10 x 1,25	100	15	39	7,0	3	DIN 374	6HX
T631M100X150R6HX-D1	T631M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T631MF120X125R6HX-D4	T631MF120X125R6HX-D4	M12 x 1,25	100	15	39	9,0	4	DIN 374	6HX
T631MF140X125R6HX-D4	T631MF140X125R6HX-D4	M14 x 1,25	100	15	47	11,0	4	DIN 374	6HX
T631MF120X150R6HX-D4	T631MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	4	DIN 374	6HX
T631M120X175R6HX-D6	T631M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T631MF140X150R6HX-D4	T631MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T631M140X200R6HX-D6	T631M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T631MF160X150R6HX-D4	T631MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX
T631M160X200R6HX-D6	T631M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T631MF180X150R6HX-D4	T631MF180X150R6HX-D4	M18 x 1,5	110	15	50	14,0	4	DIN 374	6HX
T631M180X250R6HX-D6	T631M180X250R6HX-D6	M18 x 2,5	125	25	58	13,0	4	DIN 376	6HX

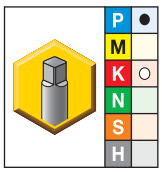
Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



KP6525 • TiCN+TiN for tapping steel.

T632 • DIN 371, 374, and 376 • Form E Bottoming Chamfer • Metric

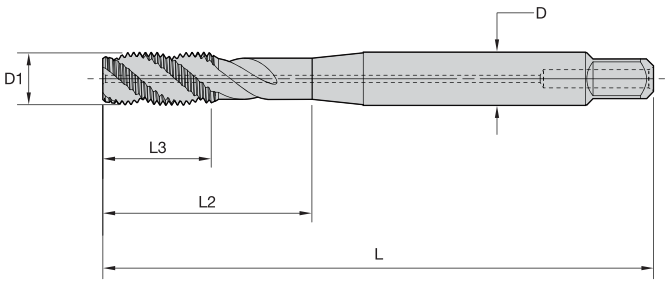


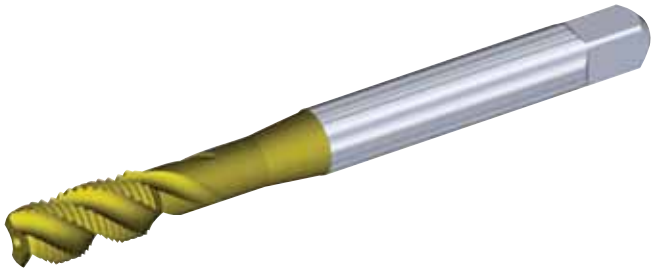
● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T632M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T632M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T632M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T632M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T632MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	4	DIN 374	6HX
T632M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T632MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T632M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T632MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX

Shank Tolerance

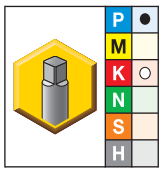
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011





KP6525 • TiCN+TiN for tapping steel.

T633 • DIN 371, 374, and 376 • Form E Bottoming Chamfer • Through Coolant • Metric

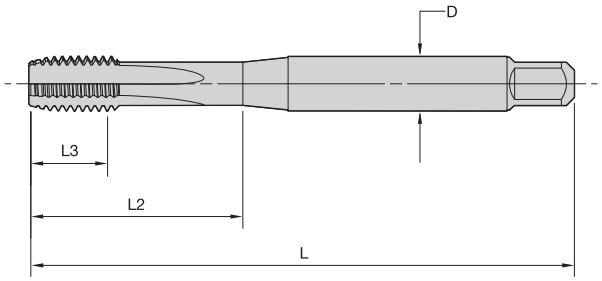


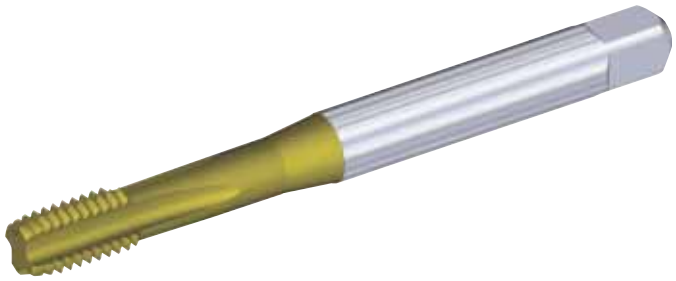
● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T633M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T633M060X100R6HX-D1	M6 x 1	80	10	30	6,0	3	DIN 371	6HX
T633M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	3	DIN 371	6HX
T633M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	3	DIN 371	6HX
T633MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	4	DIN 374	6HX
T633M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T633MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T633M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T633MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX

Shank Tolerance

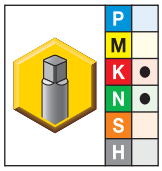
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011





KP6525 • TiCN+ TiN for cast iron and cast aluminium.

T640 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Metric

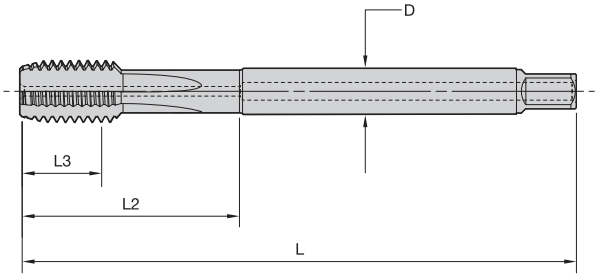


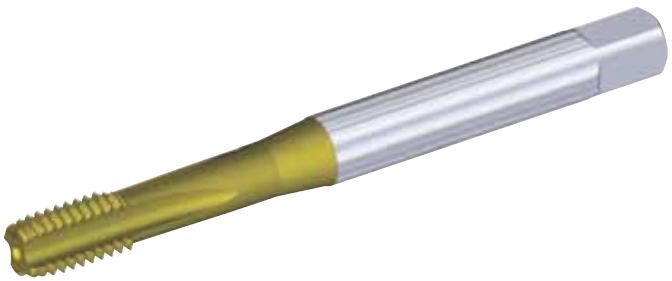
● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T640M040X070R6HX-D1	M4 x 0,7	63	10	21	4,5	3	DIN 371	6HX
T640M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T640M060X100R6HX-D1	M6 x 1	80	10	30	6,0	4	DIN 371	6HX
T640M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	4	DIN 371	6HX
T640M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	4	DIN 371	6HX
T640M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T640M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T640M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T640M180X250R6HX-D6	M18 x 2,5	125	25	58	14,0	4	DIN 376	6HX
T640M200X250R6HX-D6	M20 x 2,5	140	25	64	16,0	4	DIN 376	6HX
T640M220X250R6HX-D6	M22 x 2,5	140	25	64	16,0	4	DIN 376	6HX

Shank Tolerance

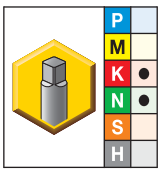
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011





KP6525 • TiCN+ TiN for cast iron and cast aluminium.

T641 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric

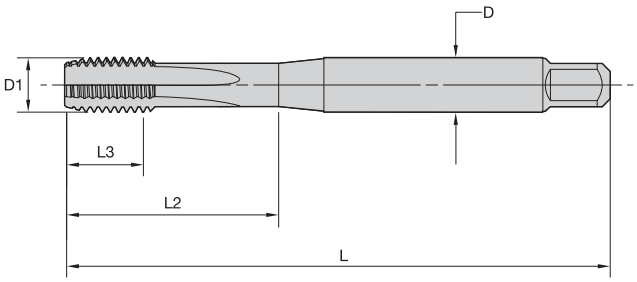


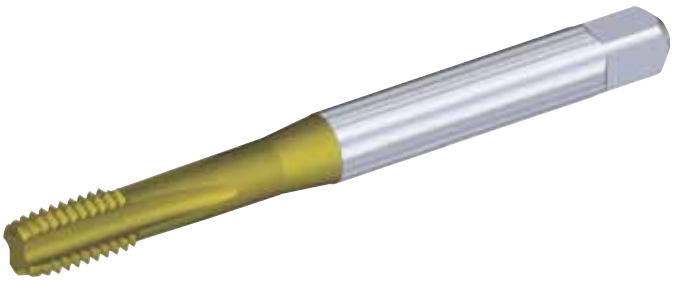
● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T641M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T641M060X100R6HX-D1	M6 x 1	80	10	30	6,0	4	DIN 371	6HX
T641M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	4	DIN 371	6HX
T641M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	4	DIN 371	6HX
T641M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T641M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T641M160X200R6HX-D6	M16 x 2	110	20	51	12,0	4	DIN 376	6HX
T641M180X250R6HX-D6	M18 x 2,5	125	25	58	14,0	4	DIN 376	6HX
T641M200X250R6HX-D6	M20 x 2,5	140	25	64	16,0	4	DIN 376	6HX

Shank Tolerance

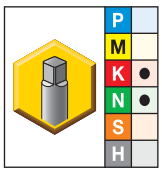
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011





KP6525 • TiCN+TiN for cast iron and cast silicon aluminium.

T642 • DIN 371, 374, and 376 • Form E Bottoming Chamfer • Metric

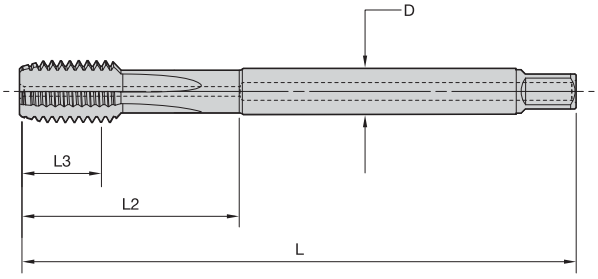


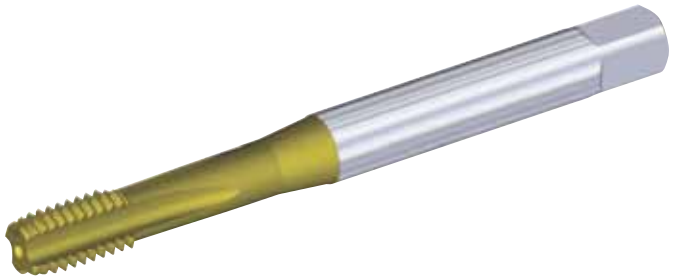
● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T642M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T642M060X100R6HX-D1	M6 x 1	80	10	30	6,0	4	DIN 371	6HX
T642M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	4	DIN 371	6HX
T642M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	4	DIN 371	6HX
T642MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	4	DIN 374	6HX
T642M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T642MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T642M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T642MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX

Shank Tolerance

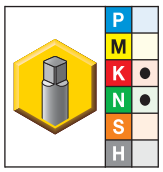
D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011





KP6525 • TiCN+TiN for tapping cast iron and cast silicon aluminium.

T643 • DIN 371, 374, and 376 • Form E Bottoming Chamfer • Through Coolant • Metric

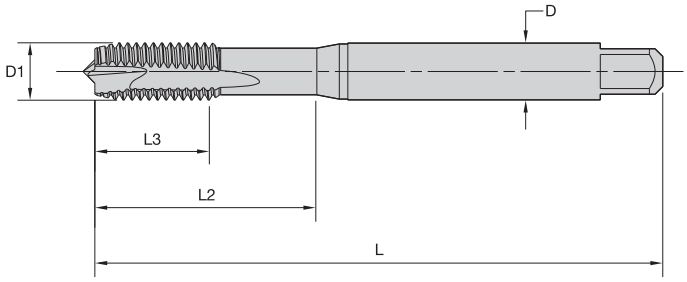


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T643M050X080R6HX-D1	M5 x 0,8	70	10	25	6,0	3	DIN 371	6HX
T643M060X100R6HX-D1	M6 x 1	80	10	30	6,0	4	DIN 371	6HX
T643M080X125R6HX-D1	M8 x 1,25	90	13	35	8,0	4	DIN 371	6HX
T643M100X150R6HX-D1	M10 x 1,5	100	15	39	10,0	4	DIN 371	6HX
T643MF120X150R6HX-D4	M12 x 1,5	100	15	39	9,0	4	DIN 374	6HX
T643M120X175R6HX-D6	M12 x 1,75	110	18	44	9,0	4	DIN 376	6HX
T643MF140X150R6HX-D4	M14 x 1,5	100	15	47	11,0	4	DIN 374	6HX
T643M140X200R6HX-D6	M14 x 2	110	20	52	11,0	4	DIN 376	6HX
T643MF160X150R6HX-D4	M16 x 1,5	100	15	46	12,0	4	DIN 374	6HX

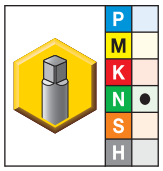
Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–16	+0, -0,011



KSN38 • DLC for tapping aluminium.

T670 • DIN 371 and 376 • Form B Plug Chamfer • Metric

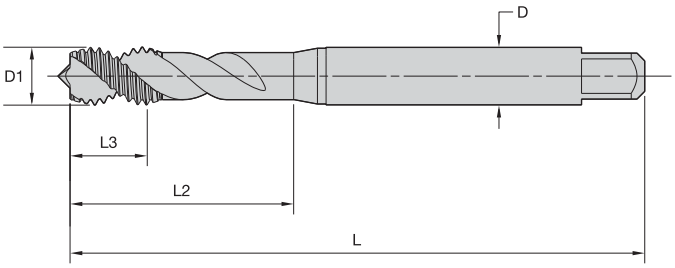


● first choice
○ alternate choice

KSN38	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T670M030X050R6H-D1	M3 x 0,5	56	11	18	3,5	2	DIN 371	6H
T670M040X070R6H-D1	M4 x 0,7	63	13	21	4,5	2	DIN 371	6H
T670M050X080R6H-D1	M5 x 0,8	70	15	25	6,0	2	DIN 371	6H
T670M060X100R6H-D1	M6 x 1	80	17	30	6,0	2	DIN 371	6H
T670M080X125R6H-D1	M8 x 1,25	90	20	35	8,0	2	DIN 371	6H
T670M100X150R6H-D1	M10 x 1,5	100	22	39	10,0	2	DIN 371	6H
T670M120X175R6H-D6	M12 x 1,75	110	24	—	9,0	3	DIN 376	6H
T670M160X200R6H-D6	M16 x 2	110	27	—	12,0	3	DIN 376	6H

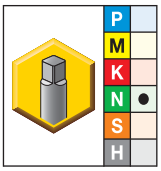
Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



KSN38 • DLC for tapping aluminium.

T680 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Metric



● first choice
○ alternate choice

KSN38	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
T680M030X050R6H-D1	M3 x 0,5	56	6	18	3,5	2	DIN 371	6H
T680M040X070R6H-D1	M4 x 0,7	63	7	21	4,5	2	DIN 371	6H
T680M050X080R6H-D1	M5 x 0,8	70	8	25	6,0	2	DIN 371	6H
T680M060X100R6H-D1	M6 x 1	80	10	30	6,0	2	DIN 371	6H
T680M080X125R6H-D1	M8 x 1,25	90	14	35	8,0	2	DIN 371	6H
T680M100X150R6H-D1	M10 x 1,5	100	16	39	10,0	2	DIN 371	6H
T680M120X175R6H-D6	M12 x 1,75	110	18	—	9,0	3	DIN 376	6H
T680M160X200R6H-D6	M16 x 2	110	22	—	12,0	3	DIN 376	6H
T680M200X250R6H-D6	M20 x 2,5	140	25	—	16,0	3	DIN 376	6H

Shank Tolerance

D	tolerance h9
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043

Wind Energy Taps

Primary Application

The new high-performance, large-sized HSS-E-PM Wind Taps were developed for manufacturers of some of the most important wind turbine components to increase productivity because of increased demand and can be used in conventional non-rigid and CNC-synchronous tapping machines. These Wind Taps are manufactured to DIN 376 dimensions and an extra-long version is available to reach the longer overhang that is common on these big components.

The precision h6 shanks enable use in either conventional tap holders with square drive or in precision round holders.

Features and Benefits

T620 LH Spiral Flute

- For through hole tapping.
- Push chips ahead, enabling free tapping on long chipping material.
- Form D plug chamfer.
- DIN 376 and extra-long versions available.

T630 RH Spiral Flute

- For blind hole tapping.
- Preferred for vertical tapping application.
- Form D plug chamfer.
- Internal coolant available as standard; see T631.
- DIN 376 and extra-long versions available.

T650 RH Spiral Flute

- For blind hole tapping.
- Preferred for horizontal tapping application.
- Form D plug chamfer.
- Internal coolant available as standard; see T651.
- DIN 376 and extra-long versions available.

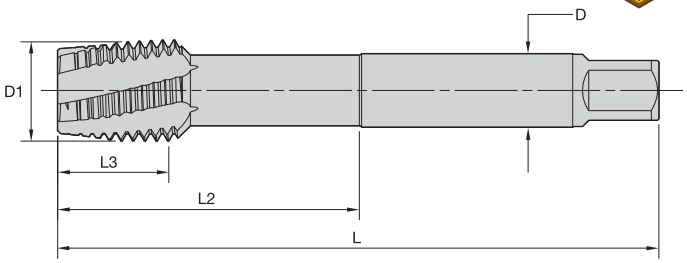
T650 HSS-E-PM • Proven Solution

Case study:

- Manufacturer of large diameter bearing for wind turbines.

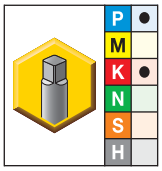
Conditions:

- Thread size: M24 x 2.5 6H
- Workpiece: bearing ring
- Material: low-carbon steel 1010 (C10)
- Thread depth: 35mm blind
- Tap drill size: 17,5mm
- Machine: CNC
- Coolant: water soluble



KP6525 • TiCN+TiN for tapping steel and cast iron.

T620 • DIN 376 • Form D Plug Chamfer • Larger Sizes • Metric

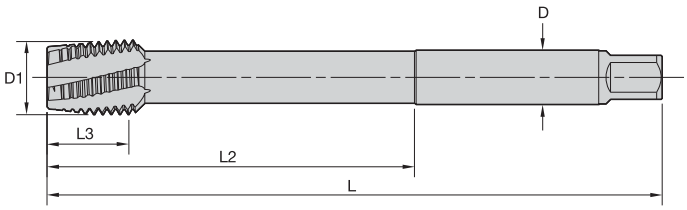


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T620M240X300R6HX-D6	M24 x 3	160	30	77	18,0	5	6HX
T620M300X350R6HX-D6	M30 x 3,5	180	35	91	22,0	5	6HX
T620M330X350R6HX-D6	M33 x 3,5	180	35	100	25,0	5	6HX
T620M360X400R6HX-D6	M36 x 4	200	40	110	28,0	6	6HX
T620M420X450R6HX-D6	M42 x 4,5	200	45	120	32,0	6	6HX

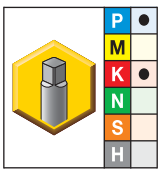
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T620 • Extra Long • Form D Plug Chamfer • Larger Sizes • Metric

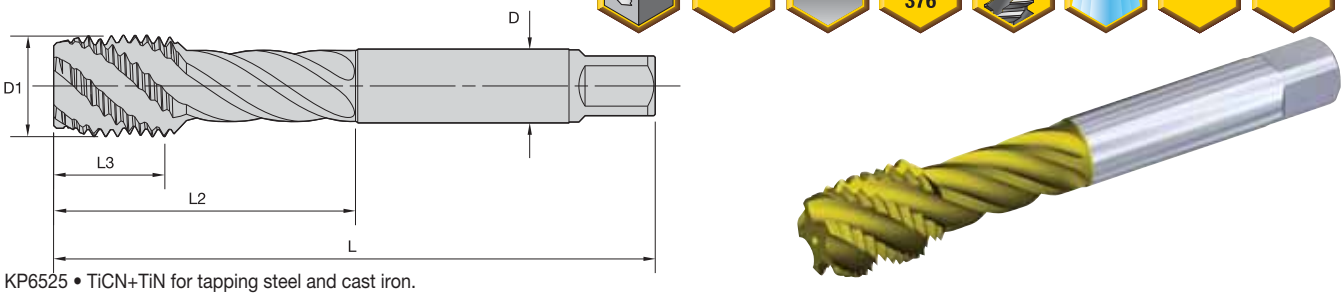


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T620M240X300R6H-XL	M24 x 3	200	30	120	18,0	5	6HX
T620M300X350R6H-XL	M30 x 3,5	250	35	150	22,0	5	6HX
T620M330X350R6H-XL	M33 x 3,5	250	35	150	25,0	5	6HX
T620M360X400R6H-XL	M36 x 4	250	40	150	28,0	6	6HX
T620M420X450R6H-XL	M42 x 4,5	300	45	180	32,0	6	6HX

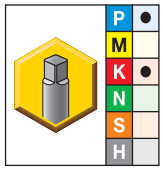
Shank Tolerance

D	tolerance h6
12–18	**+0, -0,011**
20–30	**+0, -0,013**
32–36	**+0, -0,016**



KP6525 • TiCN+TiN for tapping steel and cast iron.

T630 • DIN 376 • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric

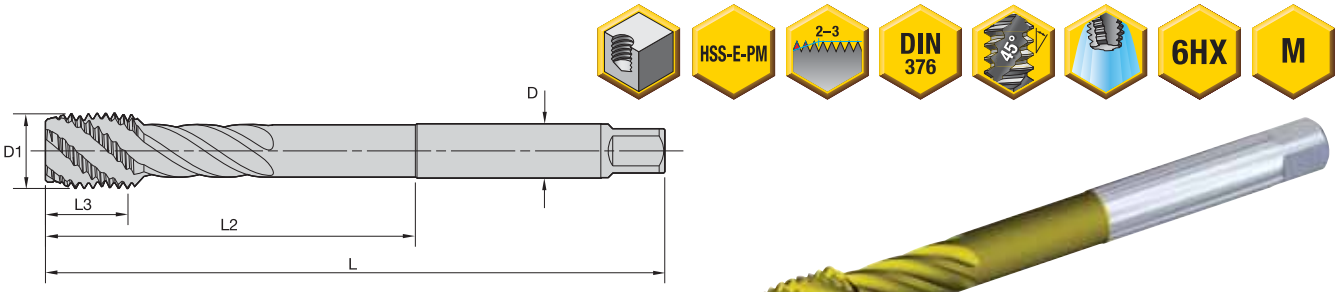


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T630M240X300R6HX-D6	M24 x 3	160	30	77	18,0	5	6HX
T630M300X350R6HX-D6	M30 x 3,5	180	35	91	22,0	5	6HX
T630M330X350R6HX-D6	M33 x 3,5	180	35	100	25,0	5	6HX
T630M360X400R6HX-D6	M36 x 4	200	40	110	28,0	5	6HX
T630M420X450R6HX-D6	M42 x 4,5	200	45	120	32,0	5	6HX

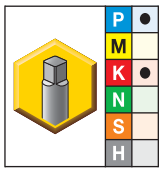
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T630 • Extra Long • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric

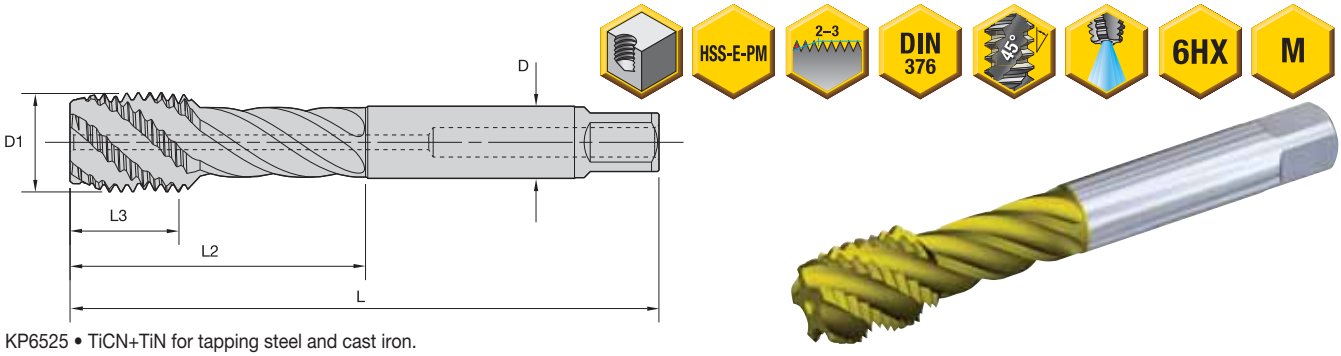


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T630M240X300R6HX-XL	M24 x 3	200	30	120	18,0	5	6HX
T630M300X350R6HX-XL	M30 x 3,5	250	35	150	22,0	5	6HX
T630M330X350R6HX-XL	M33 x 3,5	250	35	150	25,0	5	6HX
T630M360X400R6HX-XL	M36 x 4	250	40	150	28,0	5	6HX
T630M420X450R6HX-XL	M42 x 4,5	300	45	180	32,0	5	6HX

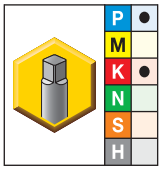
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T631 • DIN 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric

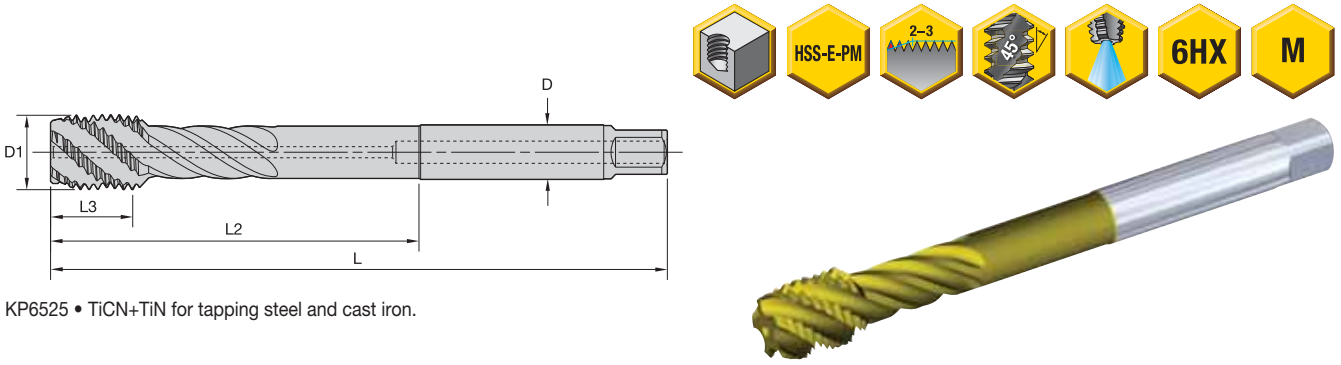


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T631M240X300R6HX-D6	M24 x 3	160	30	77	18,0	5	6HX
T631M300X350R6HX-D6	M30 x 3,5	180	35	91	22,0	5	6HX
T631M330X350R6HX-D6	M33 x 3,5	180	35	100	25,0	5	6HX
T631M360X400R6HX-D6	M36 x 4	200	40	110	28,0	5	6HX
T631M420X450R6HX-D6	M42 x 4,5	200	45	120	32,0	5	6HX

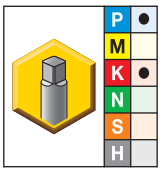
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T631 • Extra Long • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric

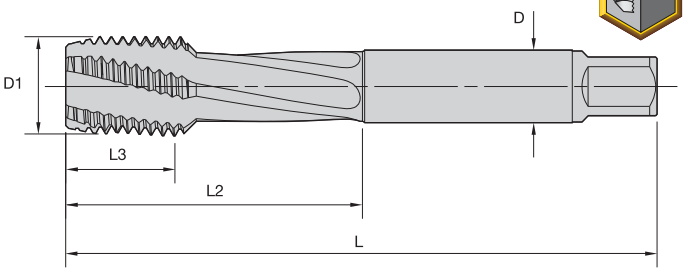


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T631M240X300R6HX-XL	M24 x 3	200	30	120	18,0	5	6HX
T631M300X350R6HX-XL	M30 x 3,5	250	35	150	22,0	5	6HX
T631M330X350R6HX-XL	M33 x 3,5	250	35	150	25,0	5	6HX
T631M360X400R6HX-XL	M36 x 4	250	40	150	28,0	5	6HX
T631M420X450R6HX-XL	M42 x 4,5	300	45	180	32,0	5	6HX

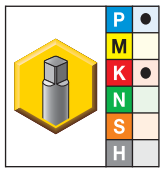
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T650 • DIN 376 • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric

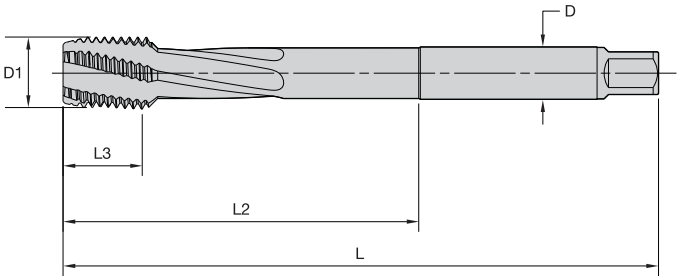


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T650M240X300R6HX-D6	M24 x 3	160	30	77	18,0	4	6HX
T650M300X350R6HX-D6	M30 x 3,5	180	35	91	22,0	5	6HX
T650M330X350R6HX-D6	M33 x 3,5	180	35	100	25,0	5	6HX
T650M360X400R6HX-D6	M36 x 4	200	40	110	28,0	5	6HX
T650M420X450R6HX-D6	M42 x 4,5	200	45	120	32,0	6	6HX

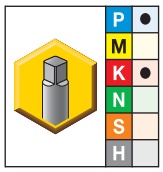
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T650 • Extra Long • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric

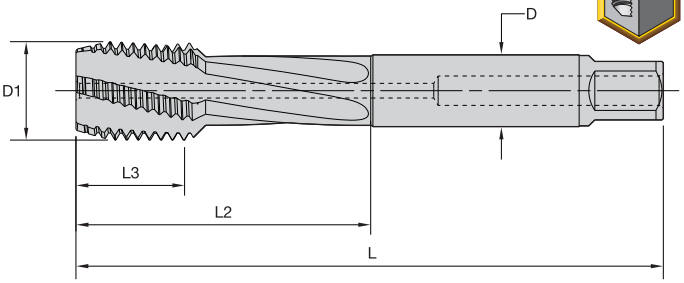


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T650M240X300R6HX-XL	M24 x 3	200	30	120	18,0	4	6HX
T650M300X350R6HX-XL	M30 x 3,5	250	35	150	22,0	5	6HX
T650M330X350R6HX-XL	M33 x 3,5	250	35	150	25,0	5	6HX
T650M360X400R6HX-XL	M36 x 4	250	40	150	28,0	5	6HX
T650M420X450R6HX-XL	M42 x 4,5	300	45	180	32,0	6	6HX

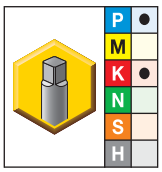
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T651 • DIN 376 • Form C Semi-Bottoming Chamfer • Through Hole • Larger Sizes • Metric

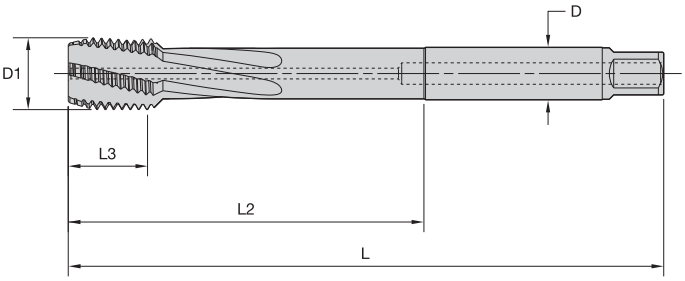


● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T651M240X300R6HX-D6	M24 x 3	160	30	77	18,0	4	6HX
T651M300X350R6HX-D6	M30 x 3,5	180	35	91	22,0	5	6HX
T651M330X350R6HX-D6	M33 x 3,5	180	35	100	25,0	5	6HX
T651M360X400R6HX-D6	M36 x 4	200	40	110	28,0	5	6HX
T651M420X450R6HX-D6	M42 x 4,5	200	45	120	32,0	6	6HX

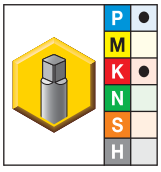
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016



KP6525 • TiCN+TiN for tapping steel and cast iron.

T651 • Extra Long • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric



● first choice
○ alternate choice

KP6525	D1 size	L	L3	L2	D	number of flutes	class of fit
T651M240X300R6HX-XL	M24 x 3	200	30	120	18,0	4	6HX
T651M300X350R6HX-XL	M30 x 3,5	250	35	150	22,0	5	6HX
T651M330X350R6HX-XL	M33 x 3,5	250	35	150	25,0	5	6HX
T651M360X400R6HX-XL	M36 x 4	250	40	150	28,0	5	6HX
T651M420X450R6HX-XL	M42 x 4,5	300	45	180	32,0	6	6HX

Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016

Material Group		Through Holes					Blind Holes				
				Range – m/min					Range – m/min		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
P	1	T620	KP6525	20	**30**	45	T630,T632,T650	KP6525	14	**21**	32
		T622	KSP21	18	**30**	50	T622	KSP21	13	**21**	35
	2	T620	KP6525	17	**25**	38	T630,T632,T650	KP6525	12	**18**	26
		T622	KSP21	15	**25**	42	T622	KSP21	10	**18**	29
	3	T620	KP6525	12	**15**	20	T630,T632,T650	KP6525	8	**11**	14
	4	T600	KSP21	5	**6**	8	T602, T604	KSP21	3	**4**	5
	5	T620	KP6525	12	**15**	20	T630,T632,T650	KP6525	8	**11**	14
	6	T600	KSP21	6	**8**	10	T602, T604	KSP21	4	**6**	7
M	1	T620	KM6515	12	**15**	20	T630,T632,T650	KM6515	8	**11**	14
	2	T620	KM6515	9	**12**	16	T630,T632,T650	KM6515	6	**8**	11
	3	T620	KM6515	8	**10**	13	T630,T632,T650	KM6515	5	**7**	9
K	1	T640	KP6525	35	**45**	59	T640, T642	KP6525	24	**32**	41
	2	T640	KP6525	31	**40**	52	T640, T642	KP6525	22	**28**	36
	3	T640	KP6525	23	**30**	39	T640, T642	KP6525	16	**21**	27
N	1	T670	KSN38	42	**55**	72	T680	KSN38	30	**39**	50
		T622	KSN28	37	**55**	83	T622	KSN28	26	**39**	58
	2	T640	KP6525	38	**50**	65	T640, T642	KP6525	27	**35**	46
		T622	KSN28	33	**50**	75	T622	KSN28	23	**35**	53
	4	T640	KP6525	4	**6**	9	T640, T642	KP6525	3	**4**	5
S	1	T620	KP6525	8	**12**	18	T630, T632	KP6525	6	**8**	11
	2	T610	KSSH22	3	**5**	8	T612	KSSH22	3	**4**	5
	3	T610	KSSH22	3	**4**	6	T612	KSSH22	2	**3**	4
	4	T614	KSN25	3	**4**	6	T616	KSN25	2	**3**	4
H	1	T606	KSSH22	1,3	**2,0**	3,0	T606	KSSH22	1,1	**1,4**	1,8
	2	T606	KSSH22	1,0	**1,5**	2,3	T606	KSSH22	0,8	**1,1**	1,4

NOTE: Increase speed by up to 25% when using coolant taps (T621,T623,T631,T633,T641,T643,T651).
Use grade KP6505™ in steels. Use 50% of the recommended speed listed for grade KP6525™.

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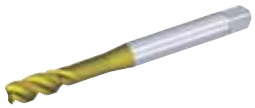
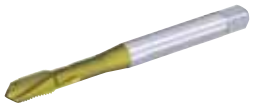
Check the Kennametal website!

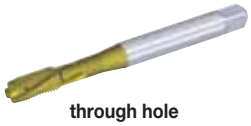
Online product catalogue available 24/7

Visit **http://www.kennametal.com/holemaking/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL®

Steel • >32 HRC

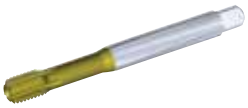
typical thread sizes		required tap drill diameter				P HSS-E-PM Taps — Tapping Steel >32 HRC		
								
cutting taps metric	inch	mm	inch	fraction	wire	blind hole T630_KP6525	through hole T620_KP6525	blind hole with coolant T631_KP6525
M3 x 0,50	—	2,500	.0984	—	—	T630M030X050R6HX-D1	T620M030X050R6HX-D1	—
—	5-40	2,578	.1015	—	38	T630NC#05-40R3BX-A	T620NC#05-40R3BX-A	—
—	6-32	2,705	.1065	—	36	T630NC#06-32R2BX-A	T620NC#06-32R2BX-A	—
M4 x 0,70	—	3,300	.1299	—	—	T630M040X070R6HX-D1	T620M040X070R6HX-D1	—
—	8-32	3,454	.1360	—	29	T630NC#08-32R2BX-A	T620NC#08-32R2BX-A	—
—	8-36	3,454	.1360	—	29	T630NF#08-36R3BX-A	T620NF#08-36R3BX-A	—
—	10-24	3,734	.1470	—	26	T630NC#10-24R3BX-A	T620NC#10-24R3BX-A	—
—	10-32	4,039	.1590	—	21	T630NF#10-32R2BX-A	T620NF#10-32R2BX-A	—
M5 x 0,80	—	4,200	.1654	—	—	T630M050X080R6HX-D1	T620M050X080R6HX-D1	T631M050X080R6HX-D1
—	12-24	4,496	.1770	—	16	T630NC#12-24R3BX-A	T620NC#12-24R3BX-A	—
M6 x 1,00	—	5,000	.1969	—	—	T630M060X100R6HX-D1	T620M060X100R6HX-D1	T631M060X100R6HX-D1
—	1/4-20	5,106	.2010	—	7	T630NC02500-20R2BX-A	T620NC02500-20R2BX-A	—
—	1/4-28	5,410	.2130	—	3	T630NF02500-28R2BX-A	T620NF02500-28R2BX-A	—
—	5/16-18	6,528	.2570	—	F	T630NC03125-18R2BX-A	T620NC03125-18R2BX-A	—
M8 x 1,25	—	6,700	.2638	—	—	T630M080X125R6HX-D1	T620M080X125R6HX-D1	T631M080X125R6HX-D1
M8 x 1,00	—	7,000	.2756	—	—	T630MF080X100R6HX D4	T620MF080X100R6HX D4	T631MF080X100R6HX D4
—	3/8-16	7,938	.3125	5/16	—	T630NC03750—16R3BX-A	T620NC03750-16R3BX-A	—
—	3/8-24	8,433	.3320	—	Q	T630NF03750—24R3BX-A	T620NF03750-24R3BX-A	—
M10 x 1,50	—	8,500	.3346	—	—	T630M100X150R6HX-D1	T620M100X150R6HX-D1	T631M100X150R6HX-D1
M10 x 1,25	—	8,700	.3425	—	—	T630MF100X125R6HX D4	—	T631MF100X125R6HX D4
M10 x 1,00	—	9,000	.3543	—	—	T630MF100X100R6HX D4	T620MF100X100R6HX D4	T631MF100X100R6HX D4
—	7/16-14	9,093	.3580	—	T	T630NC04375-14R3BX-A	T620NC04375-14R3BX-A	—
—	7/16-20	9,921	.3906	25/64	—	T630NF04375-20R3BX-A	T620NF04375-20R3BX-A	—
M12 x 1,75	—	10,200	.4016	—	—	T630M120X175R6HX-D6	T620M120X175R6HX-D6	T631M120X175R6HX-D6
M12 x 1,50	—	10,500	.4134	—	—	T630MF120X150R6HX-D4	T620MF120X150R6HX-D4	T631MF120X150R6HX-D4
—	1/2-13	10,716	.4219	27/64	—	T630NC05000-13R3BX-A	T620NC05000-13R3BX-A	—
M12 x 1,25	—	10,800	.4252	—	—	—	—	T631MF120X125R6HX-D4
—	1/2-20	11,509	.4531	29/64	—	T630NF05000-20R3BX-A	T620NF05000-20R3BX-A	—
M14 x 2,00	—	12,000	.4724	—	—	T630M140X200R6HX-D6	T620M140X200R6HX-D6	T631M140X200R6HX-D6
M14 x 1,50	—	12,500	.4921	—	—	T630MF140X150R6HX-D4	T620MF140X150R6HX-D4	T631MF140X150R6HX-D4
M16 x 2,00	—	14,000	.5512	—	—	T630M160X200R6HX-D6	T620M160X200R6HX-D6	T631M160X200R6HX-D6
M16 x 1,50	—	14,500	.5709	—	—	T630MF160X150R6HX-D4	T620MF160X150R6HX-D4	T631MF160X150R6HX-D4
M18 x 2,50	—	15,500	.6102	—	—	T630M180X250R6HX-D6	-	T631M180X250R6HX-D6
M18 x 1,50	—	16,500	.6496	—	—	T630MF180X150R6HX-D4	T620MF180X150R6HX-D4	T631MF180X150R6HX-D4
—	3/4-10	16,670	.6563	21/32	—	T630NC07500-10R3BX-A	T620NC07500-10R3BX-A	—
M20 x 2,50	—	17,500	.6890	—	—	T630M200X250R6HX-D6	T620M200X250R6HX-D6	T631M200X250R6HX-D6

	P		All Materials	
HSS-E-PM Taps — Tapping Steel >32 HRC	Recommended SC Drill		Alternate Tap Drill	
				
through hole with coolant T621_KP6525	approximately 3 x D with coolant B224_HP KCPK15	approximately 5 x D with coolant B225_HP KCPK15	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
—	—	—	B976Z02500	—
—	—	—	B976Z02578	—
—	—	—	B976Z02705	—
—	B224A03300HP	B225A03300HP	B976A03300	B977A03300
—	—	—	B976A03454	B977A03454
—	—	—	B976A03454	B977A03454
—	—	—	B976A03734	B977A03734
—	—	—	B976A04039	B977A04039
T621M050X080R6HX-D1	B224A04200HP	B225A04200HP	B976A04200	B977A04200
—	B224A04496HP	B225A04496HP	B976A04496	B977A04496
T621M060X100R6HX-D1	B224A05000HP	B225A05000HP	B976A05000	B977A05000
—	B224A05106HP	B225A05106HP	B976A05106	B977A05106
—	B224A05410HP	B225A05410HP	B976A05410	B977A05410
—	B224A06528HP	B225A06528HP	B976A06528	B977A06528
T621M080X125R6HX-D1	B224A06700HP	B225A06700HP	B976A06700	B977A06700
T621MF080X100R6HX D4	B224A07000HP	B225A07000HP	B976A07000	B977A07000
—	B224A07938HP	B225A07938HP	B976A07938	B977A07938
—	B224A08433HP	B225A08433HP	B976A08433	B977A08433
T621M100X150R6HX-D1	B224A08500HP	B225A08500HP	B976A08500	B977A08500
T621MF100X125R6HX D4	B224A08700HP	B225A08700HP	B976A08700	B977A08700
T621MF100X100R6HX D4	B224A09000HP	B225A09000HP	B976A09000	B977A09000
—	B224A09093HP	B225A09093HP	B976A09093	B977A09093
—	B224A09921HP	B225A09921HP	B976A09921	B977A09921
T621M120X175R6HX-D6	B224A10200HP	B225A10200HP	B976A10200	B977A10200
T621MF120X150R6HX-D4	B224A10500HP	B225A10500HP	B976A10500	B977A10500
—	B224A10716HP	B225A10716HP	B976A10716	B977A10716
T621MF120X125R6HX-D4	B224A10800HP	B225A10800HP	B976A10800	B977A10800
—	B224A11509HP	B225A11509HP	B976A11509	B977A11509
T621M140X200R6HX-D6	B224A12000HP	B225A12000HP	B976A12000	B977A12000
T621MF140X150R6HX-D4	B224A12500HP	B225A12500HP	B976A12500	B977A12500
T621M160X200R6HX-D6	B224A14000HP	B225A14000HP	B976A14000	B977A14000
T621MF160X150R6HX-D4	B224A14500HP	B225A14500HP	B976A14500	B977A14500
T621M180X250R6HX-D6	B224A15500HP	B225A15500HP	B976A15500	B977A15500
T621MF180X150R6HX-D4	B224A16500HP	B225A16500HP	B976A16500	B977A16500
—	—	B225A16670HP	B976A16670	B977A16670
—	B224A17500HP	B225A17500HP	B976A17500	B977A17500

Steel • 32–44 HRC

typical thread sizes	required tap drill diameter				P HSS-E-PM Taps — Tapping Steel 32–44 HRC		
cutting taps metric	mm	inch	fraction	wire	blind hole T602_KSP21	blind hole (3 x D) T604_KSH26	through hole T600_KSP21
M3 x 0,50	2,500	.0984	—	—	T602M030X050R6HX-D1	T604M030X050R6HX-D1	T600M030X050R6HX-D1
M4 x 0,70	3,300	.1299	—	—	T602M040X070R6HX-D1	T604M040X070R6HX-D1	T600M040X070R6HX-D1
M5 x 0,80	4,200	.1654	—	—	T602M050X080R6HX-D1	T604M050X080R6HX-D1	T600M050X080R6HX-D1
M6 x 1,00	5,000	.1969	—	—	T602M060X100R6HX-D1	T604M060X100R6HX-D1	T600M060X100R6HX-D1
M8 x 1,25	6,700	.2638	—	—	T602M080X125R6HX-D1	T604M080X125R6HX-D1	T600M080X125R6HX-D1
M8 x 1,00	7,000	.2756	—	—	T602MF080X100R6HX D4	T604MF080X100R6HX D4	T600MF080X100R6HX D4
M10 x 1,50	8,500	.3346	—	—	T602M100X150R6HX-D1	T604M100X150R6HX-D1	T600M100X150R6HX-D1
M10 x 1,25	8,700	.3425	—	—	T602MF100X125R6HX D4	T604MF100X125R6HX D4	T600MF100X125R6HX D4
M10 x 1,00	9,000	.3543	—	—	T602MF100X100R6HX D4	T604MF100X100R6HX D4	T600MF100X100R6HX D4
M12 x 1,75	10,200	.4016	—	—	T602M120X175R6H-D6	T604M120X175R6H-D6	T600M120X175R6HX-D6
M12 x 1,50	10,500	.4134	—	—	T602MF120X150R6H-D4	T604MF120X150R6H-D4	T600MF120X150R6HX-D4
M12 x 1,25	10,800	.4252	—	—	T602MF120X125R6H D4	T604MF120X125R6H D4	T600MF120X125R6HX D4
M14 x 2,00	12,000	.4724	—	—	T602M140X200R6H-D6	T604M140X200R6H-D6	T600M140X200R6HX-D6
M14 x 1,50	12,500	.4921	—	—	T602MF140X150R6H-D4	T604MF140X150R6H-D4	T600MF140X150R6HX-D4
M16 x 2,00	14,000	.5512	—	—	T602M160X200R6H-D6	T604M160X200R6H-D6	T600M160X200R6HX-D6
M16 x 1,50	14,500	.5709	—	—	T602MF160X150R6H-D4	T604MF160X150R6H-D4	T600MF160X150R6HX-D4
M18 x 2,50	15,500	.6102	—	—	T602M180X250R6H-D6	—	—
M18 x 1,50	16,500	.6496	—	—	T602MF180X150R6H-D4	T604MF180X150R6H-D4	T600MF180X150R6HX-D4
M20 x 2,50	17,500	.6890	—	—	T602M200X250R6H-D6	T604M200X250R6H-D6	T600M200X250R6HX-D6

Steel • Forming Taps

typical thread sizes	required tap drill diameter				P HSS-E-PM Taps — Forming Steel >32 HRC	
						
forming taps metric	mm	inch	fraction	wire	blind and through hole T622_KSP21	blind and through hole with coolant T623_KSP21
M3 x 0,50	2,800	.1102	—	—	T622M030X050R6HX-D74	—
M4 x 0,70	3,700	.1457	—	—	T622M040X070R6HX-D74	—
M5 x 0,80	4,700	.1850	—	13	T622M050X080R6HX-D74	T623M050X080R6HX-D74
M6 x 1,00	5,600	.2205	—	—	T622M060X100R6HX-D74	T623M060X100R6HX-D74
M8 x 1,25	7,400	.2913	—	—	T622M080X125R6HX-D74	T623M080X125R6HX-D74
M8 x 1,00	7,600	.2992	—	—	T622MF080X100R6HX-D74	T623MF080X100R6HX-D74
M10 x 1,50	9,400	.3701	—	—	T622M100X150R6HX-D74	T623M100X150R6HX-D74
M10 x 1,00	9,500	.3740	—	—	T622MF100X100R6HX-D74	T623MF100X100R6HX-D74
M12 x 1,75	11,300	.4449	—	—	T622M120X175R6HX-D74	T623M120X175R6HX-D74
M12 x 1,50	11,300	.4449	—	—	T622MF120X150R6HX-D74	T623MF120X150R6HX-D74
M12 x 1,25	11,500	.4528	—	—	T622MF120X125R6HX-D74	T623MF120X125R6HX-D74
M14 x 1,50	13,400	.5276	—	—	T622MF140X150R6HX-D74	T623MF140X150R6HX-D74
M16 x 2,00	15,200	.5984	—	—	T622M160X200R6HX-D74	T623M160X200R6HX-D74
M16 x 1,50	15,400	.6063	—	—	T622MF160X150R6HX-D74	T623MF160X150R6HX-D74

	P		All Materials	
	Recommended SC Drill		Alternate Tap Drill	
	approximately 3 x D with coolant B224_HP KCPK15	approximately 5 x D with coolant B225_HP KCPK15	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
	—	—	B976Z02500	—
	B224A03300HP	B225A03300HP	B976A03300	B977A03300
	B224A04200HP	B225A04200HP	B976A04200	B977A04200
	B224A05000HP	B225A05000HP	B976A05000	B977A05000
	B224A06700HP	B225A06700HP	B976A06700	B977A06700
	B224A07000HP	B225A07000HP	B976A07000	B977A07000
	B224A08500HP	B225A08500HP	B976A08500	B977A08500
	B224A08700HP	B225A08700HP	B976A08700	B977A08700
	B224A09000HP	B225A09000HP	B976A09000	B977A09000
	B224A10200HP	B225A10200HP	B976A10200	B977A10200
	B224A10500HP	B225A10500HP	B976A10500	B977A10500
	B224A10800HP	B225A10800HP	B976A10800	B977A10800
	B224A12000HP	B225A12000HP	B976A12000	B977A12000
	B224A12500HP	B225A12500HP	B976A12500	B977A12500
	B224A14000HP	B225A14000HP	B976A14000	B977A14000
	B224A14500HP	B225A14500HP	B976A14500	B977A14500
	B224A15500HP	B225A15500HP	B976A15500	B977A15500
	B224A16500HP	B225A16500HP	B976A16500	B977A16500
	B224A17500HP	B225A17500HP	B976A17500	B977A17500

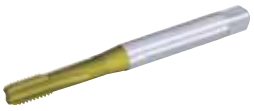
	P		All Materials	
	Recommended SC Drill		Alternate Tap Drill	
	approximately 3 x D with coolant B224_HP KCPK15	approximately 5 x D with coolant B225_HP KCPK15	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
	—	—	B976Z02800	—
	B224A03700HP	B225A03700HP	B976A03700	B977A03700
	B224A04700HP	B225A04700HP	B976A04700	B977A04700
	B224A05600HP	B225A05600HP	B976A05600	B977A05600
	B224A07400HP	B225A07400HP	B976A07400	B977A07400
	—	B225A07600HP	—	B977A07600
	B224A09400HP	B225A09400HP	B976A09400	B977A09400
	B224A09500HP	B225A09500HP	B976A09500	B977A09500
	—	B225A11300HP	B976A11300	B977A11300
	—	B225A11300HP	B976A11300	B977A11300
	B224A11500HP	B225A11500HP	B976A11500	B977A11500
	—	B225A13400HP	—	—
	—	B225A15200HP	—	—
	—	B225A15400HP	—	—

Stainless Steel

typical thread sizes		required tap drill diameter				M HSS-E-PM Taps		
cutting taps metric	inch	mm	inch	fraction	wire	blind hole T630_KM6515	through hole T620_KM6515	blind hole with coolant T631_KM6515
—	2-56	1.778	0.07	—	50	T630NC#02-56R3BX-A	T620NC#02-56R3BX-A	—
—	4-40	2.261	0.089	—	43	T630NC#04-40R2BX-A	T620NC#04-40R2BX-A	—
M3 x 0,50	—	2.500	.0984	—	—	T630M030X050R6HX-D1	T620M030X050R6HX-D1	—
—	5-40	2.578	.1015	—	38	T630NC#05-40R2BX-A	T620NC#05-40R2BX-A	—
—	6-32	2.705	.1065	—	36	T630NC#06-32R2BX-A	T620NC#06-32R2BX-A	—
M4 x 0,70	—	3.300	.1299	—	—	T630M040X070R6HX-D1	T620M040X070R6HX-D1	—
—	8-32	3.454	.1360	—	29	T630NC#08-32R2BX-A	T620NC#08-32R2BX-A	—
—	8-36	3.454	.1360	—	29	T630NF#08-36R3BX-A	T620NF#08-36R3BX-A	—
—	10-24	3.734	.1470	—	26	T630NC#10-24R3BX-A	T620NC#10-24R3BX-A	—
—	10-32	4.039	.1590	—	21	T630NF#10-32R2BX-A	T620NF#10-32R2BX-A	—
M5 x 0,80	—	4.200	.1654	—	—	T630M050X080R6HX-D1	T620M050X080R6HX-D1	T631M050X080R6HX-D1
—	12-24	4.496	.1770	—	16	T630NC#12-24R3BX-A	T620NC#12-24R3BX-A	—
M6 x 1,00	—	5.000	.1969	—	—	T630M060X100R6HX-D1	T620M060X100R6HX-D1	T631M060X100R6HX-D1
—	1/4-20	5.106	.2010	—	7	T630NC02500-20R2BX-A	T620NC02500-20R2BX-A	—
—	1/4-28	5.410	.2130	—	3	T630NF02500-28R2BX-A	T620NF02500-28R2BX-A	—
—	5/16-18	6.528	.2570	—	F	T630NC03125-18R2BX-A	T620NC03125-18R2BX-A	—
M8 x 1,25	—	6.700	.2638	—	—	T630M080X125R6HX-D1	T620M080X125R6HX-D1	T631M080X125R6HX-D1
—	5/16-24	6.909	.2720	—	I	—	T620NF03125-24R3BX-A	—
M8 x 1,00	—	7.000	.2756	—	—	T630MF080X100R6HX D4	T620MF080X100R6HX D4	T631MF080X100R6HX D4
—	3/8-16	7.938	.3125	5/16	—	T630NC03750-16R3BX-A	T620NC03750-16R3BX-A	—
—	3/8-24	8.433	.3320	—	Q	T630NF03750-24R3BX-A	T620NF03750-24R3BX-A	—
M10 x 1,50	—	8.500	.3346	—	—	T630M100X150R6HX-D1	T620M100X150R6HX-D1	T631M100X150R6HX-D1
M10 x 1,25	—	8.700	.3425	—	—	T630MF100X125R6HX D4	—	T631MF100X125R6HX D4
M10 x 1,00	—	9.000	.3543	—	—	T630MF100X100R6HX D4	T620MF100X100R6HX D4	T631MF100X100R6HX D4
—	7/16-14	9.093	.3580	—	T	T630NC04375-14R3BX-A	T620NC04375-14R3BX-A	—
—	7/16-20	9.921	.3906	25/64	—	T630NF04375-20R3BX-A	T620NF04375-20R3BX-A	—
M12 x 1,75	—	10.200	.4016	—	—	T630M120X175R6HX-D6	T620M120X175R6HX-D6	T631M120X175R6HX-D6
M12 x 1,50	—	10.500	.4134	—	—	T630MF120X150R6HX-D4	T620MF120X150R6HX-D4	T631MF120X150R6HX-D4
—	1/2-13	10.716	.4219	27/64	—	T630NC05000-13R3BX-A	T620NC05000-13R3BX-A	—
M12 x 1,25	—	10.800	.4252	—	—	—	—	T631MF120X125R6HX-D4
—	1/2-20	11.509	.4531	29/64	—	T630NF05000-20R3BX-A	T620NF05000-20R3BX-A	—
M14 x 2,00	—	12.000	.4724	—	—	T630M140X200R6HX-D6	T620M140X200R6HX-D6	T631M140X200R6HX-D6
M14 x 1,50	—	12.500	.4921	—	—	T630MF140X150R6HX-D4	T620MF140X150R6HX-D4	T631MF140X150R6HX-D4
M14 x 1,25	—	12.800	.5039	—	—	—	—	T631MF140X125R6HX-D4
—	5/8-11	13.495	.5313	17/32	—	T630NC06250-10R3BX-A	T620NC06250-10R3BX-A	—
M16 x 2,00	—	14.000	.5512	—	—	T630M160X200R6HX-D6	T620M160X200R6HX-D6	T631M160X200R6HX-D6
M16 x 1,50	—	14.500	.5709	—	—	T630MF160X150R6HX-D4	T620MF160X150R6HX-D4	T631MF160X150R6HX-D4
M18 x 2,50	—	15.500	.6102	—	—	T630M180X250R6HX-D6	—	T631M180X250R6HX-D6
M18 x 1,50	—	16.500	.6496	—	—	T630MF180X150R6HX-D4	T620MF180X150R6HX-D4	T631MF180X150R6HX-D4
—	3/4-10	16.670	.6563	21/32	—	T630NC07500-10R3BX-A	T620NC07500-10R3BX-A	—
M20 x 2,50	—	17.500	.6890	—	—	T630M200X250R6HX-D6	T620M200X250R6HX-D6	—

	M		All Materials	
HSS-E-PM Taps	Recommended Drill		Alternative Tap Drill	
through hole with coolant T621_KM6515	approximately 3 x D with coolant B210_HP KCM15	approximately 5 x D with coolant B211_HP KCM15	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
–	–	–	–	–
–	–	–	–	–
–	–	–	B976Z02500	–
–	–	–	B976Z02578	–
–	–	–	B976Z02705	–
–	B210A03300HP	B211A03300HP	B976A03300	B977A03300
–	–	B211A03454HP	B976A03454	B977A03454
–	–	B211A03454HP	B976A03454	B977A03454
–	–	–	B976A03734	B977A03734
–	–	–	B976A04039	B977A04039
T621M050X080R6HX-D1	B210A04200HP	B211A04200HP	B976A04200	B977A04200
–	–	–	B976A04496	B977A04496
T621M060X100R6HX-D1	B210A05000HP	B211A05000HP	B976A05000	B977A05000
–	B210A05106HP	–	B976A05106	B977A05106
–	B210A05410HP	–	B976A05410	B977A05410
–	B210A06528HP	–	B976A06528	B977A06528
T621M080X125R6HX-D1	B210A06700HP	B211A06700HP	B976A06700	B977A06700
–	–	-	B976A06909	B977A06909
T621MF080X100R6HX D4	B210A07000HP	B211A07000HP	B976A07000	B977A07000
–	B210A07938HP	–	B976A07938	B977A07938
–	B210A08433HP	–	B976A08433	B977A08433
T621M100X150R6HX-D1	B210A08500HP	B211A08500HP	B976A08500	B977A08500
T621MF100X125R6HX D4	B210A08700HP	B211A08700HP	B976A08700	B977A08700
T621MF100X100R6HX D4	B210A09000HP	B211A09000HP	B976A09000	B977A09000
–	B210A09093HP	–	B976A09093	B977A09093
–	B210A09921HP	–	B976A09921	B977A09921
T621M120X175R6HX-D6	B210A10200HP	B211A10200HP	B976A10200	B977A10200
T621MF120X150R6HX-D4	B210A10500HP	B211A10500HP	B976A10500	B977A10500
–	B210A10716HP	–	B976A10716	B977A10716
T621MF120X125R6HX-D4	B210A10800HP	B211A10800HP	B976A10800	B977A10800
–	B210A11509HP	–	B976A11509	B977A11509
T621M140X200R6HX-D6	B210A12000HP	B211A12000HP	B976A12000	B977A12000
T621MF140X150R6HX-D4	B210A12500HP	B211A12500HP	B976A12500	B977A12500
–	B210A12800HP	B211A12800HP	B976A12800	B977A12800
–	B210A13495HP	–	B976A13495	B977A13495
T621M160X200R6HX-D6	B210A14000HP	B211A14000HP	B976A14000	B977A14000
T621MF160X150R6HX-D4	B210A14500HP	B211A14500HP	B976A14500	B977A14500
T621M180X250R6HX-D6	B210A15500HP	B211A15500HP	B976A15500	B977A15500
T621MF180X150R6HX-D4	B210A16500HP	B211A16500HP	B976A16500	B977A16500
–	B210A16670HP	B211A16670HP	B976A16670	B977A16670
–	B210A17500HP	B211A17500HP	B976A17500	B977A17500

Cast and Ductile Iron

typical thread sizes		required tap drill diameter				K HSS-E-PM Taps	
							
cutting taps metric	inch	mm	inch	fraction	wire	blind and through hole T640 KP6525	blind and through hole with coolant T641 KP6525
M4 x 0,7	—	3,3	.1299	—	—	**T640M040X070R6HX-D1**	**—**
—	10-24	3,734	.1470	—	26	**T640NC#10-24R3B-A**	**—**
—	10-32	4,039	.1590	—	21	**T640NF#10-32R3B-A**	**—**
M5 x 0,8	—	4,2	.1654	—	—	**T640M050X080R6HX-D1**	**T641M050X080R6HX-D1**
M6 x 1,0	—	5,0	.1969	—	—	**T640M060X100R6HX-D1**	**T641M060X100R6HX-D1**
—	—	5,791	.2280	—	1	**T640NC02500-20R3B-A**	**—**
—	—	5,944	.2340	—	A	**T640NF02500-28R3B-A**	**—**
—	5/16-18	6,528	.2570	—	F	**T640NC03125-18R3B-A**	**—**
M8 x 1,25	—	6,7	.2638	—	—	**T640M080X125R6HX-D1**	**T641M080X125R6HX-D1**
—	5/16-24	6,909	.2720	—	I	**T640NF03125-24R3B-A**	**—**
—	3/8-16	7,938	.3125	5/16	—	**T640NC03750-16R3B-A**	**—**
—	3/8-24	8,433	.3320	—	Q	**T640NF03750-24R3B-A**	**—**
M10 x 1,5	—	8,5	.3346	—	—	**T640M100X150R6HX-D1**	**T641M100X150R6HX-D1**
—	7/16-14	9,093	.3580	—	T	**T640NC04375-14R3B-A**	**—**
—	7/16-20	9,921	.3906	25/64	—	**T640NF04375-20R3B-A**	**—**
M12 x 1,75	—	10,2	.4016	—	—	**T640M120X175R6HX-D6**	**T641M120X175R6HX-D6**
—	1/2-13	10,716	.4219	27/64	—	**T640NC05000-13R3B-A**	**—**
—	1/2-20	11,509	.4531	29/64	—	**T640NF05000-20R3B-A**	**—**
M14 x 2,0	—	12,0	.4724	—	—	**T640M140X200R6HX-D6**	**T641M140X200R6HX-D6**
—	5/8-11	13,495	.5313	17/32	—	**T640NC06250-11R3B-A**	**—**
M16 x 2,0	—	14,0	.5512	—	—	**T640M160X200R6HX-D6**	**T641M160X200R6HX-D6**
M18 x 2,5	—	15,5	.6102	—	—	**T640M180X250R6HX-D6**	**T641M180X250R6HX-D6**
—	3/4-10	16,67	.6563	21/32	—	**T640NC07500-10R3B-A**	**—**
M20 x 2,5	—	17,5	.6890	—	—	**T640M200X250R6HX-D6**	**T641M200X250R6HX-D6**
M22 x 2,5	—	19,5	.7677	—	—	**T640M220X250R6HX-D6**	**—**

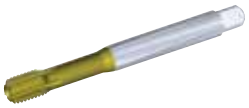
	K		All Materials	
	Recommended Drill		Alternate Tap Drill	
	approximately 3 x D with coolant B254_YPC KCK10	approximately 5 x D with coolant B255_YPC KCK10	approximately 3 x D with coolant B976 KC7315	approximately 5 x D with coolant B977 KC7315
	B254A03300YPC	B255A03300YPC	B976A03300	B977A03300
	B254A03734YPC	B255A03734YPC	B976A03734	B977A03734
	B254A04039YPC	B255A04039YPC	B976A04039	B977A04039
	B254A04200YPC	B255A04200YPC	B976A04200	B977A04200
	B254A05000YPC	B255A05000YPC	B976A05000	B977A05000
	B254A05791YPC	B255A05791YPC	B976A05791	B977A05791
	B254A05944YPC	B255A05944YPC	B976A05944	B977A05944
	B254A06528YPC	B255A06528YPC	B976A06528	B977A06528
	B254A06700YPC	B255A06700YPC	B976A06700	B977A06700
	B254A06909YPC	B255A06909YPC	B976A06909	B977A06909
	B254A07938YPC	B255A07940YPC	B976A07938	B977A07938
	B254A08433YPC	B255A08433YPC	B976A08433	B977A08433
	B254A08500YPC	B255A08500YPC	B976A08500	B977A08500
	B254A09093YPC	B255A09093YPC	B976A09093	B977A09093
	B254A09921YPC	B255A09920YPC	B976A09921	B977A09921
	B254A10200YPC	B255A10200YPC	B976A10200	B977A10200
	B254A10716YPC	B255A10716YPC	B976A10716	B977A10716
	B254A11509YPC	B255A11509YPC	B976A11509	B977A11509
	B254A12000YPC	B255A12000YPC	B976A12000	B977A12000
	B254A13495YPC	B255A13495YPC	B976A13495	B977A13495
	B254A14000YPC	B255A14000YPC	B976A14000	B977A14000
	B254A15500YPC	B255A15500YPC	B976A15500	B977A15500
	B254A16670YPC	B255A16670YPC	B976A16670	B977A16670
	B254A17500YPC	B255A17500YPC	B976A17500	B977A17500
	B254A19500YPC	B255A19500YPC	B976A19500	B977A19500

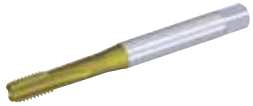
Aluminium

typical thread sizes		required tap drill diameter				N		
						HSS-E Taps — Tapping Aluminium (Wrought, low Si)		HSS-E-PM Taps — Tapping Cast Aluminium (Si <12%)
cutting taps metric	inch	mm	inch	fraction	wire	through hole T680_KSN38	blind hole T680_KSN38	blind and through hole T640 KP6525
M3 x 0,50	—	2,500	.0984	—	—	T680M030X050R6H-D1	T670M030X050R6H-D1	—
M4 x 0,70	—	3,300	.1299	—	—	T680M040X070R6H-D1	T670M040X070R6H-D1	T640M040X070R6HX-D1
—	10-24	3,734	.1470	—	26	—	—	T640NC#10-24R3B-A
—	10-32	4,039	.1590	—	21	—	—	T640NF#10-32R3B-A
M5 x 0,80	—	4,200	.1654	—	—	T680M050X080R6H-D1	T670M050X080R6H-D1	T640M050X080R6HX-D1
M6 x 1,00	— 5,000	.1969	—	—	—	T680M060X100R6H-D1	T670M060X100R6H-D1	T640M060X100R6HX-D1
—	—	5,791	.2280	—	1	—	—	T640NC02500-20R3B-A
—	—	5,944	.2340	—	A	—	—	T640NF02500-28R3B-A
—	5/16-18	6,528	.2570	—	F	—	—	T640NC03125-18R3B-A
M8 x 1,25	—	6,700	.2638	—	—	T680M080X125R6H-D1	T670M080X125R6H-D1	T640M080X125R6HX-D1
—	5/16-24	6,909	.2720	—	I	—	—	T640NF03125-24R3B-A
—	3/8-16	7,938	.3125	5/16	—	—	—	T640NC03750-16R3B-A
—	3/8-24	8,433	.3320	—	Q	—	—	T640NF03750-24R3B-A
M10 x 1,50	—	8,500	.3346	—	—	T680M100X150R6H-D1	T670M100X150R6H-D1	T640M100X150R6HX-D1
—	7/16-14	9,093	.3580	—	T	—	—	T640NC04375-14R3B-A
—	7/16-20	9,921	.3906	25/64	—	—	—	T640NF04375-20R3B-A
M12 x 1,75	—	10,200	.4016	—	—	T680M120X175R6H-D6	T670M120X175R6H-D6	T640M120X175R6HX-D6
—	1/2-13	10,716	.4219	27/64	—	—	—	T640NC05000-13R3B-A
—	1/2-20	11,509	.4531	29/64	—	—	—	T640NF05000-20R3B-A
M14 x 2,00	—	12,000	.4724	—	—	—	—	T640M140X200R6HX-D6
—	5/8-111	13,495	.5313	17/32	—	—	—	T640NC06250-11R3B-A
M16 x 2,00	—	14,000	.5512	—	—	T680M160X200R6H-D6	T670M160X200R6H-D6	T640M160X200R6HX-D6
M18 x 2,50	—	15,500	.6102	—	—	—	—	T640M180X250R6HX-D6
—	3/4-10	16,670	.6563	21/32	—	—	—	T640NC07500-10R3B-A
M20 x 2,50	—	17,500	.6890	—	—	T680M200X250R6H-D6	—	T640M200X250R6HX-D6
M22 x 2,50	—	19,500	.7677	—	—	—	—	T640M220X250R6HX-D6

Taps

Aluminium • Forming Taps

typical thread sizes		required tap drill diameter		N	
				HSS-E-PM Taps — Forming Aluminium (Wrought, low Si)	
					
forming taps metric	inch	mm	inch	blind and through hole T622 KSN38	blind and through hole with coolant T622 KSN38
M3 x 0,50	—	2,800	.1102	T622M030X050R6HX-D74	—
—	—	3,734	.1470	T622M040X070R6HX-D74	—
—	—	5,000	.1969	T622M050X080R6HX-D74	T623M050X080R6HX-D74
—	1/4-20	5,791	.2280	T622M060X100R6HX-D74	T623M060X100R6HX-D74
—	5/16-24	7,493	.2950	T622M080X125R6HX-D74	T623M080X125R6HX-D74
—	—	7,938	.3125	T622MF080X100R6HX-D74	T623MF080X100R6HX-D74
M10 x 1,25	—	9,500	.3740	T622M100X150R6HX-D74	T623M100X150R6HX-D74
—	—	9,921	.3906	T622MF100X100R6HX-D74	T623MF100X100R6HX-D74
M12 x 1,50	—	11,300	.4449	T622M120X175R6HX-D74	T623M120X175R6HX-D74
M12 x 1,25	—	11,500	.4528	T622MF120X150R6HX-D74	T623MF120X150R6HX-D74
—	—	11,509	.4531	T622MF120X125R6HX-D74	T623MF120X125R6HX-D74
M14 x 1,25	—	13,400	.5276	T622MF140X150R6HX-D74	T623MF140X150R6HX-D74
—	5/8-18	15,250	.6004	T622M160X200R6HX-D74	T623M160X200R6HX-D74
—	—	15,500	.6102	T622MF160X150R6HX-D74	T623MF160X150R6HX-D74

	N		All Materials	
	Recommended SC Drill		Alternate Tap Drill	
HSS-E-PM Taps — Tapping Cast Aluminium (Si <12%)				
approximately 3 x D with coolant T641 KP6525	approximately 3 x D with coolant B284_(HP) K715	approximately 5 x D with coolant B411 KF1	approximately 5 x D with coolant B976_KC7315	with coolant B977_KC7315
—	—	—	B976Z02500	—
—	—	B411A03300	B976A03300	B977A03300
—	—	—	B976A03734	B977A03734
—	—	—	B976A04039	B977A04039
T641M050X080R6HX-D1	B284A04200	B411A04200	B976A04200	B977A04200
T641M060X100R6HX-D1	B284A05000	B411A05000	B976A05000	B977A05000
—	—	—	B976A05791	B977A05791
—	—	—	B976A05944	B977A05944
—	—	—	B976A06528	B977A06528
T641M080X125R6HX-D1	—	—	B976A06700	B977A06700
—	—	—	B976A06909	B977A06909
—	—	—	B976A07938	B977A07938
—	—	—	B976A08433	B977A08433
T641M100X150R6HX-D1	—	B411A08500	B976A08500	B977A08500
—	—	—	B976A09093	B977A09093
—	K284A03906	—	B976A09921	B977A09921
T641M120X175R6HX-D6	—	B411A10200	B976A10200	B977A10200
—	—	—	B976A10716	B977A10716
—	K284A04531	—	B976A11509	B977A11509
T641M140X200R6HX-D6	—	B411A12000	B976A12000	B977A12000
—	—	—	B976A13495	B977A13495
T641M160X200R6HX-D6	—	B411A14000	B976A14000	B977A14000
T641M180X250R6HX-D6	—	B411A15500	B976A15500	B977A15500
—	—	—	B976A16670	B977A16670
T641M200X250R6HX-D6	—	B411A17500	B976A17500	B977A17500
—	—	B411A19500	B976A19500	B977A19500

	N		All Materials	
	Recommended SC Drill		Alternate Tap Drill	
	approximately 3 x D with coolant B284_(HP) K715	approximately 5 x D with coolant B411 KF1	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
	—	—	B976Z02800	—
	—	—	B976A03734	B977A03734
	B284A05000	B411A05000	B976A05000	B977A05000
	—	—	B976A05791	B977A05791
	—	—	—	—
	—	—	B976A07938	B977A07938
	—	B411A09500	B976A09500	B977A09500
	—	K284A03906	B976A09921	B977A09921
	—	—	B976A11300	B977A11300
	—	B411A11500	B976A11500	B977A11500
	K284A04531	—	B976A11509	B977A11509
	—	—	—	—
	—	—	—	—
	—	B411A15500	B976A15500	B977A15500

High-Temperature Alloys

typical thread sizes	required tap drill diameter		S		
			HSS-E-PM Taps – Tapping Titanium Alloys		HSS-E-PM Taps – Tapping Nickel and Cobalt Alloys
cutting taps metric	mm	inch	blind hole T616_KSN25	through hole T614_KSN25	blind hole T612_KSSH22
M3 x 0,50	2,500	.0984	T616M030X050R6HX-D1	T614M030X050R6HX-D1	T616M030X050R6HX-D1
M4 x 0,70	3,300	.1299	T616M040X070R6H-D1	T614M040X070R6H-D1	T616M040X070R6H-D1
M5 x 0,80	4,200	.1654	T616M050X080R6H-D1	T614M050X080R6H-D1	T616M050X080R6H-D1
M6 x 1,00	5,000	.1969	T616M060X100R6H-D1	T614M060X100R6H-D1	T616M060X100R6H-D1
M8 x 1,25	6,700	.2638	T616M080X125R6H-D1	T614M080X125R6H-D1	T616M080X125R6H-D1
M10 x 1,50	8,500	.3346	T616M100X150R6H-D1	T614M100X150R6H-D1	T616M100X150R6H-D1
M12 x 1,75	10,200	.4016	T616M120X175R6H-D6	T614M120X175R6H-D6	T616M120X175R6H-D6
M14 x 2,00	12,000	.4724	–	–	T612M140X200R6HX-D6
M16 x 2,00	14,000	.5512	–	–	T612M160X200R6HX-D6
M20 x 2,50	17,500	.6890	–	–	T612M200X250R6HX-D6

Taps

Hard Materials

typical thread sizes	required tap drill diameter		H	
			HSS-E-PM Taps – Tapping Hard Materials 44–55 HRC	Carbide Taps – Tapping Hard Materials 55–63 HRC
cutting taps metric	mm	inch	blind and through hole T606_KSSH22	blind and through hole T410_KCU36
M5 x 0,80	4,200	.1654	–	T410M050X080R6HX-D1
M6 x 1,00	5,000	.1969	T606M060X100R6HX-D1	T410M060X100R6HX-D1
M8 x 1,25	6,700	.2638	T606M080X125R6HX-D1	T410M080X125R6HX-D1
M8 x 1,00	7,000	.2756	T606MF080X100R6HX-D4	T410MF080X100R6HX-D4
M10 x 1,50	8,500	.3346	T606M100X150R6HX-D1	T410M100X150R6HX-D1
M10 x 1,00	9,000	.3543	T606MF100X100R6HX-D4	T410MF100X100R6HX-D4
M12 x 1,75	10,200	.4016	T606M120X175R6HX-D6	T410M120X175R6HX-D6
M12 x 1,50	10,500	.4134	T606MF120X150R6HX-D4	T410MF120X150R6HX-D4
M14 x 2,00	12,000	.4724	–	T410M140X200R6HX-D6
M14 x 1,50	12,500	.4921	T606MF140X150R6HX-D4	T410MF140X150R6HX-D4
M16 x 2,00	14,000	.5512	T606M160X200R6HX-D6	T612M160X200R6HX-D6
M16 x 1,50	14,500	.5709	T606MF160X150R6HX-D4	T410MF160X150R6HX-D4

	S		All Materials	
HSS-E-PM Taps — Tapping Nickel and Cobalt Alloys	Recommended SC Drill		Alternate Tap Drill	
through hole T610_KSSH22	approximately 3 x D with coolant B291_YPL KC7315	approximately 5 x D with coolant B292_YPL KC7315	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
T610M030X050R6HX-D1	—	—	B976Z02500	—
T610M040X070R6H-D1	B291A03300YPL	B292A03300YPL	B976A03300	B977A03300
T610M050X080R6H-D1	—	B292A04200YPL	B976A04200	B977A04200
T610M060X100R6H-D1	B291A05000YPL	B292A05000YPL	B976A05000	B977A05000
T610M080X125R6H-D1	—	—	B976A06700	B977A06700
T610M100X150R6H-D1	B291A08500YPL	B292A08500YPL	B976A08500	B977A08500
T610M120X175R6H-D6	B291A10200YPL	B292A10200YPL	B976A10200	B977A10200
T610M140X200R6HX-D6	B291A12000YPL	B292A12000YPL	B976A12000	B977A12000
T610M160X200R6HX-D6	B291A14000YPL	B292A14000YPL	B976A14000	B977A14000
T610M200X250R6HX-D6	B291A17500YPL	B292A17500YPL	B976A17500	B977A17500

	H		All Materials	
	Recommended SC Drill		Alternative Tap Drill	
	approximately 3 x D with coolant B291_YPL KC7315	approximately 5 x D with coolant B292_YPL KC7315	approximately 3 x D with coolant B976_KC7315	approximately 5 x D with coolant B977_KC7315
	—	B292A04200YPL	B976A04200	B977A04200
	B291A05000YPL	B292A05000YPL	B976A05000	B977A05000
	—	—	B976A06700	B977A06700
	B291A07000YPL	B292A07000YPL	B976A07000	B977A07000
	B291A08500YPL	B292A08500YPL	B976A08500	B977A08500
	B291A09000YPL	B292A09000YPL	B976A09000	B977A09000
	B291A10200YPL	B292A10200YPL	B976A10200	B977A10200
	B291A10500YPL	B292A10500YPL	B976A10500	B977A10500
	B291A12000YPL	B292A12000YPL	B976A12000	B977A12000
	B291A12500YPL	B292A12500YPL	B976A12500	B977A12500
	B291A14000YPL	B292A14000YPL	B976A14000	B977A14000
	B291A14500YPL	B292A14500YPL	B976A14500	B977A14500

Steel • Wind Energy

typical thread sizes	required tap drill diameter		P HSS-E-PM Taps — Tapping Steel >32 HRC		
cutting taps metric	mm	inch	blind hole T630_KP6525	blind hole T650_KP6525	through hole T620_KP6525
M24 x 3,00	21,000	.8268	T630M240X300R6HX-D6	T650M240X300R6HX-D6	T620M240X300R6HX-D6
M30 x 3,50	26,500	1.0433	T630M300X350R6HX-D6	T650M300X350R6HX-D6	T620M300X350R6HX-D6
M33 x 3,50	29,500	1.1614	T630M330X350R6HX-D6	T650M330X350R6HX-D6	T620M330X350R6HX-D6
M36 x 4,00	32,000	1.2598	T630M360X400R6HX-D6	T650M360X400R6HX-D6	T620M360X400R6HX-D6
M42 x 4,50	37,500	1.4764	T630M420X450R6HX-D6	T650M420X450R6HX-D6	T620M420X450R6HX-D6

Steel • Wind Energy • Extra Long

typical thread sizes	required tap drill diameter		P HSS-E-PM Taps — Tapping Steel >32 HRC		
cutting taps metric	mm	inch	blind hole T630_KP6525	blind hole T650_KP6525	through hole T620_KP6525
M24 x 3,00	21,000	.8268	T630M240X300R6HX-XL	T650M240X300R6HX-XL	T620M240X300R6HX-XL
M30 x 3,50	26,500	1.0433	T630M300X350R6HX-XL	T650M300X350R6HX-XL	T620M300X350R6HX-XL
M33 x 3,50	29,500	1.1614	T630M330X350R6HX-XL	T650M330X350R6HX-XL	T620M330X350R6HX-XL
M36 x 4,00	32,000	1.2598	T630M360X400R6HX-XL	T650M360X400R6HX-XL	T620M360X400R6HX-XL
M42 x 4,50	37,500	1.4764	T630M420X450R6HX-XL	T650M420X450R6HX-XL	T620M420X450R6HX-XL

Cast Iron • Wind Energy

typical thread sizes	required tap drill diameter		K HSS-E-PM Taps — Cast Iron		
cutting taps metric	mm	inch	blind hole T630_KP6525	blind hole T650_KP6525	through hole T620_KP6525
M24 x 3,00	21,000	.8268	T630M240X300R6HX-D6	T650M240X300R6HX-D6	T620M240X300R6HX-D6
M30 x 3,50	26,500	1.0433	T630M300X350R6HX-D6	T650M300X350R6HX-D6	T620M300X350R6HX-D6
M33 x 3,50	29,500	1.1614	T630M330X350R6HX-D6	T650M330X350R6HX-D6	T620M330X350R6HX-D6
M36 x 4,00	32,000	1.2598	T630M360X400R6HX-D6	T650M360X400R6HX-D6	T620M360X400R6HX-D6
M42 x 4,50	37,500	1.4764	T630M420X450R6HX-D6	T650M420X450R6HX-D6	T620M420X450R6HX-D6

Cast Iron • Wind Energy • Extra Long

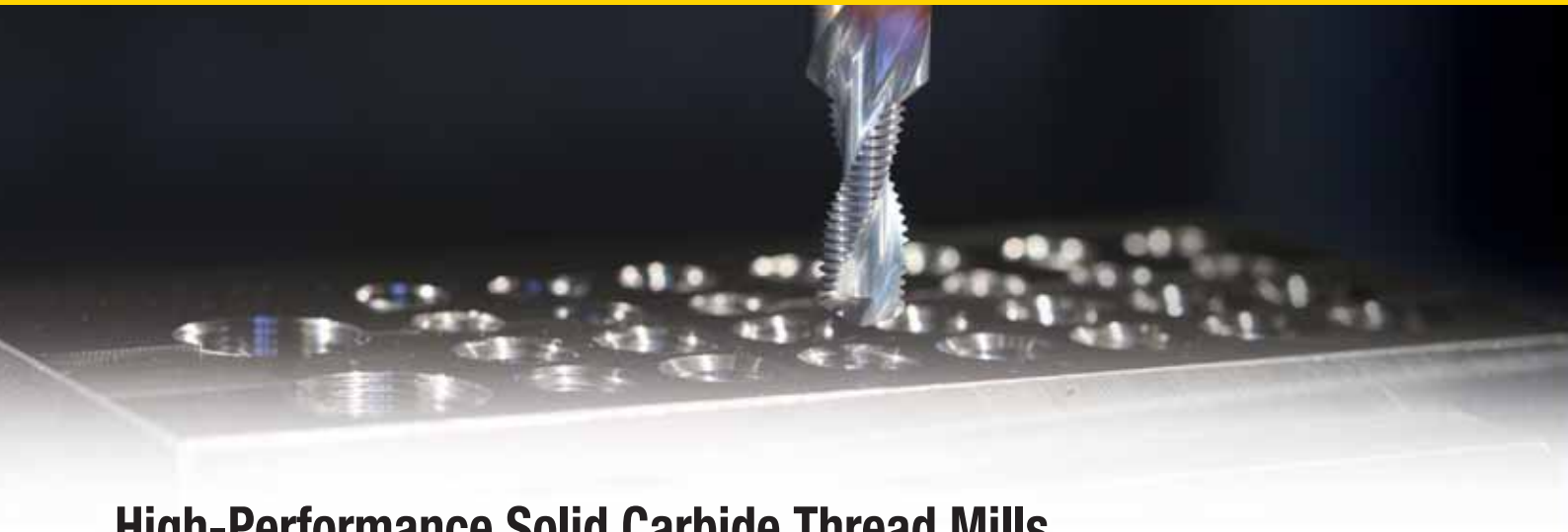
typical thread sizes	required tap drill diameter		K HSS-E-PM Taps — Cast Iron		
cutting taps metric	mm	inch	blind hole T630_KP6525	blind hole T650_KP6525	through hole T620_KP6525
M24 x 3,00	21,000	.8268	T630M240X300R6HX-XL	T650M240X300R6HX-XL	T620M240X300R6HX-XL
M30 x 3,50	26,500	1.0433	T630M300X350R6HX-XL	T650M300X350R6HX-XL	T620M300X350R6HX-XL
M33 x 3,50	29,500	1.1614	T630M330X350R6HX-XL	T650M330X350R6HX-XL	T620M330X350R6HX-XL
M36 x 4,00	32,000	1.2598	T630M360X400R6HX-XL	T650M360X400R6HX-XL	T620M360X400R6HX-XL
M42 x 4,50	37,500	1.4764	T630M420X450R6HX-XL	T650M420X450R6HX-XL	T620M420X450R6HX-XL

P		P	
HSS-E-PM Taps — Tapping Steel >32 HRC		Recommended Modular Drill	
blind hole with coolant T631_KP6525	blind hole with coolant T651_KP6525	KSEM PLUS™ insert KCP15	KSEM PLUS™ tool body 3 x D
T631M240X300R6HX-D6	T651M240X300R6HX-D6	KTIP2100HPM	KSEM PLUS
T631M300X350R6HX-D6	T651M300X350R6HX-D6	KTIP2650HPM	KSEM PLUS
T631M330X350R6HX-D6	T651M330X350R6HX-D6	KSEM PLUS	KSEM PLUS
T631M360X400R6HX-D6	T651M360X400R6HX-D6	KSEM PLUS	KSEM PLUS
T631M420X450R6HX-D6	T651M420X450R6HX-D6	KSEM PLUS	KSEM PLUS

P		P	
HSS-E-PM Taps — Tapping Steel >32 HRC		Recommended Modular Drill	
blind hole with coolant T631_KP6525	blind hole with coolant T651_KP6525	KSEM PLUS™ insert KCP15	KSEM PLUS™ tool body 3 x D
T631M240X300R6HX-XL	T651M240X300R6HX-XL	KTIP2100HPM	KSEM PLUS
T631M300X350R6HX-XL	T651M300X350R6HX-XL	KTIP2650HPM	KSEM PLUS
T631M330X350R6HX-XL	T651M330X350R6HX-XL	KSEM PLUS	KSEM PLUS
T631M360X400R6HX-XL	T651M360X400R6HX-XL	KSEM PLUS	KSEM PLUS
T631M420X450R6HX-XL	T651M420X450R6HX-XL	KSEM PLUS	KSEM PLUS

K		K	
HSS-E-PM Taps — Cast Iron		Recommended Modular Drill	
blind hole with coolant T631_KP6525	blind hole with coolant T651_KP6525	KSEM PLUS™ insert KC7140	KSEM PLUS™ tool body 3 x D
T631M240X300R6HX-D6	T651M240X300R6HX-D6	KTIP2100HPM	KSEM PLUS
T631M300X350R6HX-D6	T651M300X350R6HX-D6	KTIP2650HPM	KSEM PLUS
T631M330X350R6HX-D6	T651M330X350R6HX-D6	KSEM PLUS	KSEM PLUS
T631M360X400R6HX-D6	T651M360X400R6HX-D6	KSEM PLUS	KSEM PLUS
T631M420X450R6HX-D6	T651M420X450R6HX-D6	KSEM PLUS	KSEM PLUS

K		K	
HSS-E-PM Taps — Cast Iron		Recommended Modular Drill	
blind hole with coolant T631_KP6525	blind hole with coolant T651_KP6525	KSEM PLUS™ insert KC7140	KSEM PLUS™ tool body 3 x D
T631M240X300R6HX-XL	T651M240X300R6HX-XL	KTIP2100HPM	KSEM PLUS
T631M300X350R6HX-XL	T651M300X350R6HX-XL	KTIP2650HPM	KSEM PLUS
T631M330X350R6HX-XL	T651M330X350R6HX-XL	KSEM PLUS	KSEM PLUS
T631M360X400R6HX-XL	T651M360X400R6HX-XL	KSEM PLUS	KSEM PLUS
T631M420X450R6HX-XL	T651M420X450R6HX-XL	KSEM PLUS	KSEM PLUS



High-Performance Solid Carbide Thread Mills

Primary Application

Our solid thread mills are designed to deliver high-quality internal threading on 3-axis CNC machines. Because these mills are made of carbide, they are capable of easily cutting most difficult materials up to 63 HRC. Thread mills make interrupted cuts and short chips.

The combination of these design elements offers a range of benefits to improve overall thread quality and tool production. Short, easily evacuated chips generate less heat and friction, so there is a lower risk of damage to threading. Also, the superior carbide grades make threading easier and machining times shorter.

Features and Benefits

System Requirements

- 3-axis CNC machine.
- Good clamping for tool and workpiece.
- Internal coolant supply.

Features

- Interrupted cuts.
- Short chips.
- Optimised carbide grades.
- Drill, thread, countersink.

Advantages

- Versatile.
- Better surface quality.
- No chip problems.
- No need to reverse the spindle.
- More production safety.

Through and Blind Holes (2 x D)

		Thread Mill	Thread Mill and Chamfer	Drill, Thread Mill, and Chamfer	Mill, Thread Mill, and Chamfer
P	<35 HRC	TM711	TM721	—	TM741_RHSF
P	35–43 HRC	—	TM721	—	TM741_RHSF
M		TM711	TM721	—	TM741_RHSF
K		TM711	TM721	TM731	TM741_RHSF
N	Wrought	TM711	TM721	—	TM731
N	Cast	TM711	TM721	TM731	TM741_RHSF
S		TM711	TM721	—	TM741_LHSF
H	44–63 HRC	—	—	—	TM741_RHSF TM741_LHSF

High-Performance
Solid Carbide Thread Mills

Our solid thread mills are designed to deliver high-quality internal threading on 3-axis CNC machines. Because these mills are made of carbide, they are capable of easily cutting most difficult materials up to 63 HRC. Thread mills make interrupted cuts and short chips. The combination of these design elements offers a range of benefits to improve overall thread quality and tool production. Short, easily evacuated chips generate less heat and friction, so there is a lower risk of damage to threading. Also, the superior carbide grades make threading easier and machining times shorter.

Features:

- 3-axis CNC machine.
- Good clamping for tool and workpiece.
- Internal coolant supply.
- Interrupted cuts.
- Short chips.
- Optimised carbide grades.
- Drill, thread, countersink.
- Versatile.
- Better surface quality.
- No chip problems.
- No need to reverse the spindle.
- More production safety.

Visit **www.kennametal.com** or contact your local Authorised Kennametal Distributor.

www.kennametal.com

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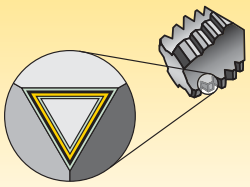


Coatings provide high-speed capability and are engineered for finishing to light roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
NEW! KCU32	Coated carbide. PVD — Fine-grain carbide substrate with high hardness TiCN coating. Universal grade for thread milling most materials.	P	P	P	P					
		M	M	M	M					
		K		K	K	K				
		N			N	N	N			
		S		S	S	S				
NEW! KCU33	Coated carbide. PVD — Carbide substrate with heat-resistant TiAlN coating. Universal grade for thread milling most materials.	P		P	P	P	P			
		M		M	M	M	M			
		K		K	K	K	K			
		N			N	N	N	N		
		S			S	S	S			
NEW! KCU36	Coated carbide. PVD — two-layer coating with heat-resistant TiAlN base layer and low-friction MoS_2 top layer over carbide substrate. Use for thread milling most materials including high hardness materials.	P			P	P	P	P		
		M			M	M	M	M		
		K			K	K	K			
		N			N	N	N			
		S				S	S	S		
		H					H	H	H	H

Solid Thread Mills Identification System

TM721	MF	120	X	150	R	2D	HA
Tap Design	Type of Thread	Nominal Diameter of Thread		Pitch	Cutting Dimension	Depth of Cut	Shank
		mm or inch (depending on type)		mm or TPI (depending on type)			

M = Metric coarse-pitch thread (ISO form)

MF = Metric fine-pitch thread (ISO form)

NC = Unified coarse series thread

NF = Unified fine series thread

DIN 6535

HA = Plain Shank

HB = Weldon® Shank

HE = Whistle Notch™ Shank

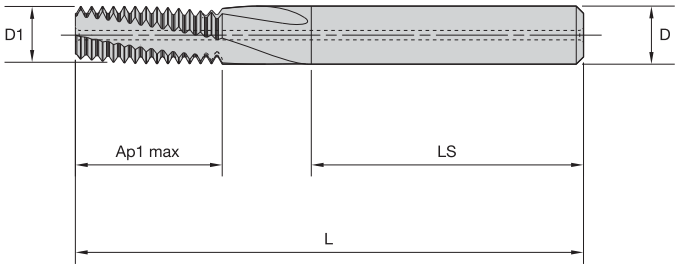
Style

TM711 = Solid Thread Mill; through coolant

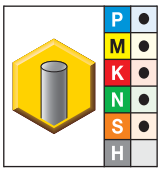
TM721 = Solid Thread Mill and Chamfer; through coolant

TM731 = Solid Thread Mill, Chamfer, and Drill; through coolant

TM741 = Solid Thread Mill, Chamfer, and Mill; through coolant



TM711 • Through Coolant • Metric and Metric Fine

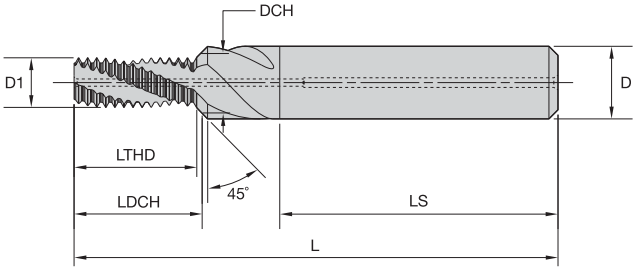


● first choice
○ alternate choice

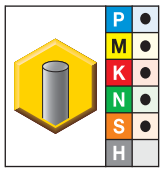
KCU32	D1 size	D1	Ap1 max	L	LS	D	cutting edges
TM711M030X050R2DHA	M3X0.5	2,4	6,2	42	28	4,0	3
TM711MF040X050R2DHA	M4X0.5	3,4	8,2	55	36	6,0	3
TM711M040X070R2DHA	M4X0.7	3,2	8,7	55	36	6,0	3
TM711MF050X050R2DHA	M5X0.5	4,3	10,2	55	36	6,0	3
TM711M050X080R2DHA	M5X0.8	4,0	10,8	55	36	6,0	3
TM711MF060X075R2DHA	M6X0.75	5,0	12,4	55	36	6,0	3
TM711M060X100R2DHA	M6X1	4,8	12,5	55	36	6,0	3
TM711MF080X075R2DHA	M8X0.75	5,9	16,8	63	36	6,0	3
TM711MF080X100R2DHA	M8X1	5,9	16,4	63	36	6,0	3
TM711M080X125R2DHA	M8X1.25	5,9	16,8	63	36	6,0	3
TM711MF100X100R2DHA	M10X1	7,9	20,5	70	36	8,0	3
TM711M100X150R2DHA	M10X1.5	7,9	20,2	70	36	8,0	3
TM711MF120X100R2DHA	M12X1	9,9	24,5	80	40	10,0	4
TM711MF120X150R2DHA	M12X1.5	9,9	24,7	80	40	10,0	4
TM711M120X175R2DHA	M12X1.75	9,9	25,3	80	40	10,0	4
TM711MF140X150R2DHA	M14X1.5	9,9	29,2	80	40	10,0	4
TM711M140X200R2DHA	M14X2	11,6	29,0	90	45	12,0	4
TM711MF160X150R2DHA	M16X1.5	11,9	32,2	90	45	12,0	4
TM711M160X200R2DHA	M16X2	11,9	32,9	90	45	12,0	4
TM711MF180X150R2DHA	M18X1.5	13,9	36,7	90	45	14,0	4
TM711M180X250R2DHA	M18X2.5	13,9	38,7	90	45	14,0	4
TM711MF200X150R2DHA	M20X1.5	13,9	41,2	90	45	14,0	4
TM711M200X250R2DHA	M20X2.5	13,9	41,2	90	45	14,0	4

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–18	+0, -0,011
20–30	+0, -0,013



TM721 • Through Coolant • Metric and Metric Fine

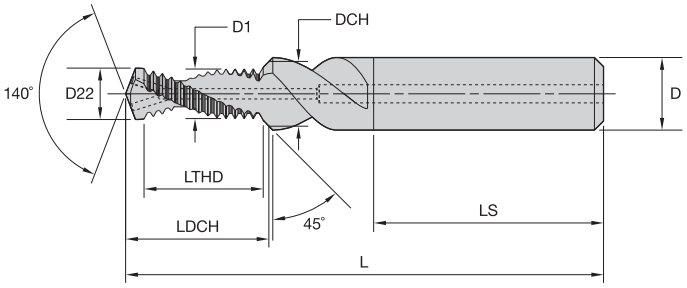


● first choice
○ alternate choice

KCU32	D1 size	D1	DCH	LTHD	LDCH	L	LS	D	cutting edges
TM721M050X080R2DHA	M5X0.8	4,0	5,3	10,82	11,40	55	36	6,0	3
TM721MF060X075R2DHA	M6X0.75	5,0	6,3	12,40	12,97	62	36	8,0	3
TM721M060X100R2DHA	M6X1	4,8	6,3	12,52	13,19	62	36	8,0	3
TM721MF080X100R2DHA	M8X1	6,7	8,3	16,53	17,23	74	40	10,0	3
TM721M080X125R2DHA	M8X1.25	6,5	8,3	16,91	17,71	74	40	10,0	3
TM721MF100X100R2DHA	M10X1	8,7	10,3	20,55	21,23	80	45	12,0	3
TM721MF100X125R2DHA	M10X1.25	8,4	10,3	20,67	21,50	80	45	12,0	3
TM721M100X150R2DHA	M10X1.5	8,2	10,3	20,29	21,22	80	45	12,0	3
TM721MF120X100R2DHA	M12X1	10,6	12,3	24,56	25,27	90	45	14,0	4
TM721MF120X125R2DHA	M12X1.25	10,4	12,3	24,43	25,24	90	45	14,0	4
TM721MF120X150R2DHA	M12X1.5	10,1	12,3	24,80	25,76	90	45	14,0	4
TM721M120X175R2DHA	M12X1.75	9,9	12,3	25,42	26,48	90	45	14,0	4
TM721MF140X150R2DHA	M14X1.5	12,1	14,3	29,31	30,25	100	48	16,0	4
TM721M140X200R2DHA	M14X2	11,6	14,3	29,05	30,24	100	48	16,0	4
TM721MF160X150R2DHA	M16X1.5	14,0	16,3	32,31	33,30	102	48	18,0	4
TM721M160X200R2DHA	M16X2	13,6	16,3	33,05	34,24	102	48	18,0	4

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–18	+0, -0,011
20–30	+0, -0,013



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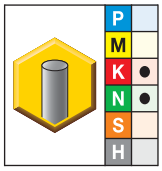
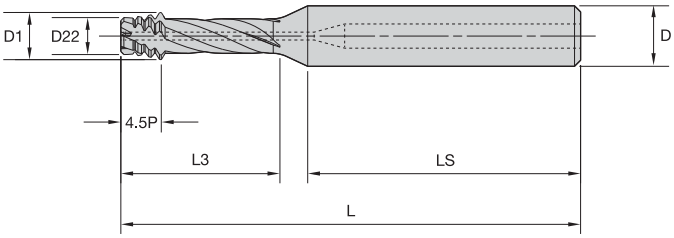


● first choice
○ alternate choice

KCU32	D1 size	D22	D1	DCH	LTHD	LDCH	L	LS	D	cutting edges
TM731M040X070R2DHA	M4X0.7	3,3	3,2	4,3	7,74	9,59	49	36	6,0	2
TM731M050X080R2DHA	M5X0.8	4,2	4,0	5,3	9,65	11,82	55	36	6,0	2
TM731MF060X075R2DHA	M6X0.75	5,3	5,1	6,3	12,07	14,37	62	36	8,0	2
TM731M060X100R2DHA	M6X1	5,0	4,8	6,3	12,06	14,69	62	36	8,0	2
TM731MF080X100R2DHA	M8X1	7,0	6,8	8,3	16,09	19,10	74	40	10,0	2
TM731M080X125R2DHA	M8X1.25	6,8	6,5	8,3	15,08	18,42	74	40	10,0	2
TM731MF100X100R2DHA	M10X1	9,0	8,7	10,3	20,11	23,52	79	45	12,0	2
TM731MF100X125R2DHA	M10X1.25	8,8	8,4	10,3	20,11	23,87	79	45	12,0	2
TM731M100X150R2DHA	M10X1.5	8,5	8,2	10,3	19,59	23,65	79	45	12,0	2
TM731MF120X125R2DHA	M12X1.25	10,8	10,4	12,3	23,88	28,00	89	45	14,0	2
TM731MF120X150R2DHA	M12X1.5	10,5	10,2	12,3	24,12	28,57	89	45	14,0	2
TM731M120X175R2DHA	M12X1.75	10,3	9,9	12,3	22,86	27,63	89	45	14,0	2
TM731MF140X150R2DHA	M14X1.5	12,5	12,1	14,3	27,14	31,98	102	48	16,0	2
TM731M140X200R2DHA	M14X2	12,0	11,6	14,3	28,12	33,62	102	48	16,0	2
TM731MF160X150R2DHA	M16X1.5	14,5	14,1	16,3	31,65	36,87	102	48	18,0	2
TM731M160X200R2DHA	M16X2	14,0	13,6	16,3	32,13	38,00	102	48	18,0	2

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–18	+0, -0,011
20–30	+0, -0,013



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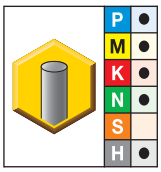
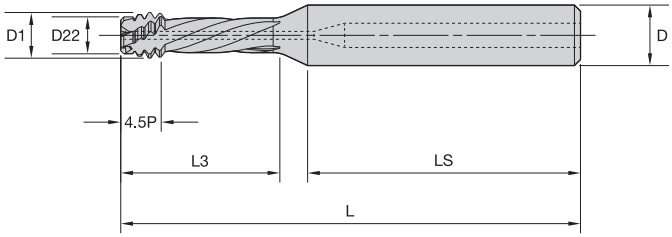


● first choice
○ alternate choice

KCU36	D1 size	D1	D22	L3	L	LS	D	cutting edges
TM741M060X100R2DHA	M6X1	4,51	3,41	16,5	60	36	8,0	3
TM741M070X100R2DHA	M7X1	4,51	3,41	16,5	60	36	8,0	3
TM741MF080X100R2DHA	M8X1	6,23	5,13	21,9	71	40	10,0	4
TM741M080X125R2DHA	M8X1.25	6,23	4,91	21,9	71	40	10,0	4
TM741MF090X100R2DHA	M9X1	6,23	5,13	21,9	71	40	10,0	4
TM741M090X125R2DHA	M9X1.25	6,23	4,91	21,9	71	40	10,0	4
TM741MF100X100R2DHA	M10X1	6,23	5,13	21,9	71	40	10,0	4
TM741MF100X125R2DHA	M10X1.25	6,23	4,91	21,9	71	40	10,0	4
TM741M100X150R2DHA	M10X1.5	7,75	6,11	26,3	76	40	10,0	4
TM741M110X150R2DHA	M11X1.5	7,75	6,11	26,3	76	40	10,0	4
TM741MF120X100R2DHA	M12X1	9,15	8,06	30,0	86	45	12,0	4
TM741MF120X150R2DHA	M12X1.5	7,75	6,11	26,3	76	40	10,0	4
TM741M120X175R2DHA	M12X1.75	9,16	7,21	32,4	86	45	12,0	4
TM741MF140X100R2DHA	M14X1	9,15	8,06	30,0	86	45	12,0	4
TM741MF140X150R2DHA	M14X1.5	10,83	9,15	37,4	98	48	16,0	4
TM741M140X200R2DHA	M14X2	11,08	8,91	41,0	98	48	16,0	4
TM741MF160X150R2DHA	M16X1.5	10,83	9,15	37,4	98	48	16,0	4
TM741M160X200R2DHA	M16X2	11,08	8,91	41,0	98	48	16,0	4
TM741MF180X150R2DHA	M18X1.5	14,83	13,15	47,0	98	48	16,0	4
TM741M180X250R2DHA	M18X2.5	14,38	11,71	51,3	111	50	20,0	5
TM741MF200X150R2DHA	M20X1.5	14,83	13,15	47,0	98	48	16,0	4
TM741M200X250R2DHA	M20X2.5	14,38	11,71	51,3	111	50	20,0	5
TM741MF220X150R2DHA	M22X1.5	18,23	16,55	56,0	111	50	20,0	5
TM741MF240X150R2DHA	M24X1.5	18,23	16,55	56,0	111	50	20,0	5

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–18	+0, -0,011
20–30	+0, -0,013



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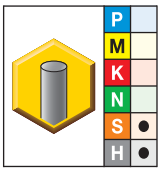


● first choice
○ alternate choice

KCU36	D1 size	D1	D22	L3	L	LS	D	cutting edges
TM741M060X100L2DHA	M6X1	4,51	3,41	16,5	60	36	8,0	3
TM741M070X100L2DHA	M7X1	4,51	3,41	16,5	60	36	8,0	3
TM741M080X125L2DHA	M8X1.25	6,23	4,91	21,9	71	40	10,0	4
TM741M090X125L2DHA	M9X1.25	6,23	4,91	21,9	71	40	10,0	4
TM741M100X150L2DHA	M10X1.5	7,75	6,11	26,3	76	40	10,0	4
TM741M110X150L2DHA	M11X1.5	7,75	6,11	26,3	76	40	10,0	4
TM741MF120X150L2DHA	M12X1.5	9,17	7,21	32,4	86	45	12,0	4

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8–10	+0, -0,009
12–18	+0, -0,011
20–30	+0, -0,013

Thread Mill TM711

Thread Mill and Chamfer TM721

Material Group		Cutting Speed — vc Range — m/min			Feed/Tooth by Diameter			Cutting Speed — vc Range — m/min			Feed/Tooth by Diameter		
		min	Starting Value	max		<10mm	>10mm	min	Starting Value	max		<10mm	>10mm
P	1	90	115	150	mm/r	0,05	0,08	140	185	240	mm/r	0,06	0,10
	2	90	115	150	mm/r	0,05	0,08	140	185	240	mm/r	0,06	0,10
	3	40	50	70	mm/r	0,02	0,03	70	90	120	mm/r	0,03	0,04
	4	–	–	–	–	–	–	70	90	120	mm/r	0,03	0,04
	5	60	80	100	mm/r	0,04	0,06	70	90	120	mm/r	0,05	0,08
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	60	80	100	mm/r	0,04	0,06	70	90	120	mm/r	0,05	0,08
	2	60	80	100	mm/r	0,04	0,06	70	90	120	mm/r	0,05	0,08
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	120	150	200	mm/r	0,06	0,10	130	170	220	mm/r	0,06	0,11
	2	120	150	200	mm/r	0,06	0,10	130	170	220	mm/r	0,06	0,11
	3	90	115	150	mm/r	0,05	0,07	110	140	180	mm/r	0,05	0,07
N	1	250	275	300	mm/r	0,07	0,09	270	300	330	mm/r	0,08	0,16
	2	200	225	250	mm/r	0,05	0,06	270	300	330	mm/r	0,08	0,16
	3	170	190	210	mm/r	0,04	0,05	160	175	190	mm/r	0,08	0,16
	4	250	275	300	mm/r	0,07	0,09	270	300	330	mm/r	0,08	0,16
	5	270	300	330	mm/r	0,12	0,13	250	275	300	mm/r	0,11	0,20
	6	170	190	210	mm/r	0,05	0,06	90	100	110	mm/r	0,11	0,20
S	1	60	80	100	mm/r	0,04	0,06	70	90	120	mm/r	0,05	0,08
	2	50	65	80	mm/r	0,03	0,04	50	60	80	mm/r	0,03	0,05
	3	50	65	80	mm/r	0,03	0,04	50	60	80	mm/r	0,03	0,05
	4	50	65	80	mm/r	0,03	0,04	50	60	80	mm/r	0,03	0,05

Drill, Chamfer, and Thread Mill TM731

Material Group		Cutting Speed — vc Range — m/min			Drilling Recommended Feed by Diameter				Milling Feed/Tooth by Diameter			
		min	Starting Value	max		<6mm	6–10mm	10–16mm		<6mm	6–10mm	10–16mm
K	1	130	175	230	mm/r	0,10	0,16	0,30	mm/r	0,05	0,07	0,10
N	2	270	300	330	mm/r	0,15	0,25	0,34	mm/r	0,06	0,08	0,12
	3	140	150	170	mm/r	0,15	0,25	0,34	mm/r	0,06	0,08	0,12
	4	270	300	330	mm/r	0,15	0,25	0,34	mm/r	0,06	0,08	0,12
	5	110	120	130	mm/r	0,12	0,20	0,32	mm/r	0,06	0,08	0,12

Mill, Chamfer, and Thread Mill TM741

Material Group		TM Style	Grade	Cutting Speed — vc Range — m/min min	Starting Value	max	Feed/Tooth by Diameter	<10mm	>10mm
P	1	TM741 R	KCU36	170	**225**	290	mm/r	0,05	0,08
	2	TM741 R	KCU36	170	**225**	290	mm/r	0,05	0,08
	3	TM741 R	KCU36	120	**150**	200	mm/r	0,03	0,05
	4	TM741 R	KCU36	100	**125**	160	mm/r	0,03	0,05
	5	TM741 R	KCU36	120	**150**	200	mm/r	0,03	0,04
	6	TM741 R	KCU36	60	**80**	100	mm/r	0,03	0,04
M	1	TM741 R	KCU36	120	**150**	200	mm/r	0,03	0,04
	2	TM741 R	KCU36	120	**150**	200	mm/r	0,03	0,04
	3	TM741 R	KCU36	120	**150**	200	mm/r	0,03	0,04
K	1	TM741 R	KCU36	190	**250**	330	mm/r	0,06	0,10
	2	TM741 R	KCU36	190	**250**	330	mm/r	0,06	0,10
	3	TM741 R	KCU36	140	**185**	240	mm/r	0,04	0,07
N	1	–	–	–	**–**	–	–	–	–
	2	–	–	–	**–**	–	–	–	–
	3	TM741 R	KCU36	180	**230**	300	mm/r	0,06	0,07
	4	TM741 R	KCU36	210	**275**	360	mm/r	0,06	0,07
	5	–	–	–	**–**	–	–	–	–
	6	TM741 R	KCU36	210	**275**	360	mm/r	0,06	0,07
S	1	TM741 L	KCU36	120	**150**	200	mm/r	0,025	0,045
	2	TM741 L	KCU36	50	**60**	80	mm/r	0,015	0,025
	3	TM741 L	KCU36	50	**60**	80	mm/r	0,015	0,025
	4	TM741 L	KCU36	70	**90**	120	mm/r	0,025	0,035
H	1	TM741	KCU36	80	**100**	130	mm/r	0,030	0,050
	2	TM741	KCU36	80	**100**	130	mm/r	0,030	0,050
	3	TM741	KCU36	50	**65**	80	mm/r	0,020	0,030
	4	TM741	KCU36	50	**65**	80	mm/r	0,020	0,030

Milling Methods

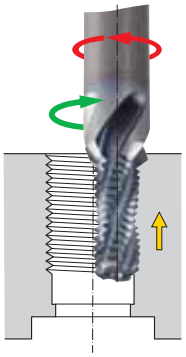
Climb Milling

Properties:

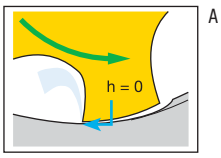
- Tool rotation direction clockwise
- Tool moves anti-clockwise
- Pitch “upwards”

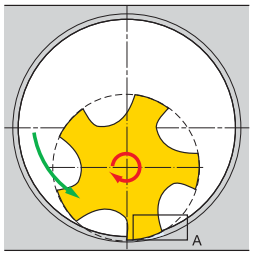
↓

- Right-hand thread



Climb milling is always when the cutting edge goes out of the material with a chip thickness h = 0





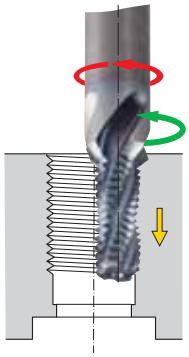
Conventional Milling

Properties:

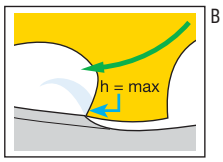
- Tool rotation direction clockwise
- Tool moves clockwise
- Pitch “downwards”

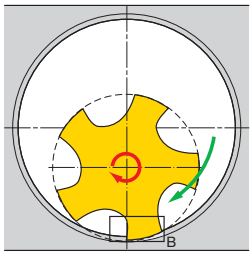
↓

- Right-hand thread



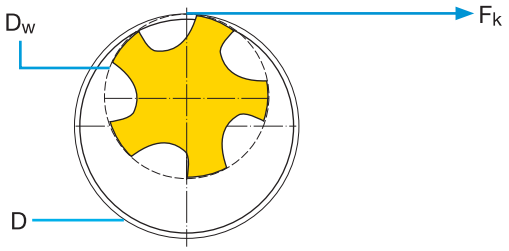
Conventional milling is always when the cutting edge goes out of the material with a chip thickness h = max





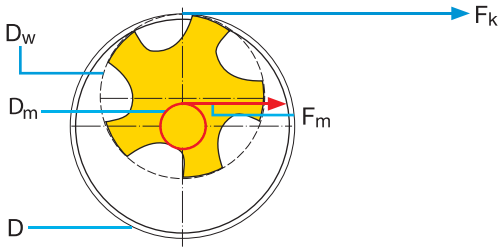
Counter Feed F_k

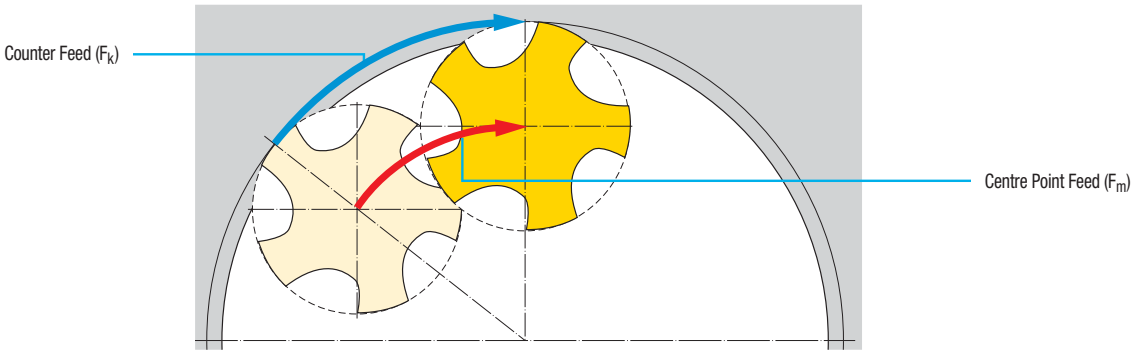
$$F_k = n \cdot f_z \cdot Z \text{ [mm/min]}$$



Centre Point Feed F_m

$$F_m = \frac{F_k \cdot (D-D_w)}{D} \text{ [mm/min]}$$





D_w = Tool diameter [mm]
n = RPM [min^{-1}]
f_z = Feed per tooth [mm]
Z = Number of teeth on tool (radial)
D = Nominal diameter of thread = Diameter of external contour [mm]
D_m = Diameter of the centre point (D-D_w) [mm]

Drill Thread Mill TM741 • Right Hand

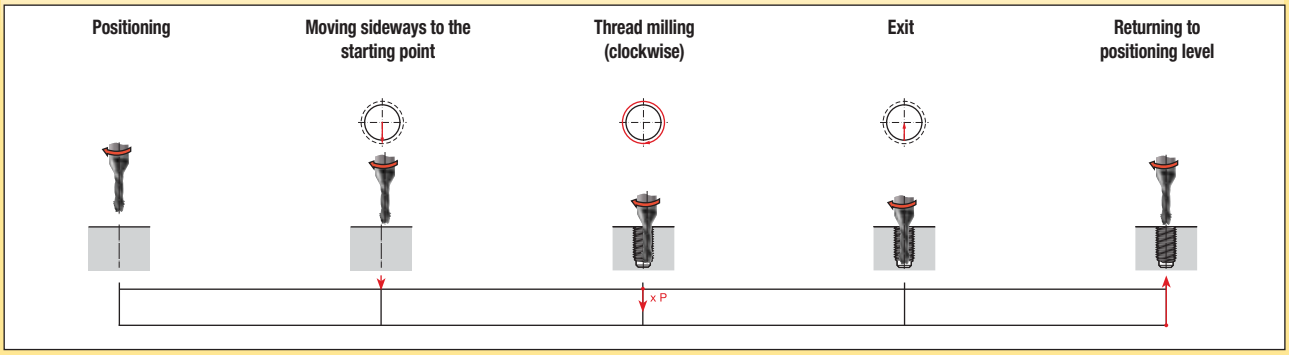
Preparation

None

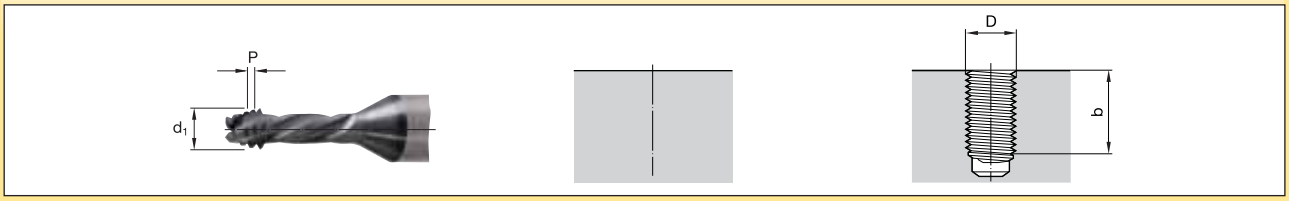
Process Principle

Milling thread and core hole, countersinking (conventional milling)

Cycle



Required Specification Values



Example

Size — M10-6H
Thread diameter D 10mm
Pitch P 1,5mm
Core hole diameter D_1 .....8,5mm

Material — Hard steel, 50 HRC

Grade — KCU36

Tool — TM741 Right Hand
Catalogue number TM741M100X150R2DHA
Number of teeth Z 4
Tool diameter d_1 .....7,75mm*
Tool radius compensation k [1] 0,08mm**
Tool radius to be programmed [2] 3,795mm***
Thread depth b 20mm
Cutting speed v_c .....100 m/min
Feed (milling) f_z .....0,04 mm/tooth
Number of turns [5] 17

*(measured on the cutting part) **0,01 x D; adjust to application ***(1/2 d_1 - k)

$$N = \frac{V_c \cdot 1000}{d_1 \cdot \pi} \qquad S = 4109$$

$$v_f = f_z \cdot Z \cdot n \qquad F = 657 \text{ (contour)}$$

$$N = \frac{v_f \text{ contour} \cdot (D-d_1)}{D} \qquad F = 148 \text{ (centre point)}$$

Program to DIN 66025 (conventional milling, on the contour, incremental)

Positioning the tool	N 10	G 54	G 90	G 00	X…	Y…	Z 1.500	S 4109	T01 [2]	M03 [6]
Incremental programming	N 20	G 91								
Moving sideways to the starting point	N 30	G 42	G 01	X 0	Y-5	F 657 (contour)		[F 148] [4] (centre point)		
Thread milling	N 40	G 02		X 0	Y 0	Z-1.500	I 0	J 5.000		
Repeat thread milling	… [5]									
Exit	N 50	G 40	G 01	X 0	Y 5					
Retracting tool to positioning level	N 70	G 90	G 00	Z 2						

Cutting time t_h

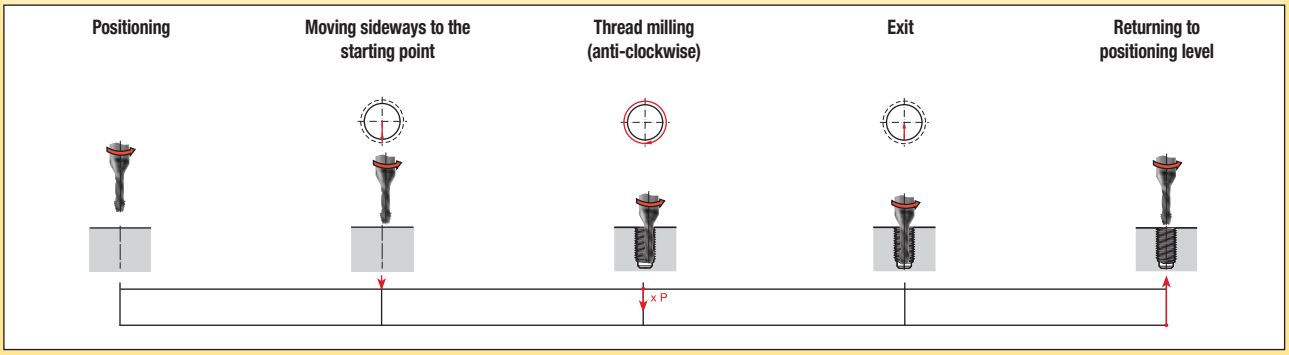
51,6 seconds

NOTES:
[1] The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
[2] The cutter radius to be programmed is normally included in the tool memory.
[3] The thread depth b must be divisible by the thread pitch P.
[4] The feed values in brackets must be used for controllers, which do not calculate the centre point feed themselves.
[5] **Set N40 must be repeated with the number of threads.** Repetitions N = thread depth b/pitch P (rounded up to the nearest integer).

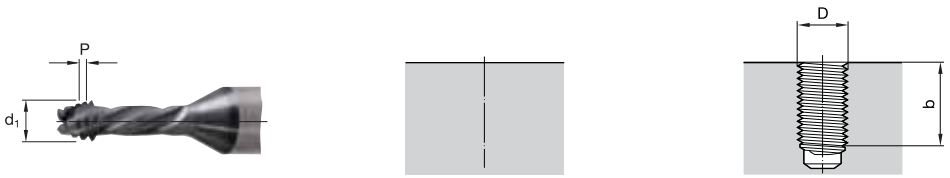
Drill Thread Mill TM741 • Left Hand

Preparation	None
Process Principle	Milling thread and core hole, countersinking (climb milling)

Cycle



Required Specification Values



Example

Size — M10-6H
Thread diameter D 10mm
Pitch P 1,5mm
Core hole diameter D_1 .....8,5mm

Material — TiAl6V4 titanium

Grade — KCU36

Tool — TM741 Left Hand
Catalogue number TM741M100X150L2DHA
Number of teeth Z 4
Tool diameter d_1 .....7,75mm*
Tool radius compensation k [1] 0,08mm**
Tool radius to be programmed [2] 3,795mm***
Drilling/countersink depth l_E 20mm
Cutting speed v_c .....100 m/min
Feed (milling) f_z .....0,03 mm/tooth
Number of turns [5] 17

*(measured on the cutting part) **(0,01 x D) ***(1/2 d_1 - k)

$$N = \frac{V_c \cdot 1000}{d_1 \cdot \pi} \qquad S = 4109$$

$$v_f = f_z \cdot Z \cdot n \qquad F = 493 \text{ (contour)}$$

$$v_f = \frac{v_f \text{ contour} \cdot (D - d_1)}{D} \qquad F = 111 \text{ (centre point)}$$

Program to DIN 66025 (climb milling, on the contour, incremental)

Positioning the tool	N 10	G 54	G 90	G 00	X…	Y…	Z 1.500	S 4109	T01 [2]	M04
Incremental programming	N 20	G 91							
Moving sideways to the starting point	N 30	G 42	G 01	X 0	Y-5	F 493 (contour)		[F 111] [4] (centre point)	
Thread milling	N 40	G 02		X 0	Y 0	Z-1.500	I 0	J 5.000	
Repeat thread milling	… [5]								
Exit	N 50	G 40	G 01	X 0	Y 5				
Retracting tool to positioning level	N 70	G 90	G 00	Z 2					

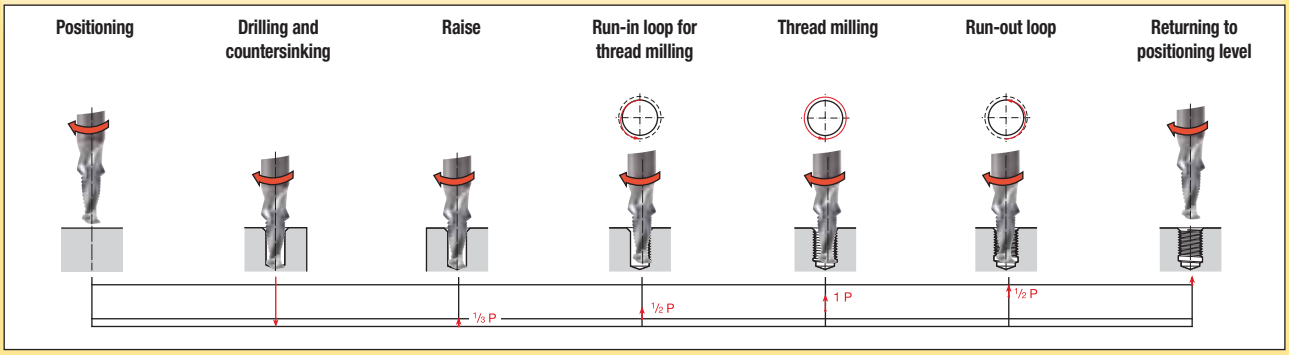
Cutting time t_h	**68,8 seconds**

NOTES:
[1] The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
[2] The cutter radius to be programmed is normally included in the tool memory.
[3] The thread depth b must be divisible by the thread pitch P.
[4] The feed values in brackets must be used for controllers, which do not calculate the centre point feed themselves.
[5] **Set N40 must be repeated with the number of threads.** Repetitions N = thread depth b/pitch P (rounded up to the nearest integer).

Drill Thread Mill TM731

Preparation	None
Process Principle	Drilling, countersinking, thread milling (climb milling)

Cycle



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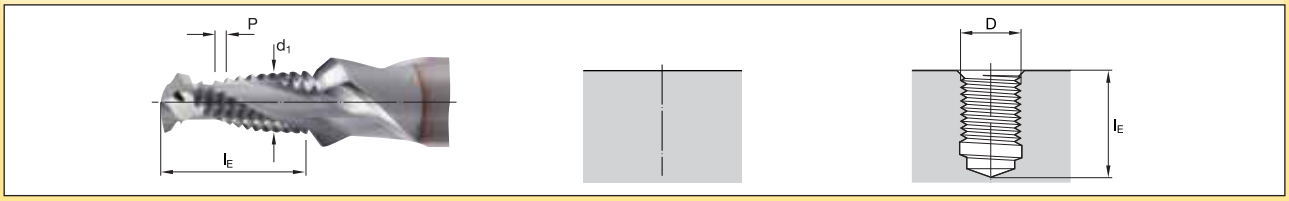


Example

Size — M10-6H
Thread diameter D 10mm
Pitch P 1,5mm
Core hole diameter D_1 .....8,5mm

Material — Grey cast iron

Grade — KCU32

Tool — TM731
Catalogue number TM731M100X150R2DHA
Number of teeth Z 2
Tool diameter d_1 .....8,2mm*
Tool radius compensation k [1] 0,1mm**
Tool radius to be programmed [2] 4mm***
Drilling/countersink depth l_E 19,11mm
Cutting speed v_c .....250 m/min
Feed (drilling, countersinking) f_b .....0,25 mm/U
Feed (milling) f_z .....0,1 mm/tooth

*(measured on the cutting part) **(0,01 x D) ***(1/2 d_1 - k)

$N = \frac{V_c \cdot 1000}{d_1 \cdot \pi}$	S = 9709
$v_b = f_b \cdot n$	F = 2427 (drilling, countersinking)
$v_f = f_z \cdot Z \cdot n$	F = 1942 (contour)
$v_f = \frac{v_f \text{ contour} \cdot (D-d_1)}{D}$	F = 350 (centre point)

Program to DIN 66025 (climb milling, on the contour, incremental)

Positioning the tool	N 10	G 54	G 90	G 00	X…	Y…	Z 2	S 9709	T01 [2]	M03
Drilling and countersinking	N 20	G 91	G 01	Z-21.110	F 2427 (drill, countersink)					
Raise	N 30	G 01	Z 0.500							
Moving sideways to the starting point	N 40	G 41	Y-4.250	F 971 (milling, 1/2 contour)				[F 175] [3] (1/2 centre point)		
Run-in loop in arc	N 50	G 03	X 0	Y 9.250	Z 0.750	I 0	J 4.625			
Thread milling	N 60	G 03	X 0	Y 0	Z 1.500	I 0	J -5.000	F1942 [F 350] [3] (centre point)		
Run-out loop in arc	N 70	G 03	X 0	Y-9.250	Z 0.750	I 0	J- 4.625			
Exit	N 80	G 00	G 40	X 0	Y 4.250					
Retracting tool to positioning level	N 90	G 90	Z 2							

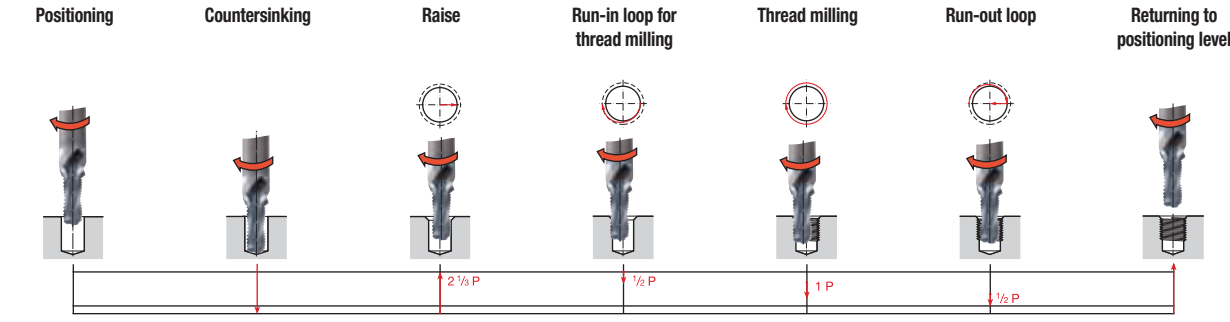
Cutting time t_h	**2,3 seconds**

NOTES:
[1] The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
[2] The cutter radius to be programmed is normally included in the tool memory.
[3] The feed values in brackets must be used for controllers, which do not calculate the centre point feed themselves.

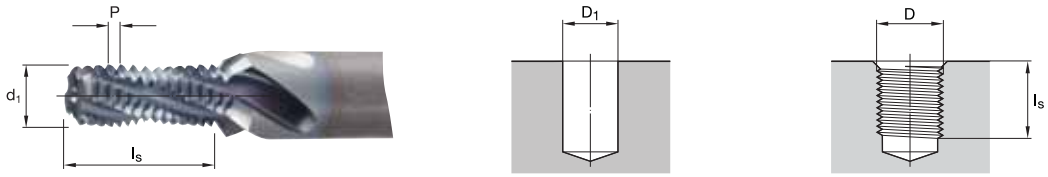
Thread Mill TM721

Preparation	Drilling of thread hole
Process Principle	Countersinking, thread milling (conventional milling)

Cycle



Required Specification Values



Example

Size — M10-6H
Thread diameter D 10mm
Pitch P 1,5mm
Core hole diameter D_1 .....8,5mm

Material — Cast aluminium

Grade — KCU32

Tool — TM721
Catalogue number TM721M100X150R2DHA
Number of teeth Z 3
Tool diameter d_1 .....8,2mm*
Tool radius compensation k [1] 0,1mm**
Tool radius to be programmed [2] 4mm***
Countersink depth l_s 21,2mm
Cutting speed v_c .....250 m/min
Feed (countersinking) f_s .....0,3 mm/U
Feed (milling) f_z .....0,09 mm/tooth

*(measured on the cutting part) **(0,01 x D) ***(1/2 d_1 - k)

$$N = \frac{V_c \cdot 1000}{d_1 \cdot \pi} \qquad S = 9709$$

$$v_s = f_s \cdot n \qquad F = 2913 \text{ (countersinking)}$$

$$v_f = f_z \cdot Z \cdot n \qquad F = 2622 \text{ (contour)}$$

$$v_f = \frac{v_f \text{ contour} \cdot (D-d_1)}{D} \qquad F = 472 \text{ (centre point)}$$

Program to DIN 66025 (conventional milling, on the contour, incremental)

Positioning the tool	N 10	G 54	G 90	G 00	X…	Y…	Z 2	S 9709	T01 [2]	M03
Advancing tool to full thread depth	N 20	G 91	Z-21.200							
Countersinking	N 30	G 01	Z-2	F 2913 (countersink)						
Raise	N 40	G 00	Z 3.450							
Moving sideways to the starting point	N 50	G 42	G01	X 4.250	F 1311 (milling, 1/2 contour)			[F 236] [3] (milling,1/2 centre point)		
Run-in loop in arc	N 60	G 02	X-9.25	Y 0.000	Z-0.750	I-4.625	J 0			
Thread milling	N 70	G 02	X 0	Y 0	Z-1.500	I 5	J 0.000	F2622 [F 472] [3] (centre point)		
Run-out loop in arc	N 80	G 02	X 9.25	Y 0.000	Z-0.750	I 4.625	J 0			
Exit	N 90	G 40	G 01	X-4.25						
Retracting tool to positioning level	N 100	G 90	G 00	Z 2						

Cutting time t_h	**1,4 seconds**

NOTES:
[1] The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
[2] The cutter radius to be programmed is normally included in the tool memory.
[3] The feed values in brackets must be used for controllers, which do not calculate the centre point feed themselves.

Taps and Thread Milling Technical Information

The technical information in the following section can be used to assist you with your tapping and thread milling operations. Whether you are simply searching for information about tap dimensions and recommendations, or you're trying to solve basic tapping and thread milling problems, you will find the relevant data here.

This Section Includes the Following Information:

- Illustrations of tap terms.
- Explanations of tap chamfers.
- Dimensional information for various tap styles and lengths.
- Tap limitation data.
- Chip handling methods for different tap styles.
- Tap recommendations.
- Descriptions of screw thread tolerance and tolerance information.
- Information regarding surface treatments and coatings.
- Guidelines and tables for determining tapping speeds.
- Troubleshooting charts.
- Hardness conversion table.
- A guide to Kennametal tapping application icons.
- Taps custom order worksheet.
- Thread Milling application sheet.

This section will further your knowledge of tapping and thread milling operations enabling you to maximise the value of your tools.

How to Apply This Technical Information

Below is an example of where the technical information in this catalogue can be useful:

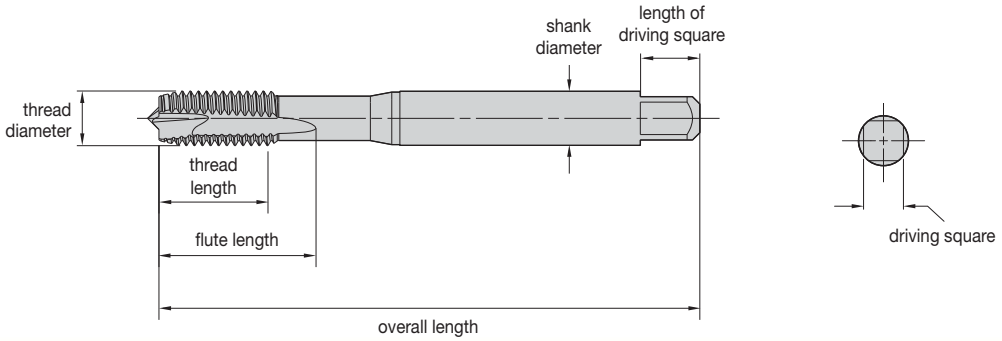
Problem

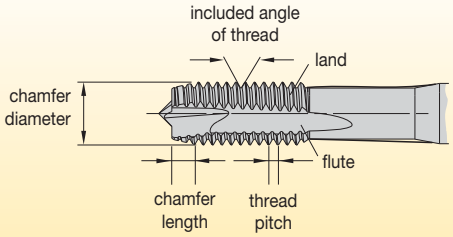
- Thread holes are oversized and taps are experiencing low life when working with stainless steel materials.

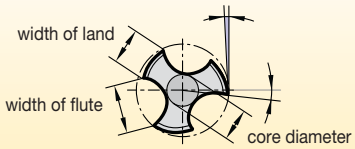
Solution

- Consult the troubleshooting portion of the Technical Information section to discover ways to correct the issue.

Definitions and Angles, Centres and Flute Forms







Flute Forms

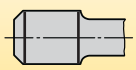
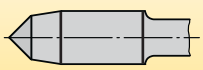
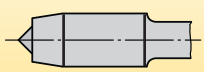
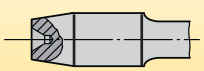
Straight flute, form C plug chamfer **without spiral point**

Right-hand spiral flute

Straight flute, form B plug chamfer **with spiral point**

Left-hand spiral flute

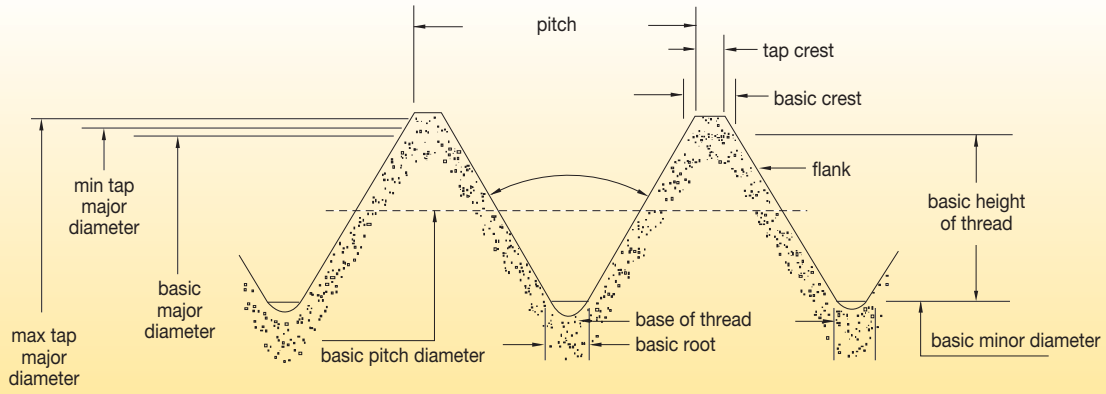
Types of Centres (Standard to DIN 2197/DIN 2175)

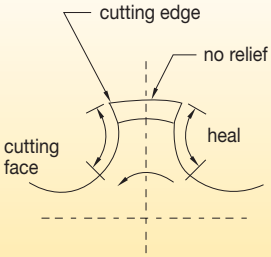
centre on thread section			
tap diameter range			
≤M10, 3/8 bottom or semi-bottom chamfer	≤M10, 3/8 plug chamfer	>M10, 3/8 all chamfers	
			
external centre removed	full external centre	partial external centre	internal centre

Coolant Hole Types

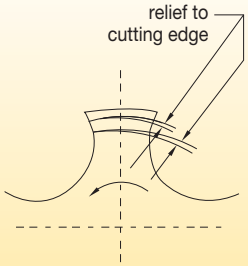
Axial coolant delivery with axial coolant exit hole

Axial coolant delivery with radial coolant hole exiting in the flutes

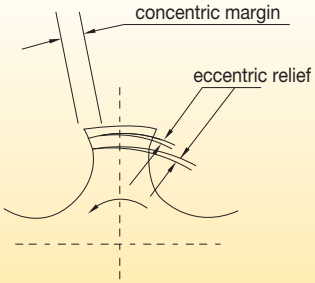




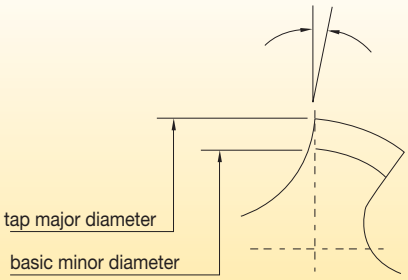
Concentric



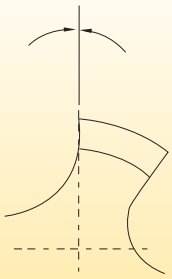
Eccentric Relief



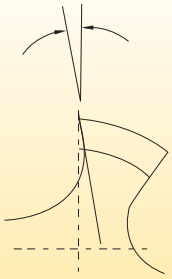
Con-Eccentric Relief



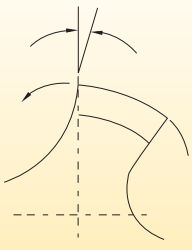
Negative Hook



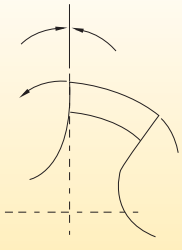
0° Hook



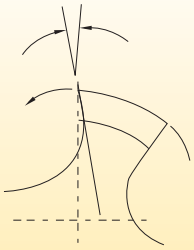
Positive Hook



Negative Rake



Radial Rake



Positive Rake

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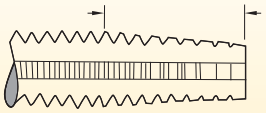
Tap Chamfers • DIN Taps

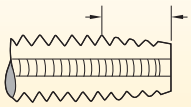
Taper Chamfer
7–10 Pitches



Form A (6–8 pitches)

The Form A chamfer has the longest standard chamfer ensuring easier starting. It provides the longest life because of more working teeth.

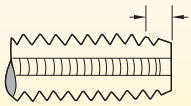
Plug Chamfer
3–5 Pitches



Form B/D (3,5–5 pitches)

The most common chamfers for use by hand or machine in through hole. Form B applies to spiral-point taps, and Form D applies to straight-flute and spiral-flute taps. This chamfer is more efficient than a Form E or Form C chamfers.

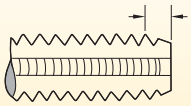
Semi-Bottoming Chamfer
2–3 Pitches



Form C (2–3 pitches)

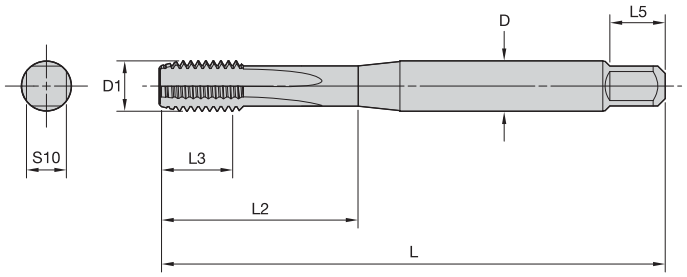
This short chamfer enables threading close to the bottom of blind holes. Due to the slightly longer chamfer and more working teeth, this chamfer is more efficient than a Form E chamfer.

Full Bottoming Chamfer
1–2 Pitches



Form E (2–3 pitches)

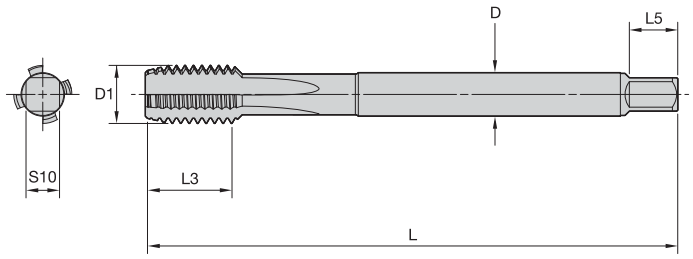
For threading close to the bottom of blind holes, the Form E chamfer is the least efficient chamfer available.



DIN 371

D1	pitch	D	L	L3*	L2	L5	S10
M3	0,5	3,5	56	11	18	6	2,7
M3,5	0,6	4	56	12	20	6	3
M4	0,7	4,5	63	13	21	6	3,4
M4,5	0,75	6	70	16	25	8	4,9
M5	0,8	6	70	16	25	8	4,9
M6	1	6	80	19	30	8	4,9
M7	1	7	80	19	30	8	5,5
M8	0,75	8	80	18	30	9	6,2
M8	1,25	8	90	22	35	9	6,2
M9	0,75	9	80	18	30	10	7
M9	1,25	9	90	22	35	10	7
M10	1	10	90	20	35	11	8
M10	1,5	10	100	24	39	11	8

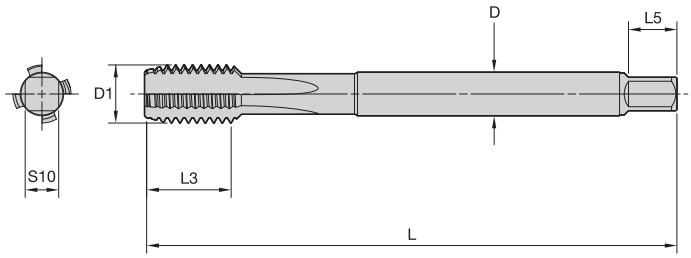
*Maximum



DIN 376

D1	pitch	D	L	L3*	L5	S10
M8	1,25	6	90	22	8	4,9
M9	1,25	7	90	22	8	5,5
M10	1,5	7	100	24	8	5,5
M11	1,5	8	100	24	9	6,2
M12	1,75	9	110	28	10	7
M14	2	11	110	30	12	9
M16	2	12	110	32	12	9
M18	2,5	14	125	34	14	11
M20	2,5	16	140	34	15	12
M22	2,5	18	140	34	17	14,5
M24	3	18	160	38	17	14,5
M27	3	20	160	38	19	16
M30	3,5	22	180	45	21	18
M33	3,5	25	180	50	23	20
M36	4	28	200	56	25	22
M39	4	32	200	60	27	24
M42	4,5	32	200	60	27	24
M45	4,5	36	220	65	32	29

*Maximum



DIN 374

D1	pitch minimum	pitch maximum	D	L	L3*	L5	S10
M8	0,2	0,75	6	80	18	8	4,9
M8	–	1	6	90	22	8	4,9
M9	0,2	0,75	7	80	18	8	5,5
M9	–	1	7	90	22	8	5,5
M10	0,2	1	7	90	20	8	5,5
M10	–	1,25	7	100	24	8	5,5
M11	0,35	1	8	90	20	9	6,2
M12	0,35	1,5	9	100	22	10	7
M14	0,35	1,5	11	100	22	12	9
M16	0,35	1,5	12	100	22	12	9
M16	–	2	12	110	32	12	9
M18	0,35	1,5	14	110	25	14	11
M18	–	2	14	125	34	14	11
M20	0,35	1,5	16	125	25	15	12
M20	–	2	16	140	34	15	12
M22	0,35	1,5	18	125	25	17	14,5
M22	–	2	18	140	34	17	14,5
M24	0,35	2	18	140	28	17	14,5
M27	0,35	2	20	140	28	19	16
M30	0,35	2	22	150	28	21	18
M30	–	3	22	180	45	21	18

*Maximum

Through Holes
Push Chips

Spiral Point LHSF

- Spiral point or LHSF (Left-Hand Spiral Flute).
- Ideal for materials with long chips.

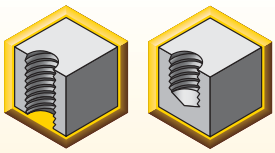
Blind Holes
Pull Chips

RHSF

- RHSF (Right-Hand Spiral Flute).
- Ideal for materials with long chips.

Blind or Through Holes
Store Chips

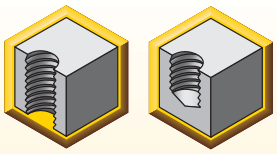
STFL



- STFL (Straight Flute).
- Ideal for materials with short chips.

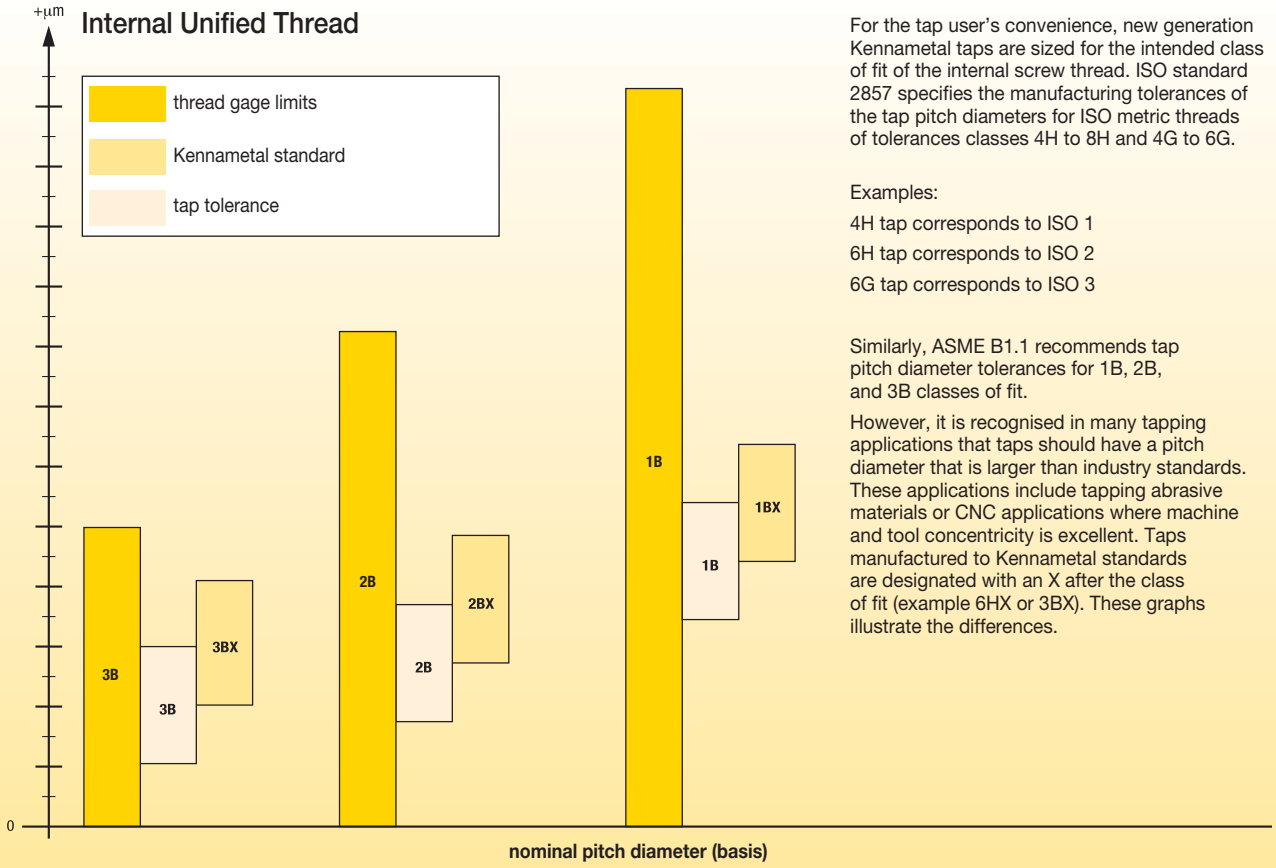
Blind or Through Holes
No Chips

Forming



- Forming.
- Ideal for ductile materials <32 HRC.

Internal Unified Thread



For the tap user's convenience, new generation Kennametal taps are sized for the intended class of fit of the internal screw thread. ISO standard 2857 specifies the manufacturing tolerances of the tap pitch diameters for ISO metric threads of tolerances classes 4H to 8H and 4G to 6G.

Examples:

4H tap corresponds to ISO 1

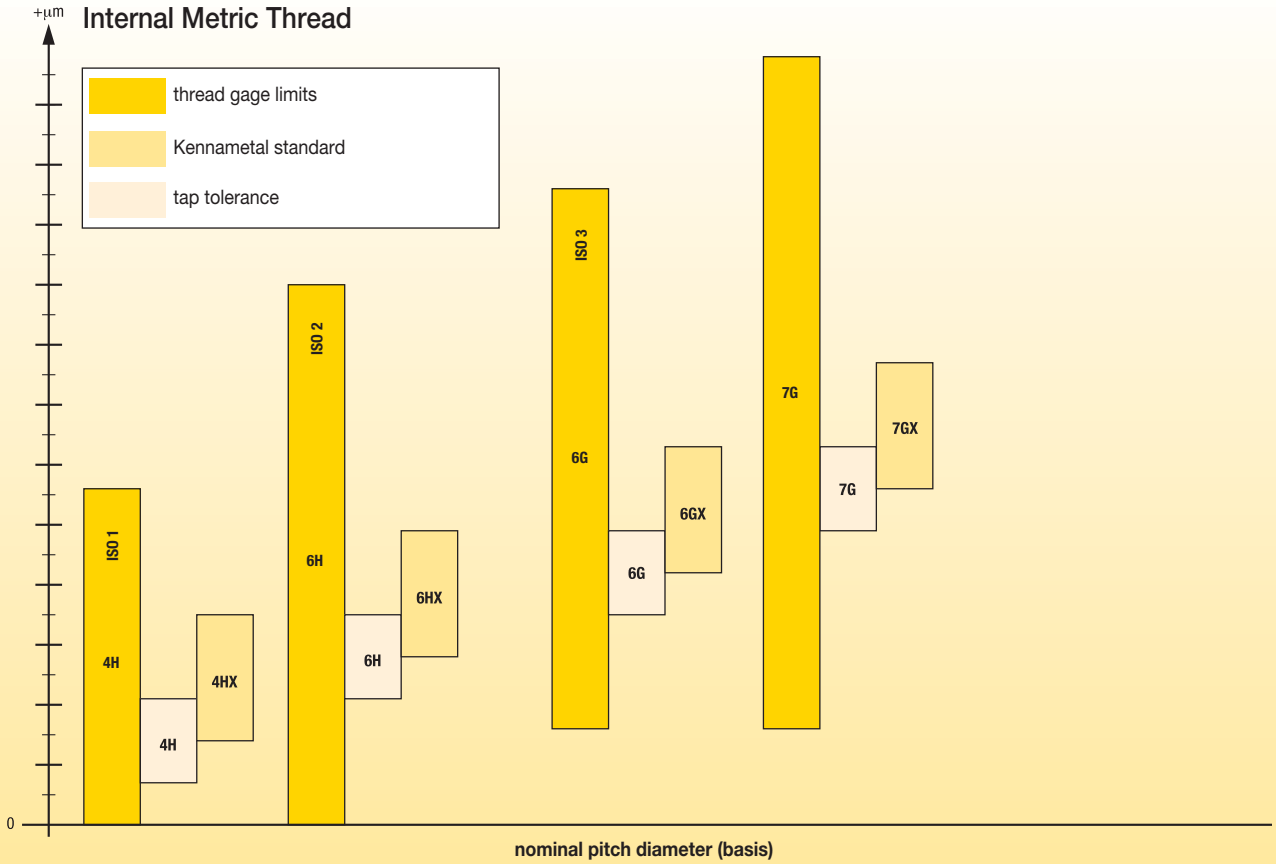
6H tap corresponds to ISO 2

6G tap corresponds to ISO 3

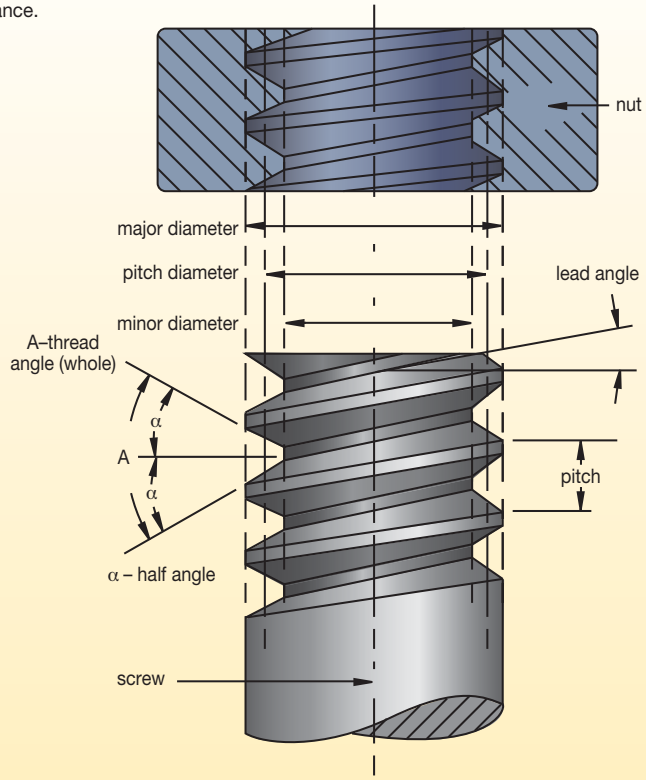
Similarly, ASME B1.1 recommends tap pitch diameter tolerances for 1B, 2B, and 3B classes of fit.

However, it is recognised in many tapping applications that taps should have a pitch diameter that is larger than industry standards. These applications include tapping abrasive materials or CNC applications where machine and tool concentricity is excellent. Taps manufactured to Kennametal standards are designated with an X after the class of fit (example 6HX or 3BX). These graphs illustrate the differences.

Internal Metric Thread



It is generally recognised that, in mass production, it is impossible to reproduce in exact detail the theoretically perfect product as laid out on the drawing board. The allowed slight variation between the theoretically perfect product drawing and each unit of the actual product is called the tolerance.



Allowance

An intentional difference in correlated dimensions of mating parts. It is the minimum clearance or maximum interference between such parts.

Angle of Thread

The angle included between the flanks of the thread measured in an axial plane

Half Angle of Thread

The angle included between a flank of the thread and the normal (90°) to the axis, measured in an axial plane.

Lead of Thread

The distance a screw thread advances axially in one turn. On a single-thread screw, the lead and pitch are identical. On a double thread, the lead is 2x pitch; on a triple thread, the lead is 3x pitch, etc.

Major Diameter

The largest diameter of a straight-screw thread.

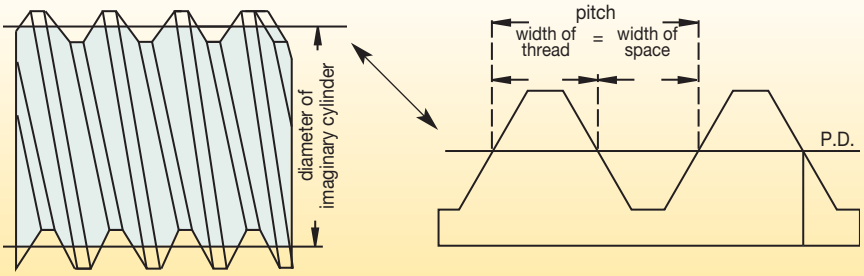
Minor Diameter

The smallest diameter of a straight-screw thread.

Pitch

The distance from a point on a screw thread to a corresponding point on the next thread measured parallel to the axis.

The pitch in inches = $\frac{1}{\text{number of threads per inch}}$



Pitch Diameter

On a straight-screw thread, the diameter of an imaginary cylinder that would pass through the threads at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder.

More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

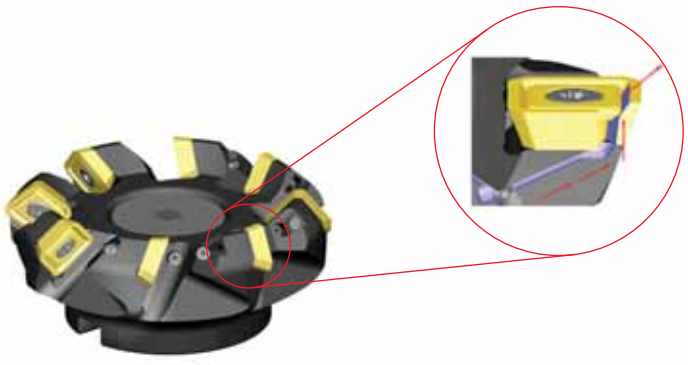
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

Factors when trying to determine the best tapping speeds:

- Material to be tapped
- Length of chamfer on tap
- Percentage of full thread to be cut
- Length of hole (depth of thread)
- Pitch of thread
- Cutting fluids
- Machine equipment
- Horizontal or vertical tapping

The best and most efficient operating speeds for taps cannot be calculated with the same certainty, as for many other metalcutting tools.

With other tools, the feed per revolution can be set at any desired point and can be varied as conditions demand. Taps, on the other hand, must always be advanced at a rate equal to one pitch for every revolution, or one lead in the case of multistart threads.

The style of tap may vary the conditions. For example, with a bottoming tap, the chamfer cuts a heavy chip, while with a taper tap, the chamfer cuts a very thin chip.

The depth of thread also varies, depending on the pitch. The coarser the thread, the greater the advance of the tap per revolution and the greater the amount of material removed.

The method of feeding the tap, and the type of equipment for driving, also influences the permissible speeds. If taps are mechanically fed at the proper rate of advance, they can be operated at higher speeds than if used with flexible tapping holders on machines with poor feed control.

Speeds may be modified to take into account any or all of these factors:

- Speeds must be lowered as length of thread increases because, in deep thread holes, the accumulated chips increase friction and interfere with lubrication.
- Bottoming taps must be run slower than plug taps.
- Tapping full height of thread calls for slower speed than if the commercial 75% height only is required.
- Coarse-thread taps in the larger diameters should be run more slowly than fine-thread taps of the same diameters.
- The quantity and quality of cutting fluid may affect the permissible speeds as much as 100%.
- Taper threaded taps, such as pipe taps, should be operated from 1/2–3/4 the speed of a straight thread tap of comparable major diameter.
- Increase the speed of coolant taps up to 25%.

RPM Formulas

SFM = Surface Feet per Minute

RPM = Revolutions per Minute

IPM = Inches per Minute

TPI = Threads per Inch

S m/min = Surface Metres per Minute

$\Pi = 3.1416$

mm/min = millimetres per minute

P = Pitch (1/number of threads per inch)

Inch Sizes

$$SFM = \frac{RPM \times \text{tool diameter}}{3.82} \quad \text{or} \quad 0.26 \times RPM \times \text{tool diameter}$$

$$RPM = \frac{3.82 \times SFM}{\text{tool diameter}}$$

$$IPM = \frac{RPM}{TPI^*} \quad \text{or} \quad {}^*P \times RPM$$

Metric Sizes

$$S\ m/min = \frac{\Pi \times \text{tool diameter} \times RPM}{1000}$$

$$RPM = \frac{mm/min \times 1000}{\Pi \times \text{tool diameter}}$$

$$mm/min = mm\ P \times RPM$$

Metric

	Vc = metres per minute (m/min)																	
	1,5	3	4,5	6	7,5	10	12	15	18	21	24	27	30	33	36	39	42	45
metric taps	revolutions per minute (RPM)																	
M1	490	979	1469	1959	2449	2938	3918	4897	5877	6856	7836	8815	9795	10774	11754	12733	13713	14692
M2	242	484	725	967	1209	1451	1934	2418	2901	3385	3868	4352	4835	5319	5803	6286	6770	7253
M3	162	324	486	347	809	971	1295	1619	1942	2266	2590	2914	3237	3561	3885	4208	4532	4856
M3.5	138	277	415	554	692	830	1107	1384	1661	1938	2214	1491	2768	3045	3322	3599	3875	4152
M4	122	243	365	487	608	730	973	1217	1460	1703	1946	2190	2433	2676	2920	3163	3406	3650
M5	97	194	291	388	485	582	776	970	1163	1357	1551	1745	1939	2133	2327	2521	2715	2905
M6	81	162	243	324	405	486	647	809	971	1133	1295	1457	1619	1781	1942	2104	2266	2428
M7	69	138	208	277	346	415	554	692	830	969	1107	1246	1384	1522	1661	1799	1938	2076
M8	61	121	182	243	303	364	485	606	728	849	970	1091	1213	1334	1455	1577	1698	1819
M10	48	97	145	194	242	291	388	485	582	679	776	873	970	1067	1163	1260	1357	1454
M12	40	81	121	162	202	243	324	405	486	567	647	728	809	890	971	1052	1133	1214
M14	35	69	104	139	173	208	277	347	416	485	555	624	693	763	832	901	971	1040
M16	30	61	91	121	152	182	243	303	364	424	485	546	606	667	728	788	849	910
M18	27	54	81	108	135	162	216	269	323	377	431	485	539	593	647	700	754	808
M20	24	49	73	97	121	146	194	243	291	340	388	437	485	534	582	631	680	728
M22	22	44	66	88	110	132	176	221	265	309	353	397	441	485	529	573	618	662
M24	20	40	61	81	101	121	162	202	243	283	323	364	404	445	485	526	566	606
M27	18	36	54	72	90	108	144	180	216	252	287	323	359	395	431	467	503	539
M30	16	32	49	65	81	97	129	162	194	226	259	291	323	356	388	420	453	485

Partial List of Solutions to Tapping Problems

application	symptom	common cause	remedy
general	gage out of limits	tap size and gage mismatch	select tap size for gage
	oversize thread	alignment, spindle feed	correct
	oversize at top	runout or alignment	correct
	go gage binds part way	worn tool, tap cuts off lead	replace tap, synchronous holder
	thread shaving	feed error, high axial force	program, synchronous holder
	chipping	high cutting force, worn tap	tap geometry, replace tap
	breakage	chip jamming flutes	tap geometry, tapping depth
	–	worn tool, high torque	replace tap with new tool
	short life, low speed	excessive wear	SC or HSS-E-PM HP taps
steel	birdnest blind hole	long, ductile chips	GT30 GP6505 (oxide), peck feed
	chipping	high material hardness	GT00, GT02 WP31MG (TiN)
	breakage in blind holes	hole depth >2D, chip jamming	GT04 WH36MG (TiN/MoS_2)
stainless steel	oversize thread, low life	galling	GT20, GT30 GM6515 (TiN-CrC/C)
	short life	work hardened core hole	replace drill
cast iron	excessive wear	abrasion	GT40 GP6520 (TiCN)
aluminium, cast	excessive wear	high silicon	GT40 GP6520 (TiCN)
aluminium, wrought	oversize thread	galling	GT70, GT80 WN48EG (DLC)
nickel, cobalt alloys	short life	high cutting temperature	GT10, GT12 WS32MG (TiCN)
titanium	short life	high cutting temperature	GT14, GT16 WN35MG (TiN-DLC)

Thread Mills

	vibration marks	major crest wear	edge chipping	cone shaped thread	entry marks
cutting speed	check	reduce	–	–	–
feed per tooth	check	increase	reduce	–	–
workpiece clamping	improve	improve	improve	–	improve
machine tool stability	improve	improve	improve	–	improve
cantilever arm	shorten	shorten	–	–	shorten
helix angle	increase	reduce	–	–	–
radial runout	check	check	–	–	–
coating	–	improve	improve	–	–
milling operation	–	climb mill	climb mill	climb mill	–
line feed/ entry ramp	check	check	–	–	improve
coolant pressure	–	check (>20 bar, 290 psi)	check (>20 bar, 290 psi)	–	–

Tap Custom-Order Worksheet

Use this Custom-Order Worksheet to modify an existing product to meet your specifications. If your custom requirements do not fall into these categories, simply contact your Kennametal Distributor.

Trust our experienced distributors and Kennametal engineering team to design the best solution for you.

1. Start with the standard product most similar to your specifications:

catalogue number _____ **grade/coating** _____

2. Type of tap needed:

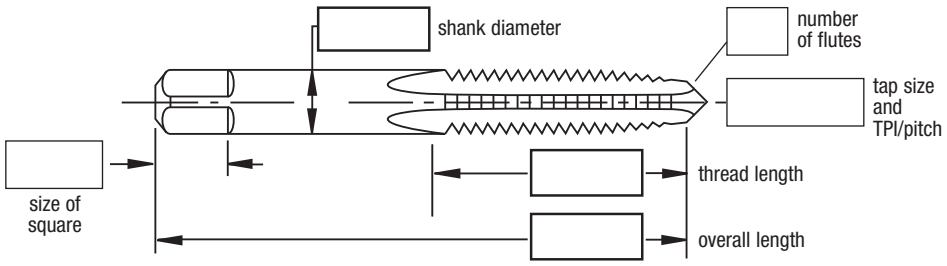
☐ solid carbide ☐ high performance HSS ☐ general purpose ☐ spiral point
☐ hand ☐ forming ☐ spiral flute
_____ pipe (and style) _____ other

3. Direction of cut (circle one)**:** left hand right hand

4. Material overview:

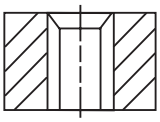
☐ ANSI ☐ DIN ☐ JIS ☐ other

5. Desired dimension:

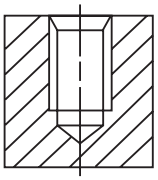


6. Choose one:

through hole:
hole diameter _____
hole depth _____



blind hole:
hole diameter _____
hole depth _____



7. Chamfer:

☐ taper: 7–10 pitch ☐ plug: 3–5 pitch ☐ semi-bottom: 2–3 pitch ☐ bottom: 1–2 pitch

8. Class of fit: **H limit** _____ **metric D limit** _____ **diameter pitch limit** _____

9. Workpiece material: _____

10. Hardness: _____

11. Number of taps required: _____

12. Price
Contact your Authorised Kennametal Distributor partners.

13. Other comments or special characteristics:

customer company name	**date**
address	**phone number**
city, state, zip	**fax number**
customer contact	**customer email address**
sales representative	

Application Sheet for Thread Milling

Test form thread data:	**Date:**

Customer Data

Company:	Department:
Street:	Position:
Postal code:	Telephone:
City:	Fax:
Country:	E-mail:

Tool Data

Engaged Kennametal tool:	Tool life:
Competitive tool:	

Workpiece Data

Thread size:			Name of workpiece:
Class of fit:			Picture, sketch...
Thread depth:		mm	
Thread type:	☐ Through hole	☐ Blind hole	
Drill hole ø:		mm	
Depth of drill hole:		mm	
Type of drilled hole:	☐ Drilled	☐ No hole	
Material:			
Hardness:			

Machine Data

Manufacturer:			Description:		
CNC-machine type:	☐ Turning machine	☐ Milling machine	Working direction:	☐ Horizontal	☐ Vertical
Control type:	☐ DIN	☐ Heidenhain	Coolant:	☐ Emulsion ☐ Compressed air	☐ MQL ☐ Dry
Coolant supply type:	☐ Internal	☐ External	Coolant pressure:		☐ Bar
Revolutions max:		☐ 1/min	Spindle power:		kW
Clamping device:	☐ Weldon® ☐ Shrinking	☐ Collet ☐ Hydraulic expansion			

Cutting Conditions

Cutting speed vc:		m/min	Revolutions:		1/min
Feed fz:		mm/tooth	Programmed feed:		mm/min
Milling direction	☐ Climb milling	☐ Down milling	Type of feed:	☐ Feed on contour	☐ Feed on center
Allocated cut over depth of thread:	☐ Yes	☐ No	Allocated cut over profile:	☐ By depth of profile	☐ By thread depth
Number of cuts:			Number of cuts:		

Knowing the hardness of the work material to be tapped is essential in selecting the best tap for the job.

10 mm/min ball 3000 kg	120° cone 150 kg	1/16" ball 100 kg	model C	1000 lb per sq. in.	10 mm/min ball 3000 kg	120° cone 150 kg	1/16" ball 100 kg	model C	1000 lb per sq. in.
Brinell	Rockwell C	Rockwell B	Shore Scleroscope	tensile strength	Brinell	Rockwell C	Rockwell B	Shore Scleroscope	tensile strength
800	72	–	100	–	276	30	105	42	136
780	71	–	99	–	269	29	104	41	132
760	70	–	98	–	261	28	103	40	129
745	68	–	97	367	258	27	102	39	127
725	67	–	96	357	255	26	102	39	125
712	66	–	95	350	249	25	101	38	123
682	65	–	93	337	245	24	100	37	119
668	64	–	91	326	240	23	99	36	117
652	63	–	89	318	237	23	99	35	115
626	62	–	87	306	229	22	98	34	113
614	61	–	85	299	224	21	97	33	110
601	60	–	83	292	217	20	96	33	107
590	59	–	81	290	211	19	95	32	104
576	57	–	79	281	206	18	94	32	102
552	56	–	76	270	203	17	94	31	100
545	55	–	75	268	200	16	93	31	98
529	54	–	74	259	196	15	92	30	96
514	53	120	72	254	191	14	92	30	94
502	52	119	70	247	187	13	91	29	92
495	51	119	69	244	185	12	91	29	91
477	49	118	67	233	183	11	90	28	90
461	48	117	66	227	180	10	89	28	89
451	47	117	65	223	175	9	88	27	86
444	46	116	64	219	170	7	87	27	84
427	46	115	62	209	167	6	87	27	82
415	44	115	60	204	165	5	86	26	81
401	43	114	58	196	163	4	85	26	80
388	42	114	57	191	160	3	84	25	78
375	41	113	55	184	156	2	83	25	76
370	40	112	54	182	154	1	82	25	75
362	39	111	53	179	152	–	82	24	74
351	38	111	51	173	150	–	81	24	74
346	37	110	50	170	147	–	80	24	72
341	37	110	49	168	145	–	79	23	71
331	36	109	47	163	143	–	79	23	70
323	35	109	46	158	141	–	78	23	69
311	34	108	46	153	140	–	77	22	69
301	33	107	45	148	135	–	75	22	67
293	32	106	44	144	130	–	72	22	65
285	31	105	43	140	–	–	–	–	–

Application Icons

Countersinking/ Stroke Chamfering	Drilling: Flat Bottom	Drilling: Blind	Tapping: Through Hole	Tapping: Blind Hole
Tapping: Pipe Thread	HSS: High-Speed Steel	HSS-E: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness	HSS-E-PM: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness (PM = Powder Metal Steel)	HM: (Carbide)
Drilling Depth: 2x	Threading: Through Hole	Threading: Blind Hole		

Geometry Icons

Corner Style: Ball Nose	Shank: Cylindrical Plain	Shank: Cylindrical with Square	Square Shank: L = 4"	Square Shank: L = 6"
Square Shank: L = 8"	Square Shank: L = 10"	Chamfer Form A (6–8)	Chamfer Form B (3–5)	Chamfer Form: (3–4)
Chamfer Form C (2–3)	Chamfer Form D (3,5–5)	Chamfer Form E (1,5–2)	Chamfer Form: (2,5–3,5)	Chamfer Form: (4–6)
Chamfer Form: (1–2)	Tapping Helix Angle: 0°	Tapping Helix Angle: L8°	Tapping Helix Angle: 10°	Tapping Helix Angle: 15°
Tapping Helix Angle: L15°	Tapping Helix Angle: 25°	Tapping Helix Angle: 30°	Tapping Helix Angle: 42°	Tapping Helix Angle: 45°
Tapping Helix Angle: 49°				

Feature Icons

DIN 371 DIN Number 371	DIN 374 DIN Number 374	DIN 376 DIN Number 376	DIN 2174 DIN Number 2174	Tapping: Through Coolant
Flood Coolant: Tapping	Coolant: Through Coolant	Through Coolant: Axial: Tapping	2B Class of Fit: 2B	3B Class of Fit: 3B
6H Class of Fit: 6H	6HX Class of Fit: 6HX	2BX Class of Fit: 2BX	3BX Class of Fit: 3BX	NPT American Tapered Pipe Thread for Threads **with Dryseal Material**
NPTF American Tapered Pipe Thread for Threads **without Dryseal Material**	ANSI American National Standards Institute	NPS American Standard Straight Pipe Threads	NPSF American Standard Straight Pipe Threads Dryseal	BSPF British Standard Pipe Fitting Thread
BSPT British Standard Pipe Taper Thread	G Whitworth Pipe Thread	Rp Cylindrical Whitworth Pipe Thread	Rc Tapered Whitworth Pipe Thread	UNF Unified Fine Thread
UNC Unified Coarse Thread	M ISO Metric Coarse Thread	MF ISO Metric Fine Thread		

DIN — German Institute for Standardisation

ANSI — American National Standards Institute

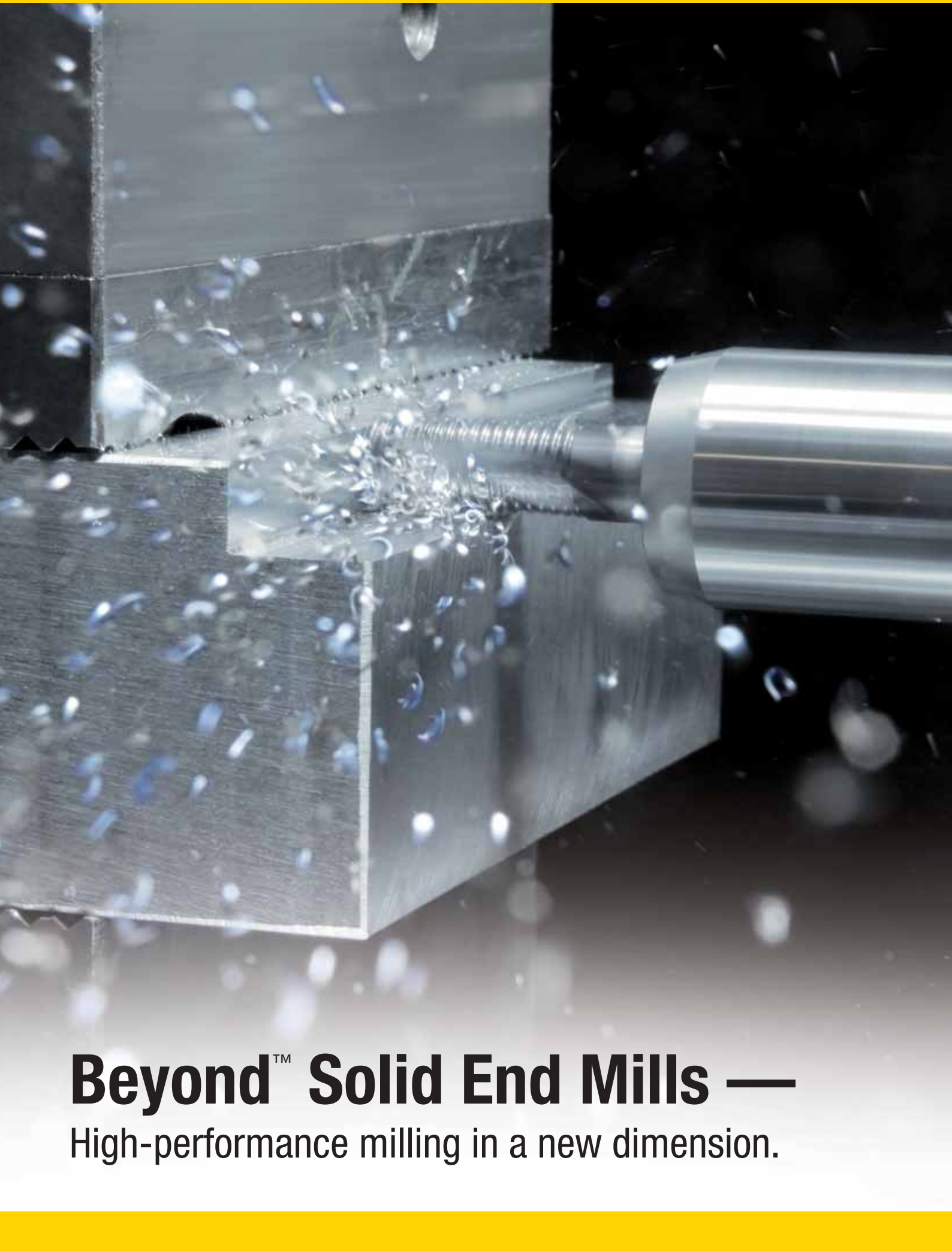
Looking for a product that's not shown in this catalogue?

Check the Kennametal website!

Online product catalogue available 24/7

Visit **http://www.kennametal.com/holemaking/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL



Beyond™ Solid End Mills —

High-performance milling in a new dimension.

Solid End Milling

Tool Selection Guide **M2–M7**

Grades and Grade Descriptions **M8–M9**

High-Performance Solid Carbide End Mills **M10–M110**

HARVI — Titanium, Stainless Steel and Steel M10–M25

KenFeed — High-Feed Machining M26–M30

Hard Steel Machining M31–M49

Aluminium Machining M50–M64

CFRP Machining M65–M71

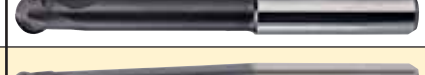
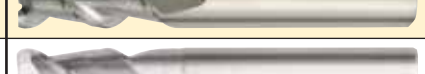
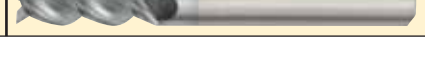
Micro Machining M72–M83

Finishing Applications M84–M95

Roughing Applications M96–M110

General Application Solid Carbide End Mills **M111–M143**

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
HARVI I™*		F4AS...DL	4–25	1,8–3 x D1	ZU=4	38°	
HARVI I*		F4AS..WM-WX-WL	6–25	1,5 x D1	ZU=4	38°	
HARVI I Chipbreaker*		F4BS..WM-WX-WL	6–25	1,5 x D1	ZU=4	38°	
HARVI I Ball Nose*		F4AW..WL-WX	6–16	1 x D1	ZU=4	38°	
HARVI II™*		UCDE	4–25	1,8–2,7 x D1	ZU=5	38°	
HARVI II		UDDE	6–25	1,8–2,2 x D1	ZU=5	38°	
HARVI II		UGDE	6–25	3–5 x D1	ZU=5	43°	
KenFeed™		KHDA	6–20	—	ZU=6	20°	
KenFeed		KMDA	6–20	—	ZU=6	20°	
Hard Steels		F2AT...WM-WL-WX	2–12	1 x D1	ZU=2	20°	
Hard Steels		F4AT... WS-WM-WL-WX	4–12	0,5 x D1	ZU=4	20°	
Hard Steels		F4AJ-F5AJ... WS-WM-WL-WX	6–25	1,5 x D1	ZU=X	50°	
Hard Steels		F4AJ-F5AJ-F6AJ WS-WL-WX	6–25	1,5 x D1	ZU=X	50°	
Hard Steels		F6AV-F8AV...DL	6–25	2,2–3 x D1	ZU=X	45°	
Hard Steels Ball Nose		F2AL...WL-WM-WX	2–12	—	ZU=2	20°	
Hard Steels Ball Nose		F2AL...WL-WM	1–16	—	ZU=2	30°	
Hard Steels Ball Nose		F2AL...WL-WM-WX	6–16	—	ZU=2	30°	
Hard Steels Ball Nose		F2AB...WL-WM-WX	3–10	—	ZU=2	30°	
Hard Steels Ball Nose		F4AL...WL-WM-WX	3–10	—	ZU=4	30°	
Aluminium MaxiMet™		ABDF	1,5–20	1,9–4 x D1	ZU=2	45°	
Aluminium MaxiMet		ABDE	3–20	1,9–4 x D1	ZU=3	38°	
Aluminium MaxiMet		ABDE	6–20	1,5 x D1	ZU=3	38°	
Aluminium		F2AA...DL	4–20	1,6–2 x D1	ZU=2	45°	
Aluminium		F2AA...WM-WL-WX	6–25	1,5 x D1	ZU=2	45°	
Aluminium		F3AA... WS-WM-WL-WX	3–20	1,9–4 x D1	ZU=3	45°	

					shank	centre cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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			☑					●	●	○		●	○	☑					M18–M19	M25
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● first choice
○ alternate choice

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
Aluminium		F3AA... WS-WM-WL-WX	6–25	1,5 x D1	ZU=3	45°	
Aluminium		F3BA... WS-WM-WL-WX	6–25	1,8–2,1 x D1	ZU=3	40°	
Aluminium		F3BA... WS-WM-WL-WX	8–25	1,8–2 x D1	ZU=3	40°	✓
Aluminium		F3BA...DL	6–20	1,2 x D1	ZU=3	40°	
CFRP*		CCNC	6–12	3 x D1	ZU=X	25°	
CFRP*		CDDC	6–12	3 x D1	ZU=6	25°	✓
CFRP*		CBDB	6–12	3 x D1	ZU=X	15°	
CFRP*		CRBD	10–12	—	ZU=4	30°	
Micro		F2AH...WS-WM	0,3–2,5	—	ZU=2	30°	
Micro		F2AH...WS	0,4–3	—	ZU=2	30°	
Micro		F3AH...WS	0,4–3	—	ZU=3	30°	
Micro		F2AL...WS	0,5–3	—	ZU=2	30°	
Micro		F2AL...WS	0,3–6	—	ZU=2	30°	
Micro		F2AL...WM	0,5–4	—	ZU=2	30°	
HP Finisher		F2AU...DK	1,8–19,7	1 x D1	ZU=2	30°	
HP Finisher		F3AU...DK	2,8–19,7	1–1,3 x D1	ZU=3	38°	
HP Finisher*		F3AS...DK	3–20	1–1,3 x D1	ZU=3	35°	
HP Finisher		F3AJ...DL	6–20	1,9–2,1 x D1	ZU=3	60°	
HP Finisher*		F3AW...WL-WX	6–16	—	ZU=3	35°	
HP Finisher*		F8AJ-F10AJ...DK	8–20	1 x D1	ZU=X	45°	
HP Finisher*		F6AJ-F8AJ...DL	6–25	2–3 x D1	ZU=X	45°	
HP Rougher*		F3BH...DL	4–25	1,8–2 x D1	ZU=3	30°	
HP Rougher*		F3BS..DK-DL	6–20	1–1,6 x D1	ZU=3	35°	
HP Rougher*		F4BJ...DL	6–20	1,9–2,2 x D1	ZU=4	30°	

					shank	centre cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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● first choice
○ alternate choice

Solid End Milling

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
HP Rougher		F3BT-F4BT-F6BT... WM-WL-WX	4–25	1 x D1	ZU=X	45°	
HP Rougher		F4BJ-F6BJ...DL	6–12	1 x D1	ZU=X	45°	
HP Rougher*		F4BJ-F6BJ...DL	6–25	1,8–2,1 x D1	ZU=X	45°	
HP Rougher*		F3BH-F4BJ-F5BJ... WS-WM-WL-WX	4–25	1,8–2,7 x D1	ZU=X	20°	
HP Rougher*		F3BH-F4BJ... WS-WM-WL-WX	8–20	1,3–1,9 x D1	ZU=X	20°	
HP Rougher*		F3BL...WS-WM	6–8	—	ZU=X	20°	
GP		F2AH...DN	4–20	1,6–2 x D1	ZU=2	30°	
GP		F2AH...DK	2–20	1,5 x D1	ZU=2	30°	
GP		F2AH... WS-WM-WL-WX	3–20	3,3–6,6 x D1	ZU=2	30°	
GOmill™		UEDE	2–12	1,2–2 x D1	ZU=3	38°	
GP		F3AH...DN	4–20	1,6–2 x D1	ZU=3	30°	
GP		F3AH...DL/DK	2,5–25	1,2–1,8 x D1	ZU=3	30°	
GP		F3AH...DK	2–20	1,5 x D1	ZU=3	45°	
GOmill		UEDE	4–12	1,2–1,7 x D1	ZU=4	38°	
GP		F4AJ...DN	4–20	1,9–2,7 x D1	ZU=4	30°	
GP		F4AJ...DK	2–20	1,9–2 x D1	ZU=4	30°	
GP		F4AJ...WM-WL-WX	3–20	3,3–6,7 x D1	ZU=4	30°	
GOmill		UEBC	2–12	1,2–2 x D1	ZU=2	30°	
GP		F2AL...DN	2–20	1,6–3 x D1	ZU=2	30°	
GP		F2AL...DL	2–20	1,6–3 x D1	ZU=2	30°	
GP		F2AL...WM-WL-WX	3–12	3,7–6,7 x D1	ZU=2	30°	
GOmill		UEBE	2–12	1,2–2 x D1	ZU=3	38°	
GP		F4AL...DN	2–20	1,9–3,5 x D1	ZU=4	30°	
GP		F4AL...DL	3–20	1,9–2,3 x D1	ZU=4	30°	
GP		F4AL...WM-WL-WX	3–12	3,7–6,7 x D1	ZU=4	30°	

					shank	centre cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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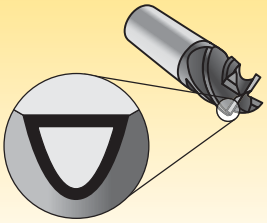
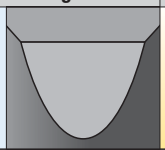
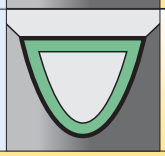
● first choice
○ alternate choice



Coatings provide high-speed capability and are engineered for roughing to finishing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

Grade

Coating		Grade Description	wear resistance ⟷ toughness: 05 10 15 20 25 30 35 40 45
K600		Carbide grade made from high-quality, micrograin materials for cutting all types of workpiece materials. Very high toughness ensures a controlled wear rate. The micrograin structure enables extremely sharp cutting edges.	N
KCPM15		Coated carbide grade with thick PVD coating and optimised chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC. beyond	P M K
KC643M		Coated fine-grain grade with PVD (AlTiN). KC643M is a hard PVD coating particularly suitable for cutting steel, cast iron, stainless steel (wet), and titanium (wet). This grade can be used for materials with hardness up to 52 HRC.	P M K S
KC633M		Coated carbide grade with PVD multilayer coating. KC633M is designed for dry milling most types of material, apart from the hardened variety. This grade is characterised by good hardness and wear resistance. It provides outstanding protection for solid carbide tools against cratering and abrasion.	P M S
KC625M		Coated carbide grade with PVD (TiCN) coating. For universal use due to its high wear resistance and hardness. Only use wet or with MQL (Minimum Quantity Lubrication).	P K S
KC639M		PVD (AlTiN) coated carbide on a new sub-micron carbide substrate. This hard coating provides outstanding performance in milling hardened materials (58–65 HRC).	H
KC637M		Coated, tough, wear-resistant carbide grade with hard PVD coating, particularly suitable for machining steels above 48 HRC.	H
KC635M		Universal carbide grade with PVD coating (TiAlN). KC635M is a high-performance grade for finishing operations. This grade is characterised by high hardness and wear resistance.	P M K S
KCN05		**High-Performance Grade** A pure, diamond-coated carbide for milling CFRP and graphite. It is a very tough and wear-resistant grade.	N

Beyond™ Solid End Milling

High-Performance milling in a new dimension

Kennametal is pleased to announce KCPM15™ — the first Beyond grade for solid carbide end mills. KCPM15 features an improved high-performance carbide substrate with proprietary aluminium titanium nitride (AlTiN) PVD coating.

Features and Benefits

- Engineered to increase tool life and productivity by 30%.
- For use in milling steels and stainless steels.
- Improved resistance to cratering, flank wear, and depth-of-cut notching.

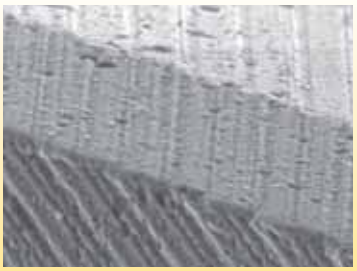
Workpiece Materials:

P	Steel
M	Stainless Steel
K	Cast Iron

Coating		Grade Description	
KCPM15	AlTiN	Coated carbide grade with thick PVD coating and optimised chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC.	P M K

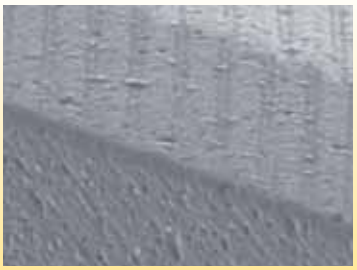
Conventional End Mill Cutting Edge

Conventional



KCPM15 End Mill Cutting Edge

New KCPM15 grade



View: 1st and 2nd Relief.

HARVI™ Line Solid Carbide End Mills

Primary Application

HARVI takes high-performance roughing, semi-finishing, slotting, and profiling to the next level. The line is designed to provide maximum metal removal rates by achieving supreme surface conditions. A wide range of diameters and corner radii are available from stock.

NOTE: Unequal flute spacing.

Features and Benefits

Higher Productivity and Profitability

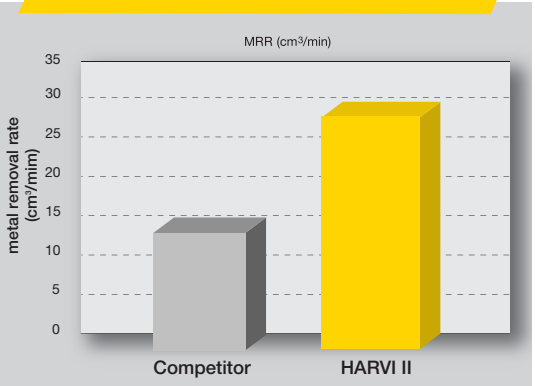
- Best suited for applications in the aerospace, medical, die and mould, automotive, and general engineering markets.
- Outstanding performance in stainless steel, titanium, INCONEL®, and other high-temperature alloys and steels.
- Increased metal removal rates in roughing and finishing operations.
- Excellent performance in both slotting and side milling operations.

Featured Application: Slotting an Engine Ring

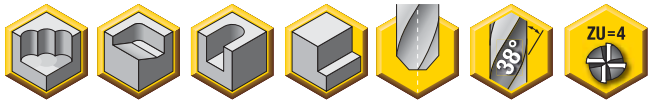
Operation: Slotting
Customer: Aerospace manufacturer
Workpiece: Engine ring
Material: SST nickel-based alloy EZ3NCT25 (25% nickel, 13% chromium) at 245 HB
Solution: HARVI II™ 5-flute with AlTiN coating
Results: 90% increase in metal removal rate

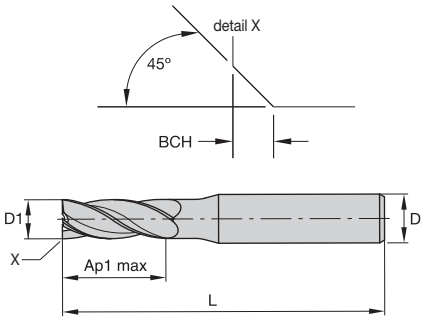
	COMPETITOR	HARVI II™
coating:	TiAlN	AlTiN
end mill:	4-flute 12mm 1mm radius	5-flute 12mm 1mm radius
material:	SST nickel-based alloy	SST nickel-based alloy
depth of cut (ap):	11,15mm	11,15mm
width of cut (ae):	12mm	12mm
speed (vc):	30 m/min	40 m/min
RPM (N):	800 RPM	1,060 RPM
feed rate (vf):	112 mm/min	212 mm/min
chip load per tooth (fz):	0,035 mm/th	0,04 mm/th
metal removal rate:	15 cm^3/min	28 cm^3/min

90% Productivity Increase!

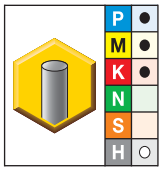


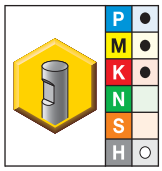
- Centre cutting.
- Single tool for roughing and finishing applications.
- Unequal flute spacing minimises chatter for smoother machining.





beyond





● first choice
○ alternate choice

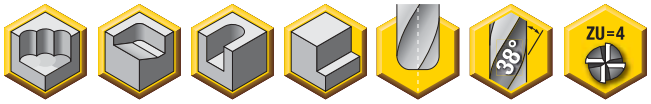
KCPM15	KCPM15	D1	D	Ap1 max	L	BCH
F4AS0400ADL38	**F4AS0400BDL38**	4,00	6,00	12,00	55,00	0,40
F4AS0500ADL38	**F4AS0500BDL38**	5,00	6,00	13,00	57,00	0,40
F4AS0600ADL38	**F4AS0600BDL38**	6,00	6,00	13,00	57,00	0,40
F4AS0800ADL38	**F4AS0800BDL38**	8,00	8,00	16,00	63,00	0,40
F4AS1000ADL38	**F4AS1000BDL38**	10,00	10,00	22,00	72,00	0,50
F4AS1200ADL38	**F4AS1200BDL38**	12,00	12,00	26,00	83,00	0,50
–	**F4AS1400BDL38**	14,00	14,00	26,00	83,00	0,50
F4AS1600ADL38	**F4AS1600BDL38**	16,00	16,00	32,00	92,00	0,50
F4AS1800ADL38	**F4AS1800BDL38**	18,00	18,00	32,00	92,00	0,50
F4AS2000ADL38	**F4AS2000BDL38**	20,00	20,00	38,00	104,00	0,50
F4AS2500ADL38	**F4AS2500BDL38**	25,00	25,00	45,00	121,00	0,50

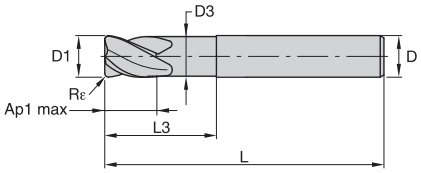
NOTE: For application data, see page M22.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Single tool for roughing and finishing applications.
- Unequal flute spacing minimises chatter for smoother machining.





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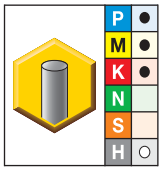
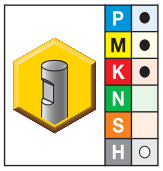




● first choice
○ alternate choice

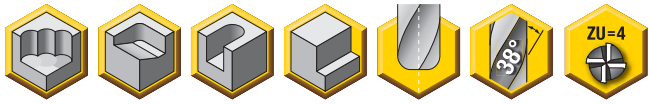
KCPM15	KCPM15	D1	D	Ap1 max	L3	L	Rε	D3
F4AS0600AWM38R050	F4AS0600BWM38R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F4AS0600AWM38R100	F4AS0600BWM38R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F4AS0800AWM38R050	F4AS0800BWM38R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F4AS0800AWM38R100	F4AS0800BWM38R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F4AS1000AWL38R050	F4AS1000BWL38R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F4AS1000AWL38R100	F4AS1000BWL38R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F4AS1000AWL38R200	F4AS1000BWL38R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F4AS1000AWL38R300	F4AS1000BWL38R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F4AS1000AWL38R400	F4AS1000BWL38R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F4AS1200AWL38R050	F4AS1200BWL38R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F4AS1200AWL38R100	F4AS1200BWL38R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F4AS1200AWL38R200	F4AS1200BWL38R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F4AS1200AWL38R300	F4AS1200BWL38R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F4AS1200AWL38R400	F4AS1200BWL38R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F4AS1600AWX38R050	F4AS1600BWX38R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F4AS1600AWX38R100	F4AS1600BWX38R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F4AS1600AWX38R200	F4AS1600BWX38R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F4AS1600AWX38R300	F4AS1600BWX38R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F4AS1600AWX38R400	F4AS1600BWX38R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F4AS2000AWX38R050	F4AS2000BWX38R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F4AS2000AWX38R100	F4AS2000BWX38R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F4AS2000AWX38R200	F4AS2000BWX38R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F4AS2000AWX38R300	F4AS2000BWX38R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F4AS2000AWX38R400	F4AS2000BWX38R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F4AS2500AWX38R050	F4AS2500BWX38R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F4AS2500AWX38R100	F4AS2500BWX38R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F4AS2500AWX38R200	F4AS2500BWX38R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F4AS2500AWX38R300	F4AS2500BWX38R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F4AS2500AWX38R400	F4AS2500BWX38R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

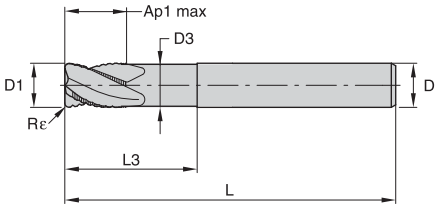
NOTE: For application data, see page M22.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Chipbreaker profile.





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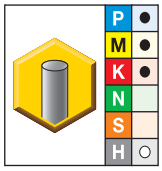
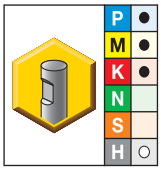




● first choice
○ alternate choice

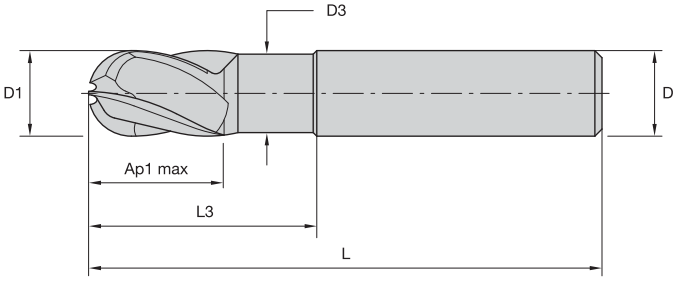
KCPM15	KCPM15	D1	D	Ap1 max	L3	L	Rε	D3
F4BS0600AWM38R050	F4BS0600BWM38R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F4BS0600AWM38R100	F4BS0600BWM38R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F4BS0800AWM38R050	F4BS0800BWM38R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F4BS0800AWM38R100	F4BS0800BWM38R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F4BS1000AWL38R050	F4BS1000BWL38R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F4BS1000AWL38R100	F4BS1000BWL38R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F4BS1000AWL38R200	F4BS1000BWL38R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F4BS1000AWL38R300	F4BS1000BWL38R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F4BS1000AWL38R400	F4BS1000BWL38R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F4BS1200AWL38R050	F4BS1200BWL38R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F4BS1200AWL38R100	F4BS1200BWL38R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F4BS1200AWL38R200	F4BS1200BWL38R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F4BS1200AWL38R300	F4BS1200BWL38R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F4BS1200AWL38R400	F4BS1200BWL38R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F4BS1600AWX38R050	F4BS1600BWX38R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F4BS1600AWX38R100	F4BS1600BWX38R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F4BS1600AWX38R200	F4BS1600BWX38R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F4BS1600AWX38R300	F4BS1600BWX38R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F4BS1600AWX38R400	F4BS1600BWX38R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F4BS2000AWX38R050	F4BS2000BWX38R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F4BS2000AWX38R100	F4BS2000BWX38R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F4BS2000AWX38R200	F4BS2000BWX38R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F4BS2000AWX38R300	F4BS2000BWX38R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F4BS2000AWX38R400	F4BS2000BWX38R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F4BS2500AWX38R050	F4BS2500BWX38R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F4BS2500AWX38R100	F4BS2500BWX38R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F4BS2500AWX38R200	F4BS2500BWX38R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F4BS2500AWX38R300	F4BS2500BWX38R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F4BS2500AWX38R400	F4BS2500BWX38R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

NOTE: For application data, see page M23.

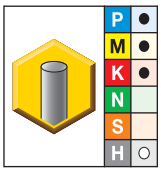
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.



beyond



● first choice
○ alternate choice

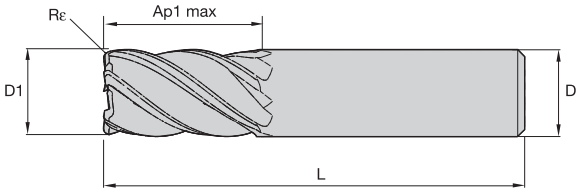
KCPM15	D1	D	Ap1 max	L3	L	D3
F4AW0600AWL38E120	6,00	6,00	6,00	12,00	76,00	5,80
F4AW0800AWL38E160	8,00	8,00	8,00	16,00	100,00	7,80
F4AW1000AWX38E200	10,00	10,00	10,00	20,00	121,50	9,50
F4AW1200AWX38E240	12,00	12,00	12,00	24,00	125,00	11,50
F4AW1600AWX38E320	16,00	16,00	16,00	32,00	150,00	15,00

NOTE: For application data, see page M23.

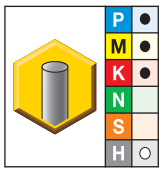
End Mill Tolerances

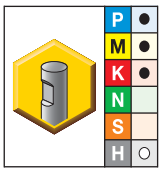
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Non-centre cutting.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Five-flute geometry enables slotting up to 1 x D.



beyond





● first choice
○ alternate choice

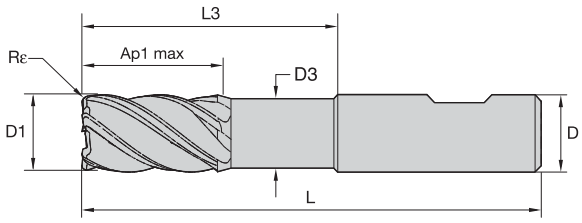
KCPM15	KCPM15	D1	D	Ap1 max	L	Rε
UCDE0400A5ARA	**UCDE0400B5ARA**	4,00	6,00	11,00	55,00	0,25
UCDE0400A5ASA	**–**	4,00	6,00	11,00	55,00	–
UCDE0500A5ARA	**UCDE0500B5ARA**	5,00	6,00	13,00	57,00	0,25
UCDE0500A5ASA	**–**	5,00	6,00	13,00	57,00	–
UCDE0600A5ARA	**UCDE0600B5ARA**	6,00	6,00	13,00	57,00	0,40
UCDE0600A5ASA	**–**	6,00	6,00	13,00	57,00	–
UCDE0700A5ARA	**UCDE0700B5ARA**	7,00	8,00	16,00	63,00	0,40
UCDE0700A5ASA	**–**	7,00	8,00	16,00	63,00	–
UCDE0800A5ARA	**UCDE0800B5ARA**	8,00	8,00	19,00	63,00	0,50
UCDE0800A5ASA	**–**	8,00	8,00	19,00	63,00	–
UCDE0900A5ARA	**UCDE0900B5ARA**	9,00	10,00	19,00	72,00	0,50
UCDE0900A5ASA	**–**	9,00	10,00	19,00	72,00	–
UCDE1000A5ARA	**UCDE1000B5ARA**	10,00	10,00	22,00	72,00	0,50
UCDE1000A5ASA	**–**	10,00	10,00	22,00	72,00	–
UCDE1200A5ARA	**UCDE1200B5ARA**	12,00	12,00	26,00	83,00	0,75
UCDE1200A5ASA	**–**	12,00	12,00	26,00	83,00	–
UCDE1400A5ARA	**UCDE1400B5ARA**	14,00	14,00	26,00	83,00	0,75
UCDE1400A5ASA	**–**	14,00	14,00	26,00	83,00	–
UCDE1600A5ARA	**UCDE1600B5ARA**	16,00	16,00	32,00	92,00	0,75
UCDE1600A5ASA	**–**	16,00	16,00	32,00	92,00	–
UCDE1800A5ARA	**UCDE1800B5ARA**	18,00	18,00	32,00	92,00	0,75
UCDE1800A5ASA	**–**	18,00	18,00	32,00	92,00	–
UCDE2000A5ARA	**UCDE2000B5ARA**	20,00	20,00	38,00	104,00	0,75
UCDE2000A5ASA	**–**	20,00	20,00	38,00	104,00	–
UCDE2500A5ARA	**UCDE2500B5ARA**	25,00	25,00	45,00	121,00	0,75
UCDE2500A5ASA	**–**	25,00	25,00	45,00	121,00	–

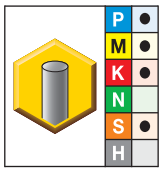
NOTE: For application data, see page M24.

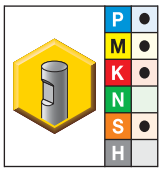
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Non-centre cutting.
- Optimised geometry for titanium machining.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Five-flute geometry enables slotting up to 1 x D.







● first choice
○ alternate choice

KC643M	KC643M	D1	D	Ap1 max	L3	L	Rε	D3
–	UDDE0600B5ARA	6,00	6,00	13,00	18,00	63,00	0,20	5,64
UDDE0600A5ARA	UDDE0600B5ARB	6,00	6,00	13,00	18,00	63,00	0,50	5,64
UDDE0600A5ARB	UDDE0600B5ARC	6,00	6,00	13,00	18,00	63,00	1,00	5,64
UDDE0600A5ARC	UDDE0600B5ARD	6,00	6,00	13,00	18,00	63,00	1,50	5,64
UDDE0600A5ASA	–	6,00	6,00	13,00	18,00	63,00	–	5,64
–	UDDE0800B5ARA	8,00	8,00	19,00	24,00	68,00	0,20	7,52
UDDE0800A5ARA	UDDE0800B5ARB	8,00	8,00	19,00	24,00	68,00	0,50	7,52
UDDE0800A5ARB	UDDE0800B5ARC	8,00	8,00	19,00	24,00	68,00	1,00	7,52
UDDE0800A5ARC	UDDE0800B5ARD	8,00	8,00	19,00	24,00	68,00	2,00	7,52
UDDE0800A5ASA	–	8,00	8,00	19,00	24,00	68,00	–	7,52
UDDE1000A5ARA	UDDE1000B5ARA	10,00	10,00	22,00	30,00	76,00	0,50	9,40
UDDE1000A5ARB	UDDE1000B5ARB	10,00	10,00	22,00	30,00	76,00	1,00	9,40
UDDE1000A5ARC	UDDE1000B5ARC	10,00	10,00	22,00	30,00	76,00	2,00	9,40
UDDE1000A5ARD	UDDE1000B5ARD	10,00	10,00	22,00	30,00	76,00	2,50	9,40
UDDE1000A5ASA	–	10,00	10,00	22,00	30,00	76,00	–	9,40
UDDE1200A5ARA	UDDE1200B5ARA	12,00	12,00	26,00	36,00	84,00	0,50	11,28

(continued)

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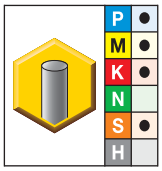
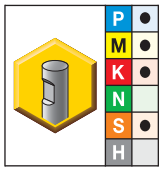




● first choice
○ alternate choice

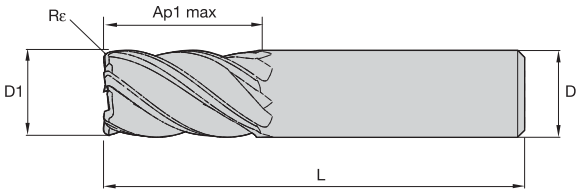
KC643M	KC643M	D1	D	Ap1 max	L3	L	Rε	D3
UDDE1200A5ARB	**UDDE1200B5ARB**	12,00	12,00	26,00	36,00	84,00	1,00	11,28
UDDE1200A5ARC	**UDDE1200B5ARC**	12,00	12,00	26,00	36,00	84,00	2,00	11,28
UDDE1200A5ARD	**UDDE1200B5ARD**	12,00	12,00	26,00	36,00	84,00	3,00	11,28
UDDE1200A5ASA	**–**	12,00	12,00	26,00	36,00	84,00	–	11,28
UDDE1600A5ARA	**UDDE1600B5ARA**	16,00	16,00	32,00	48,00	100,00	0,50	15,04
UDDE1600A5ARB	**UDDE1600B5ARB**	16,00	16,00	32,00	48,00	100,00	1,00	15,04
UDDE1600A5ARC	**UDDE1600B5ARC**	16,00	16,00	32,00	48,00	100,00	2,00	15,04
UDDE1600A5ARD	**UDDE1600B5ARD**	16,00	16,00	32,00	48,00	100,00	3,00	15,04
UDDE1600A5ARE	**UDDE1600B5ARE**	16,00	16,00	32,00	48,00	100,00	4,00	15,04
UDDE1600A5ASA	**–**	16,00	16,00	32,00	48,00	100,00	–	15,04
UDDE2000A5ARA	**UDDE2000B5ARA**	20,00	20,00	38,00	60,00	115,00	0,50	18,80
UDDE2000A5ARB	**UDDE2000B5ARB**	20,00	20,00	38,00	60,00	115,00	1,00	18,80
UDDE2000A5ARC	**UDDE2000B5ARC**	20,00	20,00	38,00	60,00	115,00	2,00	18,80
UDDE2000A5ARD	**UDDE2000B5ARD**	20,00	20,00	38,00	60,00	115,00	3,00	18,80
UDDE2000A5ARE	**UDDE2000B5ARE**	20,00	20,00	38,00	60,00	115,00	4,00	18,80
UDDE2000A5ASA	**–**	20,00	20,00	38,00	60,00	115,00	–	18,80
UDDE2500A5ARA	**UDDE2500B5ARA**	25,00	25,00	45,00	75,00	135,00	0,50	23,50
UDDE2500A5ARB	**UDDE2500B5ARB**	25,00	25,00	45,00	75,00	135,00	1,00	23,50
UDDE2500A5ARC	**UDDE2500B5ARC**	25,00	25,00	45,00	75,00	135,00	2,00	23,50
UDDE2500A5ARD	**UDDE2500B5ARD**	25,00	25,00	45,00	75,00	135,00	3,00	23,50
UDDE2500A5ARE	**UDDE2500B5ARE**	25,00	25,00	45,00	75,00	135,00	4,00	23,50
UDDE2500A5ASA	**–**	25,00	25,00	45,00	75,00	135,00	–	23,50

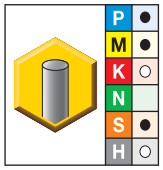
NOTE: For application data, see page M24.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Non-center cutting.
- Unequal flute spacing minimises chatter for smoother machining.
- For finishing and semi-finishing applications.





● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	Rε
UGDE0600A5ARA	6,00	6,00	18,00	63,00	0,20
UGDE0600A5ARB	6,00	6,00	18,00	63,00	0,50
UGDE0600A5ARC	6,00	6,00	18,00	63,00	1,00
UGDE0600A5BRA	6,00	6,00	30,00	76,00	0,20
UGDE0600A5BRB	6,00	6,00	30,00	76,00	0,50
UGDE0600A5BRC	6,00	6,00	30,00	76,00	1,00
UGDE0800A5ARA	8,00	8,00	24,00	67,00	0,20
UGDE0800A5ARB	8,00	8,00	24,00	67,00	0,50
UGDE0800A5ARC	8,00	8,00	24,00	67,00	1,00
UGDE0800A5BRA	8,00	8,00	40,00	87,00	0,20
UGDE0800A5BRB	8,00	8,00	40,00	87,00	0,50
UGDE0800A5BRC	8,00	8,00	40,00	87,00	1,00
UGDE1000A5ARA	10,00	10,00	30,00	76,00	0,50
UGDE1000A5ARB	10,00	10,00	30,00	76,00	1,00
UGDE1000A5ARC	10,00	10,00	30,00	76,00	2,00
UGDE1000A5ARD	10,00	10,00	30,00	76,00	2,50
UGDE1000A5BRA	10,00	10,00	50,00	100,00	0,50
UGDE1000A5BRB	10,00	10,00	50,00	100,00	1,00
UGDE1000A5BRC	10,00	10,00	50,00	100,00	2,00
UGDE1000A5BRD	10,00	10,00	50,00	100,00	2,50
UGDE1200A5ARA	12,00	12,00	36,00	100,00	0,50
UGDE1200A5ARB	12,00	12,00	36,00	100,00	1,00
UGDE1200A5ARC	12,00	12,00	36,00	100,00	2,00
UGDE1200A5ARD	12,00	12,00	36,00	100,00	2,50
UGDE1200A5BRA	12,00	12,00	36,00	125,00	0,50
UGDE1200A5BRB	12,00	12,00	60,00	125,00	1,00
UGDE1200A5BRC	12,00	12,00	60,00	125,00	2,00
UGDE1200A5BRD	12,00	12,00	60,00	125,00	2,50
UGDE1400A5ARD	14,00	14,00	42,00	100,00	3,00
UGDE1400A5BRD	14,00	14,00	70,00	120,00	3,00

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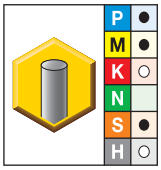


● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	Rε
UGDE1600A5ARA	16,00	16,00	48,00	110,00	1,00
UGDE1600A5ARB	16,00	16,00	48,00	110,00	2,00
UGDE1600A5ARC	16,00	16,00	48,00	110,00	2,50
UGDE1600A5ARD	16,00	16,00	48,00	110,00	3,00
UGDE1600A5ARE	16,00	16,00	48,00	110,00	4,00
UGDE1600A5BRA	16,00	16,00	80,00	141,00	1,00
UGDE1600A5BRB	16,00	16,00	80,00	141,00	2,00
UGDE1600A5BRC	16,00	16,00	80,00	141,00	2,50
UGDE1600A5BRD	16,00	16,00	80,00	141,00	3,00
UGDE1600A5BRE	16,00	16,00	80,00	141,00	4,00
UGDE2000A5ARA	20,00	20,00	60,00	125,00	1,00
UGDE2000A5ARB	20,00	20,00	60,00	125,00	2,00
UGDE2000A5ARC	20,00	20,00	60,00	125,00	2,50
UGDE2000A5ARD	20,00	20,00	60,00	125,00	3,00
UGDE2000A5ARE	20,00	20,00	60,00	125,00	4,00
UGDE2000A5BRA	20,00	20,00	100,00	166,00	1,00
UGDE2000A5BRB	20,00	20,00	100,00	166,00	2,00
UGDE2000A5BRC	20,00	20,00	100,00	166,00	2,50
UGDE2000A5BRD	20,00	20,00	100,00	166,00	3,00
UGDE2000A5BRE	20,00	20,00	100,00	166,00	4,00
UGDE2500A5ARA	25,00	25,00	75,00	150,00	1,00
UGDE2500A5ARB	25,00	25,00	75,00	150,00	2,00
UGDE2500A5ARC	25,00	25,00	75,00	150,00	2,50
UGDE2500A5ARD	25,00	25,00	75,00	150,00	3,00
UGDE2500A5ARE	25,00	25,00	75,00	150,00	4,00
UGDE2500A5BRA	25,00	25,00	125,00	190,00	1,00
UGDE2500A5BRB	25,00	25,00	125,00	190,00	2,00
UGDE2500A5BRC	25,00	25,00	125,00	190,00	2,50
UGDE2500A5BRD	25,00	25,00	125,00	190,00	3,00
UGDE2500A5BRE	25,00	25,00	125,00	190,00	4,00

NOTE: For application data, see page M25.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

High-Performance Solid Carbide End Mills

SAFE-λOCK™
by HAIMER

In High-Performance Cutting (HPC), slow microcreeping can cause the cutting tool to be pulled out of the chuck, **turning high-quality workpieces to scrap.**

Be on the Safe Side with SAFE-λOCK™ in High-Performance Cutting (HPC)

Benefits

- Highly accurate clamping due to positive connection.
- No loss of accuracy.
- No pull out or spinning of the tool.
- No damage to the workpiece or machine.
- Groove on tool shank is directed so the tool will be pulled into the chuck (depending on direction of rotation).

Order Information

Kennametal high-performance end mills with a shank diameter of 12mm (1/2") and larger are available with **SAFE-λOCK™** technology, as a special tool, upon request. Please contact your local customer service location to receive a quote.

Features

- Form-closed clamping.
- High accuracy clamping.
- Helical grooves.

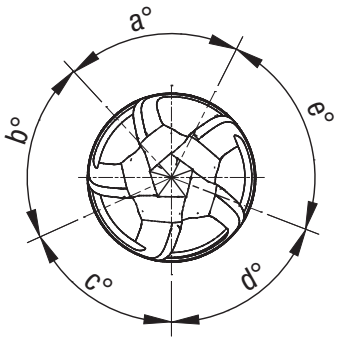
Functions

- No pull out.
- Excellent runout.
- Adjustable clamping length.

Benefits

- Reduce scrap rate.
- Higher tool life.
- No need to change NC programme after regrinding.

Customised-Solution Example for Highest Metal Removal Rates

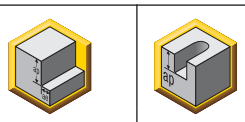


The HARVI II UDDE proprietary design with **unequal flute spacing** and unique core geometry for chatter-free machining enables slotting operations in titanium up to 1 x D.

SAFE-λOCK™

The safety belt for high-performance solid carbide end mills provides a form-closed clamping with high accuracy and helical grooves for length adjustment.

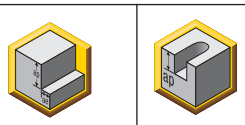
HARVI I™ • F4AS...DL • Unequal Flute Spacing



Material Group		A ap	A ae	B ap	KCPM15 Cutting Speed — vc m/min min	KCPM15 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

Solid End Milling

HARVI I • F4AS.. WM-WX-WL



Material Group		A ap	A ae	B ap	KCPM15 Cutting Speed — vc m/min min	KCPM15 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

HARVI I™ • F4BS.. WM-WX-WL • Unequal Flute Spacing • Extended Neck • Chipbreaker

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

HARVI I • F4AW..WL-WX • Extended Neck • Unequal Flute Spacing • Ball Nose

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	5,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,027	0,033	0,045	0,054	0,062	0,077	0,088
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,020	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,020	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,027	0,033	0,045	0,054	0,062	0,077	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

HARVI II™ • UCDE • Unequal Flute Spacing

Material Group		A		B	KCPM15 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

Solid End Milling

HARVI I™ • UDDE

Material Group		A		B	KC643M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter									
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	2	1,5 x D	0,5 x D	1 x D	160	200	fz	0,030	0,040	0,050	0,060	0,070	0,070	0,080	0,080	0,090	0,10	0,11
	3	1,5 x D	0,5 x D	1 x D	160	180	fz	0,030	0,030	0,040	0,05	0,060	0,030	0,070	0,080	0,080	0,090	0,10
	4	1,5 x D	0,5 x D	1 x D	140	160	fz	0,020	0,030	0,040	0,040	0,05	0,060	0,070	0,070	0,080	0,080	0,10
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,030	0,030	0,040	0,050	0,060	0,070	0,070	0,080	0,080	0,090	0,10
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,020	0,030	0,030	0,040	0,050	0,060	0,060	0,070	0,070	0,080	0,080
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,020	0,020	0,030	0,040	0,040	0,050	0,050	0,050	0,060	0,060	0,070
K	1	1,5 x D	0.5 x D	1 x D	130	170	fz	0,030	0,040	0,050	0,060	0,080	0,080	0,10	0,10	0,11	0,12	0,13
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,020	0,030	0,030	0,050	0,050	0,060	0,070	0,070	0,080	0,080	0,100
S	3	1,5 x D	0,2 x D	0,3 x D	25	40	fz	0,010	0,010	0,020	0,030	0,030	0,040	0,040	0,050	0,060	0,060	0,070
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,020	0,020	0,030	0,040	0,040	0,050	0,050	0,060	0,070	0,080	0,090

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

HARVI II™ • UGDE • 3 x D and 5 x D Lengths of Cut

Material Group		A		KC643M		Feed per Tooth — fz information is for Side Milling (A).								
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	20,0	25,0
P	1	Ap1 max	0,05 x D*	300	400	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	280	380	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	3	Ap1 max	0,05 x D*	240	320	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	4	Ap1 max	0,05 x D*	180	300	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098
	5	Ap1 max	0,05 x D*	120	200	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	6	Ap1 max	0,05 x D*	100	150	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
M	1	Ap1 max	0,05 x D*	180	230	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	120	160	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	3	Ap1 max	0,05 x D*	120	140	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
K	1	Ap1 max	0,05 x D*	240	300	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	220	260	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	3	Ap1 max	0,05 x D*	200	260	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
S	1	Ap1 max	0,05 x D*	100	180	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	50	80	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,054	0,061
	3	Ap1 max	0,05 x D*	120	160	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	4	Ap1 max	0,05 x D*	100	120	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,074	0,084
H	1	Ap1 max	0,05 x D*	160	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098

* For the above cutting data, do not exceed an overall ae of 0,8mm.

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machinining centers, please adjust parameters accordingly on >12mm diameter.

KenFeed™ End Mills for High-Feed Milling

Primary Application

Specifically engineered to machine hardened steel up to 65 HRC at extreme speeds and feeds.

Features and Benefits

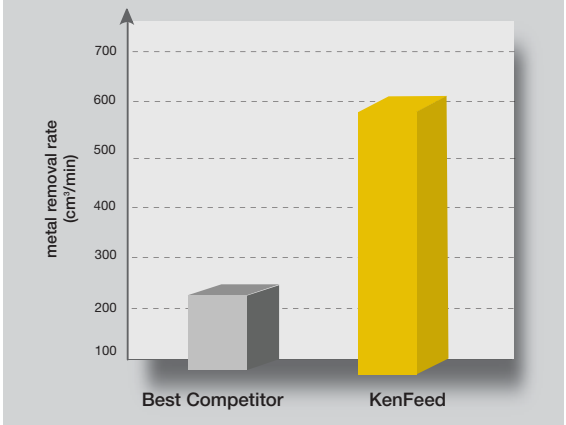
- Unique tool with new 6-flute style for high productivity.
- Necked shanks provide extended reach in deep cavities.
- High-feed rates up to 0,6mm per tooth on a 20mm tool.
- Machine hardened materials at 2–3x the metal removal rate of competitive end mills.
- Wide range of cutting diameters: down to 6mm for small and medium pocket work.
- Innovative new geometry maximises metal removal rates.
- High metal removal rates lower manufacturing costs.

Featured Application: Milling a Mould

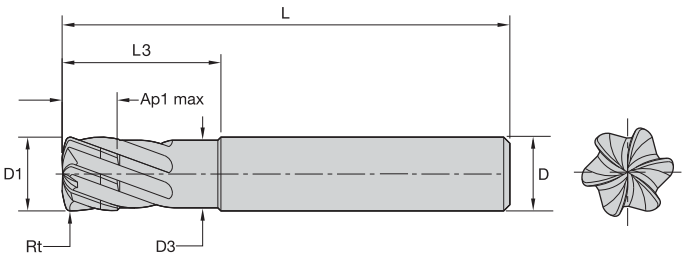
Operation: Pocket milling
Customer: Die and mould manufacturer
Workpiece: Mould
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

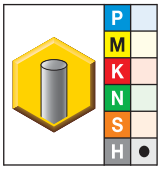
	COMPETITOR	KenFeed
tool:	4-flute H/P for die and mould	KMDA1200A6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	120 m/min	160 m/min
feed per tooth:	0,34mm	0,34mm
depth of cut:	0,8mm	0,6mm
table feed:	4.331 mm/min	15.287 mm/min
metal removal rate:	22,8 cm^3/min	60,5 cm^3/min

Increased Metal Removal Rate by 191%



- Kennametal standard dimensions.
- Non-centre cutting.
- High-feed.



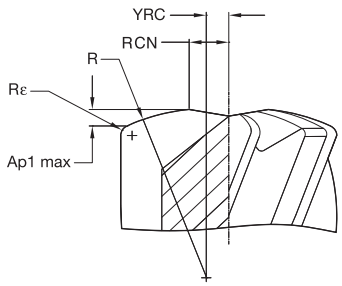


● first choice
○ alternate choice

KC639M	D1	D3	D	Ap1 max	L3	L	Rε
KHDA0600A6ANA	6,00	5,00	6,00	0,20	18,00	63,00	0,38
KHDA0800A6ANA	8,00	7,00	8,00	0,27	24,00	76,00	0,50
KHDA1000A6ANA	10,00	9,00	10,00	0,33	30,00	89,00	0,63
KHDA1200A6ANA	12,00	11,00	12,00	0,40	36,00	100,00	0,75
KHDA1600A6ANA	16,00	15,00	16,00	0,54	48,00	110,00	1,00
KHDA2000A6ANA	20,00	19,00	20,00	0,67	60,00	125,00	1,25

NOTE: For application data, see page M30.

D1	D1 tolerance	D tolerance
All	DIN e8	DIN h6

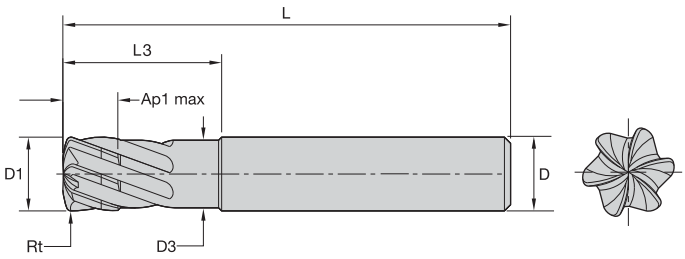


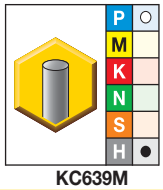
Programming Data

	geometrical parameters						ramping guide for circular and linear ramping						
							circular interpolation		linear ramping				
							optimal range of circle diameter for a single pass		calculated length per ramp angle				
catalogue number	D1	Ap1 max	R	Rε	YRC	CRN	smallest	largest	1°	2°	3°	4°	5°
KHDA0600A6ANA	6	0,20	9	0,375	0,75	1,26	8,52	12,00	32,99	16,49	10,99	8,23	6,58
KHDA0800A6ANA	8	0,27	12	0,500	1,00	1,68	11,36	16,00	43,98	21,99	14,65	10,98	8,78
KHDA1000A6ANA	10	0,33	15	0,625	1,25	2,10	14,20	20,00	54,98	27,48	18,31	13,72	10,97
KHDA1200A6ANA	12	0,40	18	0,750	1,50	2,52	17,04	24,00	65,98	32,98	21,97	16,47	13,16
KHDA1600A6ANA	16	0,54	24	1,000	2,00	3,36	22,72	32,00	87,97	43,97	29,30	21,96	17,55
KHDA2000A6ANA	20	0,67	30	1,250	2,50	4,20	28,40	40,00	109,96	54,96	36,62	27,45	21,94
							recommended percentage of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

YRC = distance from centreline to the crown of the R radius.
CRN = distance from centreline to the start of the cutting edge. This dimension can also help determine the minimum circle size when helical ramping.
R = the head radius size.
Rε = the shoulder radius or radius at the corner of the cutter.

- Kennemetal standard dimensions.
- Non-centre cutting.
- High feed.



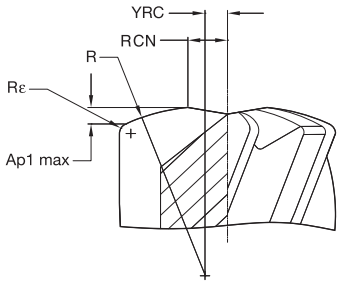


● first choice
○ alternate choice

KC639M	D1	D3	D	Ap1 max	L	Rε
KMDA0600A6ANA	6,00	5,00	6,00	0,32	63,00	0,38
KMDA0800A6ANA	8,00	7,00	8,00	0,42	76,00	0,50
KMDA1000A6ANA	10,00	9,00	10,00	0,53	89,00	0,63
KMDA1200A6ANA	12,00	11,00	12,00	0,63	100,00	0,75
KMDA1600A6ANA	16,00	15,00	16,00	0,84	110,00	1,00
KMDA2000A6ANA	20,00	19,00	20,00	1,05	125,00	1,25

NOTE: For application data, see page M30.

D1	D1 tolerance	D tolerance
All	DIN e8	DIN h6



Programming Data

geometrical parameters							ramping guide for circular and linear ramping						
							circular interpolation		linear ramping				
							optimal range of circle diameter for a single pass		calculated length per ramp angle				
catalogue number	D1	Ap1 max	R	Rε	YRC	RCN	smallest	largest	1°	2°	3°	4°	5°
KMDA0600A6ANA	6	0,32	6	0,375	0,75	1,32	8,64	12,00	35,58	17,79	11,85	8,88	7,10
KMDA0800A6ANA	8	0,42	8	0,500	1,00	1,76	11,52	16,00	47,44	23,71	15,80	11,84	9,47
KMDA1000A6ANA	10	0,53	10	0,625	1,25	2,20	14,40	20,00	59,30	29,64	19,75	14,80	11,83
KMDA1200A6ANA	12	0,63	12	0,750	1,50	2,64	17,28	24,00	71,17	35,57	23,70	17,76	14,20
KMDA1600A6ANA	16	0,84	16	1,000	2,00	3,52	23,04	32,00	94,89	47,43	31,60	23,69	18,93
KMDA2000A6ANA	20	1,05	20	1,250	2,50	4,40	28,80	40,00	118,61	59,29	39,50	29,61	23,66
							recommended degree of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

YRC = distance from centreline to the crown of the R radius.
CRN = distance from centreline to the start of the cutting edge. This dimension can also help determine the minimum circle size when helical ramping.
R = the head radius size.
Rε = the shoulder radius or radius at the corner of the cutter.

KenFeed • KHDA

Material Group		A		KC639M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0
H	2	0,03 x D	0,55 x D	100	120	fz	0,200	0,300	0,300	0,400	0,500	0,600
	3	0,03 x D	0,55 x D	80	100	fz	0,200	0,300	0,300	0,400	0,500	0,600
	4	0,03 x D	0,55 x D	50	70	fz	0,150	0,200	0,250	0,300	0,400	0,500

KenFeed • KMDA

Material Group		A		KC639M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0
P	4	0,05 x D	0,55 x D	160	180	fz	0,300	0,500	0,500	0,500	0,600	0,700
H	1	0,05 x D	0.55 x D	140	160	fz	0,300	0,500	0,500	0,500	0,600	0,700
	2	0,05 x D	0,55 x D	100	120	fz	0,200	0,300	0,300	0,400	0,500	0,600

NOTE: These guidelines may require variations to achieve optimum results.

Best-in-Class Performance for Machining Hard Materials

Using Kennametal Solid End Mills will:

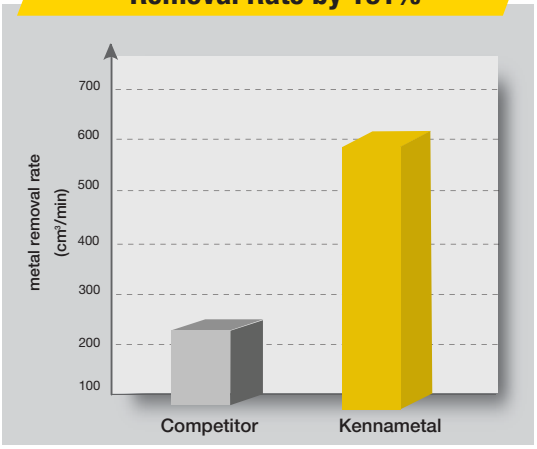
- Reduce the number of tools needed.
- Offer excellent chip evacuation.
- Promote maximum productivity.
- Increase removal rates.
- Enable higher speeds.
- Ensure accuracy.
- Reduce manufacturing costs.
- Provide long tool life.

Featured Application KenFeed™: Milling a Mould

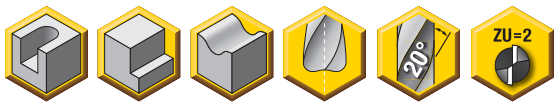
Operation: Pocket milling
Customer: Die and mould manufacturer
Workpiece: Mould
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

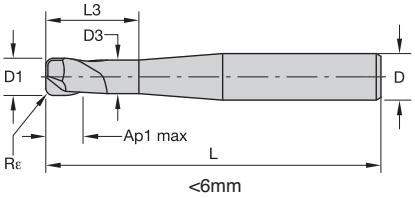
	COMPETITOR	Kennametal
tool:	4-flute H/P for die and mould	KMDA1200A6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	120 m/min	160 m/min
feed per tooth:	0,34mm	0,6mm
depth of cut:	0,8mm	0,6mm
table feed:	4.331 mm/min	15.287 mm/min
metal removal rate:	22,8 cm^3/min	60,5 cm^3/min

Increased Metal Removal Rate by 191%



- Kennametal standard dimensions.
- Centre cutting.





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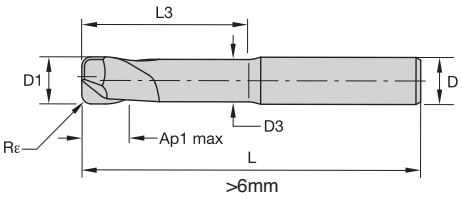

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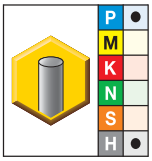


● first choice
○ alternate choice

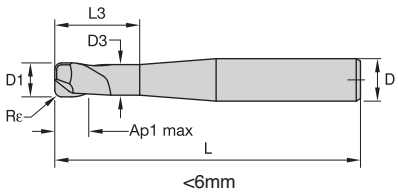
KC637M	D1	D	Ap1 max	L3	L	Rε	D3
F2AT0200AWM20R003	2,00	6,00	2,00	17,50	70,00	0,30	1,70
F2AT0200AWM20R005	2,00	6,00	2,00	17,50	70,00	0,50	1,70
F2AT0300AWM20R005	3,00	6,00	3,00	18,50	70,00	0,50	2,50
F2AT0300AWM20R010	3,00	6,00	3,00	18,50	70,00	1,00	2,50
F2AT0400AWL20R005	4,00	6,00	4,00	19,50	80,00	0,50	3,50
F2AT0400AWL20R010	4,00	6,00	4,00	19,50	80,00	1,00	3,50
F2AT0500AWL20R005	5,00	6,00	5,00	44,00	80,00	0,50	4,50
F2AT0500AWL20R010	5,00	6,00	5,00	44,00	80,00	1,00	4,50
F2AT0600AWL20R005	6,00	6,00	6,00	44,00	80,00	0,50	5,50
F2AT0600AWL20R010	6,00	6,00	6,00	44,00	80,00	1,00	5,50
F2AT0600AWL20R015	6,00	6,00	6,00	44,00	80,00	1,50	5,50
F2AT0800AWL20R010	8,00	8,00	8,00	54,00	90,00	1,00	7,00
F2AT0800AWL20R015	8,00	8,00	8,00	54,00	90,00	1,50	7,00
F2AT0800AWL20R020	8,00	8,00	8,00	54,00	90,00	2,00	7,00
F2AT1000AWL20R005	10,00	10,00	10,00	60,00	100,00	0,50	9,00
F2AT1000AWL20R010	10,00	10,00	10,00	60,00	100,00	1,00	9,00
F2AT1000AWL20R020	10,00	10,00	10,00	60,00	100,00	2,00	9,00
F2AT1000AWL20R030	10,00	10,00	10,00	60,00	100,00	3,00	9,00
F2AT1200AWX20R005	12,00	12,00	12,00	65,00	110,00	0,50	11,00
F2AT1200AWX20R010	12,00	12,00	12,00	65,00	110,00	1,00	11,00
F2AT1200AWX20R030	12,00	12,00	12,00	65,00	110,00	3,00	11,00
F2AT1200AWX20R040	12,00	12,00	12,00	65,00	110,00	4,00	11,00

NOTE: For application data, see page M42.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.



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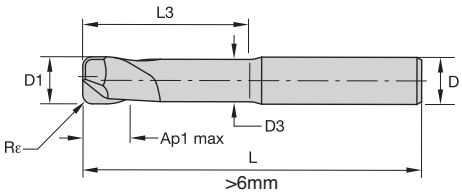

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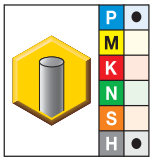


● first choice
○ alternate choice

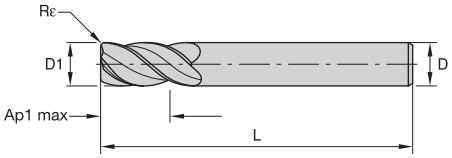
KC637M	D1	D	Ap1 max	L3	L	Rε	D3
F4AT0400AWS20R005	4,00	6,00	2,00	10,00	45,00	0,50	3,80
F4AT0400AWS20R010	4,00	6,00	2,00	10,00	45,00	1,00	3,80
F4AT0500AWS20R005	5,00	6,00	2,50	12,00	50,00	0,50	4,80
F4AT0500AWS20R010	5,00	6,00	2,50	12,00	50,00	1,00	4,80
F4AT0600AWS20R005	6,00	6,00	3,00	12,00	50,00	0,50	5,80
F4AT0600AWS20R020	6,00	6,00	3,00	12,00	50,00	2,00	5,80
F4AT0600AWL20R003	6,00	6,00	6,00	42,00	80,00	0,30	5,80
F4AT0600AWL20R005	6,00	6,00	6,00	42,00	80,00	0,50	5,80
F4AT0600AWL20R010	6,00	6,00	6,00	42,00	80,00	1,00	5,80
F4AT0800AWM20R005	8,00	8,00	4,00	20,00	60,00	0,50	7,80
F4AT0800AWM20R010	8,00	8,00	4,00	20,00	60,00	1,00	7,80
F4AT0800AWM20R020	8,00	8,00	4,00	20,00	60,00	2,00	7,80
F4AT0800AWL20R005	8,00	8,00	8,00	52,00	90,00	0,50	7,80
F4AT0800AWL20R010	8,00	8,00	8,00	52,00	90,00	1,00	7,80
F4AT0800AWL20R015	8,00	8,00	8,00	52,00	90,00	1,50	7,80
F4AT0800AWL20R020	8,00	8,00	8,00	52,00	90,00	2,00	7,80
F4AT1000AWL20R005	10,00	10,00	10,00	58,00	100,00	0,50	9,70
F4AT1000AWL20R010	10,00	10,00	10,00	58,00	100,00	1,00	9,70
F4AT1000AWL20R015	10,00	10,00	10,00	58,00	100,00	1,50	9,70
F4AT1000AWL20R020	10,00	10,00	10,00	58,00	100,00	2,00	9,70
F4AT1000AWL20R025	10,00	10,00	10,00	58,00	100,00	2,50	9,70
F4AT1000AWM20R005	10,00	10,00	5,00	24,00	70,00	0,50	9,80
F4AT1000AWM20R010	10,00	10,00	5,00	24,00	70,00	1,00	9,80
F4AT1000AWM20R015	10,00	10,00	5,00	24,00	70,00	1,50	9,80
F4AT1000AWM20R020	10,00	10,00	5,00	24,00	70,00	2,00	9,80
F4AT1000AWM20R025	10,00	10,00	5,00	24,00	70,00	2,50	9,80
F4AT1200AWX20R010	12,00	12,00	12,00	62,00	110,00	1,00	11,70
F4AT1200AWX20R015	12,00	12,00	12,00	62,00	110,00	1,50	11,70
F4AT1200AWX20R020	12,00	12,00	12,00	62,00	110,00	2,00	11,70
F4AT1200AWX20R030	12,00	12,00	12,00	62,00	110,00	3,00	11,70
F4AT1200AWL20R005	12,00	12,00	6,00	24,00	75,00	0,50	11,80
F4AT1200AWL20R010	12,00	12,00	6,00	24,00	75,00	1,00	11,80
F4AT1200AWL20R015	12,00	12,00	6,00	24,00	75,00	1,50	11,80
F4AT1200AWL20R020	12,00	12,00	6,00	24,00	75,00	2,00	11,80
F4AT1200AWL20R030	12,00	12,00	6,00	24,00	75,00	3,00	11,80

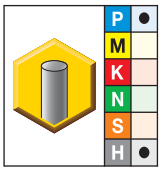
NOTE: For application data, see page M42.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

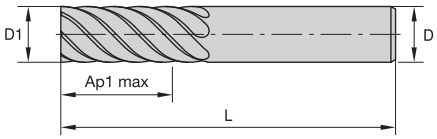
KC633M	D1	D	Ap1 max	L	Rε	Z U
F4AJ0600AWS50R025	6,00	6,00	9,00	50,00	0,25	4
F4AJ0600AWS50R050	6,00	6,00	9,00	50,00	0,50	4
F4AJ0800AWM50R050	8,00	8,00	12,00	63,00	0,50	4
F4AJ0800AWM50R100	8,00	8,00	12,00	63,00	1,00	4
F4AJ1000AWL50R050	10,00	10,00	15,00	76,00	0,50	4
F4AJ1000AWL50R100	10,00	10,00	15,00	76,00	1,00	4
F4AJ1200AWL50R050	12,00	12,00	18,00	76,00	0,50	4
F4AJ1200AWL50R150	12,00	12,00	18,00	76,00	1,50	4
F4AJ1600AWL50R050	16,00	16,00	24,00	89,00	0,50	4
F4AJ1600AWL50R150	16,00	16,00	24,00	89,00	1,50	4
F4AJ2000AWX50R050	20,00	20,00	30,00	104,00	0,50	4
F4AJ2000AWX50R200	20,00	20,00	30,00	104,00	2,00	4
F5AJ2500AWX50R050	25,00	25,00	38,00	121,00	0,50	5
F5AJ2500AWX50R300	25,00	25,00	38,00	121,00	3,00	5

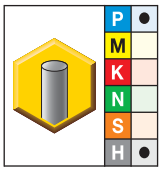
NOTE: For application data, see page M43.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

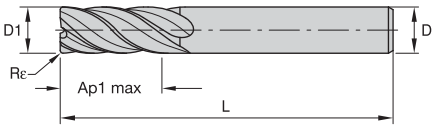
KC633M	D1	D	Ap1 max	L	Z U
F4AJ0600AWS50L090	6,00	6,00	9,00	50,00	4
F4AJ0800AWM50L120	8,00	8,00	12,00	63,00	4
F4AJ1000AWM50L150	10,00	10,00	15,00	76,00	4
F4AJ1200AWL50L180	12,00	12,00	18,00	76,00	4
F4AJ1600AWL50L240	16,00	16,00	24,00	89,00	4
F4AJ2000AWL50L300	20,00	20,00	30,00	104,00	4
F5AJ2500AWX50L380	25,00	25,00	38,00	121,00	5

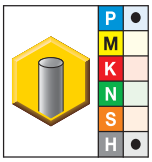
NOTE: For application data, see page M43.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

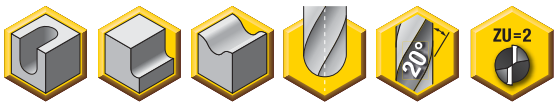
KC637M	D1	D	Ap1 max	L	Rε	Z U
F6AV0600ADL45	6,00	6,00	13,00	57,00	0,50	6
F6AV0600AWM45	6,00	6,00	18,00	62,00	0,50	6
F6AV0800ADL45	8,00	8,00	19,00	63,00	0,50	6
F6AV0800AWM45	8,00	8,00	24,00	68,00	0,50	6
F6AV1000ADL45	10,00	10,00	22,00	72,00	0,50	6
F6AV1000AWL45	10,00	10,00	30,00	80,00	0,50	6
F6AV1200ADL45	12,00	12,00	26,00	83,00	1,00	6
F6AV1200AWL45	12,00	12,00	36,00	93,00	1,00	6
F6AV1600ADL45	16,00	16,00	32,00	92,00	1,00	6
F6AV1600AWX45	16,00	16,00	48,00	108,00	1,00	6
F8AV2000ADL45	20,00	20,00	38,00	104,00	1,00	8
F8AV2000AWX45	20,00	20,00	60,00	126,00	1,00	8
F8AV2500ADL45	25,00	25,00	45,00	121,00	0,50	8
F8AV2500AWX45	25,00	25,00	75,00	150,00	1,50	8

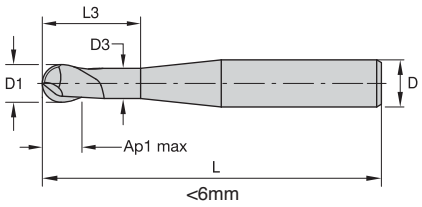
NOTE: For application data, see page M45.

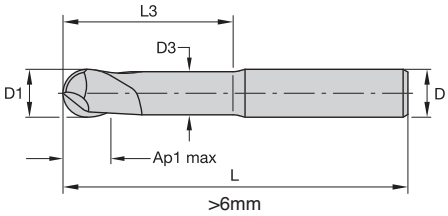
End Mill Tolerances

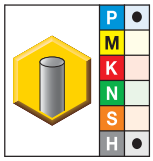
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.









● first choice
○ alternate choice

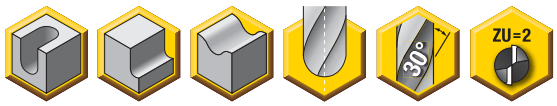
KC637M	D1	D3	D	Ap1 max	L3	L
F2AL0200AWM20	2,00	1,70	6,00	2,00	17,50	70,00
F2AL0300AWM20	3,00	2,50	6,00	3,00	18,50	70,00
F2AL0400AWL20	4,00	3,50	6,00	4,00	19,50	80,00
F2AL0500AWL20	5,00	4,50	6,00	5,00	44,00	80,00
F2AL0600AWL20	6,00	5,50	6,00	6,00	44,00	80,00
F2AL0800AWL20	8,00	7,00	8,00	8,00	54,00	90,00
F2AL1000AWL20	10,00	9,00	10,00	10,00	60,00	100,00
F2AL1200AWX20	12,00	11,00	12,00	12,00	65,00	110,00

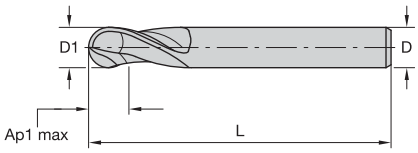
NOTE: For application data, see page M44.

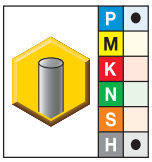
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0-/0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

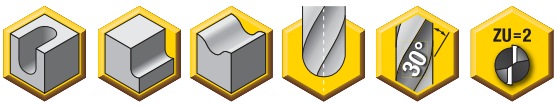
KC637M	D1	D	Ap1 max	L
F2AL0100AWL30	1,00	4,00	1,00	40,00
F2AL0150AWL30	1,50	4,00	1,50	40,00
F2AL0200AWL30	2,00	6,00	2,00	45,00
F2AL0300AWL30	3,00	6,00	3,00	45,00
F2AL0400AWL30	4,00	6,00	4,00	45,00
F2AL0500AWL30	5,00	6,00	5,00	50,00
F2AL0600AWL30	6,00	6,00	6,00	50,00
F2AL0800AWL30	8,00	8,00	8,00	60,00
F2AL1000AWM30	10,00	10,00	10,00	70,00
F2AL1200AWM30	12,00	12,00	12,00	75,00
F2AL1600AWM30	16,00	16,00	16,00	80,00

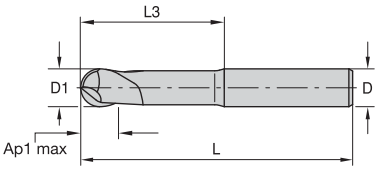
NOTE: For application data, see page M46.

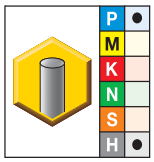
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

KC637M	D1	D	Ap1 max	L	L3
F2AL0600AWM30	6,00	6,00	6,00	80,00	6,00
F2AL0800AWM30	8,00	8,00	8,00	90,00	8,00
F2AL1000AWL30	10,00	10,00	10,00	100,00	10,00
F2AL1200AWX30	12,00	12,00	12,00	110,00	12,00
F2AL1600AWX30	16,00	16,00	16,00	140,00	16,00

NOTE: For application data, see page M47.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

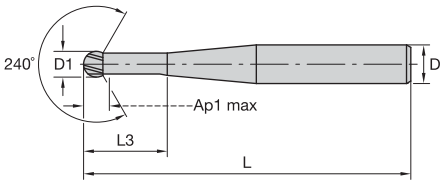
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

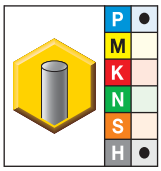
By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

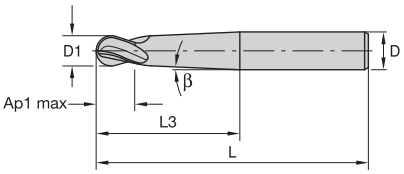
KC637M	D1	D	Ap1 max	L3	L
F2AB0200AWM30	2,00	6,00	1,00	17,00	70,00
F2AB0300AWM30	3,00	6,00	1,50	18,00	70,00
F2AB0400AWL30	4,00	6,00	2,00	19,00	80,00
F2AB0500AWL30	5,00	6,00	2,50	42,00	80,00
F2AB0600AWL30	6,00	6,00	3,00	42,00	80,00
F2AB0800AWL30	8,00	8,00	4,00	52,00	90,00
F2AB1000AWL30	10,00	10,00	5,00	58,00	100,00
F2AB1200AWX30	12,00	12,00	6,00	63,00	110,00

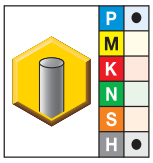
NOTE: For application data, see page M48.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

KC637M	D1	D	Ap1 max	L3	L	β
F4AL0300AWM30L040	3,00	6,00	4,00	4,00	75,00	2.85
F4AL0300AWL30L040	3,00	6,00	4,00	4,00	100,00	1.65
F4AL0400AWM30L050	4,00	6,00	5,00	5,00	75,00	2.67
F4AL0400AWL30L050	4,00	6,00	5,00	5,00	100,00	1.18
F4AL0500AWM30L060	5,00	6,00	6,00	6,00	75,00	1.33
F4AL0500AWL30L060	5,00	8,00	6,00	6,00	100,00	1.75
F4AL0600AWM30L080	6,00	8,00	8,00	8,00	75,00	2.38
F4AL0600AWL30L080	6,00	10,00	8,00	8,00	100,00	2.52
F4AL0800AWL30L120	8,00	10,00	12,00	12,00	100,00	1.52
F4AL0800AWX30L120	8,00	12,00	12,00	12,00	150,00	1.40
F4AL1000AWL30L150	10,00	12,00	15,00	15,00	100,00	1.83
F4AL1000AWX30L150	10,00	12,00	15,00	15,00	150,00	.80

NOTE: For application data, see page M49.

End Mill Tolerances

D1	tolerance h8	D	tolerance h6
≤3	+0/-0,014	≤3	+0/-0,006
>3–6	+0/-0,018	>3–6	+0/-0,008
>6–10	+0/-0,022	>6–10	+0/-0,009
>10–18	+0/-0,027	>10–18	+0/-0,011
>18–30	+0/-0,033	>18–30	+0/-0,013

F2AT...AWL/M/X20R...

Material Group		A		B	KC637M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,5 x D	0,4 x D	0,3 x D	120	160	fz	0,011	0,017	0,026	0,033	0,040	0,055	0,067	0,077
	4	0,5 x D	0,4 x D	0,3 x D	90	150	fz	0,010	0,016	0,024	0,030	0,036	0,049	0,059	0,069
H	1	0,5 x D	0,4 x D	0,3 x D	80	140	fz	0,010	0,016	0,024	0,030	0,036	0,049	0,059	0,069
	2	0,5 x D	0,3 x D	0,2 x D	60	80	fz	0,012	0,016	0,018	0,022	0,027	0,037	0,044	0,051
	3	0,5 x D	0,15 x D	0,15 x D	50	70	fz	0,009	0,013	0,014	0,018	0,021	0,029	0,035	0,041
	4	0,5 x D	0,1 x D	0,1 x D	40	60	fz	0,006	0,008	0,009	0,012	0,014	0,019	0,023	0,027

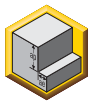
NOTE: These guidelines may require possible variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4AT...AWS/M/L/X20R...

Material Group		A		B	KC637M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,5 x D	0,4 x D	0,3 x D	120	160	fz	0,026	0,033	0,040	0,055	0,067	0,077
	4	0,5 x D	0,4 x D	0,3 x D	90	150	fz	0,024	0,030	0,036	0,049	0,059	0,069
H	1	0,5 x D	0,4 x D	0,3 x D	80	140	fz	0,024	0,030	0,036	0,049	0,059	0,069
	2	0,5 x D	0,3 x D	0,2 x D	60	80	fz	0,018	0,022	0,027	0,037	0,044	0,051
	3	0,5 x D	0,15 x D	0,15 x D	50	70	fz	0,014	0,018	0,021	0,029	0,035	0,041
	4	0,5 x D	0,1 x D	0,1 x D	40	60	fz	0,009	0,012	0,014	0,019	0,023	0,027

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

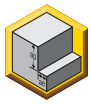
F4/5AJ...AWS/M/LX50R...



Material Group		A		B	KC633M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,4 x D	1 x D	160	180	fz	0,019	0,026	0,033	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1 x D	0,4 x D	0,75 x D	140	160	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1 x D	0,4 x D	0,75 x D	120	140	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1 x D	0,3 x D	0,5 x D	80	130	fz	0,013	0,018	0,022	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1 x D	0,15 x D	0,3 x D	70	100	fz	0,010	0,014	0,018	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1 x D	0,1 x D	0,15 x D	50	70	fz	0,007	0,009	0,012	0,014	0,019	0,023	0,027	0,034	0,039	0,044

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4/5/6AJ...A/BWS/M/LX50L...



Material Group		A		B	KC633M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,4 x D	1 x D	160	180	fz	0,019	0,026	0,033	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1 x D	0,4 x D	0,75 x D	140	160	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1 x D	0,4 x D	0,75 x D	120	140	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1 x D	0,3 x D	0,5 x D	80	130	fz	0,013	0,018	0,022	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1 x D	0,15 x D	0,3 x D	70	100	fz	0,010	0,014	0,018	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1 x D	0,1 x D	0,15 x D	50	70	fz	0,007	0,009	0,012	0,014	0,019	0,023	0,027	0,034	0,039	0,044

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AL...AWM/L/X20...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,052	0,080	0,108	0,137	0,168	0,231	0,279	0,324
	4	0,04 x D	0,04 x D	364	416	fz	0,048	0,073	0,099	0,125	0,152	0,207	0,249	0,288
H	1	0,03 x D	0,03 x D	290	406	fz	0,052	0,078	0,106	0,134	0,162	0,221	0,266	0,308
	2	0,03 x D	0,03 x D	203	348	fz	0,039	0,059	0,080	0,101	0,122	0,166	0,199	0,230
	3	0,02 x D	0,02 x D	216	324	fz	0,033	0,050	0,067	0,084	0,102	0,139	0,168	0,196
	4	0,02 x D	0,02 x D	180	252	fz	0,022	0,033	0,045	0,056	0,068	0,093	0,112	0,130

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,034	0,052	0,070	0,089	0,109	0,150	0,182	0,211
	4	0,1 x D	0,05 x D	238	272	fz	0,031	0,048	0,064	0,081	0,099	0,134	0,162	0,187
H	1	0,07 x D	0,1 x D	200	280	fz	0,039	0,060	0,080	0,102	0,123	0,168	0,203	0,234
	2	0,05 x D	0,04 x D	161	276	fz	0,034	0,052	0,070	0,088	0,107	0,145	0,174	0,201
	3	0,03 x D	0,03 x D	174	261	fz	0,031	0,047	0,063	0,079	0,096	0,130	0,158	0,183
	4	0,03 x D	0,03 x D	145	203	fz	0,021	0,031	0,042	0,053	0,064	0,087	0,105	0,122

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,015	0,023	0,031	0,040	0,049	0,067	0,081	0,094
	4	0,2 x D	0,1 x D	182	208	fz	0,014	0,021	0,029	0,036	0,044	0,060	0,073	0,084
H	1	0,15 x D	0,1 x D	140	196	fz	0,021	0,032	0,043	0,054	0,066	0,090	0,109	0,125
	2	0.1 x D	0,075 x D	119	204	fz	0,024	0,036	0,048	0,061	0,074	0,101	0,121	0,140
	3	0,05 x D	0,05 x D	138	207	fz	0,027	0,041	0,055	0,069	0,084	0,114	0,138	0,161
	4	0,05 x D	0,05 x D	115	161	fz	0,018	0,027	0,037	0,046	0,056	0,076	0,092	0,107

F6/8AV...ADL45...

Material Group		A		KC637M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
				Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1,5 x D	0,2 x D	120	160	fz	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1,5 x D	0,2 x D	90	150	fz	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1,5 x D	0,2 x D	80	140	fz	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1,5 x D	0,15 x D	60	80	fz	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1,5 x D	0,1 x D	50	70	fz	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1,5 x D	0,05 x D	40	60	fz	0,014	0,019	0,023	0,027	0,034	0,039	0,044

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

Solid End Milling Application Videos

Check out our new KennametalSolutions Channel on YouTube!
You can find application videos for our solid end milling products there.
Just go to: **www.youtube.com/KennametalSolutions.**

F2AL...AWL/M30..

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0256	0,0522	0,108	0,168	0,231	0,279	0,324	0,403
	4	0,04 x D	0,04 x D	364	416	fz	0,0239	0,0484	0,099	0,152	0,207	0,249	0,288	0,355
H	1	0,03 x D	0,03 x D	290	406	fz	0,0255	0,0517	0,106	0,162	0,221	0,266	0,308	0,379
	2	0,03 x D	0,03 x D	203	348	fz	0,0193	0,0391	0,080	0,122	0,166	0,199	0,230	0,281
	3	0,02 x D	0,02 x D	216	324	fz	0,0163	0,0328	0,067	0,102	0,139	0,168	0,196	0,244
	4	0,02 x D	0,02 x D	180	252	fz	0,0108	0,0219	0,045	0,068	0,093	0,112	0,130	0,162

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,017	0,034	0,070	0,109	0,150	0,182	0,211	0,262
	4	0,1 x D	0,05 x D	238	272	fz	0,016	0,031	0,064	0,099	0,134	0,162	0,187	0,230
H	1	0,07 x D	0,1 x D	200	280	fz	0,019	0,039	0,080	0,123	0,168	0,203	0,234	0,288
	2	0,05 x D	0,04 x D	161	276	fz	0,017	0,034	0,070	0,107	0,145	0,174	0,201	0,246
	3	0,03 x D	0,03 x D	174	261	fz	0,015	0,031	0,063	0,096	0,130	0,158	0,183	0,229
	4	0,03 x D	0,03 x D	145	203	fz	0,010	0,021	0,042	0,064	0,087	0,105	0,122	0,151

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,007	0,015	0,031	0,049	0,067	0,081	0,094	0,117
	4	0,2 x D	0,1 x D	182	208	fz	0,007	0,014	0,029	0,044	0,060	0,073	0,084	0,103
H	1	0,15 x D	0,1 x D	140	196	fz	0,010	0,021	0,043	0,066	0,090	0,109	0,125	0,154
	2	0,1 x D	0,075 x D	119	204	fz	0,012	0,024	0,048	0,074	0,101	0,121	0,140	0,171
	3	0,05 x D	0,05 x D	138	207	fz	0,013	0,027	0,055	0,084	0,114	0,138	0,161	0,200
	4	0,05 x D	0,05 x D	115	161	fz	0,009	0,018	0,037	0,056	0,076	0,092	0,107	0,133

F2AL...AWM/L/X30...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0256	0,0522	0,108	0,168	0,231	0,279	0,324	0,403
	4	0,04 x D	0,04 x D	364	416	fz	0,0239	0,0484	0,099	0,152	0,207	0,249	0,288	0,355
H	1	0,03 x D	0,03 x D	290	406	fz	0,0255	0,0517	0,106	0,162	0,221	0,266	0,308	0,379
	2	0,03 x D	0,03 x D	203	348	fz	0,0193	0,0391	0,080	0,122	0,166	0,199	0,230	0,281
	3	0,02 x D	0,02 x D	216	324	fz	0,0163	0,0328	0,067	0,102	0,139	0,168	0,196	0,244
	4	0,02 x D	0,02 x D	180	252	fz	0,0108	0,0219	0,045	0,068	0,093	0,112	0,130	0,162

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,017	0,034	0,070	0,109	0,150	0,182	0,211	0,262
	4	0,1 x D	0,05 x D	238	272	fz	0,016	0,031	0,064	0,099	0,134	0,162	0,187	0,230
H	1	0,07 x D	0,1 x D	200	280	fz	0,019	0,039	0,080	0,123	0,168	0,203	0,234	0,288
	2	0,05 x D	0,04 x D	161	276	fz	0,017	0,034	0,070	0,107	0,145	0,174	0,201	0,246
	3	0,03 x D	0,03 x D	174	261	fz	0,015	0,031	0,063	0,096	0,130	0,158	0,183	0,229
	4	0,03 x D	0,03 x D	145	203	fz	0,010	0,021	0,042	0,064	0,087	0,105	0,122	0,151

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,007	0,015	0,031	0,049	0,067	0,081	0,094	0,117
	4	0,2 x D	0,1 x D	182	208	fz	0,007	0,014	0,029	0,044	0,060	0,073	0,084	0,103
H	1	0,15 x D	0,1 x D	140	196	fz	0,010	0,021	0,043	0,066	0,090	0,109	0,125	0,154
	2	0,1 x D	0,075 x D	119	204	fz	0,012	0,024	0,048	0,074	0,101	0,121	0,140	0,171
	3	0,05 x D	0,05 x D	138	207	fz	0,013	0,027	0,055	0,084	0,114	0,138	0,161	0,200
	4	0,05 x D	0,05 x D	115	161	fz	0,009	0,018	0,037	0,056	0,076	0,092	0,107	0,133

F2AB...AWM/L/X30...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0522	0,108	0,168	0,231	0,279	0,324
P	4	0,04 x D	0,04 x D	364	416	fz	0,0484	0,099	0,152	0,207	0,249	0,288
H	1	0,03 x D	0,03 x D	290	406	fz	0,0517	0,106	0,162	0,221	0,266	0,308
H	2	0,03 x D	0,03 x D	203	348	fz	0,0391	0,080	0,122	0,166	0,199	0,230
H	3	0,02 x D	0,02 x D	216	324	fz	0,0328	0,067	0,102	0,139	0,168	0,196
H	4	0,02 x D	0,02 x D	180	252	fz	0,0219	0,045	0,068	0,093	0,112	0,130

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,034	0,070	0,109	0,150	0,182	0,211
P	4	0,1 x D	0,05 x D	238	272	fz	0,031	0,064	0,099	0,134	0,162	0,187
H	1	0,07 x D	0,1 x D	200	280	fz	0,039	0,080	0,123	0,168	0,203	0,234
H	2	0,05 x D	0,04 x D	161	276	fz	0,034	0,070	0,107	0,145	0,174	0,201
H	3	0,03 x D	0,03 x D	174	261	fz	0,031	0,063	0,096	0,130	0,158	0,183
H	4	0,03 x D	0,03 x D	145	203	fz	0,021	0,042	0,064	0,087	0,105	0,122

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,015	0,031	0,049	0,067	0,081	0,094
P	4	0,2 x D	0,1 x D	182	208	fz	0,014	0,029	0,044	0,060	0,073	0,084
H	1	0,15 x D	0,1 x D	140	196	fz	0,021	0,043	0,066	0,090	0,109	0,125
H	2	0,1 x D	0,075 x D	119	204	fz	0,024	0,048	0,074	0,101	0,121	0,140
H	3	0,05 x D	0,05 x D	138	207	fz	0,027	0,055	0,084	0,114	0,138	0,161
H	4	0,05 x D	0,05 x D	115	161	fz	0,018	0,037	0,056	0,076	0,092	0,107

F4AL...AWM/L/X30L...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,080	0,108	0,137	0,168	0,231	0,279
	4	0,04 x D	0,04 x D	364	416	fz	0,073	0,099	0,125	0,152	0,207	0,249
H	1	0,03 x D	0,03 x D	290	406	fz	0,078	0,106	0,134	0,162	0,221	0,266
	2	0,03 x D	0,03 x D	203	348	fz	0,059	0,080	0,101	0,122	0,166	0,199
	3	0,02 x D	0,02 x D	216	324	fz	0,050	0,067	0,084	0,102	0,139	0,168
	4	0,02 x D	0,02 x D	180	252	fz	0,033	0,045	0,056	0,068	0,093	0,112

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,052	0,070	0,089	0,109	0,150	0,182
	4	0,1 x D	0,05 x D	238	272	fz	0,048	0,064	0,081	0,099	0,134	0,162
H	1	0,07 x D	0,1 x D	200	280	fz	0,060	0,080	0,102	0,123	0,168	0,203
	2	0,05 x D	0,04 x D	161	276	fz	0,052	0,070	0,088	0,107	0,145	0,174
	3	0,03 x D	0,03 x D	174	261	fz	0,047	0,063	0,079	0,096	0,130	0,158
	4	0,03 x D	0,03 x D	145	203	fz	0,031	0,042	0,053	0,064	0,087	0,105

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,023	0,031	0,040	0,049	0,067	0,081
	4	0,2 x D	0,1 x D	182	208	fz	0,021	0,029	0,036	0,044	0,060	0,073
H	1	0,15 x D	0,1 x D	140	196	fz	0,032	0,043	0,054	0,066	0,090	0,109
	2	0,1 x D	0,075 x D	119	204	fz	0,036	0,048	0,061	0,074	0,101	0,121
	3	0,05 x D	0,05 x D	138	207	fz	0,041	0,055	0,069	0,084	0,114	0,138
	4	0,05 x D	0,05 x D	115	161	fz	0,027	0,037	0,046	0,056	0,076	0,092

MaxiMet™ Carbide End Mills for High Metal Removal Rates and Superior Surface Finishes

Primary Application

Designed to significantly reduce machining time in aluminium! The innovative geometry designs include a wiper facet for superior surface finish on aluminium parts. MaxiMet takes roughing and finishing cuts with one tool.

Features and Benefits

Higher Productivity and Profitability

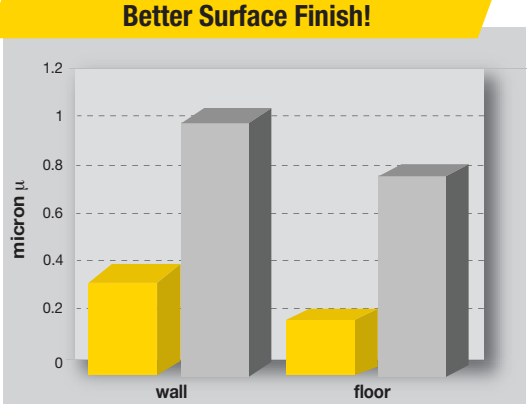
- Use only one tool for roughing and finishing operations.
- Slotting is effective up to full 1 x D axial depth. Side milling is effective up to 0,5 x D radial and 1,5 x D axial depth.
- Three-flute series uses unequal flute spacing for chatter-free performance.
- Effective in a full range of machine speeds.
- Multiple corner radii and extended neck configurations are available as standard.

Featured Application: Machining a Block

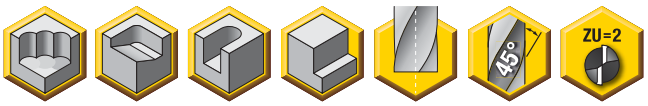
Operation: Slotting
Workpiece: Aluminium block
Material: 6061 aluminium
Solution: MaxiMet solid carbide end mill
Results: 100% better surface finish on walls and floor

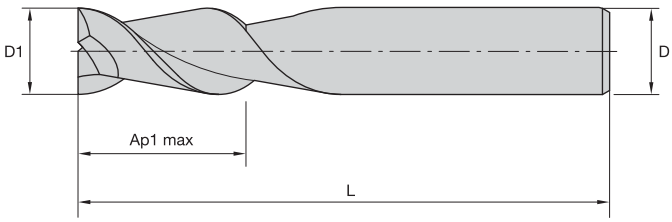
	COMPETITOR	MaxiMet
grade:	uncoated tools	uncoated tools
end mill:	16mm 3-flute	16mm 3-flute MaxiMet
material:	aluminium	aluminium
depth of cut (ap):	8mm	8mm
width of cut (ae):	8mm	8mm
speed (vc):	610 m/min	610 m/min
RPM (N):	12.000 RPM	12.000 RPM
feed rate (vf):	3.600 mm/min	3.600 mm/min
chip load per tooth (fz):	0,1 mm/th	0,1 mm/th
metal removal rate:	230 cm^3/min	230 cm^3/min

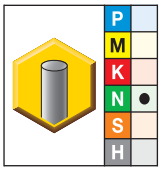
MaxiMet Delivered 100% Better Surface Finish!



- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.







● first choice
○ alternate choice

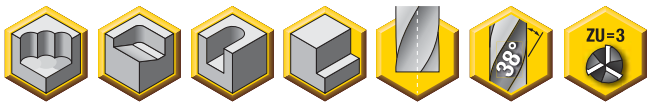
K600	D1	D	Ap1 max	L
ABDF0150A2AS	1,50	3,00	6,00	38,00
ABDF0200A2AS	2,00	3,00	8,00	38,00
ABDF0250A2AS	2,50	3,00	9,00	38,00
ABDF0300A2AS	3,00	3,00	12,00	38,00
ABDF0400A2AS	4,00	4,00	12,00	50,00
ABDF0500A2AS	5,00	5,00	14,00	50,00
ABDF0600A2AS	6,00	6,00	16,00	50,00
ABDF0800A2AS	8,00	8,00	20,00	63,00
ABDF1000A2AS	10,00	10,00	22,00	76,00
ABDF1200A2AS	12,00	12,00	25,00	76,00
ABDF1400A2AS	14,00	14,00	32,00	83,00
ABDF1600A2AS	16,00	16,00	32,00	89,00
ABDF1800A2AS	18,00	18,00	38,00	100,00
ABDF2000A2AS	20,00	20,00	38,00	104,00

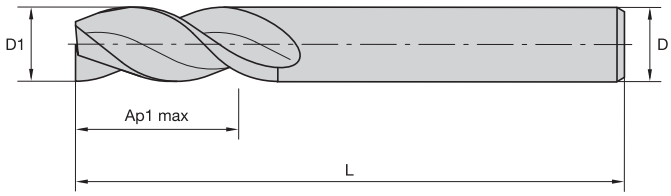
NOTE: For application data, see page M62.

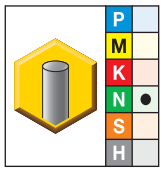
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.







● first choice
○ alternate choice

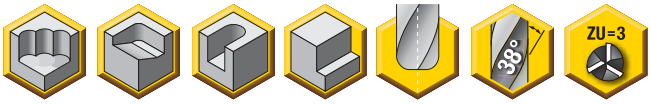
K600	D1	D	Ap1 max	L
ABDE0300A3AS	3,00	3,00	12,00	38,00
ABDE0400A3AS	4,00	4,00	12,00	50,00
ABDE0500A3AS	5,00	5,00	14,00	50,00
ABDE0600A3AS	6,00	6,00	16,00	50,00
ABDE0800A3AS	8,00	8,00	20,00	63,00
ABDE1000A3AS	10,00	10,00	22,00	76,00
ABDE1200A3AS	12,00	12,00	25,00	76,00
ABDE1400A3AS	14,00	14,00	32,00	83,00
ABDE1600A3AS	16,00	16,00	32,00	89,00
ABDE1800A3AS	18,00	18,00	38,00	100,00
ABDE2000A3AS	20,00	20,00	38,00	104,00

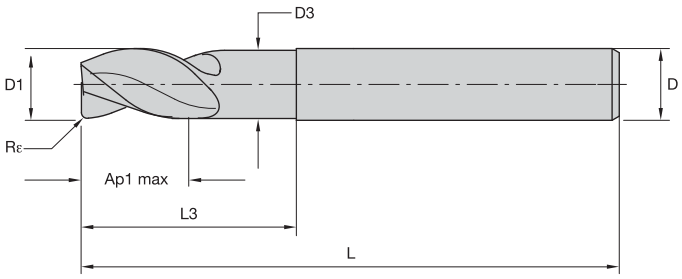
NOTE: For application data, see page M62.

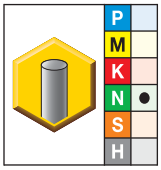
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.







● first choice
○ alternate choice

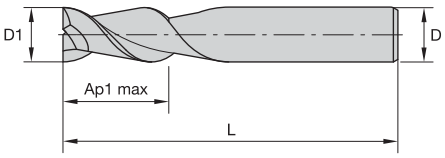
K600	D1	D	D3	Ap1 max	L3	L	Rε
ABDE0600A3ARA	6,00	6,00	5,40	9,00	18,00	63,00	0,20
ABDE0600A3ARB	6,00	6,00	5,40	9,00	18,00	63,00	0,50
ABDE0600A3ARC	6,00	6,00	5,40	9,00	18,00	63,00	1,00
ABDE0800A3ARA	8,00	8,00	7,20	12,00	24,00	76,00	0,20
ABDE0800A3ARB	8,00	8,00	7,20	12,00	24,00	76,00	0,50
ABDE0800A3ARC	8,00	8,00	7,20	12,00	24,00	76,00	1,00
ABDE1000A3ARA	10,00	10,00	9,00	15,00	30,00	89,00	0,20
ABDE1000A3ARB	10,00	10,00	9,00	15,00	30,00	89,00	0,50
ABDE1000A3ARC	10,00	10,00	9,00	15,00	30,00	89,00	1,50
ABDE1200A3ARA	12,00	12,00	10,80	18,00	36,00	100,00	0,20
ABDE1200A3ARB	12,00	12,00	10,80	18,00	36,00	100,00	0,50
ABDE1200A3ARC	12,00	12,00	10,80	18,00	36,00	100,00	1,50
ABDE1600A3ARA	16,00	16,00	14,40	24,00	48,00	110,00	0,20
ABDE1600A3ARB	16,00	16,00	14,40	24,00	48,00	110,00	0,50
ABDE1600A3ARC	16,00	16,00	14,40	24,00	48,00	110,00	1,00
ABDE1600A3ARD	16,00	16,00	14,40	24,00	48,00	110,00	2,00
ABDE2000A3ARA	20,00	20,00	18,80	30,00	60,00	125,00	0,20
ABDE2000A3ARB	20,00	20,00	18,80	30,00	60,00	125,00	0,50
ABDE2000A3ARC	20,00	20,00	18,80	30,00	60,00	125,00	1,50
ABDE2000A3ARD	20,00	20,00	18,80	30,00	60,00	125,00	4,00

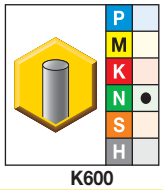
NOTE: For application data, see page M62.

End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

• Centre cutting.





● first choice
○ alternate choice

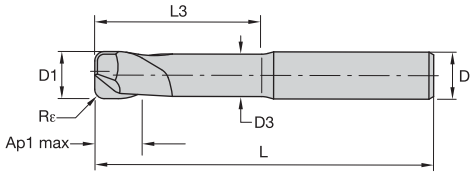
K600	D1	D	Ap1 max	L
F2AA0400ADL45	4,00	6,00	8,00	57,00
F2AA0500ADL45	5,00	6,00	10,00	57,00
F2AA0600ADL45	6,00	6,00	10,00	57,00
F2AA0800ADL45	8,00	8,00	16,00	63,00
F2AA1000ADL45	10,00	10,00	19,00	72,00
F2AA1200ADL45	12,00	12,00	22,00	83,00
F2AA1400ADL45	14,00	14,00	22,00	83,00
F2AA1600ADL45	16,00	16,00	26,00	92,00
F2AA1800ADL45	18,00	18,00	26,00	92,00
F2AA2000ADL45	20,00	20,00	32,00	104,00

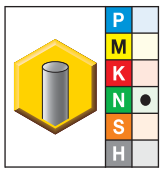
NOTE: For application data, see page M62.

End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

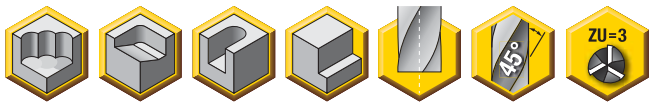
K600	D1	D	Ap1 max	L3	L	Rε	D3
F2AA0600AWM45R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F2AA0600AWM45R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F2AA0800AWM45R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F2AA0800AWM45R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F2AA1000AWL45R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F2AA1000AWL45R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F2AA1000AWL45R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F2AA1000AWL45R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F2AA1000AWL45R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F2AA1200AWL45R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F2AA1200AWL45R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F2AA1200AWL45R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F2AA1200AWL45R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F2AA1200AWL45R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F2AA1600AWX45R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F2AA1600AWX45R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F2AA1600AWX45R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F2AA1600AWX45R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F2AA1600AWX45R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F2AA2000AWX45R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F2AA2000AWX45R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F2AA2000AWX45R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F2AA2000AWX45R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F2AA2000AWX45R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F2AA2500AWX45R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F2AA2500AWX45R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F2AA2500AWX45R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F2AA2500AWX45R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F2AA2500AWX45R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

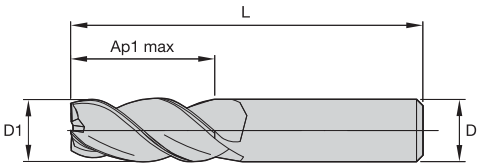
NOTE: For application data, see page M63.

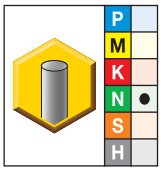
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

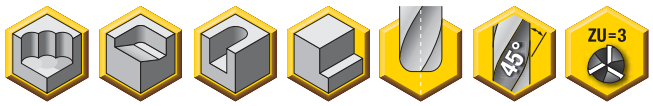
K600	D1	D	Ap1 max	L
F3AA0300AWS45	3,00	3,00	12,00	38,00
F3AA0400AWS45	4,00	4,00	12,00	50,00
F3AA0500AWS45	5,00	6,00	14,00	50,00
F3AA0600AWS45	6,00	6,00	16,00	50,00
F3AA0800AWM45	8,00	8,00	20,00	63,00
F3AA1000AWL45	10,00	10,00	22,00	76,00
F3AA1200AWL45	12,00	12,00	25,00	76,00
F3AA1400AWL45	14,00	14,00	32,00	89,00
F3AA1600AWL45	16,00	16,00	32,00	89,00
F3AA1800AWL45	18,00	18,00	38,00	100,00
F3AA2000AWX45	20,00	20,00	38,00	104,00

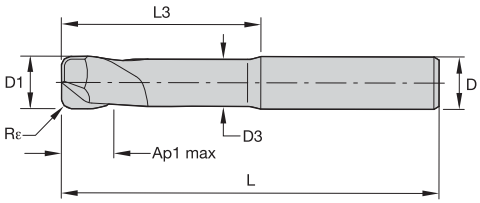
NOTE: For application data, see page M63.

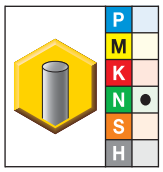
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimension.
- Centre cutting.







● first choice
○ alternate choice

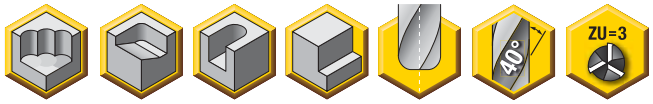
K600	D1	D3	D	Ap1 max	L3	L	Rε
F3AA0600AWM45R050	6,00	5,80	6,00	9,00	18,00	63,00	0,50
F3AA0600AWM45R100	6,00	5,80	6,00	9,00	18,00	63,00	1,00
F3AA0800AWM45R050	8,00	7,80	8,00	12,00	24,00	68,00	0,50
F3AA0800AWM45R100	8,00	7,80	8,00	12,00	24,00	68,00	1,00
F3AA1000AWL45R050	10,00	9,50	10,00	15,00	30,00	76,00	0,50
F3AA1000AWL45R100	10,00	9,50	10,00	15,00	30,00	76,00	1,00
F3AA1000AWL45R200	10,00	9,50	10,00	15,00	30,00	76,00	2,00
F3AA1000AWL45R300	10,00	9,50	10,00	15,00	30,00	76,00	3,00
F3AA1000AWL45R400	10,00	9,50	10,00	15,00	30,00	76,00	4,00
F3AA1200AWL45R050	12,00	11,50	12,00	18,00	36,00	84,00	0,50
F3AA1200AWL45R100	12,00	11,50	12,00	18,00	36,00	84,00	1,00
F3AA1200AWL45R200	12,00	11,50	12,00	18,00	36,00	84,00	2,00
F3AA1200AWL45R300	12,00	11,50	12,00	18,00	36,00	84,00	3,00
F3AA1200AWL45R400	12,00	11,50	12,00	18,00	36,00	84,00	4,00
F3AA1600AWX45R050	16,00	15,00	16,00	24,00	48,00	100,00	0,50
F3AA1600AWX45R100	16,00	15,00	16,00	24,00	48,00	100,00	1,00
F3AA1600AWX45R200	16,00	15,00	16,00	24,00	48,00	100,00	2,00
F3AA1600AWX45R300	16,00	15,00	16,00	24,00	48,00	100,00	3,00
F3AA1600AWX45R400	16,00	15,00	16,00	24,00	48,00	100,00	4,00
F3AA2000AWX45R050	20,00	19,00	20,00	30,00	60,00	115,00	0,50
F3AA2000AWX45R100	20,00	19,00	20,00	30,00	60,00	115,00	1,00
F3AA2000AWX45R200	20,00	19,00	20,00	30,00	60,00	115,00	2,00
F3AA2000AWX45R300	20,00	19,00	20,00	30,00	60,00	115,00	3,00
F3AA2000AWX45R400	20,00	19,00	20,00	30,00	60,00	115,00	4,00
F3AA2500AWX45R050	25,00	24,00	25,00	37,50	75,00	135,00	0,50
F3AA2500AWX45R100	25,00	24,00	25,00	37,50	75,00	135,00	1,00
F3AA2500AWX45R200	25,00	24,00	25,00	37,50	75,00	135,00	2,00
F3AA2500AWX45R300	25,00	24,00	25,00	37,50	75,00	135,00	3,00
F3AA2500AWX45R400	25,00	24,00	25,00	37,50	75,00	135,00	4,00

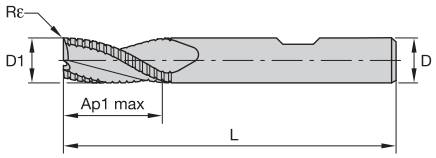
NOTE: For application data, see page M63.

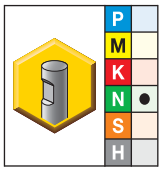
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Aluminium profile.
- Centre cutting.







● first choice
○ alternate choice

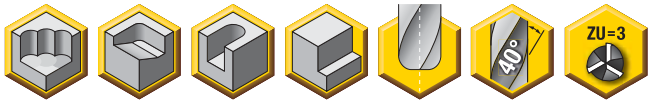
K600	D1	D	Ap1 max	L	Rε
F3BA0600BWS40	6,00	6,00	13,00	57,00	0,25
F3BA0800BWM40	8,00	8,00	16,00	63,00	0,25
F3BA1000BWM40	10,00	10,00	22,00	72,00	0,50
F3BA1200BWL40	12,00	12,00	26,00	83,00	0,50
F3BA1600BWL40	16,00	16,00	32,00	92,00	1,00
F3BA2000BWX40	20,00	20,00	38,00	104,00	1,00
F3BA2500BWX40	25,00	25,00	45,00	121,00	1,50

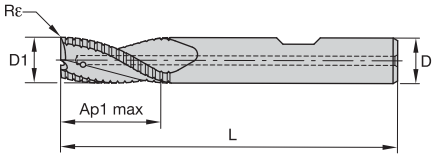
NOTE: For application data, see page M64.

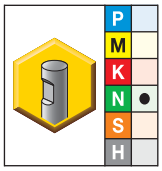
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Aluminium profile.
- Centre cutting.







● first choice
○ alternate choice

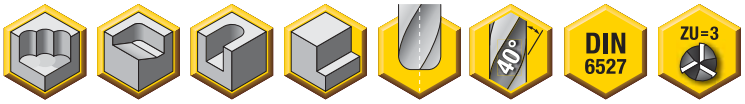
K600	D1	D	Ap1 max	L	Rε
F3BA0800BWM40C160	8,00	8,00	16,00	63,00	0,25
F3BA1000BWM40C220	10,00	10,00	22,00	72,00	0,50
F3BA1200BWL40C260	12,00	12,00	26,00	83,00	0,50
F3BA1600BWL40C320	16,00	16,00	32,00	92,00	1,00
F3BA2000BWX40C380	20,00	20,00	38,00	104,00	1,00
F3BA2500BWX40C450	25,00	25,00	45,00	121,00	1,50

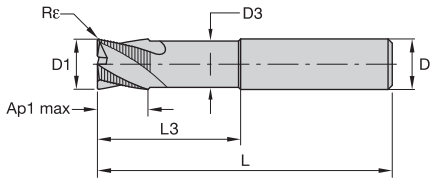
NOTE: For application data, see page M64.

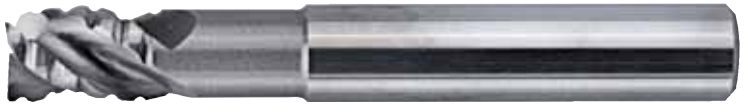
End Mill Tolerances

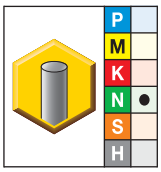
D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Aluminium profile.
- Centre cutting.









● first choice
○ alternate choice

K600	D1	D	Ap1 max	L3	L	Rε	D3
F3BA0600ADL40E180	6,00	6,00	8,00	18,00	57,00	0,25	5,00
F3BA0800ADL40E240	8,00	8,00	10,00	24,00	63,00	0,25	7,00
F3BA1000ADL40E300	10,00	10,00	12,00	30,00	72,00	0,25	9,00
F3BA1200ADL40E360	12,00	12,00	15,00	36,00	83,00	0,25	11,00
F3BA1600ADL40E480	16,00	16,00	20,00	48,00	92,00	1,00	15,00
F3BA2000ADL40E600	20,00	20,00	24,00	60,00	104,00	1,00	19,00

NOTE: For application data, see page M64.

End Mill Tolerances

D1	tolerance d11	D	Tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

Looking for a product that's not shown in this catalogue?

Check the Kennametal website!

Online product catalogue available 24/7

Visit **http://www.kennametal.com/endmilling/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL

ABDE... • ABDF...

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 1,5	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1,5 x D	0,5 x D	1 x D	500	2000	fz	0,014	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180
N	2	1,5 x D	0,5 x D	1 x D	500	1500	fz	0,012	0,016	0,032	0,049	0,065	0,081	0,097	0,130	0,162

ABDE... with Neck

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,060	0,080	0,100	0,120	0,160	0,200
N	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,054	0,072	0,090	0,108	0,144	0,180

F2AA...ADL45...

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
N	1	1,2 x D	0,5 x D	1 x D	500	2000	fz	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180
N	2	1,2 x D	0,5 x D	1 x D	500	1500	fz	0,032	0,049	0,065	0,081	0,097	0,113	0,130	0,162

NOTE: ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AA...AWM/L/X45R...

Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,054	0,072	0,090	0,108	0,144	0,180	0,225
N	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,049	0,065	0,081	0,097	0,130	0,162	0,203

F3AA...AWS/L45...

Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	0,7 x D	500	2000	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144	0,180
N	2	1 x D	0,5 x D	0,7 x D	500	1500	fz	0,024	0,032	0,049	0,065	0,081	0,097	0,130	0,162

F3AA...AWM/L/X45R...

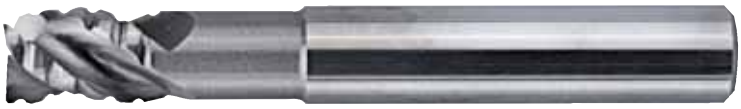
Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	18,0	20,0	25,0
N	1	1 x D	0,5 x D	0,7 x D	500	2000	fz	0,054	0,072	0,090	0,108	0,144	0,162	0,180	0,225
N	2	1 x D	0,5 x D	0,7 x D	500	1500	fz	0,049	0,065	0,081	0,097	0,130	0,146	0,162	0,203

NOTE: ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3BA...BWS/M/L/X30...

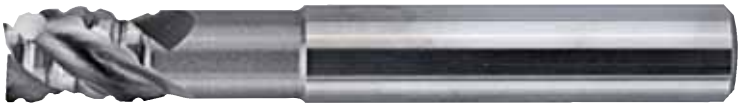
Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
N	1	1,5 x D	0,5 x D	1 x D	500	2000	fz	0,072	0,096	0,120	0,144	0,192	0,240	0,300
N	2	1,5 x D	0,5 x D	1 x D	500	1500	fz	0,065	0,086	0,108	0,130	0,173	0,216	0,270

F3BA..BWM/L/X30C...



Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
					Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	ap	min	max	mm	8,0	10,0	12,0	16,0	20,0	25,0
N	1	1,5 x D	0,5 x D	1,25 x D	500	2000	fz	0,096	0,120	0,144	0,192	0,240	0,300
N	2	1,5 x D	1,5 x D	1,25 x D	500	1500	fz	0,086	0,108	0,130	0,173	0,216	0,270

F3BA...ADL40E...



Material Group		A		B	K600			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
					Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,078	0,104	0,130	0,156	0,208	0,260
N	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,070	0,094	0,117	0,140	0,187	0,234

NOTE: These guidelines may require possible variations to achieve optimum results.
ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

Go Beyond™ Traditional CFRP Milling Grades • Maximise Productivity with KCN05™ Solid Carbide Routers

beyond

Primary Application

Kennametal has the correct milling solutions engineered for machining difficult CFRP (Carbon-Fibre reinforced polymer) and non-ferrous components. KCN05 solid carbide router products provide excellent tool life and produce smooth finishes with improved edge quality. The unique geometries are free cutting, reduce heat generation, and provide high-quality machined surfaces.

Features and Benefits

Compression-Style Router

- Cutters are designed to provide high feed rates.
- Produce excellent quality edges on both sides on the material.
- Up-cut/down-cut geometry establishes stable cutting conditions.

Down-Cut-Style Router

- Intended for surface work.
- Great ramping capabilities for producing pockets.
- Geometry produces down forces to eliminate surface delamination.

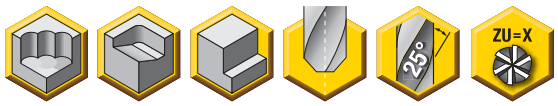
Burr-Style Router

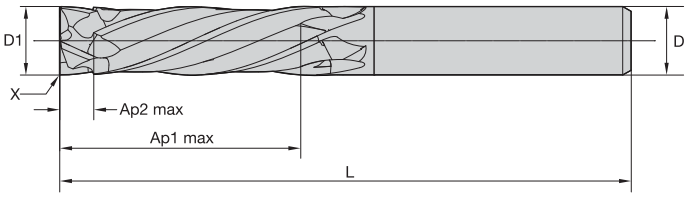
- Designed for trimming fibreglass and CFRP.
- Excellent temperature control.
- Good surface quality.

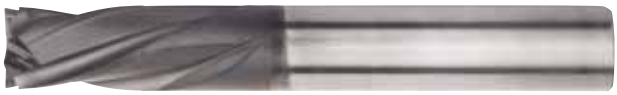
Ball-End-Style Router

- Specially designed for slotting and profiling.
- Excellent tool life.

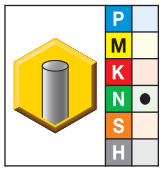
- Kennametal standard dimensions.
- Through-hole capability.
- Aerospace composites and fibreglass.
- Internal air coolant for ZU=4.







beyond



● first choice
○ alternate choice

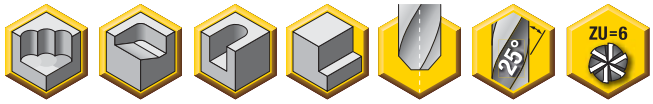
KCN05	D1	D	Ap1 max	Ap2 max	L	Z U
CCNC0600A3AH	6,00	6,00	18,01	2,50	63,00	3
CCNC0600A3BH	6,00	6,00	35,99	2,50	100,00	3
CCNC1000A4AH	10,00	10,00	18,01	2,50	83,00	4
CCNC1000A4BH	10,00	10,00	35,99	2,50	100,00	4
CCNC1200A4AH	12,00	12,00	18,01	2,50	83,00	4
CCNC1200A4BH	12,00	12,00	35,99	2,50	100,00	4

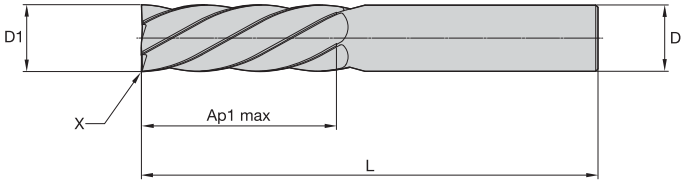
NOTE: For application data, see page M70.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+0/-0,05	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–24	+0/-0,013

- Kennametal standard dimensions.
- Aerospace composites and fibreglass.





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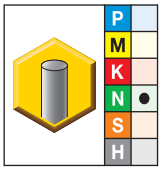


● first choice
○ alternate choice

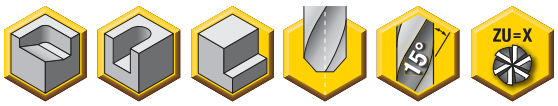
KCN05	D1	D	Ap1 max	L
CDDC0600A6AH	6,00	6,00	18,00	63,00
CDDC0600A6BH	6,00	6,00	36,00	100,00
CDDC1000A6AH	10,00	10,00	18,00	83,00
CDDC1000A6BH	10,00	10,00	36,00	100,00
CDDC1200A6AH	12,00	12,00	18,00	83,00
CDDC1200A6BH	12,00	12,00	36,00	100,00

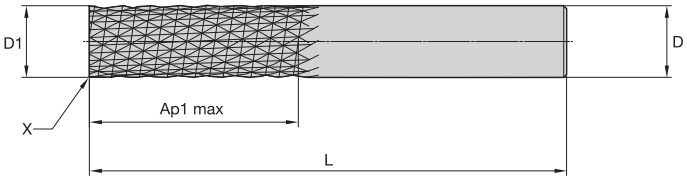
NOTE: For application data, see page M70.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+0/-0,05	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–24	+0/-0,013

- Kennametal standard dimensions.
- Aerospace composites and fibreglass.





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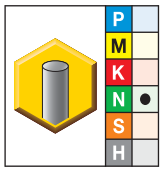
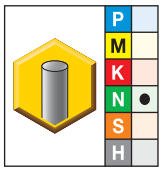


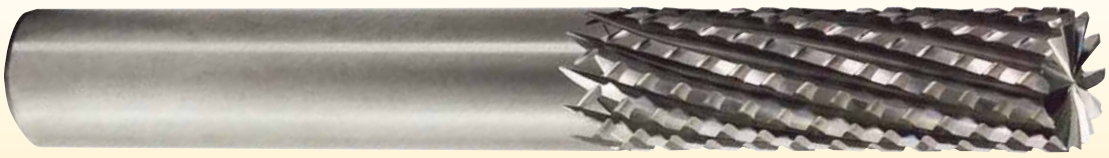


● first choice
○ alternate choice

K600	KCN05	D1	D	Ap1 max	L
CBDB0600AXAS	**CBDB0600AXAS**	6,00	6,00	18,00	63,00
CBDB0600AXBS	**CBDB0600AXBS**	6,00	6,00	36,00	100,00
CBDB1000AXAS	**CBDB1000AXAS**	10,00	10,00	18,00	83,00
CBDB1000AXBS	**CBDB1000AXBS**	10,00	10,00	36,00	100,00
CBDB1200AXAS	**CBDB1200AXAS**	12,00	12,00	18,00	83,00
CBDB1200AXBS	**CBDB1200AXBS**	12,00	12,00	36,00	100,00

NOTE: For application data, see page M70.
12 RHS/RHC flutes. 10 LHS/RHC flutes, 6 end teeth.
For tolerance table, see page M67.

Additional point styles are available upon request:

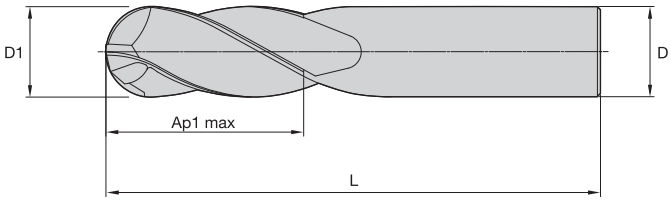


End Mill End Cutting

Drill-Point Cutting

Non-End Cutting

- Kennametal standard dimensions.
- Aerospace composites and fibreglass.



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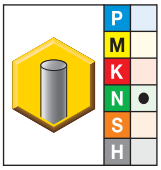


● first choice
○ alternate choice

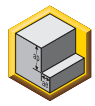
KCN05	D1	D	Ap1 max	L
CRBD1000A4AR	10,00	10,00	18,00	83,00
CRBD1200A4AR	12,00	12,00	18,00	83,00

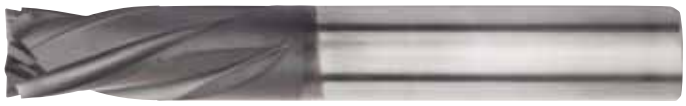
NOTE: For application data, see page M71.
For tolerance table, see page M67.

Solid End Milling Application Videos

Check out our new KennametalSolutions Channel on YouTube!
You can find application videos for our solid end milling products there.
Just go to: **www.youtube.com/KennametalSolutions.**

Compression-Style Router • CCNC • Metric



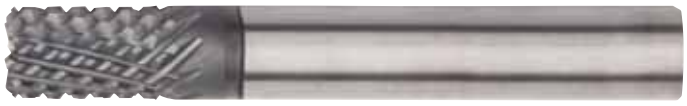


Material Group		A		beyond KCN05			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%.		
				Cutting Speed — vc m/min			D1 — Diameter		
		ap	ae	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	0,5 x D	100	150	fz	0,018	0,030	0,036

Down-Cut Router • CDDC • Metric

Material Group		A		beyond KCN05			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%.		
				Cutting Speed — vc m/min			D1 — Diameter		
		ap	ae	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	1 x D	100	150	fz	0,018	0,030	0,036

Burr-Style Router • CBDB • Metric



Material Group		A		B	K600		beyond KCN05			Feed per revolution — Frev information is for side milling (A). For Slotting (B), reduce fz by 10%.		
					Cutting Speed — vc m/min		Cutting Speed — vc m/min			D1 — Diameter		
		ap	ae	ap	min	max	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	0,2 x D	1 x D	80	120	100	150	Frev	0,15	0,25	0,30

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

Ball-Style Router • CRBD • Metric

Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Finishing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,04 x D	0,04 x D	416	468	fz	0,279	0,324

Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Semi-Finishing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,1 x D	0,05 x D	272	306	fz	0,182	0,211

Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Roughing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,2 x D	0,1 x D	208	234	fz	0,081	0,094

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordiongly on >12mm diameter.

High-Performance Solid Carbide End Mills • Micro

Features and Benefits

- End mills from cutting diameter D = 0,4mm.
- Short and long length of cut variations.
- Ball nose and square end offering.

Applications:

Side Milling

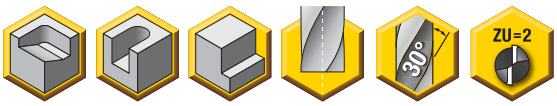
Slotting

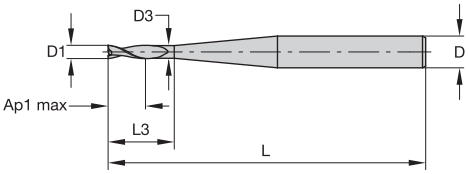
3-D Milling

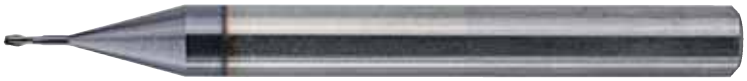
Workpiece Materials:

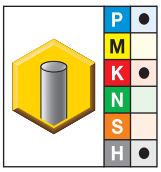
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

- Kennametal standard dimensions.
- Centre cutting.









● first choice
○ alternate choice

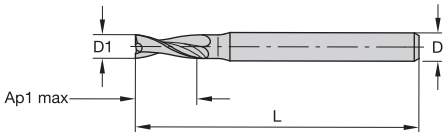
KC637M	D1	D	Ap1 max	L3	L	D3
F2AH0030AWS30L040	0,30	6,00	0,40	–	50,00	–
F2AH0040AWS30L060	0,40	6,00	0,60	–	50,00	–
F2AH0050AWS30L070	0,50	6,00	0,70	1,50	50,00	0,45
F2AH0050AWM30L070	0,50	6,00	0,70	2,50	60,00	0,45
F2AH0060AWS30L090	0,60	6,00	0,90	1,80	50,00	0,55
F2AH0060AWM30L090	0,60	6,00	0,90	3,00	60,00	0,55
F2AH0080AWS30L120	0,80	6,00	1,20	2,40	50,00	0,75
F2AH0080AWM30L120	0,80	6,00	1,20	4,00	60,00	0,75
F2AH0100AWS30L150	1,00	6,00	1,50	2,50	50,00	0,95
F2AH0100AWM30L150	1,00	6,00	1,50	5,00	60,00	0,95
F2AH0120AWS30L180	1,20	6,00	1,80	3,00	50,00	1,15
F2AH0120AWM30L180	1,20	6,00	1,80	6,00	60,00	1,15
F2AH0140AWS30L210	1,40	6,00	2,10	3,50	50,00	1,35
F2AH0140AWM30L210	1,40	6,00	2,10	7,00	60,00	1,35
F2AH0150AWS30L230	1,50	6,00	2,30	3,80	50,00	1,45
F2AH0150AWM30L230	1,50	6,00	2,30	7,50	60,00	1,45
F2AH0160AWS30L240	1,60	6,00	2,40	4,00	50,00	1,55
F2AH0160AWM30L240	1,60	6,00	2,40	8,00	60,00	1,55
F2AH0180AWS30L270	1,80	6,00	2,70	4,50	50,00	1,75
F2AH0180AWM30L270	1,80	6,00	2,70	9,00	60,00	1,75
F2AH0200AWS30L300	2,00	6,00	3,00	5,00	50,00	1,95
F2AH0200AWM30L300	2,00	6,00	3,00	10,00	60,00	1,95
F2AH0250AWS30L370	2,50	6,00	3,70	5,00	50,00	2,40
F2AH0250AWM30L370	2,50	6,00	3,70	12,50	60,00	2,40

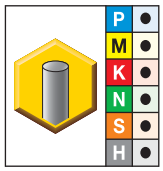
NOTE: For application data, see page M79.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

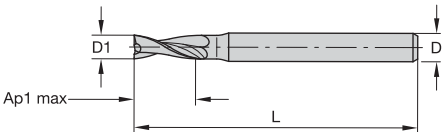
KC625M	D1	D	Ap1 max	L
F2AH0040AWS30	0,40	3,00	0,80	38,00
F2AH0050AWS30	0,50	3,00	1,00	38,00
F2AH0060AWS30	0,60	3,00	1,20	38,00
F2AH0080AWS30	0,80	3,00	1,60	38,00
F2AH0100AWS30	1,00	3,00	2,00	38,00
F2AH0120AWS30	1,20	3,00	2,40	38,00
F2AH0150AWS30	1,50	3,00	3,00	38,00
F2AH0180AWS30	1,80	3,00	3,60	38,00
F2AH0200AWS30	2,00	3,00	6,00	38,00
F2AH0250AWS30	2,50	3,00	7,00	38,00
F2AH0300AWS30	3,00	3,00	7,00	38,00

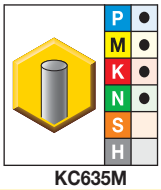
NOTE: For application data, see page M79.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

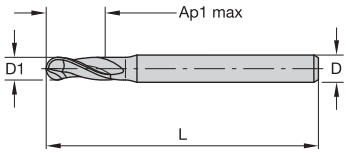
KC635M	D1	D	Ap1 max	L
F3AH0040AWS30	0,40	3,00	1,50	38,00
F3AH0050AWS30	0,50	3,00	1,50	38,00
F3AH0060AWS30	0,60	3,00	1,50	38,00
F3AH0080AWS30	0,80	3,00	1,50	38,00
F3AH0100AWS30	1,00	3,00	2,00	38,00
F3AH0120AWS30	1,20	3,00	2,00	38,00
F3AH0150AWS30	1,50	3,00	2,00	38,00
F3AH0180AWS30	1,80	3,00	2,00	38,00
F3AH0200AWS30	2,00	3,00	8,00	38,00
F3AH0250AWS30	2,50	3,00	9,00	38,00
F3AH0300AWS30	3,00	3,00	12,00	38,00

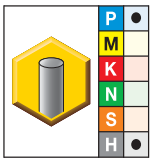
NOTE: For application data, see page M80.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

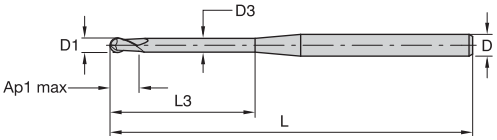
KC637M	D1	D	Ap1 max	L
F2AL0050AWS30	0,50	3,00	1,50	38,00
F2AL0060AWS30	0,60	3,00	1,60	38,00
F2AL0080AWS30	0,80	3,00	1,80	38,00
F2AL0100AWS30	1,00	3,00	2,00	38,00
F2AL0120AWS30	1,20	3,00	2,20	38,00
F2AL0150AWS30	1,50	3,00	2,50	38,00
F2AL0200AWS30	2,00	3,00	3,00	38,00
F2AL0250AWS30	2,50	3,00	4,00	38,00
F2AL0300AWS30	3,00	3,00	5,00	38,00

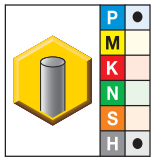
NOTE: For application data, see page M81.

End Mill Tolerances

D1	tolerance h8	D	tolerance h6
≤3	+0/-0,014	≤3	+0/-0,006
>3–6	+0/-0,018	>3–6	+0/-0,008
>6–10	+0/-0,022	>6–10	+0/-0,009
>10–18	+0/-0,027	>10–18	+0/-0,011
>18–30	+0/-0,033	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

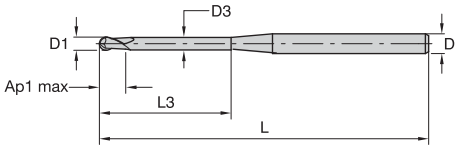
KC637M	D1	D	Ap1 max	L3	L	D3
F2AL0030AWS30L030	0,30	6,00	0,30	–	50,00	–
F2AL0040AWS30L040	0,40	6,00	0,40	–	50,00	–
F2AL0050AWS30L050	0,50	6,00	0,50	1,50	50,00	0,45
F2AL0060AWS30L060	0,60	6,00	0,60	1,80	50,00	0,55
F2AL0080AWS30L080	0,80	6,00	0,80	2,40	50,00	0,75
F2AL0100AWS30L100	1,00	6,00	1,00	2,50	50,00	0,95
F2AL0120AWS30L120	1,20	6,00	1,20	3,00	50,00	1,15
F2AL0140AWS30L140	1,40	6,00	1,40	3,50	50,00	1,35
F2AL0150AWS30L150	1,50	6,00	1,50	3,80	50,00	1,45
F2AL0160AWS30L160	1,60	6,00	1,60	4,00	50,00	1,55
F2AL0180AWS30L180	1,80	6,00	1,80	4,50	50,00	1,75
F2AL0200AWS30L200	2,00	6,00	2,00	5,00	50,00	1,95
F2AL0250AWS30L250	2,50	6,00	2,50	5,00	50,00	2,40
F2AL0300AWS30L300	3,00	6,00	3,00	6,00	50,00	2,85
F2AL0400AWS30L400	4,00	6,00	4,00	6,00	50,00	3,85
F2AL0600AWS30L600	6,00	6,00	6,00	9,00	50,00	5,85

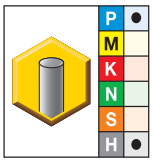
NOTE: For application data, see page M82.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

KC637M	D1	D	Ap1 max	L3	L	D3
F2AL0050AWM30E050	0,50	4,00	1,00	5,00	65,00	0,46
F2AL0050AWM30E080	0,50	4,00	1,00	8,00	65,00	0,46
F2AL0060AWM30E060	0,60	4,00	1,00	6,00	65,00	0,56
F2AL0060AWM30E090	0,60	4,00	1,00	9,00	65,00	0,56
F2AL0080AWM30E040	0,80	4,00	1,30	4,00	65,00	0,76
F2AL0080AWM30E080	0,80	4,00	1,30	8,00	65,00	0,76
F2AL0080AWM30E120	0,80	4,00	1,30	12,00	65,00	0,76
F2AL0080AWM30E160	0,80	4,00	1,30	16,00	65,00	0,76
F2AL0100AWM30E030	1,00	4,00	1,60	3,00	65,00	0,95
F2AL0100AWM30E060	1,00	4,00	1,60	6,00	65,00	0,95
F2AL0100AWM30E100	1,00	4,00	1,60	10,00	65,00	0,95
F2AL0100AWM30E160	1,00	4,00	1,60	16,00	65,00	0,95
F2AL0150AWM30E030	1,50	4,00	2,40	3,00	65,00	1,44
F2AL0150AWM30E060	1,50	4,00	2,40	6,00	65,00	1,44
F2AL0150AWM30E100	1,50	4,00	2,40	10,00	65,00	1,44
F2AL0150AWM30E160	1,50	4,00	2,40	16,00	65,00	1,44
F2AL0200AWM30E60	2,00	4,00	3,20	6,00	65,00	1,94
F2AL0200AWM30E100	2,00	4,00	3,20	10,00	65,00	1,94
F2AL0200AWM30E160	2,00	4,00	3,20	16,00	65,00	1,94
F2AL0200AWM30E0200	2,00	4,00	3,20	20,00	65,00	1,94
F2AL0300AWM30E080	3,00	4,00	4,50	8,00	65,00	2,92
F2AL0300AWM30E120	3,00	4,00	4,50	12,00	65,00	2,92
F2AL0300AWM30E160	3,00	4,00	4,50	16,00	65,00	2,92
F2AL0300AWM30E0300	3,00	4,00	4,50	30,00	65,00	2,92
F2AL0400AWM30E060	4,00	6,00	6,00	6,00	70,00	3,92
F2AL0400AWM30E100	4,00	6,00	6,00	10,00	70,00	3,92
F2AL0400AWM30E140	4,00	6,00	6,00	14,00	70,00	3,92
F2AL0400AWM30E160	4,00	6,00	6,00	16,00	70,00	3,92

NOTE: For application data, see page M83.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

F2AH...AWS30L...

Material Group		A		B	KC637M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	0,3	0,5	0,8	1,0	1,5	2,0	2,5	3,0
P	2	1,25 x D	0,25 x D	0,75 x D	140	190	fz	0,0020	0,0034	0,0054	0,0069	0,0104	0,0138	0,0174	0,0210
P	3	1,25 x D	0,25 x D	0,75 x D	120	160	fz	0,0016	0,0028	0,0044	0,0057	0,0085	0,0113	0,0143	0,0173
P	4	1,25 x D	0,25 x D	0,5 x D	90	150	fz	0,0015	0,0026	0,0041	0,0052	0,0079	0,0105	0,0132	0,0159
P	5	1,25 x D	0,25 x D	0,5 x D	60	100	fz	0,0014	0,0023	0,0037	0,0047	0,0071	0,0094	0,0118	0,0143
K	1	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,0020	0,0034	0,0054	0,0069	0,0104	0,0138	0,0174	0,0210
K	2	1,25 x D	0,25 x D	0,5 x D	110	140	fz	0,0016	0,0028	0,0044	0,0057	0,0085	0,0113	0,0143	0,0173
H	1	1,25 x D	0,25 x D	0,5 x D	80	140	fz	0,0015	0,0026	0,0041	0,0052	0,0079	0,0105	0,0132	0,0159
H	2	1,25 x D	0,25 x D	0,3 x D	70	120	fz	0,0012	0,0020	0,0031	0,0079	0,0100	0,0120	0,0141	0,0162
H	3	1,25 x D	0,25 x D	0,25 x D	60	90	fz	0,0009	0,0015	0,0025	0,0062	0,0078	0,0095	0,0111	0,0127

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For tools with reach >3 x D, reduce fz by 20%.
For tools with reach >5 x D, reduce fz by 30%.
For tools with reach >10 x D, reduce vc and fz by 20–30%.

F2AH...AWS30...

Material Group		A		B	KC625M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	0,4	0,6	0,8	1,0	1,2	1,5	2,0	3,0
P	1	1 x D	0,1 x D	0,25 x D	150	200	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
P	2	1 x D	0,1 x D	0,25 x D	140	190	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
P	3	1 x D	0,1 x D	0,25 x D	120	160	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
P	4	1 x D	0,1 x D	0,25 x D	90	150	fz	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016
P	5	1 x D	0,1 x D	0,25 x D	60	100	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
M	1	1 x D	0,1 x D	0,25 x D	90	115	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
M	2	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
K	1	1 x D	0,1 x D	0,25 x D	120	150	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
K	2	1 x D	0,1 x D	0,25 x D	110	130	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
N	1	1 x D	0,1 x D	0,25 x D	500	2000	fz	0,004	0,006	0,008	0,010	0,012	0,015	0,020	0,030
N	2	1 x D	0,1 x D	0,25 x D	500	1500	fz	0,003	0,005	0,006	0,008	0,010	0,012	0,016	0,024
N	3	1 x D	0,1 x D	0,25 x D	500	1000	fz	0,004	0,005	0,007	0,009	0,011	0,014	0,018	0,027
S	1	1 x D	0,1 x D	0,25 x D	50	90	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
S	4	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
H	1	1 x D	0,1 x D	0,25 x D	80	140	fz	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016

NOTE: These guidelines may require possible variations to achieve optimum results.

F3AH...AWS30...

Material Group		A		B	KC635M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	0,4	0,5	0,6	0,8	1,0	1,2	1,5
P	1	1 x D	0,1 x D	0,25 x D	150	200	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	2	1 x D	0,1 x D	0,25 x D	140	190	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	3	1 x D	0,1 x D	0,25 x D	120	160	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
	4	1 x D	0,1 x D	0,25 x D	90	150	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009
M	1	1 x D	0,1 x D	0,25 x D	90	115	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
	2	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,003	0,004	0,005	0,006	0,008
K	1	1 x D	0,1 x D	0,25 x D	120	150	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	2	1 x D	0,1 x D	0,25 x D	110	130	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
N	1	1 x D	0,1 x D	0,25 x D	250	1000	fz	0,005	0,006	0,007	0,009	0,012	0,014	0,017
	2	1 x D	0,1 x D	0,25 x D	250	750	fz	0,004	0,005	0,006	0,007	0,009	0,011	0,014
	3	1 x D	0,1 x D	0,25 x D	250	750	fz	0,004	0,005	0,006	0,008	0,010	0,012	0,016

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

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F2AL...AWS30...

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Finishing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796
	4	0,04 x D	0,04 x D	364	416	fz	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734
H	1	0,03 x D	0,03 x D	290	406	fz	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784
	2	0,03 x D	0,03 x D	203	348	fz	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592
	3	0,02 x D	0,02 x D	216	324	fz	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497
	4	0,02 x D	0,02 x D	180	252	fz	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Semi-Finishing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518
	4	0,1 x D	0,05 x D	238	272	fz	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477
H	1	0,07 x D	0,1 x D	200	280	fz	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596
	2	0,05 x D	0,04 x D	161	276	fz	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518
	3	0,03 x D	0,03 x D	174	261	fz	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466
	4	0,03 x D	0,03 x D	145	203	fz	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Roughing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232
	4	0,2 x D	0,1 x D	182	208	fz	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213
H	1	0,15 x D	0,1 x D	140	196	fz	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319
	2	0,1 x D	0,075 x D	119	204	fz	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360
	3	0,05 x D	0,05 x D	138	207	fz	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408
	4	0,05 x D	0,05 x D	115	161	fz	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272

F2AL...AWS30L...

Material Group		A		KC637M			Feed per Tooth — Finishing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796
	4	0,04 x D	0,04 x D	364	416	fz	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734
H	1	0,03 x D	0,03 x D	290	406	fz	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784
	2	0,03 x D	0,03 x D	203	348	fz	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592
	3	0,02 x D	0,02 x D	216	324	fz	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497
	4	0,02 x D	0,02 x D	180	252	fz	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331

Material Group		A		KC637M			Feed per Tooth — Semi-Finishing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518
	4	0,1 x D	0,05 x D	238	272	fz	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477
H	1	0,07 x D	0,1 x D	200	280	fz	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596
	2	0,05 x D	0,04 x D	161	276	fz	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518
	3	0,03 x D	0,03 x D	174	261	fz	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466
	4	0,03 x D	0,03 x D	145	203	fz	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311

Material Group		A		KC637M			Feed per Tooth — Roughing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232
	4	0,2 x D	0,1 x D	182	208	fz	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213
H	1	0,15 x D	0,1 x D	140	196	fz	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319
	2	0,1 x D	0,075 x D	119	204	fz	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360
	3	0,05 x D	0,05 x D	138	207	fz	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408
	4	0,05 x D	0,05 x D	115	161	fz	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272

F2AL...AWM30E...

Material Group		A		KC637M			Feed per Tooth — Finishing												
				Cutting Speed — vc m/min			D1 — Diameter												
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,04 x D	0,04 x D	374	421	fz	0,0076	0,0102	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796	0,1062	0,1327	0,0796
	4	0,04 x D	0,04 x D	328	374	fz	0,0071	0,0095	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734	0,0979	0,1223	0,0734
H	1	0,03 x D	0,03 x D	261	365	fz	0,0076	0,0102	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784	0,1045	0,1307	0,0784
	2	0,03 x D	0,03 x D	183	313	fz	0,0058	0,0077	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592	0,0789	0,0986	0,0592
	3	0,02 x D	0,02 x D	194	292	fz	0,0049	0,0065	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497	0,0663	0,0828	0,0497
	4	0,02 x D	0,02 x D	162	227	fz	0,0032	0,0043	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331	0,0442	0,0552	0,0331

Material Group		A		KC637M			Feed per Tooth — Semi-Finishing												
				Cutting Speed — vc m/min			D1 — Diameter												
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,1 x D	0,05 x D	245	275	fz	0,0050	0,0066	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518	0,0690	0,0863	0,0518
	4	0,1 x D	0,05 x D	214	245	fz	0,0046	0,0062	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477	0,0636	0,0795	0,0477
H	1	0,07 x D	0,1 x D	180	252	fz	0,0058	0,0077	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596	0,0795	0,0994	0,0596
	2	0,05 x D	0,04 x D	145	248	fz	0,0050	0,0067	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518	0,0690	0,0863	0,0518
	3	0,03 x D	0,03 x D	157	235	fz	0,0045	0,0061	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466	0,0621	0,0777	0,0466
	4	0,03 x D	0,03 x D	131	183	fz	0,0030	0,0040	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311	0,0414	0,0518	0,0311

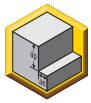
Material Group		A		KC637M			Feed per Tooth — Roughing												
				Cutting Speed — vc m/min			D1 — Diameter												
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,2 x D	0,1 x D	187	211	fz	0,0022	0,0030	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232	0,0309	0,0386	0,0232
	4	0,2 x D	0,1 x D	164	187	fz	0,0021	0,0028	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213	0,0285	0,0356	0,0213
H	1	0,15 x D	0,1 x D	126	176	fz	0,0031	0,0041	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319	0,0426	0,0532	0,0319
	2	0,1 x D	0,075 x D	107	184	fz	0,0035	0,0047	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360	0,0480	0,0600	0,0360
	3	0,05 x D	0,05 x D	124	186	fz	0,0040	0,0053	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408	0,0544	0,0680	0,0408
	4	0,05 x D	0,05 x D	104	145	fz	0,0027	0,0035	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272	0,0362	0,0453	0,0272

High-Performance Solid Carbide End Mills • Finishing

Features and Benefits

- Best surface finish.
- Keyway cutter portfolio.
- High helix portfolio.
- Multiflute finisher.

Applications:



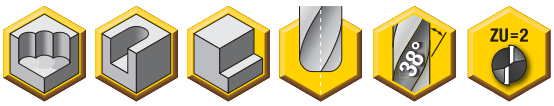
Side Milling

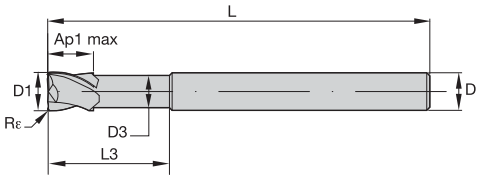
Slotting

Workpiece Materials:

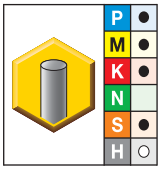
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

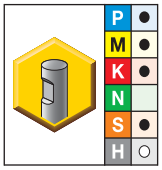
- Kennametal standard dimensions.
- Centre cutting.





NEW!





● first choice
○ alternate choice

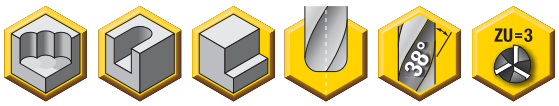
KC643M	KC643M	D1	D	D3	Ap1 max	L	L3	Rε
F2AU0180ADK38	–	1,80	4,00	1,77	2,00	36,00	8,00	0,12
F2AU0280ADK38	**F2AU0280BDK38**	2,80	6,00	2,77	4,00	50,00	14,00	0,12
–	**F2AU0380BDK38**	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F2AU0380ADK38	–	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F2AU0480ADK38	**F2AU0480BDK38**	4,80	6,00	4,76	6,00	54,00	18,00	0,20
F2AU0575ADK38	**F2AU0575BDK38**	5,75	6,00	5,71	7,00	54,00	18,00	0,20
F2AU0775ADK38	**F2AU0775BDK38**	7,75	8,00	7,70	9,00	58,00	22,00	0,20
F2AU0970ADK38	**F2AU0970BDK38**	9,70	10,00	9,65	11,00	66,00	26,00	0,33
F2AU1170ADK38	**F2AU1170BDK38**	11,70	12,00	11,64	12,00	73,00	28,00	0,33
F2AU1370ADK38	**F2AU1370BDK38**	13,70	14,00	13,64	14,00	75,00	30,00	0,33
F2AU1570ADK38	**F2AU1570BDK38**	15,70	16,00	15,64	16,00	82,00	34,00	0,33
F2AU1770ADK38	**F2AU1770BDK38**	17,70	18,00	17,64	18,00	84,00	36,00	0,40
F2AU1970ADK38	**F2AU1970BDK38**	19,70	20,00	19,63	20,00	92,00	42,00	0,40

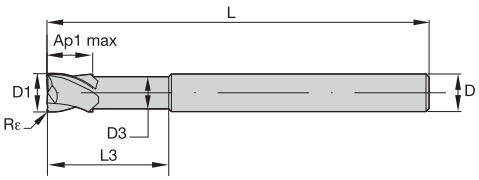
NOTE: For application data, see page M92.

End Mill Tolerances

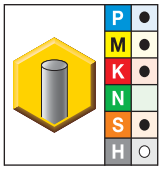
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

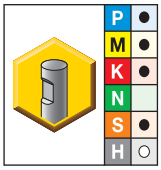
- Kennametal standard dimensions.
- Centre cutting.





NEW!





● first choice
○ alternate choice

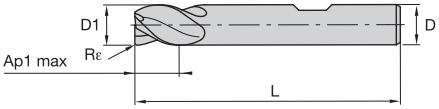
KC643M	KC643M	D1	D	D3	Ap1 max	L	L3	Rε
F3AU0280ADK38	**F3AU0280BDK38**	2,80	6,00	2,77	4,00	50,00	14,00	0,12
F3AU0380ADK38	**F3AU0380BDK38**	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F3AU0480ADK38	**F3AU0480BDK38**	4,80	6,00	4,76	6,00	54,00	18,00	0,20
F3AU0575ADK38	**F3AU0575BDK38**	5,75	6,00	5,71	7,00	54,00	18,00	0,20
F3AU0775ADK38	**F3AU0775BDK38**	7,75	8,00	7,70	9,00	58,00	22,00	0,20
F3AU0970ADK38	**F3AU0970BDK38**	9,70	10,00	9,65	11,00	66,00	26,00	0,33
F3AU1170ADK38	**F3AU1170BDK38**	11,70	12,00	11,64	12,00	73,00	28,00	0,33
F3AU1370ADK38	**F3AU1370BDK38**	13,70	14,00	13,64	14,00	75,00	30,00	0,33
F3AU1570ADK38	**F3AU1570BDK38**	15,70	16,00	15,64	16,00	82,00	34,00	0,33
F3AU1770ADK38	**F3AU1770BDK38**	17,70	18,00	17,64	18,00	84,00	36,00	0,40
F3AU1970ADK38	**F3AU1970BDK38**	19,70	20,00	19,63	20,00	92,00	42,00	0,40

NOTE: For application data, see page M92.

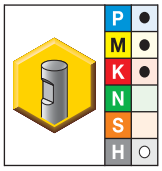
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.



beyond



● first choice
○ alternate choice

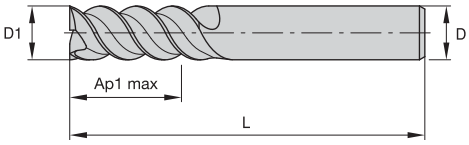
KCPM15	D1	D	Ap1 max	L	Rε
F3AS0300BDK35	3,00	6,00	4,00	50,00	0,25
F3AS0400BDK35	4,00	6,00	5,00	54,00	0,25
F3AS0500BDK35	5,00	6,00	6,00	54,00	0,25
F3AS0600BDK35	6,00	6,00	7,00	54,00	0,45
F3AS0800BDK35	8,00	8,00	9,00	58,00	0,45
F3AS1000BDK35	10,00	10,00	11,00	66,00	0,45
F3AS1200BDK35	12,00	12,00	12,00	73,00	0,45
F3AS1400BDK35	14,00	14,00	14,00	75,00	0,45
F3AS1600BDK35	16,00	16,00	16,00	82,00	0,45
F3AS1800BDK35	18,00	18,00	18,00	84,00	0,45
F3AS2000BDK35	20,00	20,00	20,00	92,00	0,45

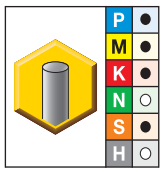
NOTE: For application data, see page M93.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

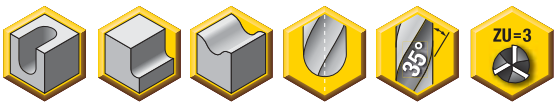
KC625M	D1	D	Ap1 max	L
F3AJ0600ADL60	6,00	6,00	13,00	57,00
F3AJ0800ADL60	8,00	8,00	19,00	63,00
F3AJ1000ADL60	10,00	10,00	22,00	72,00
F3AJ1200ADL60	12,00	12,00	26,00	83,00
F3AJ1400ADL60	14,00	14,00	26,00	83,00
F3AJ1600ADL60	16,00	16,00	32,00	92,00
F3AJ1800ADL60	18,00	18,00	32,00	92,00
F3AJ2000ADL60	20,00	20,00	38,00	104,00

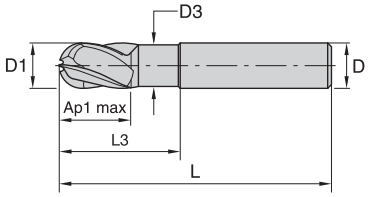
NOTE: For application data, see page M93.

End Mill Tolerances

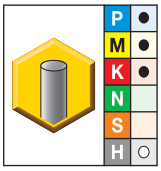
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





beyond



● first choice
○ alternate choice

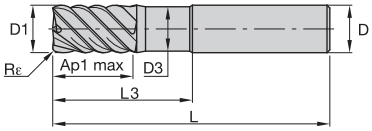
KCPM15	D1	D	Ap1 max	L3	L	D3
F3AW0600AWL35E120	6,00	6,00	6,00	12,00	76,00	5,80
F3AW0800AWL35E160	8,00	8,00	8,00	16,00	100,00	7,80
F3AW1000AWX35E200	10,00	10,00	10,00	20,00	121,50	9,50
F3AW1200AWX35E240	12,00	12,00	12,00	24,00	125,00	11,50
F3AW1600AWX35E320	16,00	16,00	16,00	32,00	150,00	15,00

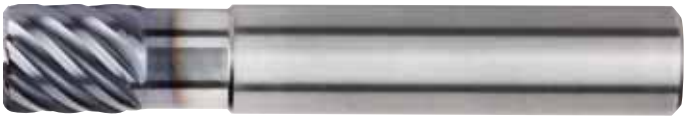
NOTE: For application data, see page M94.

End Mill Tolerances

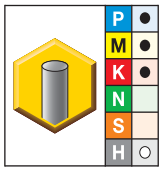
D1	tolerance e8	D	tolerance h6
All	+0/-0,03	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–30	+0/-0,013

• Centre cutting.





beyond



● first choice
○ alternate choice

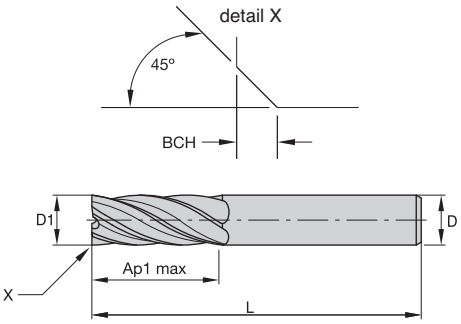
KCPM15	D1	D	Ap1 max	L3	L	Rε	D3	Z U
F8AJ0800ADK45E160	8,00	8,00	8,00	16,00	58,00	1,00	7,00	8
F8AJ1000ADK45E200	10,00	10,00	10,00	20,00	66,00	1,00	9,00	8
F8AJ1200ADK45E240	12,00	12,00	12,00	24,00	73,00	1,00	11,00	8
F10AJ1600ADK45E320	16,00	16,00	16,00	32,00	82,00	1,00	15,00	10
F10AJ2000ADK45E400	20,00	20,00	20,00	40,00	92,00	1,00	19,00	10

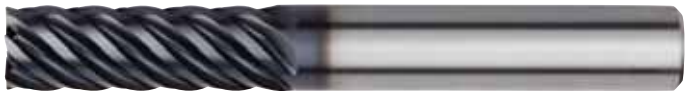
NOTE: For application data, see page M94.

End Mill Tolerances

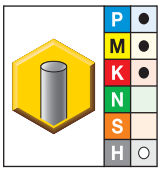
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Non-centre cutting.





beyond



● first choice
○ alternate choice

KCPM15	D1	D	Ap1 max	L	BCH	Z U
F6AJ0600ADL45	6,00	6,00	13,00	57,00	0,10	6
F6AJ0600AWM45	6,00	6,00	18,00	62,00	0,10	6
F6AJ0800ADL45	8,00	8,00	19,00	63,00	0,20	6
F6AJ0800AWM45	8,00	8,00	24,00	68,00	0,20	6
F6AJ1000ADL45	10,00	10,00	22,00	72,00	0,30	6
F6AJ1000AWL45	10,00	10,00	30,00	80,00	0,30	6
F6AJ1200ADL45	12,00	12,00	26,00	83,00	0,30	6
F6AJ1200AWL45	12,00	12,00	36,00	93,00	0,30	6
F6AJ1400ADL45	14,00	14,00	26,00	83,00	0,30	6
F6AJ1600ADL45	16,00	16,00	32,00	92,00	0,40	6
F6AJ1600AWX45	16,00	16,00	48,00	108,00	0,40	6
F8AJ2000AWX45	20,00	20,00	60,00	126,00	0,40	8
F8AJ2500AWX45	25,00	25,00	75,00	150,00	0,40	8

NOTE: For application data, see page M95.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

F2AU...A/BDK38...

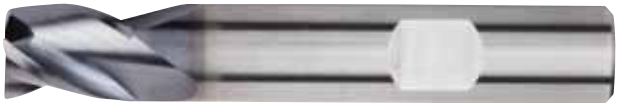
Material Group		A		B	K633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1 x D	0,5 x D	0,75 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1 x D	0,5 x D	0,75 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1 x D	0,5 x D	0,75 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1 x D	0,5 x D	0,75 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,5 x D	0,75 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1 x D	0,5 x D	0,75 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1 x D	0,5 x D	0,75 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,5 x D	0,75 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	4	1 x D	0,5 x D	0,75 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

F3AU...A/BDK38...

Material Group		A		B	K633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1 x D	0,5 x D	0,75 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1 x D	0,5 x D	0,75 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1 x D	0,5 x D	0,75 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1 x D	0,5 x D	0,75 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,5 x D	0,75 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1 x D	0,5 x D	0,75 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1 x D	0,5 x D	0,75 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,5 x D	0,75 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	4	1 x D	0,5 x D	0,75 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3AS...DK



Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	0,75 x D	0,4 x D	0,5 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	0,75 x D	0,4 x D	0,5 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	0,75 x D	0,4 x D	0,5 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	0,75 x D	0,4 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	0,75 x D	0,4 x D	0,5 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	0,75 x D	0,4 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	0,75 x D	0,4 x D	0,5 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	0,75 x D	0,4 x D	0,5 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	0,75 x D	0,4 x D	0,5 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	0,75 x D	0,4 x D	0,5 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	0,75 x D	0,4 x D	0,5 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	0,75 x D	0,4 x D	0,5 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
H	1	0,75 x D	0,4 x D	0,3 x D	100	140	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088

F3AJ...ADL60...

Material Group		A		B	KC625M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0
P	3	1,5 x D	0,3 x D	0,5 x D	120	160	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,013	0,017	0,022	0,026	0,036	0,043	0,050	0,061	0,070
	5	1,5 x D	0,3 x D	0,5 x D	60	100	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	6	1,5 x D	0,3 x D	0,3 x D	50	75	fz	0,010	0,013	0,016	0,020	0,027	0,032	0,037	0,046	0,052
M	1	1,5 x D	0,3 x D	0,5 x D	80	100	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	2	1,5 x D	0,3 x D	0,5 x D	60	80	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	3	1,5 x D	0,3 x D	0,5 x D	60	80	fz	0,010	0,013	0,016	0,020	0,027	0,032	0,037	0,046	0,052
K	1	1,5 x D	0,3 x D	0,5 x D	120	160	fz	0,018	0,023	0,029	0,035	0,048	0,058	0,066	0,081	0,091
	2	1,5 x D	0,3 x D	0,5 x D	110	140	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,3 x D	0,5 x D	100	130	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	2	1,5 x D	0,3 x D	0,3 x D	20	40	fz	0,008	0,010	0,013	0,016	0,021	0,026	0,030	0,037	0,043
	3	1,5 x D	0,3 x D	0,5 x D	50	80	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	4	1,5 x D	0,3 x D	0,3 x D	45	65	fz	0,010	0,013	0,017	0,021	0,029	0,036	0,041	0,051	0,059
H	1	1,5 x D	0,3 x D	0,5 x D	80	140	fz	0,013	0,017	0,022	0,026	0,036	0,043	0,050	0,061	0,070

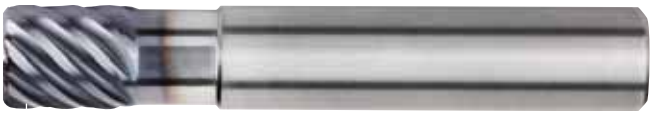
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3AW...WL-WX

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	20,0
P	1	1 x D	0,5 x D	1 x D	150	200	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	2	1 x D	0,5 x D	1 x D	140	190	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	3	1 x D	0,5 x D	1 x D	120	160	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	4	1 x D	0,5 x D	1 x D	90	150	fz	0,016	0,027	0,033	0,045	0,054	0,062	0,077	0,088	0,088
	5	1 x D	0,5 x D	1 x D	60	100	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
	6	1 x D	0,5 x D	1 x D	50	75	fz	0,012	0,020	0,025	0,034	0,040	0,047	0,057	0,065	0,065
M	1	1 x D	0,5 x D	1 x D	80	100	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	2	1 x D	0,5 x D	1 x D	60	80	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
	3	1 x D	0,5 x D	1 x D	60	80	fz	0,012	0,020	0,025	0,034	0,040	0,047	0,057	0,065	0,065
K	1	1 x D	0,5 x D	1 x D	120	160	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	2	1 x D	0,5 x D	1 x D	110	140	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	3	1 x D	0,5 x D	1 x D	100	130	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
H	1	1 x D	0,5 x D	1 x D	100	140	fz	0,016	0,027	0,033	0,045	0,054	0,062	0,077	0,088	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

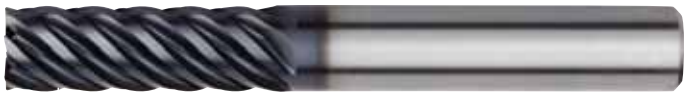
F8AJ-F10AJ...DK



Material Group		A		KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1 x D	0,05 x D	150	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1 x D	0,05 x D	140	190	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	1 x D	0,05 x D	120	160	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	1 x D	0,04 x D	90	150	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	1 x D	0,05 x D	60	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	1 x D	0,04 x D	50	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	1 x D	0,05 x D	80	100	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1 x D	0,05 x D	60	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	1 x D	0,05 x D	60	80	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	1 x D	0,05 x D	120	160	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1 x D	0,05 x D	110	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	1 x D	0,05 x D	100	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
H	1	1 x D	0,04 x D	80	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F6AJ-F8AJ...DL • Multiflute • Long • Extra Long



Material Group		A		KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,05 x D	150	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,5 x D	0,05 x D	140	190	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	1,5 x D	0,05 x D	120	160	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	1,5 x D	0,04 x D	90	150	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	1,5 x D	0,05 x D	60	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	1,5 x D	0,04 x D	50	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	1,5 x D	0,05 x D	80	100	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1,5 x D	0,05 x D	60	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	1,5 x D	0,05 x D	60	80	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	1,5 x D	0,05 x D	120	160	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,5 x D	0,05 x D	110	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	1,5 x D	0,05 x D	100	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
H	1	1,5 x D	0,04 x D	80	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

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- Systematic and efficient disposal of carbide materials.
- Improved profitability.

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High-Performance Solid Carbide End Mills • Roughing

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- Highest metal removal rates.
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- End mills with internal coolant.
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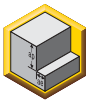
Applications:



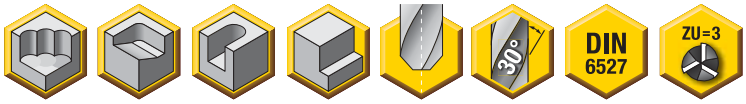
Side Milling

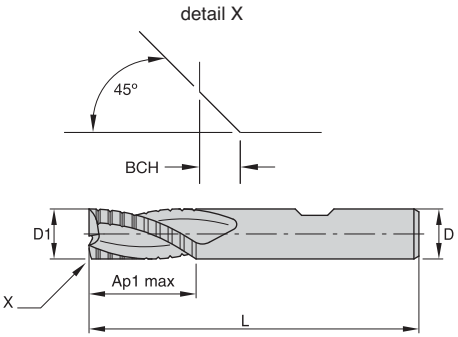
Slotting

Workpiece Materials:

P	Steel
M	Stainless Steel
K	Cast Iron
S	High-Temp Alloys
H	Hardened Materials

- Centre cutting.
- Semi-finishing profile.





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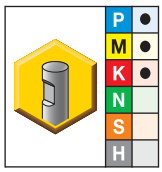


● first choice
○ alternate choice

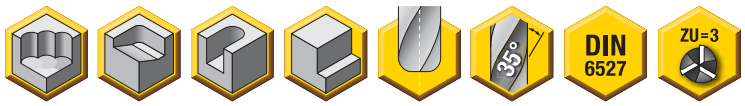
KCPM15	D1	D	Ap1 max	L	BCH
F3BH0400BDL30	4,00	6,00	8,00	57,00	0,10
F3BH0500BDL30	5,00	6,00	13,00	57,00	0,10
F3BH0600BDL30	6,00	6,00	13,00	57,00	0,10
F3BH0800BDL30	8,00	8,00	16,00	63,00	0,20
F3BH1000BDL30	10,00	10,00	19,00	72,00	0,30
F3BH1200BDL30	12,00	12,00	22,00	83,00	0,30
F3BH1600BDL30	16,00	16,00	26,00	92,00	0,40
F3BH2000BDL30	20,00	20,00	32,00	104,00	0,40
F3BH2500BDL30	25,00	25,00	45,00	121,00	0,40

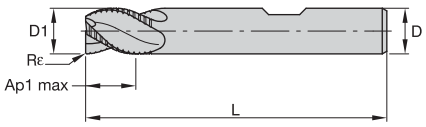
NOTE: For application data, see page M106.

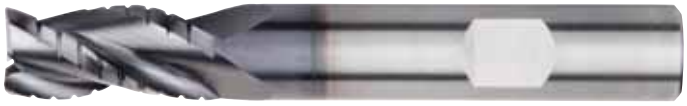
End Mill Tolerances

D1	tolerance h11	D	tolerance h6
≤3	+0/-0,060	≤3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

- Centre cutting.
- Chipbreaker profile.







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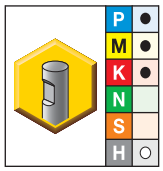


● first choice
○ alternate choice

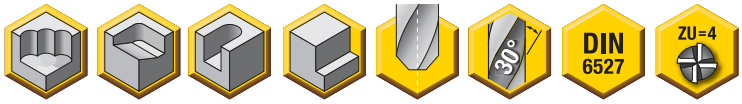
KCPM15	D1	D	Ap1 max	L	Rε
F3BS0600BDK35	6,00	6,00	7,00	54,00	0,45
F3BS0600BDL35	6,00	6,00	10,00	57,00	0,45
F3BS0800BDK35	8,00	8,00	9,00	58,00	0,45
F3BS0800BDL35	8,00	8,00	16,00	63,00	0,45
F3BS1000BDK35	10,00	10,00	11,00	66,00	0,45
F3BS1000BDL35	10,00	10,00	19,00	72,00	0,45
F3BS1200BDK35	12,00	12,00	12,00	73,00	0,45
F3BS1200BDL35	12,00	12,00	22,00	83,00	0,45
F3BS1400BDK35	14,00	14,00	14,00	75,00	0,45
F3BS1400BDL35	14,00	14,00	22,00	83,00	0,45
F3BS1600BDK35	16,00	16,00	16,00	82,00	0,45
F3BS1600BDL35	16,00	16,00	26,00	92,00	0,45
F3BS2000BDK35	20,00	20,00	20,00	92,00	0,45
F3BS2000BDL35	20,00	20,00	32,00	104,00	0,45

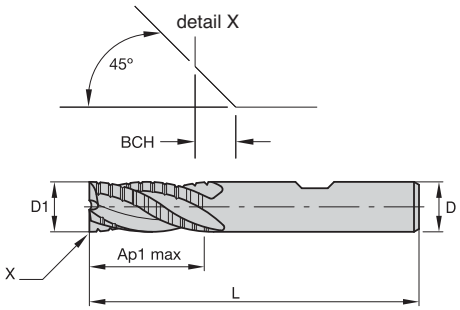
NOTE: For application data, see page M106.

End Mill Tolerances

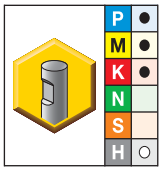
D1	tolerance d11	D	Tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Centre cutting.
- Semi-finishing profile.





beyond



● first choice
○ alternate choice

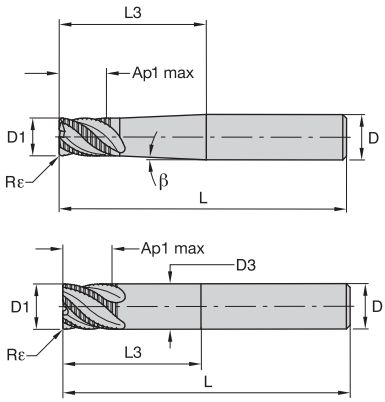
KCPM15	D1	D	Ap1 max	L	BCH
F4BJ0600BDL30	6,00	6,00	13,00	57,00	0,10
F4BJ0800BDL30	8,00	8,00	19,00	63,00	0,20
F4BJ1000BDL30	10,00	10,00	22,00	72,00	0,30
F4BJ1200BDL30	12,00	12,00	26,00	83,00	0,30
F4BJ1400BDL30	14,00	14,00	26,00	83,00	0,30
F4BJ1600BDL30	16,00	16,00	32,00	92,00	0,40
F4BJ1800BDL30	18,00	18,00	32,00	92,00	0,40
F4BJ2000BDL30	20,00	20,00	38,00	104,00	0,40

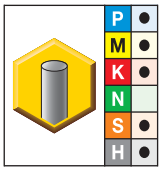
NOTE: For application data, see page M107.

End Mill Tolerances

D1	tolerance h11	D	tolerance h6
≤3	+0/-0,060	≤3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Flat shallow-pitch profile.





● first choice
○ alternate choice

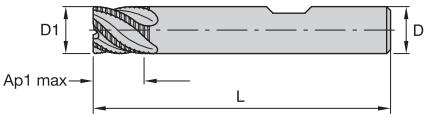
KC633M	D1	D	Ap1 max	L	L3	Rε	D3	Z U
F3BT0400AWM45R075	4,00	6,00	4,00	75,00	4,00	0,75	–	3
F3BT0500AWM45R075	5,00	6,00	5,00	75,00	5,00	0,75	–	3
F4BT0600AWL45R075	6,00	10,00	6,00	100,00	6,00	0,75	–	4
F4BT0800AWL45R075	8,00	10,00	8,00	100,00	8,00	0,75	–	4
F4BT1000AWX45R075	10,00	12,00	10,00	125,00	10,00	0,75	–	4
F4BT1200AWX45R100	12,00	16,00	12,00	125,00	12,00	1,00	–	4
F6BT2000AWX45R125	20,00	20,00	20,00	150,00	20,00	1,25	19,00	6
F6BT2500AWX45R125	25,00	25,00	25,00	150,00	25,00	1,25	24,00	6

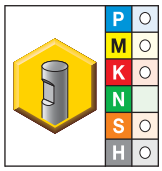
NOTE: For application data, see page M107.

End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Centre cutting.
- Shallow-pitch profile.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L	Z U
F4BJ0600BDL45L060	6,00	6,00	6,00	57,00	4
F4BJ0800BDL45L080	8,00	8,00	8,00	63,00	4
F4BJ1000BDL45L100	10,00	10,00	10,00	72,00	4
F4BJ1200BDL45L120	12,00	12,00	12,00	83,00	4

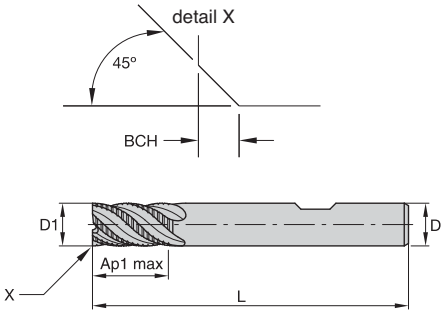
NOTE: For application data, see page M108.

End Mill Tolerances

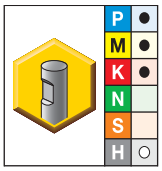
D1	tolerance d11	D	tolerance h6
≤ 3	-0,020/-0,080	≤ 3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

	Corner Radius (chamfer height)	
D1 d11	R	tolerance
6–11,99	0,75	± 0,05
12–19,99	1,00	± 0,05
20–25	1,25	± 0,05

- Centre cutting.
- Shallow-pitch profile.



beyond



● first choice
○ alternate choice

KCPM15	D1	D	Ap1 max	L	BCH	Z U
F4BJ0600BDL45	6,00	6,00	13,00	57,00	0,10	4
F4BJ0800BDL45	8,00	8,00	19,00	63,00	0,20	4
F4BJ1000BDL45	10,00	10,00	22,00	72,00	0,30	4
F4BJ1200BDL45	12,00	12,00	26,00	83,00	0,30	4
F6BJ1600BDL45	16,00	16,00	32,00	92,00	1,00	6
F6BJ2000BDL45	20,00	20,00	38,00	104,00	1,25	6
F6BJ2500BDL45	25,00	25,00	45,00	121,00	1,25	6

NOTE: For application data, see page M108.

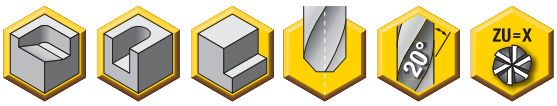
Solid End Milling

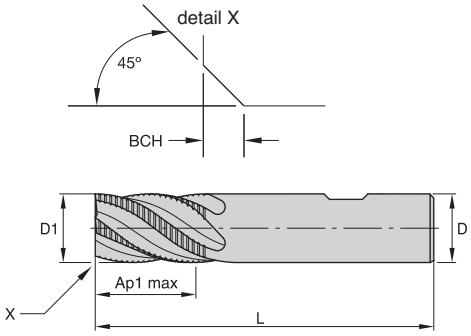
End Mill Tolerances

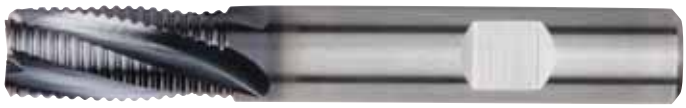
D1	tolerance h11	D	tolerance h6
≤ 3	+0/-0,060	≤ 3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

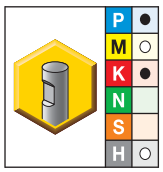
- Kennametal standard dimensions.
- Centre cutting.
- Fine-pitch profile.







beyond



● first choice
○ alternate choice

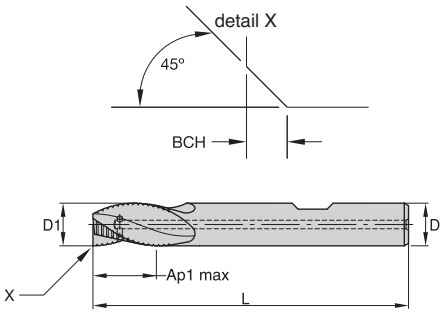
KCPM15	D1	D	Ap1 max	L	BCH	Z U
F3BH0400BWS20L110	4,00	6,00	11,00	55,00	0,30	3
F3BH0500BWS20L130	5,00	6,00	13,00	57,00	0,30	3
F3BH0600BWS20L080	6,00	6,00	8,00	54,00	0,30	3
F3BH0600BWS20L130	6,00	6,00	13,00	57,00	0,30	3
F3BH0800BWS20L110	8,00	8,00	11,00	58,00	0,30	3
F3BH0800BWM20L160	8,00	8,00	16,00	63,00	0,30	3
F4BJ1000BWM20L130	10,00	10,00	13,00	66,00	0,50	4
F4BJ1000BWM20L220	10,00	10,00	22,00	72,00	0,50	4
F4BJ1200BWM20L160	12,00	12,00	16,00	73,00	0,50	4
F4BJ1200BWL20L260	12,00	12,00	26,00	83,00	0,50	4
F4BJ1400BWL20L260	14,00	14,00	26,00	83,00	0,50	4
F4BJ1600BWL20L190	16,00	16,00	19,00	82,00	0,50	4
F4BJ1600BWL20L320	16,00	16,00	32,00	92,00	0,50	4
F4BJ2000BWL20L220	20,00	20,00	22,00	92,00	0,50	4
F4BJ2000BWX20L380	20,00	20,00	38,00	104,00	0,50	4
F5BJ2500BWX20L450	25,00	25,00	45,00	121,00	0,50	5

NOTE: For application data, see page M109.

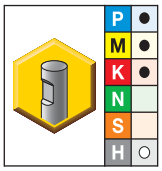
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤ 3	-0,020/-0,080	≤ 3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Fine-pitch profile.



beyond™



● first choice
○ alternate choice

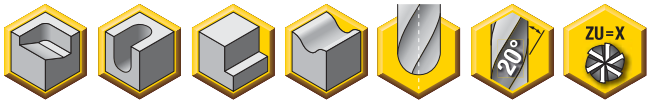
KCPM15	D1	D	Ap1 max	L	BCH	Z U
F3BH0800BWS20C110	8,00	8,00	11,00	58,00	0,30	3
F3BH0800BWM20C160	8,00	8,00	16,00	63,00	0,30	3
F4BJ1000BWM20C130	10,00	10,00	13,00	66,00	0,50	4
F4BJ1000BWM20C220	10,00	10,00	22,00	72,00	0,50	4
F4BJ1200BWM20C160	12,00	12,00	16,00	73,00	0,50	4
F4BJ1200BWL20C260	12,00	12,00	26,00	83,00	0,50	4
F4BJ1600BWL20C190	16,00	16,00	19,00	82,00	0,50	4
F4BJ1600BWL20C320	16,00	16,00	32,00	92,00	0,50	4
F4BJ2000BWL20C220	20,00	20,00	22,00	92,00	0,50	4
F4BJ2000BWX20C380	20,00	20,00	38,00	104,00	0,50	4

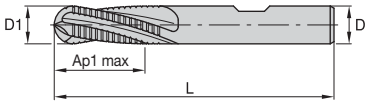
NOTE: For application data, see page M109.

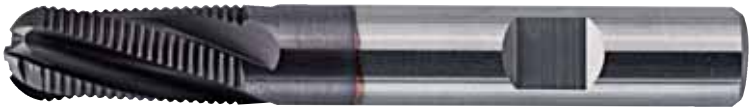
End Mill Tolerances

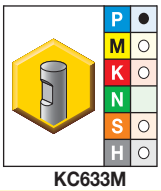
D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Roughing profile.









● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L	Z U
F3BL0600BWS20	6,00	6,00	13,00	57,00	3
F3BL0800BWM20	8,00	8,00	16,00	63,00	3

NOTE: For application data, see page M110.

End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

F3BH...DL • DIN 6527 • Long • Steel

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1 x D	0,4 x D	0,75 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1 x D	0,4 x D	0,75 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1 x D	0,3 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	3	1 x D	0,4 x D	0,75 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	4	1 x D	0,3 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1 x D	0,4 x D	0,75 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1 x D	0,4 x D	0,75 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081

F3BS...DK-DL • DIN 6527 • Short • Long • Steel • Stainless Steel

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1 x D	0,4 x D	0,75 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1 x D	0,4 x D	0,75 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1 x D	0,3 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	1 x D	0,4 x D	0,75 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	1 x D	0,3 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1 x D	0,4 x D	0,75 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1 x D	0,4 x D	0,75 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
H	1	1 x D	0,3 x D	0,3 x D	100	140	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4BJ...DL • DIN 6527 • Long • Steel

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.										
					Cutting Speed — vc m/min			D1 — Diameter										
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	1	1,5 x D	0,4 x D	1 x D	150	200	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	2	1,5 x D	0,4 x D	1 x D	140	190	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088	0,110
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
	6	1,5 x D	0,3 x D	0,3 x D	50	75	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,081
M	1	1,5 x D	0,4 x D	0,75 x D	80	100	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	2	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
	3	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,081
K	1	1,5 x D	0,4 x D	1 x D	120	160	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
H	1	1,5 x D	0,3 x D	0,3 x D	100	140	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088	0,110

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3/4/6BT...AWM/L/X45R...

Material Group		A		B	K633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	0,8 x D	0,5 x D	0,75 x D	160	180	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	0,8 x D	0,4 x D	0,5 x D	140	160	fz	0,018	0,023	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	0,8 x D	0,5 x D	0,75 x D	60	100	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	0,8 x D	0,4 x D	0,5 x D	50	80	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	0,8 x D	0,5 x D	0,75 x D	80	100	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,024	0,031	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	0,8 x D	0,5 x D	0,75 x D	110	140	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,4 x D	0,75 x D	100	130	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
S	1	0,8 x D	0,4 x D	0,75 x D	90	115	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,25 x D	0,3 x D	20	40	fz	0,011	0,014	0,017	0,022	0,027	0,033	0,042	0,054	0,061
	3	0,8 x D	0,4 x D	0,75 x D	50	80	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	4	0,8 x D	0,3 x D	0,5 x D	45	65	fz	0,013	0,018	0,022	0,031	0,038	0,046	0,058	0,074	0,084
H	1	0,8 x D	0,5 x D	0,5 x D	120	140	fz	0,018	0,023	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	0,8 x D	0,2 x D	0,3 x D	80	130	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	0,8 x D	0,15 x D	0,2 x D	70	100	fz	0,011	0,014	0,017	0,023	0,027	0,034	0,041	0,052	0,057

NOTE: These guidelines may require possible variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For rougher tool with six flutes, use ap in slotting 60% of table value.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4BJ-F6BJ...DL • DIN 6527

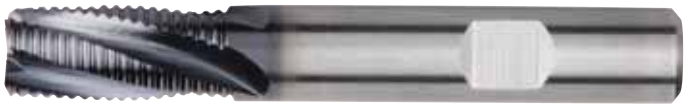
Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	0,8 x D	0,4 x D	0,5 x D	90	150	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	0,8 x D	0,5 x D	0,75 x D	60	100	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	0,8 x D	0,4 x D	0,5 x D	50	75	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	0,8 x D	0,5 x D	0,75 x D	80	100	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	0,8 x D	0,5 x D	0,75 x D	110	140	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,4 x D	0,75 x D	100	130	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
S	1	0,8 x D	0,4 x D	0,75 x D	50	90	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	50	90	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,25 x D	0,3 x D	20	40	fz	0,017	0,022	0,027	0,033	0,042	0,054	0,061
	4	0,8 x D	0,3 x D	0,5 x D	45	65	fz	0,022	0,031	0,038	0,046	0,058	0,074	0,084
H	1	0,8 x D	0,5 x D	0,5 x D	80	140	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	0,8 x D	0,2 x D	0,3 x D	70	120	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	0,8 x D	0,2 x D	0,2 x D	60	90	fz	0,017	0,023	0,027	0,034	0,041	0,052	0,057

F4BJ-F6BJ...DL • DIN 6527

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,5 x D	0,5 x D	120	160	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	1 x D	0,3 x D	0,4 x D	90	150	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	1 x D	0,5 x D	0,5 x D	60	100	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	1 x D	0,3 x D	0,4 x D	50	75	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	1 x D	0,5 x D	0,5 x D	80	100	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	1 x D	0,5 x D	0,5 x D	60	80	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	1 x D	0,5 x D	0,5 x D	60	80	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	1 x D	0,5 x D	0,5 x D	120	160	fz	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	1 x D	0,5 x D	0,5 x D	110	140	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	1 x D	0,5 x D	0,5 x D	100	130	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
H	1	1 x D	0,3 x D	0,3 x D	80	140	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	1 x D	0,2 x D	0,2 x D	70	120	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	1 x D	0,2 x D	0,2 x D	60	90	fz	0,017	0,023	0,027	0,034	0,041	0,052	0,057

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3BH-F4BJ-F5BJ...WS-WM-WL-WX



Material Group		A		B	KCPM15 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0,3 x D	0,5 x D	90	150	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1,5 x D	0,5 x D	1 x D	120	160	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1,0 x D	0,3 x D	0,5 x D	80	140	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076

F3BH-F4BJ...WS-WM-WL-WX • Internal Coolant

Material Group		A		B	KCPM15 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0,3 x D	0,5 x D	90	150	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1,5 x D	0,5 x D	1 x D	120	160	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1,0 x D	0,3 x D	0,5 x D	80	140	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3BL...BWS/M...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1.5 x D	0.5 x D	1 x D	150	200	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1.5 x D	0.5 x D	1 x D	140	190	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1.5 x D	0.4 x D	0,75 x D	120	160	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0.3 x D	0,5 x D	90	150	fz	0,027	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1.5 x D	0.4 x D	0,75 x D	60	100	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0.4 x D	0,75 x D	80	100	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0.4 x D	0,75 x D	60	80	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0.4 x D	0,75 x D	60	80	fz	0,020	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1.5 x D	0.5 x D	1 x D	120	160	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1.5 x D	0.4 x D	1 x D	110	140	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1.5 x D	0.4 x D	1 x D	100	130	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
S	1	1.5 x D	0.4 x D	0,75 x D	50	90	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1.5 x D	0.4 x D	0,75 x D	50	80	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1 x D	0.3 x D	0,5 x D	80	140	fz	0,027	0,037	0,044	0,054	0,060	0,066	0,072	0,076

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >12,0mm diameter.

General Application • Solid Carbide End Mills

Features and Benefits

- Wide range of diameters.
- Short, regular, long, and extra-long overall lengths.
- Different coatings.
- DIN and factory-standard end mills.

Applications:

Side Milling

Slotting

3-D Milling

Workpiece Materials:

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

GOmill™ • the Economical Milling Cutter Line

Primary Application

The GOmill line is specifically engineered to work on short length-of-cut applications in multiple workpiece materials, like soft and hard steels up to 48 HRC, stainless steels, high-temperature alloys, and cast iron. With the very short overall length and soft cutting geometries, the line is made to conform to the growing market of millturn machines.

The 3-flute sharp and 4-flute chamfer versions support roughing, semi-finishing, and finishing applications. The 3-flute ball nose tool supports roughing and semi-finishing applications. The 2-flute ball nose version requires finishing applications. All three geometries work in slotting as well as side milling applications up to 1 x D depth of cut.

Features and Benefits

- Unequal flute spacing.
- AlTiN coating.
- Short overall tool length.
- Positive rake angle.
- Better surface finish and tool life.
- Universal usage on multiple workpiece materials.
- Higher cutting conditions, higher productivity, lower price due to less carbide.
- Lower power consumption.

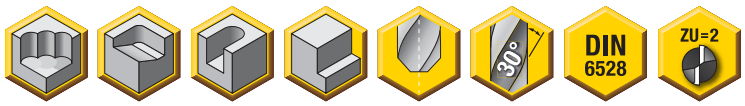
Portfolio:

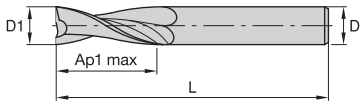
- 4-flute square end, chamfer corner, Ø 4–12mm.
- 3-flute square end, sharp corner, Ø 2–12mm.
- 3-flute ball nose, Ø 2–12mm.
- 2-flute ball nose, Ø 2–12mm.

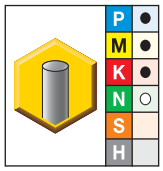
Functions:

- Less vibrations.
- Optimum combination of hardness and toughness.
- Extremely stable.
- Soft cutting.

• Centre cutting.







● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F2AH0400ADN30	4,00	4,00	8,00	50,00
F2AH0450ADN30	4,50	4,50	8,00	50,00
F2AH0500ADN30	5,00	5,00	10,00	50,00
F2AH0550ADN30	5,50	5,50	10,00	57,00
F2AH0600ADN30	6,00	6,00	10,00	57,00
F2AH0650ADN30	6,50	6,50	13,00	60,00
F2AH0700ADN30	7,00	7,00	13,00	60,00
F2AH0750ADN30	7,50	7,50	16,00	63,00
F2AH0800ADN30	8,00	8,00	16,00	63,00
F2AH0850ADN30	8,50	8,50	16,00	67,00
F2AH0900ADN30	9,00	9,00	16,00	67,00
F2AH0950ADN30	9,50	9,50	19,00	72,00
F2AH1000ADN30	10,00	10,00	19,00	72,00
F2AH1100ADN30	11,00	11,00	22,00	83,00
F2AH1200ADN30	12,00	12,00	22,00	83,00
F2AH1300ADN30	13,00	13,00	22,00	83,00
F2AH1400ADN30	14,00	14,00	22,00	83,00
F2AH1500ADN30	15,00	15,00	26,00	92,00
F2AH1600ADN30	16,00	16,00	26,00	92,00
F2AH1800ADN30	18,00	18,00	26,00	92,00
F2AH2000ADN30	20,00	20,00	32,00	104,00

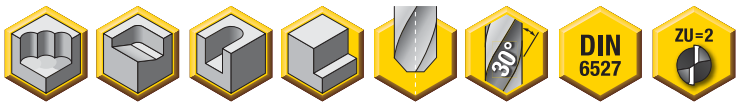
NOTE: For application data, see page M134.

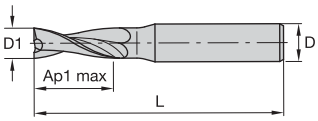
End Mill Tolerances

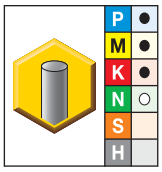
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

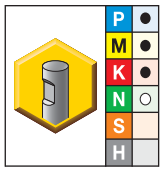
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.







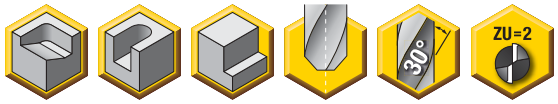


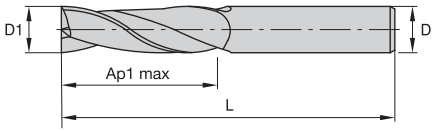
● first choice
○ alternate choice

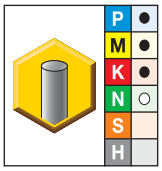
KC633M	KC633M	D1	D	Ap1 max	L
F2AH0200ADK30	F2AH0200BDK30	2,00	6,00	3,00	50,00
F2AH0250ADK30	F2AH0250BDK30	2,50	6,00	3,00	50,00
F2AH0250ADL30	F2AH0250BDL30	2,50	6,00	7,00	57,00
F2AH0300ADK30	F2AH0300BDK30	3,00	6,00	4,00	50,00
F2AH0300ADL30	F2AH0300BDL30	3,00	6,00	7,00	57,00
F2AH0350ADK30	F2AH0350BDK30	3,50	6,00	4,00	50,00
F2AH0400ADK30	F2AH0400BDK30	4,00	6,00	5,00	54,00
F2AH0400ADL30	F2AH0400BDL30	4,00	6,00	8,00	57,00
F2AH0450ADK30	F2AH0450BDK30	4,50	6,00	5,00	54,00
F2AH0450ADL30	F2AH0450BDL30	4,50	6,00	8,00	57,00
F2AH0500ADK30	F2AH0500BDK30	5,00	6,00	6,00	54,00
F2AH0500ADL30	F2AH0500BDL30	5,00	6,00	10,00	57,00
F2AH0550ADK30	F2AH0550BDK30	5,50	6,00	7,00	54,00
F2AH0550ADL30	F2AH0550BDL30	5,50	6,00	10,00	57,00
F2AH0600ADK30	F2AH0600BDK30	6,00	6,00	7,00	54,00
F2AH0600ADL30	F2AH0600BDL30	6,00	6,00	10,00	57,00
F2AH0650ADK30	F2AH0650BDK30	6,50	8,00	8,00	58,00
F2AH0700ADK30	F2AH0700BDK30	7,00	8,00	8,00	58,00
F2AH0700ADL30	F2AH0700BDL30	7,00	8,00	13,00	63,00
F2AH0750ADK30	F2AH0750BDK30	7,50	8,00	9,00	58,00
F2AH0800ADK30	F2AH0800BDK30	8,00	8,00	9,00	58,00
F2AH0800ADL30	F2AH0800BDL30	8,00	8,00	16,00	63,00
F2AH0850ADK30	F2AH0850BDK30	8,50	10,00	10,00	66,00
F2AH0900ADK30	F2AH0900BDK30	9,00	10,00	10,00	66,00
F2AH0900ADL30	F2AH0900BDL30	9,00	10,00	16,00	72,00
F2AH0950ADK30	F2AH0950BDK30	9,50	10,00	11,00	66,00
F2AH1000ADK30	F2AH1000BDK30	10,00	10,00	11,00	66,00
F2AH1000ADL30	F2AH1000BDL30	10,00	10,00	19,00	72,00
F2AH1100ADK30	F2AH1100BDK30	11,00	12,00	12,00	73,00
F2AH1100ADL30	F2AH1100BDL30	11,00	12,00	22,00	83,00
F2AH1200ADK30	F2AH1200BDK30	12,00	12,00	12,00	73,00
F2AH1200ADL30	F2AH1200BDL30	12,00	12,00	22,00	83,00
F2AH1300ADK30	F2AH1300BDK30	13,00	14,00	14,00	75,00
F2AH1400ADK30	F2AH1400BDK30	14,00	14,00	14,00	75,00
F2AH1400ADL30	F2AH1400BDL30	14,00	14,00	22,00	83,00
F2AH1500ADK30	F2AH1500BDK30	15,00	16,00	16,00	82,00
F2AH1500ADL30	F2AH1500BDL30	15,00	16,00	26,00	92,00
F2AH1600ADK30	F2AH1600BDK30	16,00	16,00	16,00	82,00
F2AH1600ADL30	F2AH1600BDL30	16,00	16,00	26,00	92,00
F2AH1800ADK30	F2AH1800BDK30	18,00	18,00	18,00	84,00
F2AH1800ADL30	F2AH1800BDL30	18,00	18,00	26,00	92,00
F2AH2000ADK30	F2AH2000BDK30	20,00	20,00	20,00	92,00
F2AH2000ADL30	F2AH2000BDL30	20,00	20,00	32,00	104,00

NOTE: For application data, see page M134.
For tolerance and chamfer tables, see M114.

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

KC625M	D1	D	Ap1 max	L
F2AH0300AWM30	3,00	3,00	20,00	75,00
F2AH0400AWM30	4,00	4,00	25,00	75,00
F2AH0500AWM30	5,00	5,00	30,00	75,00
F2AH0600AWM30	6,00	6,00	30,00	75,00
F2AH0800AWL30	8,00	8,00	40,00	100,00
F2AH1000AWL30	10,00	10,00	40,00	100,00
F2AH1200AWX30	12,00	12,00	45,00	150,00
F2AH1400AWX30	14,00	14,00	45,00	150,00
F2AH1600AWX30	16,00	16,00	65,00	150,00
F2AH1800AWX30	18,00	18,00	65,00	150,00
F2AH2000AWX30	20,00	20,00	65,00	150,00

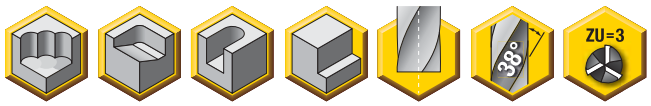
NOTE: For application data, see page M135.

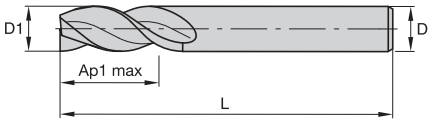
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

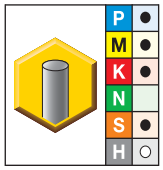
- Kennametal standard dimensions.
- Centre cutting.
- Unequal flute spacing.
- Roughing/finishing.

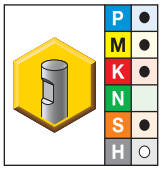




NEW!

GOmill





● first choice
○ alternate choice

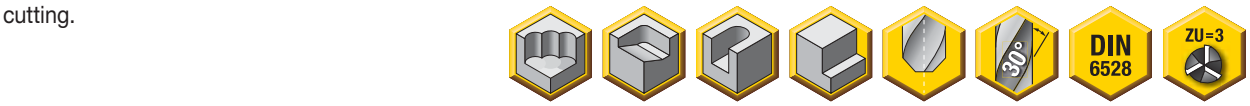
KC643M	KC643M	D1	D	Ap1 max	L
UEDE0200A3AS	**UEDE0200B3AS**	2,00	6,00	4,00	38,00
UEDE0300A3AS	**UEDE0300B3AS**	3,00	6,00	5,00	38,00
UEDE0400A3AS	**UEDE0400B3AS**	4,00	6,00	7,00	38,00
UEDE0500A3AS	**UEDE0500B3AS**	5,00	6,00	8,00	38,00
UEDE0600A3AS	**UEDE0600B3AS**	6,00	6,00	8,00	38,00
UEDE0800A3AS	**UEDE0800B3AS**	8,00	8,00	11,00	43,00
UEDE1000A3AS	**UEDE1000B3AS**	10,00	10,00	13,00	50,00
UEDE1200A3AS	**UEDE1200B3AS**	12,00	12,00	15,00	55,00

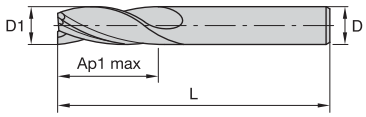
NOTE: For application data, see page M135.

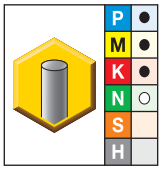
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F3AH0400ADN30	4,00	4,00	8,00	50,00
F3AH0450ADN30	4,50	4,50	8,00	50,00
F3AH0500ADN30	5,00	5,00	10,00	50,00
F3AH0550ADN30	5,50	5,50	10,00	57,00
F3AH0600ADN30	6,00	6,00	10,00	57,00
F3AH0650ADN30	6,50	6,50	13,00	60,00
F3AH0700ADN30	7,00	7,00	13,00	60,00
F3AH0750ADN30	7,50	7,50	16,00	63,00
F3AH0800ADN30	8,00	8,00	16,00	63,00
F3AH0850ADN30	8,50	8,50	16,00	67,00
F3AH0900ADN30	9,00	9,00	16,00	67,00
F3AH0950ADN30	9,50	9,50	19,00	72,00
F3AH1000ADN30	10,00	10,00	19,00	72,00
F3AH1100ADN30	11,00	11,00	22,00	83,00
F3AH1200ADN30	12,00	12,00	22,00	83,00
F3AH1300ADN30	13,00	13,00	22,00	83,00
F3AH1400ADN30	14,00	14,00	22,00	83,00
F3AH1500ADN30	15,00	15,00	26,00	92,00
F3AH1600ADN30	16,00	16,00	26,00	92,00
F3AH1800ADN30	18,00	18,00	26,00	92,00
F3AH2000ADN30	20,00	20,00	32,00	104,00

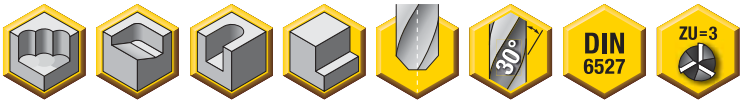
NOTE: For application data, see page M134.

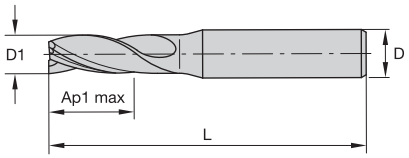
End Mill Tolerances

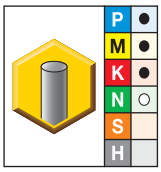
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

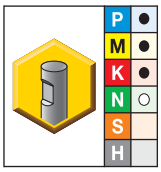
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.







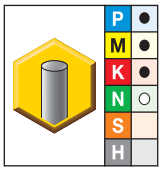


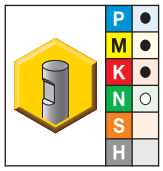
● first choice
○ alternate choice

KC633M	KC633M	D1	D	Ap1 max	L
F3AH0250ADK30 F3AH0280ADK30	F3AH0250BDK30 F3AH0280BDK30	2,50 2,80	6,00 6,00	3,00 4,00	50,00 50,00
F3AH0300ADK30 F3AH0350ADK30	F3AH0300BDK30 F3AH0350BDK30	3,00 3,50	6,00 6,00	4,00 4,00	50,00 50,00
F3AH0380ADK30 F3AH0400ADK30	F3AH0380BDK30 F3AH0400BDK30	3,80 4,00	6,00 6,00	5,00 5,00	54,00 54,00
F3AH0400ADL30 F3AH0450ADK30	F3AH0400BDL30 F3AH0450BDK30	4,00 4,50	6,00 6,00	8,00 5,00	57,00 54,00
F3AH0450ADL30 F3AH0480ADK30	F3AH0450BDL30 F3AH0480BDK30	4,50 4,80	6,00 6,00	8,00 6,00	57,00 54,00
F3AH0480ADL30 F3AH0500ADK30	F3AH0480BDL30 F3AH0500BDK30	4,80 5,00	6,00 6,00	10,00 6,00	57,00 54,00
F3AH0500ADL30 F3AH0550ADK30	F3AH0500BDL30 F3AH0550BDK30	5,00 5,50	6,00 6,00	10,00 7,00	57,00 54,00
F3AH0550ADL30 F3AH0575ADK30	F3AH0550BDL30 F3AH0575BDK30	5,50 5,75	6,00 6,00	10,00 7,00	57,00 54,00
F3AH0575ADL30 F3AH0600ADK30	F3AH0575BDL30 F3AH0600BDK30	5,75 6,00	6,00 6,00	10,00 7,00	57,00 54,00
F3AH0600ADL30 F3AH0650ADK30	F3AH0600BDL30 F3AH0650BDK30	6,00 6,50	6,00 8,00	10,00 8,00	57,00 58,00
F3AH0650ADL30 F3AH0675ADK30	F3AH0650BDL30 F3AH0675BDK30	6,50 6,75	8,00 8,00	13,00 8,00	63,00 58,00
F3AH0675ADL30 F3AH0700ADK30	F3AH0675BDL30 F3AH0700BDK30	6,75 7,00	8,00 8,00	13,00 8,00	63,00 58,00
F3AH0700ADL30 F3AH0750ADK30	F3AH0700BDL30 F3AH0750BDK30	7,00 7,50	8,00 8,00	13,00 9,00	63,00 58,00
F3AH0775ADK30 F3AH0775ADL30	F3AH0775BDK30 F3AH0775BDL30	7,75 7,75	8,00 8,00	9,00 16,00	58,00 63,00
F3AH0800ADK30 F3AH0800ADL30	F3AH0800BDK30 F3AH0800BDL30	8,00 8,00	8,00 8,00	9,00 16,00	58,00 63,00
F3AH0850ADK30 F3AH0850ADL30	F3AH0850BDK30 F3AH0850BDL30	8,50 8,50	10,00 10,00	10,00 16,00	66,00 72,00
F3AH0870ADK30 F3AH0870ADL30	F3AH0870BDK30 F3AH0870BDL30	8,70 8,70	10,00 10,00	10,00 16,00	66,00 72,00
F3AH0900ADK30 F3AH0900ADL30	F3AH0900BDK30 F3AH0900BDL30	9,00 9,00	10,00 10,00	10,00 16,00	66,00 72,00
F3AH0950ADK30 F3AH0970ADK30	F3AH0950BDK30 F3AH0970BDK30	9,50 9,70	10,00 10,00	11,00 11,00	66,00 66,00
F3AH0970ADL30 F3AH1000ADK30	F3AH0970BDL30 F3AH1000BDK30	9,70 10,00	10,00 10,00	19,00 11,00	72,00 66,00
F3AH1000ADL30 F3AH1100ADK30	F3AH1000BDL30 F3AH1100BDK30	10,00 11,00	10,00 12,00	19,00 12,00	72,00 73,00
F3AH1100ADL30 F3AH1170ADK30	F3AH1100BDL30 F3AH1170BDK30	11,00 11,70	12,00 12,00	22,00 12,00	83,00 73,00
F3AH1170ADL30 F3AH1200ADK30	F3AH1170BDL30 F3AH1200BDK30	11,70 12,00	12,00 12,00	22,00 12,00	83,00 73,00

(continued)

(continued)





● first choice
○ alternate choice

KC633M	KC633M	D1	D	Ap1 max	L
F3AH1200ADL30 **F3AH1300ADK30**	**F3AH1200BDL30** **F3AH1300BDK30**	12,00 13,00	12,00 14,00	22,00 14,00	83,00 75,00
F3AH1300ADL30 **F3AH1370ADK30**	**F3AH1300BDL30** **F3AH1370BDK30**	13,00 13,70	14,00 14,00	22,00 14,00	83,00 75,00
F3AH1370ADL30 **F3AH1400ADK30**	**F3AH1370BDL30** **F3AH1400BDK30**	13,70 14,00	14,00 14,00	22,00 14,00	83,00 75,00
F3AH1400ADL30 **F3AH1500ADK30**	**F3AH1400BDL30** **F3AH1500BDK30**	14,00 15,00	14,00 16,00	22,00 16,00	83,00 82,00
F3AH1500ADL30 **F3AH1570ADK30**	**F3AH1500BDL30** **F3AH1570BDK30**	15,00 15,70	16,00 16,00	26,00 16,00	92,00 82,00
F3AH1570ADL30 **F3AH1600ADK30**	**F3AH1570BDL30** **F3AH1600BDK30**	15,70 16,00	16,00 16,00	26,00 16,00	92,00 82,00
F3AH1600ADL30 **F3AH1800ADK30**	**F3AH1600BDL30** **F3AH1800BDK30**	16,00 18,00	16,00 18,00	26,00 18,00	92,00 84,00
F3AH1800ADL30 **F3AH2000ADK30**	**F3AH1800BDL30** **F3AH2000BDK30**	18,00 20,00	18,00 20,00	26,00 20,00	92,00 92,00
F3AH2000ADL30	**F3AH2000BDL30**	20,00	20,00	32,00	104,00

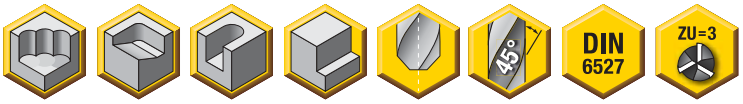
NOTE: For application data, see page M136.

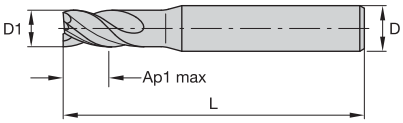
End Mill Tolerances

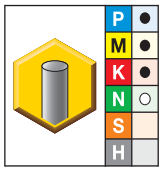
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

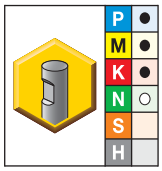
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.









● first choice
○ alternate choice

KC633M	KC633M	D1	D	Ap1 max	L
F3AH0200ADK45	F3AH0200BDK45	2,00	6,00	3,00	50,00
F3AH0250ADK45	F3AH0250BDK45	2,50	6,00	3,00	50,00
F3AH0300ADK45	F3AH0300BDK45	3,00	6,00	4,00	50,00
F3AH0300ADL45	F3AH0300BDL45	3,00	6,00	7,00	57,00
F3AH0350ADK45	F3AH0350BDK45	3,50	6,00	4,00	50,00
F3AH0350ADL45	F3AH0350BDL45	3,50	6,00	7,00	57,00
F3AH0400ADK45	F3AH0400BDK45	4,00	6,00	5,00	54,00
F3AH0400ADL45	F3AH0400BDL45	4,00	6,00	8,00	57,00
F3AH0450ADK45	F3AH0450BDK45	4,50	6,00	5,00	54,00
F3AH0450ADL45	F3AH0450BDL45	4,50	6,00	8,00	57,00
F3AH0500ADK45	F3AH0500BDK45	5,00	6,00	6,00	54,00
F3AH0500ADL45	F3AH0500BDL45	5,00	6,00	10,00	57,00
F3AH0600ADK45	F3AH0600BDK45	6,00	6,00	7,00	54,00
F3AH0600ADL45	F3AH0600BDL45	6,00	6,00	10,00	57,00
F3AH0700ADK45	F3AH0700BDK45	7,00	8,00	8,00	58,00
F3AH0700ADL45	F3AH0700BDL45	7,00	8,00	13,00	63,00
F3AH0800ADK45	F3AH0800BDK45	8,00	8,00	9,00	58,00
F3AH0800ADL45	F3AH0800BDL45	8,00	8,00	16,00	63,00
F3AH0900ADK45	F3AH0900BDK45	9,00	10,00	10,00	66,00
F3AH0900ADL45	F3AH0900BDL45	9,00	10,00	16,00	72,00
F3AH1000ADK45	F3AH1000BDK45	10,00	10,00	11,00	66,00
F3AH1000ADL45	F3AH1000BDL45	10,00	10,00	19,00	72,00
F3AH1200ADK45	F3AH1200BDK45	12,00	12,00	12,00	73,00
F3AH1200ADL45	F3AH1200BDL45	12,00	12,00	22,00	83,00
F3AH1400ADK45	F3AH1400BDK45	14,00	14,00	14,00	75,00
F3AH1400ADL45	F3AH1400BDL45	14,00	14,00	22,00	83,00
F3AH1600ADK45	F3AH1600BDK45	16,00	16,00	16,00	82,00
F3AH1600ADL45	F3AH1600BDL45	16,00	16,00	26,00	92,00
F3AH1800ADK45	F3AH1800BDK45	18,00	18,00	18,00	84,00
F3AH1800ADL45	F3AH1800BDL45	18,00	18,00	26,00	92,00
F3AH2000ADK45	F3AH2000BDK45	20,00	20,00	20,00	92,00
F3AH2000ADL45	F3AH2000BDL45	20,00	20,00	32,00	104,00

NOTE: For application data, see page M136.

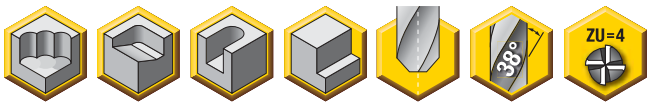
End Mill Tolerances

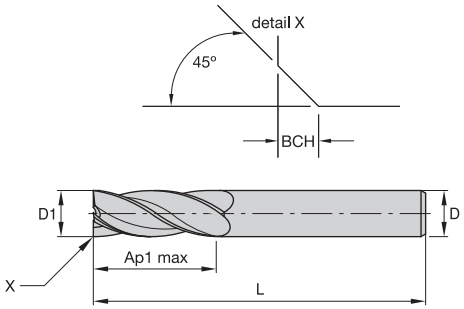
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

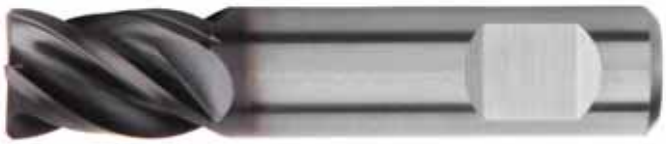
Corner Chamfer (chamfer height)

D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

- Kennametal standard dimensions.
- Centre cutting.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.

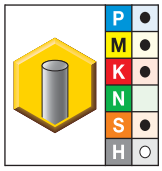


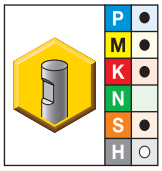




NEW!

GOmill





● first choice
○ alternate choice

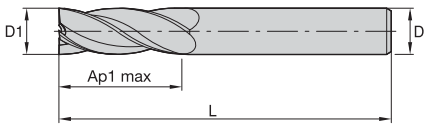
KC643M	KC643M	D1	D	Ap1 max	L	BCH
UEDE0400A4AH	**UEDE0400B4AH**	4,00	6,00	7,00	38,00	0,40
UEDE0600A4AH	**UEDE0600B4AH**	6,00	6,00	8,00	38,00	0,40
UEDE0800A4AH	**UEDE0800B4AH**	8,00	8,00	11,00	43,00	0,40
UEDE1000A4AH	**UEDE1000B4AH**	10,00	10,00	13,00	50,00	0,50
UEDE1200A4AH	**UEDE1200B4AH**	12,00	12,00	15,00	55,00	0,50

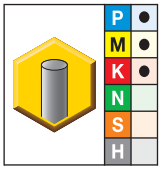
NOTE: For application data, see page M136.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F4AJ0400ADN30	4,00	4,00	11,00	50,00
F4AJ0450ADN30	4,50	4,50	11,00	50,00
F4AJ0500ADN30	5,00	5,00	13,00	50,00
F4AJ0550ADN30	5,50	5,50	13,00	57,00
F4AJ0600ADN30	6,00	6,00	13,00	57,00
F4AJ0650ADN30	6,50	6,50	16,00	60,00
F4AJ0700ADN30	7,00	7,00	16,00	60,00
F4AJ0750ADN30	7,50	7,50	19,00	63,00
F4AJ0800ADN30	8,00	8,00	19,00	63,00
F4AJ0850ADN30	8,50	8,50	19,00	67,00
F4AJ0900ADN30	9,00	9,00	19,00	67,00
F4AJ0950ADN30	9,50	9,50	22,00	72,00
F4AJ1000ADN30	10,00	10,00	22,00	72,00
F4AJ1200ADN30	12,00	12,00	26,00	83,00
F4AJ1300ADN30	13,00	13,00	26,00	83,00
F4AJ1400ADN30	14,00	14,00	26,00	83,00
F4AJ1500ADN30	15,00	15,00	32,00	92,00
F4AJ1600ADN30	16,00	16,00	32,00	92,00
F4AJ1800ADN30	18,00	18,00	32,00	92,00
F4AJ2000ADN30	20,00	20,00	38,00	104,00

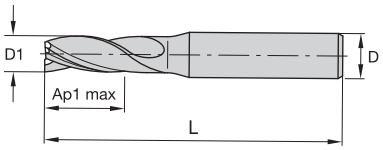
NOTE: For application data, see page M137.

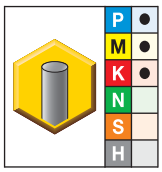
End Mill Tolerances

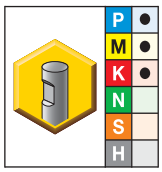
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting





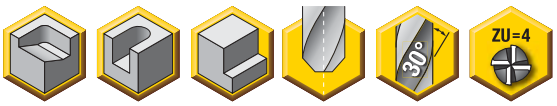


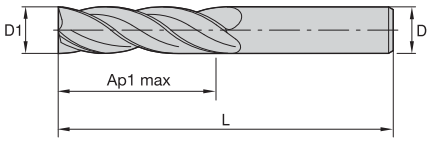
● first choice
○ alternate choice

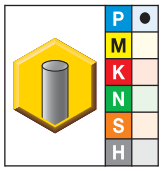
KC633M	KC633M	D1	D	Ap1 max	L
F4AJ0200ADK30	F4AJ0200BDK30	2,00	6,00	4,00	50,00
F4AJ0250ADK30	F4AJ0250BDK30	2,50	6,00	4,00	50,00
F4AJ0300ADK30	F4AJ0300BDK30	3,00	6,00	5,00	50,00
F4AJ0350ADK30	F4AJ0350BDK30	3,50	6,00	6,00	50,00
F4AJ0400ADK30	F4AJ0400BDK30	4,00	6,00	8,00	54,00
F4AJ0400ADL30	F4AJ0400BDL30	4,00	6,00	11,00	57,00
F4AJ0450ADK30	F4AJ0450BDK30	4,50	6,00	8,00	54,00
F4AJ0450ADL30	F4AJ0450BDL30	4,50	6,00	11,00	57,00
F4AJ0500ADK30	F4AJ0500BDK30	5,00	6,00	9,00	54,00
F4AJ0500ADL30	F4AJ0500BDL30	5,00	6,00	13,00	57,00
F4AJ0550ADK30	F4AJ0550BDK30	5,50	6,00	10,00	54,00
F4AJ0600ADK30	F4AJ0600BDK30	6,00	6,00	10,00	54,00
F4AJ0600ADL30	F4AJ0600BDL30	6,00	6,00	13,00	57,00
F4AJ0650ADK30	F4AJ0650BDK30	6,50	8,00	11,00	58,00
F4AJ0700ADK30	F4AJ0700BDK30	7,00	8,00	11,00	58,00
F4AJ0700ADL30	F4AJ0700BDL30	7,00	8,00	16,00	63,00
F4AJ0750ADK30	F4AJ0750BDK30	7,50	8,00	12,00	58,00
F4AJ0800ADK30	F4AJ0800BDK30	8,00	8,00	12,00	58,00
F4AJ0800ADL30	F4AJ0800BDL30	8,00	8,00	19,00	63,00
F4AJ0850ADK30	F4AJ0850BDK30	8,50	10,00	13,00	66,00
F4AJ0900ADK30	F4AJ0900BDK30	9,00	10,00	13,00	66,00
F4AJ0900ADL30	F4AJ0900BDL30	9,00	10,00	19,00	72,00
F4AJ0950ADK30	F4AJ0950BDK30	9,50	10,00	14,00	66,00
F4AJ1000ADK30	F4AJ1000BDK30	10,00	10,00	14,00	66,00
F4AJ1000ADL30	F4AJ1000BDL30	10,00	10,00	22,00	72,00
F4AJ1100ADK30	F4AJ1100BDK30	11,00	12,00	16,00	73,00
F4AJ1100ADL30	F4AJ1100BDL30	11,00	12,00	26,00	83,00
F4AJ1200ADK30	F4AJ1200BDK30	12,00	12,00	16,00	73,00
F4AJ1200ADL30	F4AJ1200BDL30	12,00	12,00	26,00	83,00
F4AJ1300ADK30	F4AJ1300BDK30	13,00	14,00	18,00	75,00
F4AJ1300ADL30	F4AJ1300BDL30	13,00	14,00	26,00	83,00
F4AJ1400ADK30	F4AJ1400BDK30	14,00	14,00	18,00	75,00
F4AJ1400ADL30	F4AJ1400BDL30	14,00	14,00	26,00	83,00
F4AJ1500ADK30	F4AJ1500BDK30	15,00	16,00	22,00	82,00
F4AJ1500ADL30	F4AJ1500BDL30	15,00	16,00	32,00	92,00
F4AJ1600ADK30	F4AJ1600BDK30	16,00	16,00	22,00	82,00
F4AJ1600ADL30	F4AJ1600BDL30	16,00	16,00	32,00	92,00
F4AJ1800ADK30	F4AJ1800BDK30	18,00	18,00	24,00	84,00
F4AJ1800ADL30	F4AJ1800BDL30	18,00	18,00	32,00	92,00
F4AJ2000ADK30	F4AJ2000BDK30	20,00	20,00	26,00	92,00
F4AJ2000ADL30	F4AJ2000BDL30	20,00	20,00	38,00	104,00

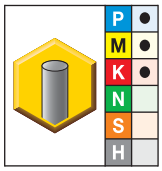
NOTE: For application data, see page M137.
For tolerance and chamfer tables, see page M125

- Kennametal standard dimensions.
- Centre cutting.









● first choice
○ alternate choice

K600	KC625M	D1	D	Ap1 max	L
F4AJ0300AWM30	**F4AJ0300AWM30**	3,00	3,00	20,00	75,00
F4AJ0400AWM30	**F4AJ0400AWM30**	4,00	4,00	25,00	75,00
F4AJ0500AWM30	**F4AJ0500AWM30**	5,00	5,00	30,00	75,00
F4AJ0600AWM30	**F4AJ0600AWM30**	6,00	6,00	30,00	75,00
F4AJ0800AWL30	**F4AJ0800AWL30**	8,00	8,00	40,00	100,00
F4AJ1000AWL30	**F4AJ1000AWL30**	10,00	10,00	40,00	100,00
F4AJ1200AWX30	**F4AJ1200AWX30**	12,00	12,00	45,00	150,00
F4AJ1400AWX30	**F4AJ1400AWX30**	14,00	14,00	45,00	150,00
F4AJ1600AWX30	**F4AJ1600AWX30**	16,00	16,00	65,00	150,00
F4AJ1800AWX30	**F4AJ1800AWX30**	18,00	18,00	65,00	150,00
F4AJ2000AWX30	**F4AJ2000AWX30**	20,00	20,00	65,00	150,00

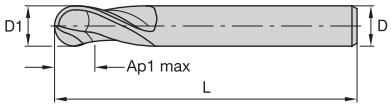
NOTE: For application data, see page M138.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

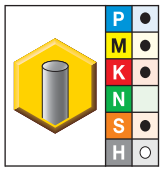
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

- Kennametal standard dimensions.
- Semi-finishing/finishing.
- Centre cutting.



NEW!

GOmill



● first choice
○ alternate choice

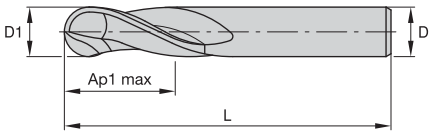
KC643M	D1	D	Ap1 max	L
UEBC0200A2A	2,00	6,00	4,00	38,00
UEBC0300A2A	3,00	6,00	5,00	38,00
UEBC0400A2A	4,00	6,00	7,00	38,00
UEBC0500A2A	5,00	6,00	8,00	38,00
UEBC0600A2A	6,00	6,00	8,00	38,00
UEBC0800A2A	8,00	8,00	11,00	43,00
UEBC1000A2A	10,00	10,00	13,00	50,00
UEBC1200A2A	12,00	12,00	15,00	55,00

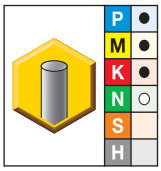
NOTE: For application data, see page M138.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

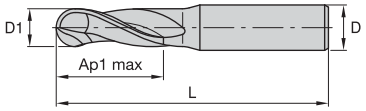
KC633M	D1	D	Ap1 max	L
F2AL0200ADN30	2,00	2,00	6,00	32,00
F2AL0300ADN30	3,00	3,00	7,00	32,00
F2AL0400ADN30	4,00	4,00	8,00	50,00
F2AL0500ADN30	5,00	5,00	10,00	50,00
F2AL0600ADN30	6,00	6,00	10,00	57,00
F2AL0800ADN30	8,00	8,00	16,00	63,00
F2AL1000ADN30	10,00	10,00	19,00	72,00
F2AL1200ADN30	12,00	12,00	22,00	83,00
F2AL1400ADN30	14,00	14,00	22,00	83,00
F2AL1600ADN30	16,00	16,00	26,00	92,00
F2AL1800ADN30	18,00	18,00	26,00	92,00
F2AL2000ADN30	20,00	20,00	32,00	104,00

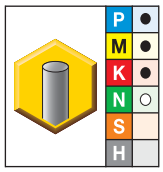
NOTE: For application data, see page M140.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

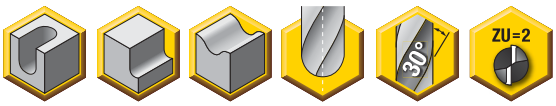
KC633M	D1	D	Ap1 max	L
F2AL0200ADL30	2,00	6,00	6,00	57,00
F2AL0300ADL30	3,00	6,00	7,00	57,00
F2AL0400ADL30	4,00	6,00	8,00	57,00
F2AL0500ADL30	5,00	6,00	10,00	57,00
F2AL0600ADL30	6,00	6,00	10,00	57,00
F2AL0800ADL30	8,00	8,00	16,00	63,00
F2AL1000ADL30	10,00	10,00	19,00	72,00
F2AL1200ADL30	12,00	12,00	22,00	83,00
F2AL1400ADL30	14,00	14,00	22,00	83,00
F2AL1600ADL30	16,00	16,00	26,00	92,00
F2AL1800ADL30	18,00	18,00	26,00	92,00
F2AL2000ADL30	20,00	20,00	32,00	104,00

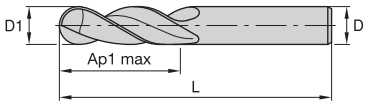
NOTE: For application data, see page M141.

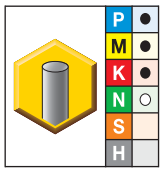
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

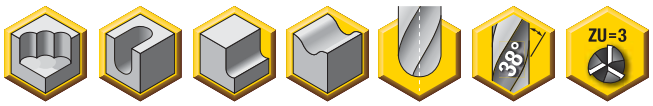
KC633M	D1	D	Ap1 max	L
F2AL0300AWM30L200	3,00	3,00	20,00	75,00
F2AL0400AWM30L250	4,00	4,00	25,00	75,00
F2AL0500AWM30L300	5,00	5,00	30,00	75,00
F2AL0600AWM30L300	6,00	6,00	30,00	75,00
F2AL0800AWL30L400	8,00	8,00	40,00	100,00
F2AL1000AWL30L400	10,00	10,00	40,00	100,00
F2AL1200AWX30L450	12,00	12,00	45,00	150,00

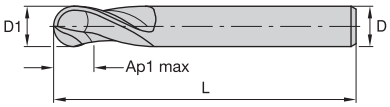
NOTE: For application data, see page M142.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

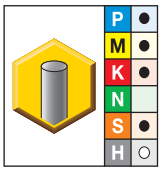
- Kennametal standard dimensions.
- Centre cutting.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.





NEW!

GOmill



● first choice
○ alternate choice

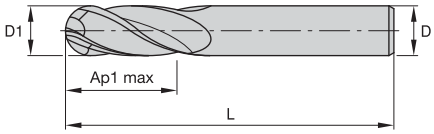
KC643M	D1	D	Ap1 max	L
UEBE0200A3A	2,00	6,00	4,00	38,00
UEBE0300A3A	3,00	6,00	5,00	38,00
UEBE0400A3A	4,00	6,00	7,00	38,00
UEBE0500A3A	5,00	6,00	8,00	38,00
UEBE0600A3A	6,00	6,00	8,00	38,00
UEBE0800A3A	8,00	8,00	11,00	43,00
UEBE1000A3A	10,00	10,00	13,00	50,00
UEBE1200A3A	12,00	12,00	15,00	55,00

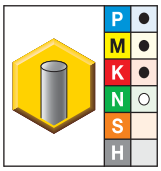
NOTE: For application data, see page M139.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

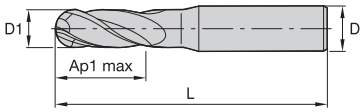
KC633M	D1	D	Ap1 max	L
F4AL0200ADN30	2,00	2,00	7,00	32,00
F4AL0300ADN30	3,00	3,00	8,00	32,00
F4AL0400ADN30	4,00	4,00	11,00	50,00
F4AL0500ADN30	5,00	5,00	13,00	50,00
F4AL0600ADN30	6,00	6,00	13,00	57,00
F4AL0800ADN30	8,00	8,00	19,00	63,00
F4AL1000ADN30	10,00	10,00	22,00	72,00
F4AL1200ADN30	12,00	12,00	26,00	83,00
F4AL1400ADN30	14,00	14,00	26,00	83,00
F4AL1600ADN30	16,00	16,00	32,00	92,00
F4AL1800ADN30	18,00	18,00	32,00	92,00
F4AL2000ADN30	20,00	20,00	38,00	104,00

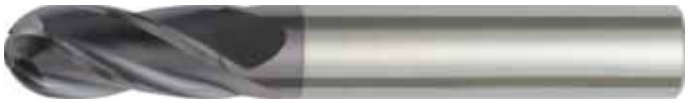
NOTE: For application data, see page M140.

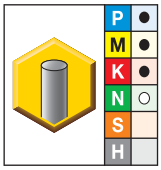
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

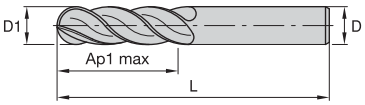
KC633M	D1	D	Ap1 max	L
F4AL0300ADL30	3,00	6,00	7,00	57,00
F4AL0400ADL30	4,00	6,00	8,00	57,00
F4AL0500ADL30	5,00	6,00	11,00	57,00
F4AL0600ADL30	6,00	6,00	13,00	57,00
F4AL0800ADL30	8,00	8,00	19,00	63,00
F4AL1000ADL30	10,00	10,00	22,00	72,00
F4AL1200ADL30	12,00	12,00	26,00	83,00
F4AL1400ADL30	14,00	14,00	26,00	83,00
F4AL1600ADL30	16,00	16,00	32,00	92,00
F4AL1800ADL30	18,00	18,00	32,00	92,00
F4AL2000ADL30	20,00	20,00	38,00	104,00

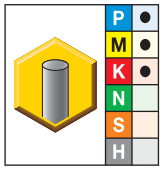
NOTE: For application data, see page M141.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F4AL0300AWM30L200	3,00	3,00	20,00	75,00
F4AL0400AWM30L250	4,00	4,00	25,00	75,00
F4AL0500AWM30L300	5,00	5,00	30,00	75,00
F4AL0600AWM30L300	6,00	6,00	30,00	75,00
F4AL0800AWL30L400	8,00	8,00	40,00	100,00
F4AL1000AWL30L400	10,00	10,00	40,00	100,00
F4AL1200AWX30L450	12,00	12,00	45,00	150,00

NOTE: For application data, see page M142.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

F2/3AH...ADN30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1,25 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,25 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1,25 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1,25 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1,25 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1,25 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1,25 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,25 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	1,25 x D	0,1 x D	0,5 x D	100	300	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
	2	1,25 x D	0,1 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
	5	1,25 x D	0,1 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

F2AH...A/BDK30

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	0,75 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	0,75 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	0,75 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	0,75 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	0,75 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	0,75 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	0,75 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	0,75 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	0,75 x D	0,1 x D	0,5XD	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
	2	0,75 x D	0,1 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
	5	0,75 x D	0,1 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AH...AWM/L/X30...

Material Group		A		B	KC625M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0	20,0
P	1	3 x D	0,05 x D	0,15 x D	150	200	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,05 x D	0,15 x D	140	190	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	3	3 x D	0,05 x D	0,15 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	4	3 x D	0,05 x D	0,15 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,082	0,088
M	1	3 x D	0,05 x D	0,15 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	2	3 x D	0,05 x D	0,15 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,075	0,081
K	1	3 x D	0,05 x D	0,15 x D	120	150	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,05 x D	0,15 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
N	1	3 x D	0,05 x D	0,15 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,180	0,200
	2	3 x D	0,05 x D	0,15 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,144	0,160
	5	3 x D	0,05 x D	0,15 x D	500	1000	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,162	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

UEDE • 3-Flute Sharp

Material Group		A		B	KC643M			Recommended Feed per Tooth (fz=inch/th) for side milling (A). For slotting (B), reduce fz by 10%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

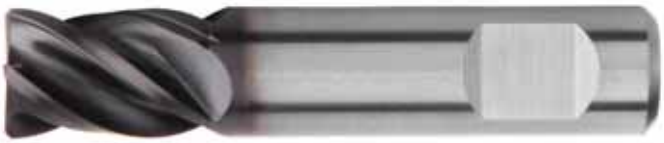
F3AH...A/BDK/L...

Material Group		A ap	A ae	B ap	KC633M Cutting Speed — vc m/min min	KC633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	0,5 x D	0,1 x D	0,25 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
P	2	0,5 x D	0,1 x D	0,25 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
P	3	0,5 x D	0,1 x D	0,25 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
P	4	0,5 x D	0,1 x D	0,25 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	0,5 x D	0,1 x D	0,25 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
M	2	0,5 x D	0,1 x D	0,25 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	0,5 x D	0,1 x D	0,25 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
K	2	0,5 x D	0,1 x D	0,25 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	0,5 x D	0,1 x D	0,25 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
N	2	0,5 x D	0,1 x D	0,25 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
N	5	0,5 x D	0,1 x D	0,25 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

Solid End Milling

UEDE • 4-Flute Chamfer



Material Group		A ap	A ae	B ae	KC643M Cutting Speed — vc m/min min	KC643M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083
P	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083
P	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070
P	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062
P	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056
P	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070
M	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056
M	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083
K	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070
K	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,023	0,036	0,050	0,061	0,070
S	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,013	0,019	0,026	0,032	0,037
S	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056
S	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

F4AJ...ADN30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1,5 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,5 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1,5 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1,5 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1,5 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1,5 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1,5 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,5 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101

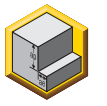
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4AJ...A/BDL/K30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1 x D	0,1 x D	0,5 x D	180	220	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1 x D	0,1 x D	0,5 x D	160	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1 x D	0,1 x D	0,5 x D	160	180	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1 x D	0,1 x D	0,5 x D	140	160	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

F4AJ...AWM/L/X30...



Material Group		A		B	K600		KC625M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min					D1 — Diameter								
		ap	ae	ap	min	max	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0	20,0
P	1	3 x D	0,1 x D	0,15 x D	90	110	180	220	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,1 x D	0,15 x D	80	100	160	200	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	3	3 x D	0,1 x D	0,15 x D	—	—	160	180	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	4	3 x D	0,05 x D	0,15 x D	—	—	140	160	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,082	0,088
M	1	3 x D	0,1 x D	0,15 x D	—	—	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	2	3 x D	0,1 x D	0,15 x D	—	—	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,075	0,081
K	1	3 x D	0,1 x D	0,15 x D	—	—	120	150	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,1 x D	0,15 x D	—	—	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

UEBC • 2-Flute Ball Nose

Material Group		A		B	KC643M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

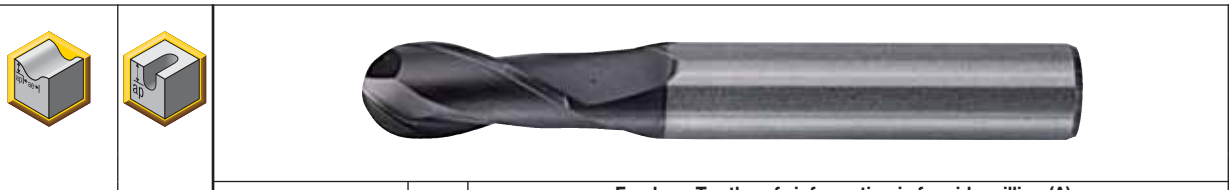
NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

UEBE • 3-Flute Ball Nose

Material Group		A		B	KC643M			Recommended Feed per Tooth (fz=inch/th) for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

NOTE: Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

F2ALDN30...



Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.											
					Cutting Speed — vc m/min			D1 — Diameter											
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1 x D	0,25 x D	0,5 x D	180	220	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	2	1 x D	0,25 x D	0,5 x D	160	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	3	1 x D	0,25 x D	0,5 x D	160	180	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
	4	1 x D	0,25 x D	0,4 x D	140	160	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088
M	1	1 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
	2	1 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081
K	1	1 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	2	1 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
N	1	1 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200
	2	1 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160
	3	1 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180

Solid End Milling

F4ALDN30....

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,4 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AL...ADL30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,5 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,030	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,024	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4AL...ADL30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,4 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180

NOTE: These guidelines may require possible variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2/4AL...AWM/L/X30L...

Material Group		A		B	KC633M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0
P	1	1,5 x D	0,15 x D	0,25 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	2	1,5 x D	0,15 x D	0,25 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	3	1,5 x D	0,15 x D	0,25 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
	4	1,5 x D	0,15 x D	0,25 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077
M	1	1,5 x D	0,15 x D	0,25 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
	2	1,5 x D	0,15 x D	0,25 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070
K	1	1,5 x D	0,15 x D	0,25 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	2	1,5 x D	0,15 x D	0,25 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
N	1	1,5 x D	0,25 x D	0,5 x D	250	1000	fz	0,030	0,040	0,060	0,080	0,100	0,120	0,160
	2	1,5 x D	0,25 x D	0,5 x D	250	750	fz	0,024	0,032	0,048	0,064	0,080	0,096	0,128
	3	1,5 x D	0,25 x D	0,5 x D	250	750	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144

F2/4AL...AWM/L/X30L...

Solid End Milling

Material Group		A		B	KC633M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0
P	1	1,5 x D	0,15 x D	0,25 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	2	1,5 x D	0,15 x D	0,25 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	3	1,5 x D	0,15 x D	0,25 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
	4	1,5 x D	0,15 x D	0,25 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077
M	1	1,5 x D	0,15 x D	0,25 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
	2	1,5 x D	0,15 x D	0,25 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070
K	1	1,5 x D	0,15 x D	0,25 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
	2	1,5 x D	0,15 x D	0,25 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

High-Performance Milling Chucks

- Heavy- and fine-milling capabilities.
- Prebalanced G6.3 @ 20,000 RPM — six threaded M6 holes to accept set screws for fine balancing.
- Heavy milling — tighten locknut until O-ring on back face of locknut just touches the flange on the chuck body to achieve runout 0,01mm (.0004") 3 x D1.
- Fine milling — tighten as above, then back the locknut off 1/8–1/4 turn to achieve runout 0,005mm (.0002") 3 x D1.
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FACE MILLS

See Section O for more details.

- **Dodeka™ Series Platform**
- **MEGA Series Platform**
- **Beyond BLAST™ KSSM™ 45°**
- **KSSM 45°**
- **KSOM™ and KSOM Mini**
- **Fix-Perfect™ Series Platform**
- **HexaCut™ Series Platform**
- **KSSR™ 84°**
- **KCMS™ Cartridge Milling System**
- **KSCM™ PCD AluMill™**
- **Fix-Perfect 90° Aluminium**
- **Chamfer Mills (30°, 45°, 60°)**

SHOULDER MILLS

See Section P for more details.

- **Mill 1-10™ Platform**
- **Mill 1-14™ Platform**
- **Mill 1-18™ Platform**
- **Mill 1-25™ Platform**
- **KSSM™ Platform**
- **KSSM-KSSP, Helical Cutters Platform**
- **KFSR™ Helical Platform**

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SLOTTING CUTTERS

See Section Q for more details.

KTMS™ T-Slot Platform

KVNS™ Platform

SN Platform

LN Platform

KSSM™ Platform

COPY MILLS

See Section R for more details.

KenFeed™ 2X

KenFeed Mini

Rodeka™ Platform

KDM Platform

KSRM™ Platform

Beyond BLAST™ KSRM Platform

KDMB™ and KDMT™ Platforms

Z-Axis • Plunge Milling Cutters

KDMR™ • Multifunction Cutters

KIPR™ and KSSP™ • Round Ceramic Milling Cutters

THREAD MILLS

See Section S for more details.

Indexable End Mills

- Weldon® Shank • TM25
- Conical Thread • TMT25
- Mini Thread Mills • STN
- Tapered Thread • STN

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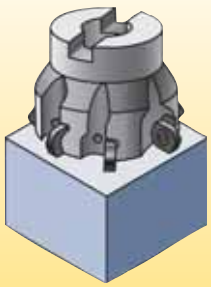
Each tool has a material grid marked with a letter indicating the materials that can be machined.

● first choice
○ alternate choice

P	○	Steel
M	●	Stainless Steel
K		Cast Iron
N		Non-Ferrous Materials
S	○	High-Temp Alloys
H	○	Hardened Materials

Choose your application:
- Face Milling
- Chamfer Milling
- Shoulder Milling
- Slotting
- Copy Milling
- Ceramic Milling
- Thread Milling

Face Mills



Dodeka™ Mini 15° • High-Feed — **Tool name**

Illustration of the product

Ap1: 1,60mm
Cutting Edges: 12
Dia: 25–80mm

Lead angle

k = 15°

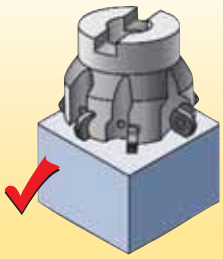
Pages: O4–O5

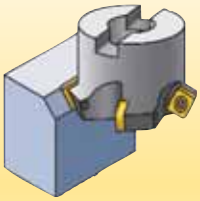
Location of introduction detail, tool bodies, inserts, and cutting data

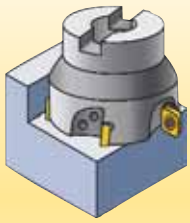
Select tool based on maximum depth of cut and diameter required:
Information is given in this area to provide specific detail as a quick reference.

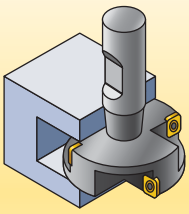
How to Navigate the 2013 Catalogue

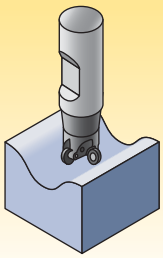
Step 1 • Select Application

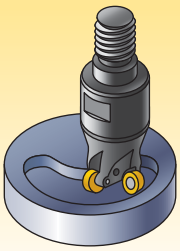

Face Milling

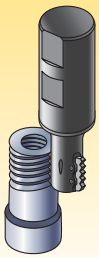

Chamfer Milling


Shoulder Milling (End Milling)


Slotting


Copy Milling

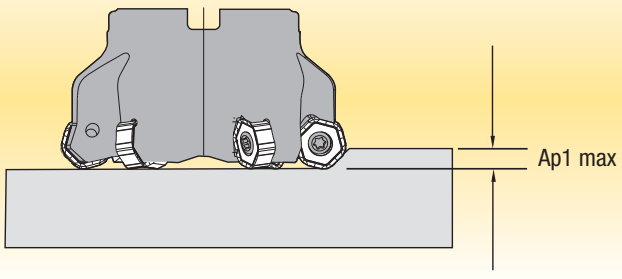

Ceramic Milling


Thread Milling

Step 2 • Select Workpiece Material

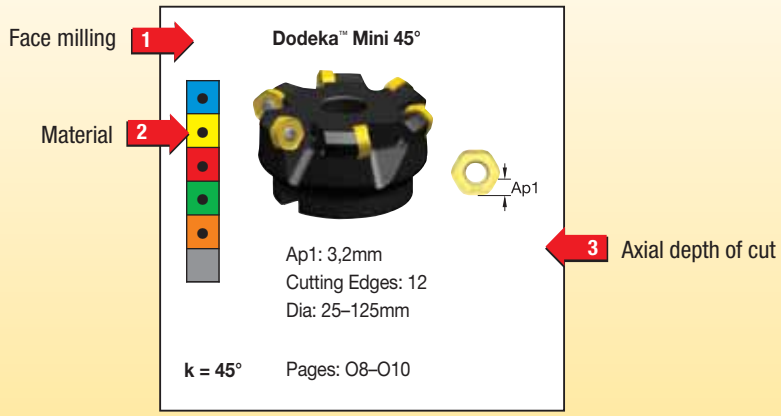
ISO Description		● first choice ○ alternate choice	Material Group	
Steel	P	●	P1–P2	Carbon steels
			P3–P4	Alloy steels and tool steels
			P5–P6	Ferritic, martensitic, and PH stainless steels
Stainless Steel	M	●	M1–M2	Austenitic stainless steels
			M3	Duplex stainless steels (ferritic and austenitic mixture)
Cast Iron	K		K1–K2	Grey, ductile, CGI, and malleable cast irons >80 KSI
			K3	Ductile, CGI, and malleable cast irons >80 KSI
Non-Ferrous Materials	N		N1–N2	Aluminium alloys <12.2% Si
			N3	Aluminium alloys >12.2% Si
High-Temp Alloys	S	●	S1–S2	Iron- and cobalt-based heat-resistant alloys
			S3	Nickel-based heat-resistant alloys
			S4	Alpha-Beta titanium alloys
Hardened Materials	H	○	H1	Hardened steels and irons

Step 3 • Select a Maximum Axial Depth of Cut (Ap)

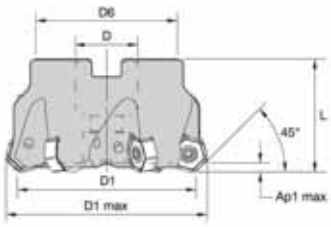


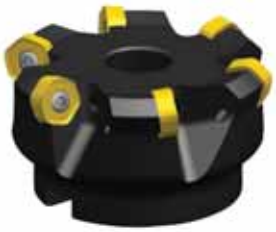
How to Navigate the 2013 Catalogue *(continued)*

Step 4 • Select Milling Cutter from Application Selector



Select the Cutter





Dodeka Mini 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4126387	KSHR040A04RS45HN06	40	48,2	22	38	40	3,2	4	0,25	15800
4124313	KSHR040A05RS45HN06	40	48,2	22	38	40	3,2	5	0,25	15800
4126388	KSHR050A04RS45HN06	50	58,2	22	38	40	3,2	4	0,36	12700
4122886	KSHR050A05RS45HN06	50	58,2	22	38	40	3,2	5	0,37	12700
4126389	KSHR050A06RS45HN06	50	58,2	22	38	40	3,2	6	0,36	12700
4122887	KSHR063A04RS45HN06	63	71,2	22	50	40	3,2	4	0,59	10100
4122889	KSHR063A06RS45HN06	63	71,2	22	50	40	3,2	6	0,65	10100
4126390	KSHR063A08RS45HN06	63	71,2	22	50	40	3,2	8	0,64	10100

4

Step 5 • Insert Selection Guide

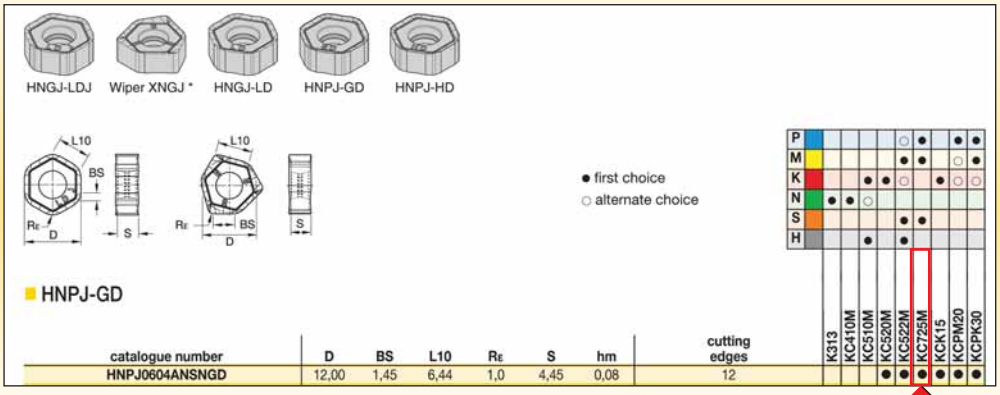
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	.S..GD	KCPM20	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
M3	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	.S..GD	KCK15	.S..HD	KCK15
K3	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	.F..LDJ	KC410M	.E..LD	KC510M
N3	.F..LDJ	KC410M	.E..LD	KC510M	.E..LD	KC510M
S1–S2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
S3	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
S4	.S..GD	KC725M	.S..HD	KC725M	–	–
H1	.E..LD	KC510M	.S..GD	KC522M	–	–

5

How to Navigate the 2013 Catalogue *(continued)*

Step 6 • Insert Chart, Providing the Inserts and Grades



HNPJ-GD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges
HNPJ0604ANSNGD	12,00	1,45	6,44	1,0	4,45	0,08	12

6

Step 7 • Defining the Feed per Tooth

Geometry (S.GD)
20% radial width of cut, follow arrows for value.
% = radial width of cut (Ae) ÷ cutter diameter (D1)
Using a round or ball nose insert, consider the axial depth of cut; see separate chart on the cutter page.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LDJ
.E..LD	0,12	**0,35**	0,71	0,09	**0,27**	0,53	0,08	**0,23**	0,46	0,07	**0,22**	0,43	0,07	**0,21**	0,42	.E..LD
.S..GD	0,24	**0,54**	0,94	0,18	**0,41**	0,70	0,16	**0,35**	0,61	0,15	**0,33**	0,57	0,14	**0,32**	0,56	.S..GD
.S..HD	0,24	**0,60**	0,97	0,18	**0,45**	0,72	0,16	**0,39**	0,63	0,15	**0,37**	0,59	0,14	**0,36**	0,57	.S..HD

NOTE: Use "Light Machining" values as starting feed rate.

7

7

Always consider starting with the "Light Machining" value. Once established, increase the feed per tooth from the chart.
These are minimum values and can be increased when the application has been proven.
Light Machining — Low Feed Rate, Higher Speed
General Purpose — Normal Feed, Normal Speed
Heavy Machining — Higher Feed, Reduced Speed

Step 8 • Recommended Starting Speeds [m/min]

8

8

Material Group		KC522M			KCPM20			KC725M			KCK15			KCPK30		
P	1	395	**345**	325	660	**580**	535	315	**275**	255	–	–	–	545	**475**	440
	2	330	**290**	240	410	**370**	330	260	**230**	195	–	–	–	335	**305**	275
	3	305	**255**	215	370	**330**	305	240	**205**	170	–	–	–	305	**275**	250
	4	270	**225**	180	275	**255**	230	215	**180**	145	–	–	–	225	**210**	190
	5	225	**200**	180	330	**300**	275	180	**160**	145	–	–	–	310	**275**	255
	6	200	**150**	120	230	**200**	175	160	**120**	95	–	–	–	190	**165**	–
M	1	245	**215**	200	270	**240**	205	205	**180**	165	–	–	–	250	**220**	190
	2	225	**190**	160	245	**215**	190	185	**160**	130	–	–	–	225	**195**	170
	3	170	**145**	115	195	**175**	150	140	**120**	95	–	–	–	175	**160**	140
K	1	275	**250**	220	435	**390**	350	–	–	–	505	**460**	410	355	**320**	285
	2	215	**195**	180	345	**310**	280	–	–	–	400	**355**	330	280	**255**	230
	3	180	**160**	145	290	**255**	240	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	50	**45**	35	–	–	–	45	**35**	30	–	–	–	–	–	–
	2	50	**45**	35	–	–	–	45	**35**	30	–	–	–	–	–	–
	3	60	**50**	35	–	–	–	55	**45**	30	–	–	–	–	–	–
	4	85	**60**	45	–	–	–	75	**55**	35	–	–	–	–	–	–
H	1	145	**110**	85	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Choose the Application

- Face Milling
- Chamfer Milling
- Shoulder Milling
- Slotting
- Copy Milling
- Ceramic Milling
- Thread Milling

● first choice
○ alternate choice

P	○	Steel
M	●	Stainless Steel
K		Cast Iron
N		Non-Ferrous Materials
S	○	High-Temp Alloys
H	○	Hardened Materials

Face Mills

Dodeka™ Mini 15° • High-Feed

Ap1: 1,60mm
Cutting Edges: 12
Dia: 25–80mm
k = 15° Pages: O4–O5

Dodeka™ Mini 45°

Ap1: 3,2mm
Cutting Edges: 12
Dia: 25–125mm
k = 45° Pages: O8–O10

Dodeka™ Mini 60° • Heavy Duty

Ap1: 4,4mm
Cutting Edges: 12
Dia: 40–125mm
k = 60° Page: O13

Dodeka™ • High-Feed • 15°

Ap1: 2,2mm
Cutting Edges: 12
Dia: 50–160mm
k = 15° Page: O16

Dodeka™

Ap1: 4,5mm
Cutting Edges: 12
Dia: 40–315mm
k = 45° Pages: O19–O20

Dodeka™ JIS

Ap1: 4,5mm
Cutting Edges: 12
Dia: 80–160mm
k = 45° Page: O21

Dodeka MAX™

Ap1: 8mm
Cutting Edges: 12
Dia: 80–315mm
k = 45° Page: O26

Dodeka MAX™ JIS

Ap1: 8mm
Cutting Edges: 12
Dia: 80–315mm
k = 45° Page: O27

MEGA 45° • Heavy Duty

Ap1: 17,2mm
Cutting Edges: 4
Dia: 125–315mm
k = 45° Page: O32

MEGA 45° • Heavy Duty • JIS

Ap1: 17,2mm
Cutting Edges: 4
Dia: 125–315mm
k = 45° Page: O33

MEGA 15 • Heavy Duty

Ap1: 6,1mm
Cutting Edges: 4
Dia: 125–315mm
k = 15° Page: O38

MEGA 60 • Heavy Duty

Ap1: 21,4mm
Cutting Edges: 4
Dia: 125–315mm
k = 60° Page: O40

MEGA 60 • Heavy Duty • JIS

Ap1: 21,4mm
Cutting Edges: 4
Dia: 125–315mm
k = 60° Page: O41

MEGA 90 • Heavy Duty

Ap1: 25,5mm
Cutting Edges: 4
Dia: 125–315mm
k = 90° Page: O44

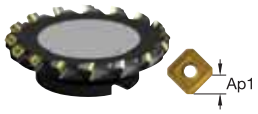
MEGA 90 • Heavy Duty • JIS

Ap1: 25,5mm
Cutting Edges: 4
Dia: 125–315mm
k = 90° Page: O45

KSSM™ 45° • Beyond BLAST™

Ap1: 6,6mm
Cutting Edges: 4
Dia: 50–200mm
k = 45° Page: O50

KSSM™ 45° • Beyond BLAST™ • JIS



Ap1: 6,6mm
Cutting Edges: 4
Dia: 80–200mm
k = 45° Page: O51

KSSM™ 45°

Ap1: 6,6mm
Cutting Edges: 4
Dia: 40–160mm
k = 45° Pages: O55–O56

KSSM™ 45° JIS

Ap1: 6,6mm
Cutting Edges: 4
Dia: 80–160mm
k = 45° Page: O57

KSOM™ Mini

Ap1: 3,5mm (8 edges)
Ap2: 9mm (4 edges)
Dia: 32–160mm
k = 43° Pages: O64–O66

KSOM™ Mini JIS

Ap1: 3,5mm (8 edges)
Ap2: 9mm (4 edges)
Dia: 80–160mm
k = 43° Page: O67

KSOM™ • OF.T07L6...

Ap1: 5mm (8 edges)
Ap2: 11mm (4 edges)
Dia: 63–160mm
k = 43° Page: O72

KSOM™ • OF.T07L6... JIS

Ap1: 5mm (8 edges)
Ap2: 11mm (4 edges)
Dia: 80–160mm
k = 43° Page: O73

Fix-Perfect™ • Finisher

Ap1: 1mm
Cutting Edges: 4
Dia: 63–250mm
k = 15° Page: O80

Fix-Perfect™ 70° • Cast Iron • IC12

Ap1: 5,9mm (8 edges)
Ap2: 9,5mm (4 edges)
Dia: 50–250mm
k = 70° Page: O84

Fix-Perfect™ 90° • Cast Iron • IC12

Ap1: 6mm (8 edges)
Ap2: 10mm (4 edges)
Dia: 50–200mm
k = 90° Page: O88

Fix-Perfect™ 70° • Cast Iron • IC15

Ap1: 6,5mm (8 edges)
Ap2: 12mm (4 edges)
Dia: 80–250mm
k = 70° Page: O92

Fix-Perfect™ 90° • Cast Iron • IC15

Ap1: 8mm (8 edges)
Ap2: 12mm (4 edges)
Dia: 80–200mm
k = 90° Page: O96

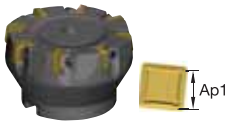
HexaCut™ 45° • Cast Iron

Ap1: 6,5mm
Cutting Edges: 12
Dia: 80–200mm
k = 45° Page: O103

HexaCut™ 60° • Cast Iron

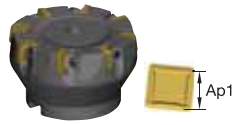
Ap1: 8mm
Cutting Edges: 12
Dia: 80–200mm
k = 60° Page: O108

KSSR • Left and Right Hand



Ap1: 5mm
Cutting Edges: 8
Dia: 63–250mm
k = 84° Pages: O116–O118

KSSR JIS



Ap1: 5mm
Cutting Edges: 8
Dia: 80–250mm
k = 84° Page: O119

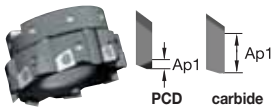
KCMS™ • Cartridge Milling System

Ap1: 0,7–18mm
28 alternative cartridges
Note: See cartridges for Ap1 value
Dia: 125–315mm
Variable Page: O126

KSCM™ AluMill™

Ap1: 3mm
Cutting Edges: 1
Dia: 63–315mm
k = 90° Pages: O129–O130

Fix-Perfect™ 90° • Aluminium

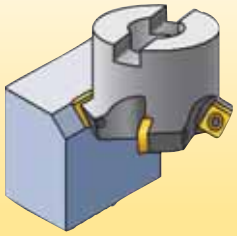


Ap1: 9,5mm (carbide)
Ap1: 2,5-5,2mm (PCD)
Cutting Edges: 1 (PCD); 4 (carbide)
Dia: 40–315mm
k = 90° Pages: O139–O143

● first choice
○ alternate choice

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

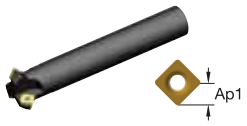
Chamfer Mills



Chamfer Mill • End Mills 45° • IC 09

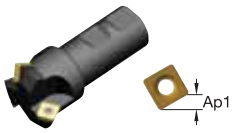
Ap1: 6,5mm
Cutting Edges: 4
Dia: 10–32mm
k = 45° Page: O148

Chamfer Mill • End Mills 45° • IC 12



Ap1: 9mm
Cutting Edges: 4
Dia: 32mm
k = 45° Page: O151

Chamfer Mill • End Mills 30° • IC 12



Ap1: 6,5mm
Cutting Edges: 4
Dia: 32mm
k = 30° Page: O150

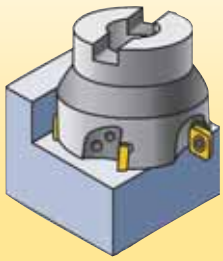
Chamfer Mill • End Mills 45° • IC 12

Ap1: 9mm
Cutting Edges: 4
Dia: 32mm
k = 45° Page: O150

Chamfer Mill • End Mills 60° • IC 12

Ap1: 10mm
Cutting Edges: 4
Dia: 32mm
k = 60° Page: O151

Shoulder Mills



Mill 1-10™

Ap1: 10mm (carbide)
Ap1: 4mm (PCD)
Cutting Edges: 2
Dia: 12–100mm
k = 90° Pages: P3–P7

Mill 1-10™ • JIS

Ap1: 9,9mm (carbide)
Ap1: 4mm (PCD)
Cutting Edges: 2
Dia: 80–100mm
k = 90° Page: P8

Mill 1-10™ Helical

Ap1: up to 45mm
Cutting Edges: 2
Dia: 20–50mm
k = 90° Pages: P14–P16

Mill 1-14™

Ap1: 14mm
Cutting Edges: 2
Dia: 20–160mm
k = 90° Pages: P23–P25

Mill 1-14™ • JIS

Ap1: 14,2mm
Cutting Edges: 2
Dia: 80–160mm
k = 90° Page: P26

Mill 1-14™ Helical

Ap1: 27–54mm
Cutting Edges: 2
Dia: 32–63mm
k = 90° Pages: P33–P35

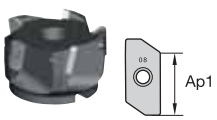
Mill 1-18™

Ap1: 18mm
Cutting Edges: 2
Dia: 25–160mm
k = 90° Pages: P45–P48

Mill 1-18™ • JIS

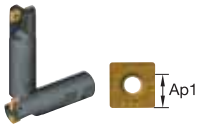
Ap1: 18mm
Cutting Edges: 2
Dia: 80–160mm
k = 90° Page: P50

Mill 1-25™



Ap1: 25mm
Cutting Edges: 2
Dia: 40–100mm
k = 90° Pages: P57–P58, P60

KSSM™ 90° • IC 10mm



Ap1: 6,6mm
Cutting Edges: 4
Dia: 25–100mm
k = 90° Pages: P65–P66

KSSM™ 90° • IC 12mm

Ap1: 9,2mm
Cutting Edges: 4
Dia: 50–200mm
k = 90° Page: P70

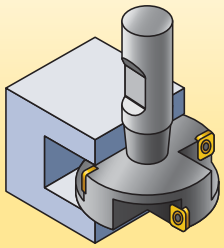
KSSM™ • Helical 90° • IC 12mm

Ap1: 32–61mm
Cutting Edges: 4
Dia: 50–80mm
k = 90° Page: P75

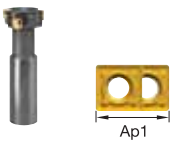
KFSR™ Heavy Duty

Ap1: 24–111mm
Cutting Edges: 2
Dia: 63–250mm
k = 90° Pages: P81, P83

Slotting

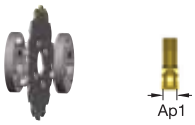


T-Slot Cutter



Ap1: 9–22mm
Dia: 21–50mm
k = 90° Page: Q3

KVNS™ A2™ Slotting Cutters



Ap1: 1,6–4mm
Cutting Edge: 1
Dia: 63–250mm
k = 90° Pages: Q9–Q10

90° SN Slotting Cutters

B min: 4–14mm
Cutting Edges: 4
Dia: 80–250mm
k = 90° Page: Q15

90° LN Slotting Cutters

B min: 6–12mm
Cutting Edges: 4
Dia: 80–200mm
k = 90° Pages: Q19–Q20

KSSM™ Slotting Cutters • IC 10

B min: 14–18mm
Cutting Edges: 4
Dia: 100–315mm
k = 90° Pages: Q27–Q40

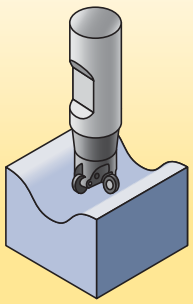
KSSM™ Slotting Cutters • IC 12

B min: 18–23,3mm
Cutting Edges: 4
Dia: 125–315mm
k = 90° Pages: Q44–Q57

● first choice
○ alternate choice

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

Copy Mills



KenFeed™ 2X Series

P ● M ● K ● N ● S ○ H ●

Ap1: 1,5mm
Cutting Edges: 6
Dia: 25–80mm
HF Pages: R3–R4

KenFeed™ Mini

P ● M ● K ● N ● S ● H ●

Ap1: 0,8–1mm
Cutting Edges: 3
Dia: 16–35mm
HF Page: R9

KDR Rodeka™ IC 12

P ● M ● K ● N ● S ● H ○

Ap1: 3mm/6mm
Cutting Edges: 12/8
Dia: 32–100mm
Round Pages: R13–R15, R19

KDM • RD.X05...

P ● M ● K ● N ○ S ● H ●

Ap1: 2,5mm
Dia: 12–25mm
Round Page: R21

KDM • RD.X07...

P ● M ● K ● N ○ S ● H ●

Ap1: 3,5mm
Dia: 12–35mm
Round Page: R24

KDM • RD.X10...

P ● M ● K ● N ● S ● H ●

Ap1: 5mm
Dia: 20–52mm
Round Pages: R27–R29

KDM • RD.X12...

P ● M ● K ● N ● S ● H ●

Ap1: 6mm
Dia: 24–80mm
Round Pages: R33–R34

KDM • RD.X16...

P ● M ● K ● N ● S ● H ●

Ap1: 8mm
Dia: 32–100mm
Round Page: R38

KSRM™ • IC12

P ● M ● K ○ N ● S ● H

Ap1: 6mm
Dia: 32–100mm
Round Pages: R43–R45

KSRM™ • IC16

P ● M ○ K ● N ● S ● H

Ap1: 8mm
Dia: 40–125mm
Round Pages: R49–R50

KSRM™ • IC20

P ● M ● K ○ N ● S ● H

Ap1: 10mm
Dia: 63–200mm
Round Page: R54

Beyond BLAST™ • KSRM™ • IC20

P ● M ● K ● N ● S ● H ●

Ap1: 10mm
Dia: 63–200mm
Round Page: R59

Beyond BLAST™ • KSRM™ • IC20 • JIS

P ● M ● K ● N ● S ● H ●

Ap1: 10mm
Dia: 80–200mm
Round Page: R60

KDMB™ Ball Nose Platform

Ap1: 3–16mm
Cutting Edges: 1
Dia: 6–32mm
Pages: R65–R68

KDMT™ Platform • KDMS™

Ap1: Up to 8mm
Cutting Edges: 1
Dia: 8–32mm
Pages: R82–R83

KDMT™ High-Feed

Ap1: up to 8mm
Cutting Edges: 1
Dia: 6–20mm
HF Pages: R82–R83

KMM™ Platform

Ap1: 1mm
Cutting Edges: 2
Dia: 10–52mm
k = 95° Pages: R89–R90

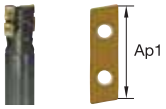
Z-Axis Plunge Mill

Ap1: 11mm
Cutting Edges: 4
Dia: 32–160mm
k = 88.5° Pages: R97–R99

Z-Axis Plunge Mill • JIS

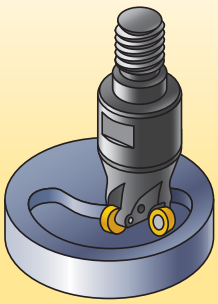
Ap1: 11mm
Cutting Edges: 4
Dia: 80–160mm
k = 88.5° Page: R100

KDMR™ Platform



Ap1: up to 54mm
Ap2 = up to 10mm
Cutting Edges: 2
Dia: 16–50mm
k = 90° Pages: R107–R110

Ceramic Mills



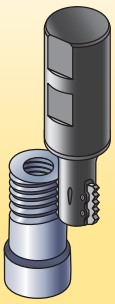
Ceramic Positive RP

Ap1: 3–6,3mm
Dia: 16–100mm
Round Pages: R115–R117

Ceramic Negative RN

Ap1: 6mm
Dia: 50–160mm
Round Page: R121

Thread Mills



Thread Mills

Inserts:
Long: STN 16, STN 27, STN 38
Normal: STN 11, STN 16, STN 27, STN 38
Mini - STN 10
Dia: 9–46mm
Pages: S9–S10

Thread Mills — Tapered Thread

Inserts:
STN 11, STN 16, STN 27
Dia: 10–42mm
Page: S11

Thread Mills

Dia: 17–30mm
Page: S4

Conical Thread Mills

Dia: 14–26mm
Page: S5

How Do Catalogue Numbers Work?

Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

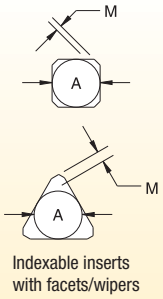
H — Insert Shape

A	Parallelogram	85°
C E	Rhomboid	80° 75°
H	Hexagon	120°
L	Rectangular	90°
O	Octagon	135°
R	Round	—
S	Square	90°
T	Triangular	60°
X	Kennametal Standard Form	

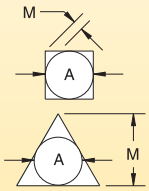
N — Insert Clearance Angle

A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

G — Tolerance Class



Indexable inserts with facets/wipers



Indexable inserts with corner radii

Insert thickness

J — Geometry and Clamping Type

06 — Size

A	"L" for shapes C	T	R	O	C	H	E
6,00	–	–	06	–	–	–	–
6,35	06	11	06	02	06	03	06
8,00	–	–	08	–	–	–	–
9,52	09	16	09	04	09	05	09
10,00	–	–	10	–	–	–	–
12,00	–	–	12	–	–	–	–
12,70	12	22	12	05	12	07	13
15,88	15	27	15	06	16	09	16
16,00	–	–	16	–	–	–	–
19,05	19	33	19	07	19	11	19
20,00	–	–	20	–	–	–	–
25,00	–	–	25	–	–	–	–
25,40	25	44	25	10	25	14	26

For shapes A, L, and X, see position #1; use length of leading cutting edge.

tolerance class	tolerance on "A"	tolerance on "M"	tolerance on "T"	tolerance class	tolerance on "A"	tolerance on "M"	tolerance on "T"
A	0,025	0,005	0,025	**J**	0,05–0,13*	0,005	0,025
B	0,025	0,005	0,13	**K**	0,05–0,13*	0,013	0,025
C	0,025	0,013	0,025	**L**	0,05–0,13*	0,025	0,025
D	0,025	0,013	0,13	**M**	0,05–0,10*	0,05–0,25*	0,13
E	0,025	0,025	0,025	**N**	0,05–0,10*	0,05–0,25*	0,025
F	0,013	0,005	0,025	**P****	0,038	0,038	0,038
G	0,025	0,025	0,13	**U**	0,08–0,25*	0,13–0,30*	0,13
H	0,013	0,013	0,025	**—**	—	—	—

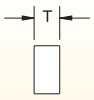
*See table below for tolerances according to insert size and class.
**Kennametal standard only.

A	tolerances on "A"		tolerances on "M"	
	classes J, K, L, M, N	class U	classes M & N	class U
4,76–10,00	0,051	0,076	0,076	0,127
11,11–14,29	0,076	0,127	0,127	0,203
15,00–20,64	0,102	0,178	0,152	0,279
22,00–31,16	0,127	0,254	0,178	0,381
31,75–35,00	0,152	0,254	0,203	0,381

symbol	hole	shape of hole	chipbreaker	shape of insert's section
N	without		without	
R			single sided	
F			double sided	
A	with	cylindrical hole	without	
M			single sided	
G			double sided	
W		partly cylindrical hole, 40–60° countersink	without	
T			single sided	
Q		partly cylindrical hole, 40–60° double countersink	without	
U			double sided	
B		partly cylindrical hole, 70–90° countersink	without	
H			single sided	
C		partly cylindrical hole, 70–90° double countersink	without	
J			double sided	
X	special design			

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

04 — Thickness



insert thickness

T	
2,38	02
3,18	03
3,97	T3
4,76	04
5,56	05
6,35	06
7,94	07

AN — Corner Configuration

radius		leading or major cutting edge			
M0	round insert	If letter is replaced by number(s), refer to table for radius "r".		wiper edge clearance P	
01	0,1mm				
02	0,2mm			A	3°
04	0,4mm			B	5°
05	0,5mm			C	7°
08	0,8mm			D	15°
10	1,0mm			E	20°
12	1,2mm	lead angle K		F	25°
15	1,5mm	A	45°	G	30°
16	1,6mm	D	60°	N	0°
24	2,4mm	E	75°	P	11°
32	3,2mm	P	90°		

E — Cutting Edge Form

F Sharp

E Honed

T T-land

S Honed T-land

N — Insert Hand

direction of cutter rotation

direction of cutter rotation

direction of cutter rotation

L — Edge Prep Size

L = Light — sharp or lightly honed and/or T-land
G = General — medium hone and/or T-land
H = Heavy — large hone and/or T-land

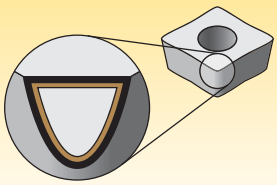
D — Rake Face Angle

N	A	B	C	P	D	E	F	G
0° or less	3°	5°	7°	11°	15°	20°	25°	30°

Nominal or average angle of rake on insert face at leading cutting edge before edge prep and before installation.

Added Info

J = Polished rake face
P = Partial T-land
W = Wiper/radiused facet



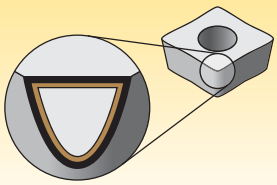
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KMF	KMF is an uncoated carbide grade, fine grained substrate for machining of high-temperature alloys and non-ferrous materials.	K N S			K N S	K N S	K N			
K115M	A premium uncoated carbide grade designed for high edge wear resistance in non-ferrous and cast iron materials. Coolant use recommended.	K N	K N	K N						
K313	An uncoated carbide grade suitable for machining cast iron, high-temperature alloys, and non-ferrous materials. This grade can be used both wet and dry and is designed for light and general machining.	K N S	K N S	K N S						
K110M	A universal uncoated carbide grade for machining non-ferrous materials for use in light and general machining. K110M can be used with or without coolant.	K N S		K N S	K N					
K125M	An uncoated carbide grade particularly suitable for dry machining of steel. Its primary use is in light and general machining.	P			P	P	P			
KC410M	An extremely hard TiB_2-PVD-coated grade that provides very good wear characteristics at higher cutting speeds. KC410M resists edge build up, can help reduce burring, and generates excellent surface finishes. This grade is best suited for aluminium with <10% silicon and other non-ferrous materials.	N	N	N						
KC422M	A very wear resistant TiB_2-PVD-coated grade. Its hard coating and tough substrate make KC422M an excellent choice for medium to roughing applications in aluminium with <10% silicon and other non-ferrous materials.	N			N	N	N			
KC505M	A highly wear-resistant TiAlN-PVD-coated grade primarily for light machining in steel and hardened steel.	P H	P H	P						



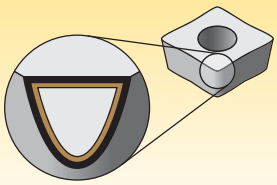
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC510M	A highly wear-resistant TiAiN-PVD-coated carbide grade primarily for use in milling aluminium and high-temperature alloys in light applications. Can also be used for machining steel and hardened steel.	P	P							
		N	N	N						
		S	S							
		H	H							
KC514M	A thicker TiAlN-PVD-coated carbide grade that combines high wear-resistance with good toughness. KC514M is primarily for light to medium machining of cast irons and can be used wet or dry.									
		K		K	K	K				
KC515M	A K10 substrate premium grade with built-in wear resistance and a TiAlN coating for extended life during finishing applications. Used in ball nose finishing and back draft inserts for the die and mould industry and is capable of running at moderate to high cutting speeds.	P	P	P						
		M	M							
		K	K							
KC520M	A TiAlN-PVD-coated carbide grade developed specifically for general machining of ductile cast iron and can be used with or without coolant.									
		K		K	K	K				
KC522M	AlTiN-PVD-coated carbide grade engineered to provide better performance in general machining of high-temperature alloys and stainless steel. KC522M resists breakage and offers improved wear resistance and increased strength.	P			P	P				
		M			M	M	M			
		K				K	K	K		
		S			S	S	S			
KC524M	A thicker coated TiAlN-PVD-coated carbide grade combining good wear-resistance and high toughness. It is primarily for general machining of all cast irons and can be used wet or dry.									
		K			K	K	K	K		
KC525M	A new universal TiAlN-PVD-coated carbide grade primarily for use in light and general machining of milling steel, stainless steel, and high-temperature alloys. KC525M can be used with or without coolant.	P			P	P	P			
		M			M	M	M			
		S			S	S	S			
KC527M	A TiAlN-PVD-coated carbide grade ideal for medium milling applications in steel and high strength ductile cast irons. For best results, use dry, but can be used wet.	P			P	P	P			
		K			K	K	K			



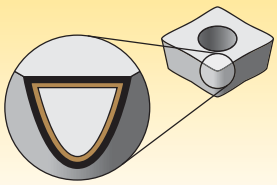
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC530M	A premium TiAlN-PVD-coated carbide grade enabling extended tool life at moderate feeds and high cutting speeds. First choice for milling in all steels, including die and mould steels, and is recommended for use without coolant.	P	P	P	P	P	P	P	P	P
		M	M	M	M	M	M	M	M	M
KC537M	A tough, general-purpose TiAlN-PVD-coated carbide grade for medium to heavy milling applications for use in all steels and cast irons. KC537M can be used either wet or dry.	P	P	P	P	P	P	P	P	P
		M	M	M	M	M	M	M	M	M
		K	K	K	K	K	K	K	K	K
KC5410	An extremely hard TiB_2-PVD-coated grade that provides very good wear characteristics at high cutting speeds and is best suited for machining aluminium with <10% silicon and other non-ferrous materials. KC5410 resists built-up edge, can help reduce the burring effect, and will generate excellent surface finishes.	N	N	N	N	N	N	N	N	N
KC610M	A high-performance, TiN-TiCN-TiN-PVD-coated carbide grade characterised by good hardness and wear resistance for milling all types of material and is the first choice for steel. KC610M should be used with coolant or minimal lubrication.	P	P	P	P	P	P	P	P	P
		M	M	M	M	M	M	M	M	M
		K	K	K	K	K	K	K	K	K
		S	S	S	S	S	S	S	S	S
KC620M	A TiN-PVD-coated carbide grade suitable for machining cast iron, non-ferrous materials, and aluminium alloys that can be used for wet or dry machining.	P	P	P	P	P	P	P	P	P
		K	K	K	K	K	K	K	K	K
		N	N	N	N	N	N	N	N	N
KC635M	A high-performance, TiAlN-PVD-coated grade characterised by high hardness and wear resistance. KC635M is suitable for cutting hard materials up to 65 HRC and is first choice for stainless steel.	P	P	P	P	P	P	P	P	P
		M	M	M	M	M	M	M	M	M
		K	K	K	K	K	K	K	K	K
		H	H	H	H	H	H	H	H	H
KCPM20	KCPM20 is a multilayered TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment. The substrate is a well-balanced combination of wear resistance and toughness. KCPM20 is primarily for light and general machining of steels and stainless steels or roughing of cast irons.	P	P	P	P	P	P	P	P	P
		M	M	M	M	M	M	M	M	M
		K	K	K	K	K	K	K	K	K
KC715M	KC715M has a deformed substrate and PVD coating that can handle high temperatures and higher surface speeds making it ideal for dry machining. KC715M is primarily for use in light and general machining of steel, stainless steel, and cast steel.	P	P	P	P	P	P	P	P	P



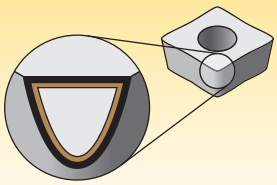
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC720M	A TiAlN-TiN-PVD-coated carbide grade engineered to provide balanced wear and deformation resistance in combination with excellent breakage resistance.	P, M								
KC725M	A high-performance TiAlN-PVD-coated carbide grade for milling steel, stainless steel and ductile cast iron. The good thermal shock resistance of the substrate makes this grade ideal for both wet and dry machining. KC725M is primarily for use in general and heavy machining.	P, M, S								
KC730M	A TiN-PVD-coated carbide grade with a tough substrate and is recommended for general milling with moderate speeds. KC730M can be used wet or dry.	P, M								
KC735M	A TiN-PVD-coated carbide grade offering an unusual combination of high toughness and wear resistance. Even under extreme toughness requirements, KC735M achieves outstanding results in general and heavy machining applications and is suitable for dry and wet machining.	P, M								
KCK15	A multilayered TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment. KCK15 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results in dry but can also be used wet.	K								
KTPK20	A multilayered TiAlN-AlCrN-PVD-coated cermet. This tough cermet is primarily for use in light and general machining of steel, stainless steel, and cast iron and performs best dry.	P, M, K								
KCPK30	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment and a very tough substrate. KCPK30 has a wide application area in general and rough milling of steels and cast irons. It performs best dry but can also be used wet.	P, K								
KCMP30	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment and a very tough substrate. KCMP30 has a wide application area in general and rough milling of steels. It performs best dry but can also be used wet.	P, M, S								



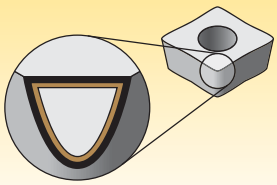
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC907M	A TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with a very hard substrate providing excellent wear resistance. Primarily for use in light cuts and finishing of cast iron.	K	K							
KC914M	A TiN-TiCN-Al_2O_3-ZrCN-CVD-coated carbide grade ideal for light to medium cutting of grey cast iron at high speeds that performs best dry.	K		K	K					
KC917M	A wear-resistant multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with balanced toughness for general milling of cast irons at high speeds. Best results achieved when used with coolant but can also be used dry.	K		K	K	K				
KC924M	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with good toughness for medium to heavy milling of all cast irons. Best results when machining dry, but can be used wet.	K			K	K	K			
KC927M	A multilayered TiN-TiCN-Al_2O_3-TiN-CVD-coated carbide grade with a tough substrate used for medium machining of all steels and ductile cast irons. Best results when machining dry but can be used wet.	P					P	P		
		M				M	M			
		K			K	K	K			
KYSM10	KYSM10 — previously KY2100 — has good mechanical shock resistance combined with edge wear resistance and is used for general-purpose machining of high-temperature alloys. KYSM10 can also be used for machining steel and stainless steel.	M		M	M					
		S		S	S	S				
KY3500	A ceramic cutting material based on micro-grain Si_3N_4 primarily for use in light to general machining of grey cast iron and ferritic ductile cast iron. Dry machining is preferred while using this grade.	K			K	K	K	K		
KYHS10	KYHS10 — previously KY4300 — is an Al_2O_3 matrix reinforced with SiC whiskers for excellent toughness suited for machining high-temperature and ferrous alloys with a high Brinell hardness.	K		K	K	K				
		S		S	S	S				
		H					H	H		



Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

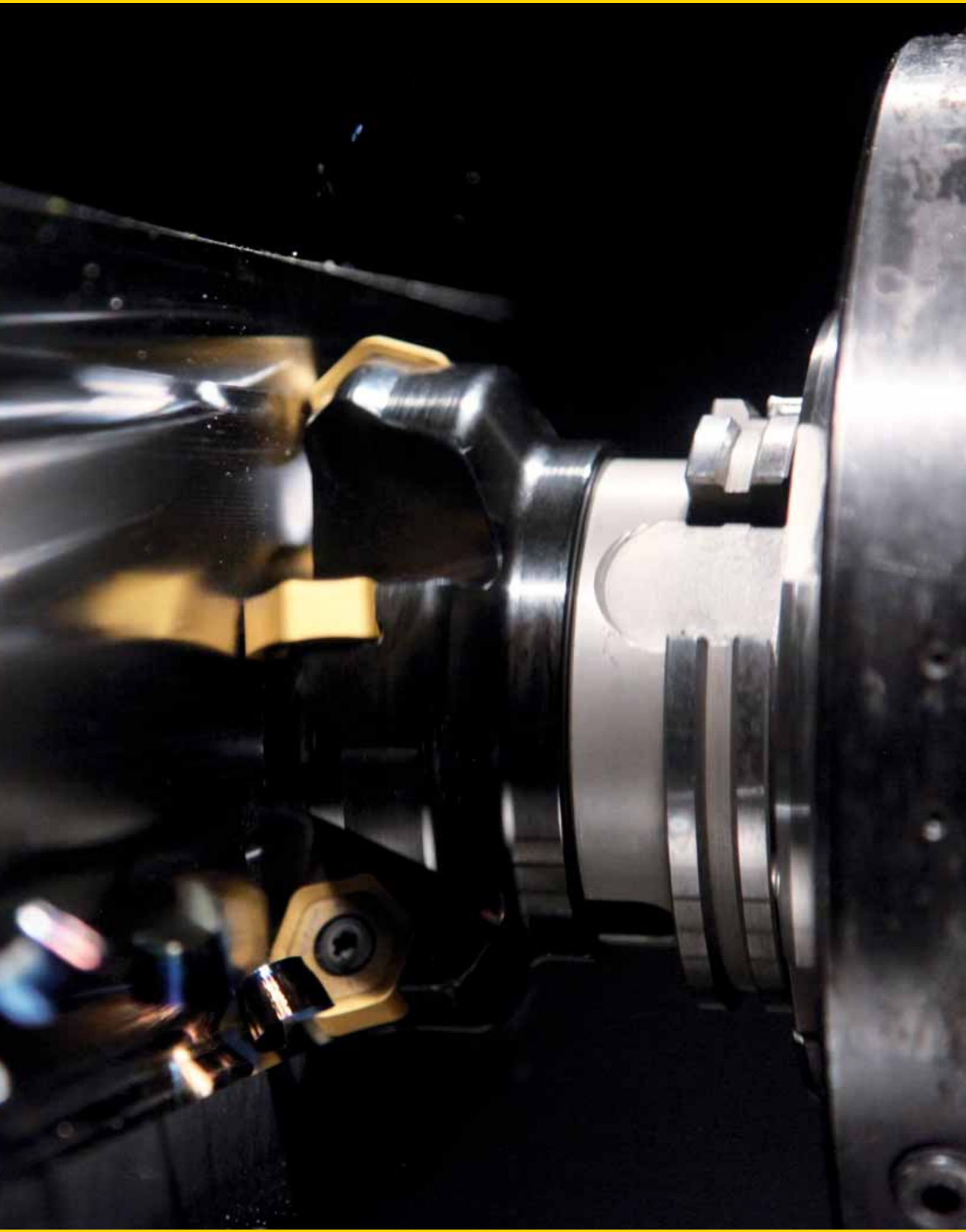
wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KYSP30	Combines excellent wear properties, fracture toughness, and thermal shock resistance for general purpose to finish machining of high-temperature alloys. KYSP30 provides superior depth-of-cut notch resistance compared to whisker ceramics.									
KYS30	KYS30 is the latest in the line of α/βSiAlON grades for general purpose to finish machining of high-temperature alloys. This grade provides excellent wear characteristics, with better toughness and thermal shock resistance than whisker ceramics. KYS30 also gives improved thermal stability.									
KB1340	A PCBN cutting material with micrograin structure for light to general machining of grey cast iron and hard materials. The grade has good wear resistance and is ideal for finishing.									
KD1410	A PCD-tip brazed to carbide for machining aluminium with a very high silicon content, abrasive non-ferrous materials, and fibre-reinforced plastics. KD1410 can be used at very high cutting speeds, even where good surface finishes are required. This grade can be used both wet or dry but is suggested to use coolant where good surface finishes are required.									
KD1415	PCD-tip brazed to carbide for general machining of aluminium with a low silicon content, non-ferrous heavy metals, and plastics. KD1415 can be used at high cutting speeds and for continuous cutting, even where outstanding surface finishes are required. KD1415 is suitable for wet and dry machining.									
KD1420	A varied-grain, PCD-brazed tip grade suited for machining low silicon aluminium, non-ferrous heavy metals, and plastics. It can be used for high cutting speeds where outstanding surface finishes are required and is suitable for dry and wet machining.									

Grade Conversion by Name Only
KSSR™ — Face Mill Platform
HexaCut™ — Face Mill Platform
Machining cast iron only.
Inserts are the same; only the grade name changes.

old TN grade names	NEW grade name
TN2510	KC914M
TN5505	KC907M
TN5515	KC917M
TN5520	KC924M
TN6510	KC514M
TN6520	KC524M
TN6525	KC527M
TN6540	KC537M
TN7525	KC927M



Face Mills

Dodeka Series • Performance Booster (12 True Edges per Insert) O2–O29

Dodeka Mini O4–O15

Dodeka O16–O24

Dodeka MAX O26–O29

MEGA Series • Heavy-Duty Machining O30–O47

MEGA 45° O32–O35

MEGA 15 . . . . . O38–O39

MEGA 60 . . . . . O40–O43

MEGA 90 . . . . . O44–O47

Beyond BLAST KSSM 45° • First Choice for Machining Titanium O48–O53

KSSM 45° • Conventional Machining O54–O60

KSOM Mini • KSOM • Best-in-Class Free-Cutting Face Mills O62–O77

Fix-Perfect Series O78–O99

Fix-Perfect Finisher • Cast Iron O80–O82

Fix-Perfect 70° • Cast Iron O84–O87, O92–O94

Fix-Perfect 90° • Cast Iron O88–O91, O96–O98

HexaCut Series O100–O113

HexaCut 45° • Cast Iron O103–O106

HexaCut 60° • Cast Iron O108–O112

KSSR 84° • Cast Iron • Roughing and Finishing (84° Lead) O114–O123

KCMS Cartridge Milling System O124–O127

KSCM PCD AluMill O128–O137

Fix-Perfect 90° Aluminium O138–O146

Chamfer Mills (30°, 45°, 60°) O147–O153

Dodeka™ Series • Leader in Advanced Face Milling Applications

Primary Application

Dodeka, Dodeka Mini, and Dodeka MAX™ are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost per edge and high productivity. With Beyond™ premium milling grades, you will see up to 30% higher Metal Removal Rates (MRR), 25% lower cutting forces due to real soft cutting action, and up to 35% better tool life in light to heavy machining.

Features and Benefits

Dodeka Mini Series • Most comprehensive face milling booster in the market, up to Ap1 max = 4,4mm

All different cutter body variations can be loaded with one insert style.

Dodeka Mini High-Feed

12 True Cutting Edges — 15° lead

Insert HNGJ0604
HNPJ0604

Ap1 max = 1,6mm

Dodeka Mini HF can be loaded with all Dodeka Mini standard inserts, except wiper inserts.

Dodeka Mini 45°

12 True Cutting Edges — 45° lead

Insert HNGJ0604
HNPJ0604

Ap1 max = 3,2mm

Best-in-class leader in face milling up to Ap1 max = 3,2mm. Excellent choice for near net shape strategies and driven tools.

Dodeka Mini 60°

12 True Cutting Edges — 60° lead

Insert HNGJ0604
HNPJ0604

Ap1 max = 4,4mm

Achieve a higher axial depth-of-cut capability up to Ap1 = 4,4mm with standard Dodeka Mini inserts.

Dodeka™ Mini Series

insert size HN.J06
Ap1 max = 4,4mm
page O4–O15

Dodeka™

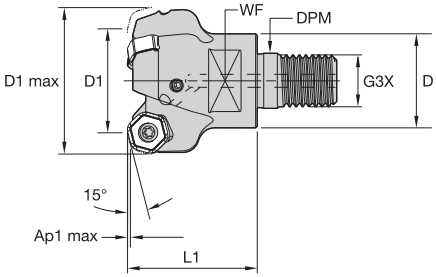
insert size HN.J0905
Ap1 max = 4,5mm
page O16–O24

Dodeka MAX™

insert size HN.J1307
Ap1 max = 8mm
page O26–O29

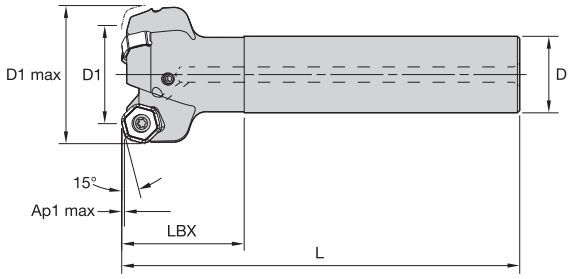
P M K N S — *Capable in all material groups • Excellent results in machining titanium*

- Twelve cutting edges per insert.
- High-Feed capability.



Dodeka Mini High-Feed 15° • Screw-On End Mills

order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4153686	**KSHRHF025D02M16HN06**	25	38,2	29	17,0	M16	32	22	1,6	2	0,18	20000
4153687	**KSHRHF025D03M16HN06**	25	38,2	29	17,0	M16	32	22	1,6	3	0,16	20000
4153688	**KSHRHF032D03M16HN06**	32	45,2	29	17,0	M16	40	22	1,6	3	0,24	17600
4153689	**KSHRHF032D04M16HN06**	32	45,2	29	17,0	M16	40	22	1,6	4	0,25	17600
4153690	**KSHRHF040D04M16HN06**	40	53,2	29	17,0	M16	40	22	1,6	4	0,30	15800
4153691	**KSHRHF040D05M16HN06**	40	53,2	29	17,0	M16	40	22	1,6	5	0,30	15800



Dodeka Mini High-Feed 15° • Cylindrical End Mills

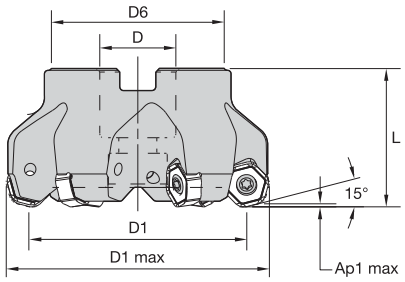
order number	catalogue number	D1	D1 max	D	L	LBX	Ap1 max	Z	kg	max RPM
4153692	**KSHRHF025D02A20HN06L120**	25	38,2	20	120	32	1,6	2	0,33	20000
4153703	**KSHRHF025D03A20HN06L120**	25	38,2	20	120	32	1,6	3	0,31	20000
4153704	**KSHRHF032D03A25HN06L130**	32	45,2	25	130	40	1,6	3	0,52	17600
4153705	**KSHRHF032D04A25HN06L130**	32	45,2	25	130	40	1,6	4	0,53	17600

Spare Parts

D1	insert screw	Nm	wrench
25	**193.492**	3,5	**170.025**
32	**193.492**	3,5	**170.025**
40	**193.492**	3,5	**170.025**

NOTE: D1 = 40 for Spare Parts table.

- Twelve cutting edges per insert.
- High-Feed capability.



Dodeka Mini High-Feed 15° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4153706	**KSHRHF040A05RS15HN06**	40	53,2	22	38	40	1,6	5	0,29	15800
4153707	**KSHRHF050A05RS15HN06**	50	63,1	22	38	40	1,6	5	0,39	12700
4153708	**KSHRHF063A06RS15HN06**	63	76,1	22	50	40	1,6	6	0,67	10100
4153709	**KSHRHF080A08RS15HN06**	80	93,1	27	60	50	1,6	8	1,26	7900

Spare Parts

D1	insert screw	Nm	wrench
40	**193.492**	3,5	**170.025**
50	**193.492**	3,5	**170.025**
63	**193.492**	3,5	**170.025**
80	**193.492**	3,5	**170.025**

Dodeka Mini High-Feed

First choice for long reach face milling applications or light fixtures.

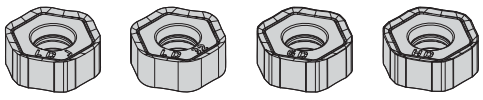
Chip thinning effect due to lead angle 14,5°. Tremendous enlargement of feed rate and Metal Removal Rate (MRR).

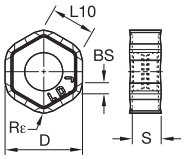
Up to 40% shorter machining cycle time.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts


HNGJ-LDJ HNGJ-LD HNPJ-GD HNPJ-HD



● first choice
○ alternate choice

	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	●
K			●	●	○		●	○	○
N	●	●	○						
S					●	●			
H									

Face Mills

HNGJ-LDJ

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANFNLDJ	12,00	1,54	6,44	1,00	4,48	0,02	12	●	●							

HNGJ-LD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANENLD	12,00	1,54	6,44	1,0	4,48	0,05	12			●	●	●	●	●	●	●
HNGJ060432ANENLD	12,00	–	6,43	3,2	4,48	0,05	12				●	●	●	●	●	●

HNPJ-GD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNGD	12,00	1,45	6,44	1,0	4,45	0,08	12				●	●	●	●	●	●

HNPJ-HD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNHD	12,00	1,45	6,44	1,0	4,40	0,14	12				●	●	●	●	●	●
HNPJ060432ANSNHD	12,00	–	6,43	3,2	4,42	0,10	12				●	●	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	395	**345**	325
	2	–	–	–	–	–	–	–	–	–	–	–	–	330	**290**	240
	3	–	–	–	–	–	–	–	–	–	–	–	–	305	**255**	215
	4	–	–	–	–	–	–	295	**240**	200	–	–	–	270	**225**	180
	5	–	–	–	–	–	–	–	–	–	–	–	–	225	**200**	180
	6	–	–	–	–	–	–	–	–	–	–	–	–	200	**150**	120
M	1	–	–	–	–	–	–	–	–	–	–	–	–	245	**215**	200
	2	–	–	–	–	–	–	–	–	–	–	–	–	225	**190**	160
	3	–	–	–	–	–	–	–	–	–	–	–	–	170	**145**	115
K	1	–	–	–	–	–	–	350	**315**	285	325	**295**	260	275	250	220
	2	–	–	–	–	–	–	275	**250**	230	255	**225**	215	215	**195**	180
	3	–	–	–	–	–	–	235	**205**	190	215	**190**	170	180	**160**	145
N	1–2	955	**835**	715	1460	**1300**	1195	770	**685**	630	–	–	–	–	–	–
	3	–	–	–	1300	**1195**	1100	695	**640**	585	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	2	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	3	–	–	–	–	–	–	–	–	–	–	–	–	60	**50**	35
	4	–	–	–	–	–	–	–	–	–	–	–	–	85	**60**	45
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM20			KC725M			KCK15			KCPK30		
P	1	660	**580**	535	315	**275**	255	–	–	–	545	**475**	440
	2	410	**370**	330	260	**230**	195	–	–	–	335	**305**	275
	3	370	**330**	305	240	**205**	170	–	–	–	305	**275**	250
	4	275	**255**	230	215	**180**	145	–	–	–	225	**210**	190
	5	330	**300**	275	180	**160**	145	–	–	–	310	**275**	255
	6	230	**200**	175	160	**120**	95	–	–	–	190	**165**	–
M	1	270	**240**	205	205	**180**	165	–	–	–	250	**220**	190
	2	245	**215**	190	185	**160**	130	–	–	–	225	**195**	170
	3	195	**175**	150	140	**120**	95	–	–	–	175	**160**	140
K	1	435	**390**	350	–	–	–	505	**460**	410	355	**320**	285
	2	345	**310**	280	–	–	–	400	**355**	330	280	**255**	230
	3	290	**255**	240	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

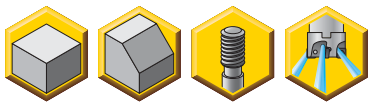
Recommended Starting Feeds [mm]

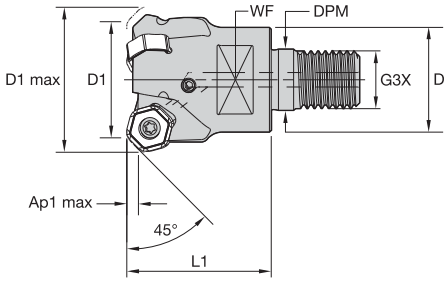
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,33	**0,65**	1,31	0,25	**0,48**	0,97	0,21	**0,42**	0,84	0,20	**0,39**	0,79	0,20	**0,39**	0,77	.F..LDJ
.E..LD	0,33	**0,98**	1,97	0,25	**0,73**	1,46	0,21	**0,63**	1,27	0,20	**0,59**	1,18	0,20	**0,58**	1,16	.E..LD
.S..GD	0,66	**1,45**	2,39	0,49	**1,07**	1,76	0,43	**0,93**	1,53	0,40	**0,87**	1,42	0,39	**0,86**	1,39	.S..GD
.S..HD	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,40	**1,00**	1,60	0,39	**0,98**	1,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

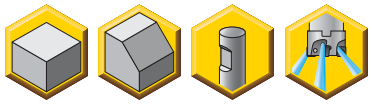
- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.

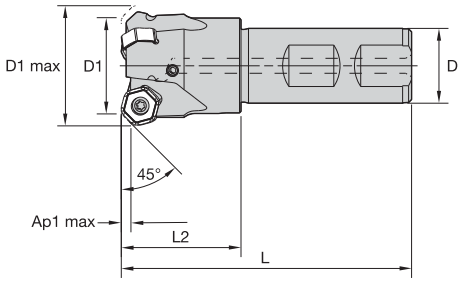




Dodeka Mini 45° • Screw-On End Mills

order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4125881	**KSHR025D02M16HN06**	25	33,2	29	17,0	M16	32	22	3,2	2	0,14	20000
4125882	**KSHR025D03M16HN06**	25	33,2	29	17,0	M16	32	22	3,2	3	0,13	20000
4126343	**KSHR032D03M16HN06**	32	40,2	29	17,0	M16	40	22	3,2	3	0,21	17600
4126344	**KSHR032D04M16HN06**	32	40,2	29	17,0	M16	40	22	3,2	4	0,21	17600
4126345	**KSHR040D04M16HN06**	40	48,2	29	17,0	M16	40	22	3,2	4	0,26	15800
4126346	**KSHR040D05M16HN06**	40	48,2	29	17,0	M16	40	22	3,2	5	0,26	15800





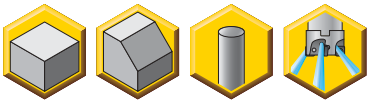
Dodeka Mini 45° • Weldon® End Mills

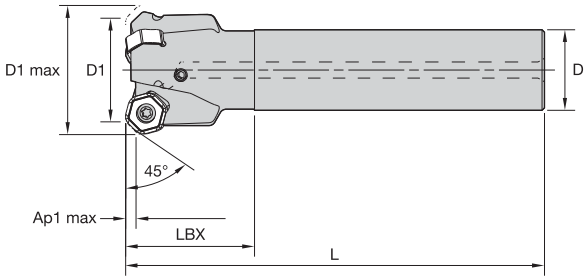
order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	kg	max RPM
4126347	**KSHR025D02B20HN06**	25	33,2	20	82	32	3,2	2	0,22	20000
4126348	**KSHR025D03B20HN06**	25	33,2	20	82	32	3,2	3	0,21	20000
4126349	**KSHR032D03B25HN06**	32	40,2	25	97	40	3,2	3	0,40	17600
4126350	**KSHR032D04B25HN06**	32	40,2	25	97	40	3,2	4	0,41	17600

Spare Parts

D1	insert screw	Nm	wrench
25	**193.492**	3,5	**170.025**
32	**193.492**	3,5	**170.025**
40	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Long-reach version.





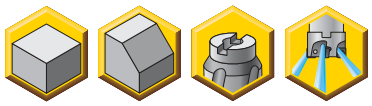
Dodeka Mini 45° • Cylindrical End Mills

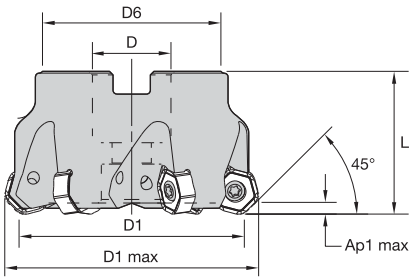
order number	catalogue number	D1	D1 max	D	L	LBX	Ap1 max	Z	kg	max RPM
4126351	**KSHR025D02A20HN06L120**	25	33,2	20	120	32	3,2	2	0,28	20000
4126352	**KSHR025D03A20HN06L120**	25	33,2	20	120	32	3,2	3	0,28	20000
4126385	**KSHR025D02A25HN06L200**	25	33,2	25	200	32	3,2	2	0,72	20000
4126386	**KSHR025D03A25HN06L200**	25	33,2	25	200	32	3,2	3	0,71	20000
4126383	**KSHR032D03A25HN06L130**	32	40,2	25	130	40	3,2	3	0,50	17600
4126384	**KSHR032D04A25HN06L130**	32	40,2	25	130	40	3,2	4	0,50	17600

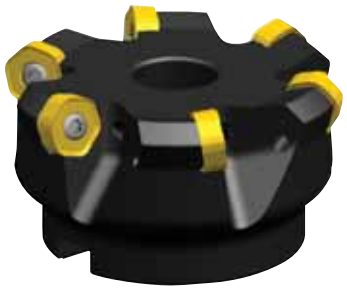
Spare Parts

D1	insert screw	Nm	wrench
25	**193.492**	3,5	**170.025**
32	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.



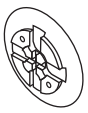




Dodeka Mini 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4126387	**KSHR040A04RS45HN06**	40	48,2	22	38	40	3,2	4	0,25	15800
4124313	**KSHR040A05RS45HN06**	40	48,2	22	38	40	3,2	5	0,25	15800
4126388	**KSHR050A04RS45HN06**	50	58,2	22	38	40	3,2	4	0,36	12700
4122886	**KSHR050A05RS45HN06**	50	58,2	22	38	40	3,2	5	0,37	12700
4126389	**KSHR050A06RS45HN06**	50	58,2	22	38	40	3,2	6	0,36	12700
4122887	**KSHR063A04RS45HN06**	63	71,2	22	50	40	3,2	4	0,59	10100
4122889	**KSHR063A06RS45HN06**	63	71,2	22	50	40	3,2	6	0,65	10100
4126390	**KSHR063A08RS45HN06**	63	71,2	22	50	40	3,2	8	0,64	10100
4126391	**KSHR080A05RS45HN06**	80	88,1	27	60	50	3,2	5	1,13	7900
4126392	**KSHR080A08RS45HN06**	80	88,1	27	60	50	3,2	8	1,25	7900
4126403	**KSHR080A10RS45HN06**	80	88,1	27	60	50	3,2	10	1,19	7900
4126404	**KSHR100B06RS45HN06**	100	108,1	32	80	50	3,2	6	1,73	6300
4126405	**KSHR100B09RS45HN06**	100	108,1	32	80	50	3,2	9	1,84	6300
4126406	**KSHR100B12RS45HN06**	100	108,1	32	80	50	3,2	12	1,84	6300
4126407	**KSHR125B08RS45HN06**	125	133,1	40	90	63	3,2	8	2,87	5050
4126408	**KSHR125B12RS45HN06**	125	133,1	40	90	63	3,2	12	2,98	5050
4124262	**KSHR125B16RS45HN06**	125	133,1	40	90	63	3,2	16	3,05	5050

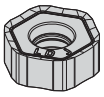
Spare Parts

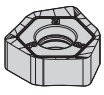


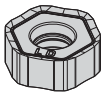
D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
40	**193.492**	3,5	**170.025**	**125.025**	–	–	–
50	**193.492**	3,5	**170.025**	**125.025**	–	–	–
63	**193.492**	3,5	**170.025**	**125.025**	–	–	–
80	**193.492**	3,5	**170.025**	**125.230**	–	–	–
100	**193.492**	3,5	**170.025**	–	**MS2189C**	–	–
125	**193.492**	3,5	**170.025**	–	–	**420.200**	**470.232**

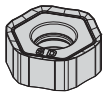
Insert Selection Guide

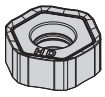
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	.E..LD	KC510M	**.S..GD**	**KC522M**	–	–

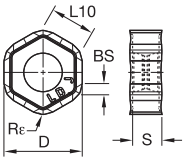

HNGJ-LDJ

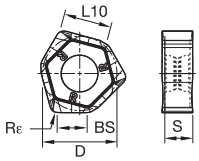

Wiper XNGJ *


HNGJ-LD


HNPJ-GD


HNPJ-HD





● first choice
○ alternate choice

		K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P						○	●		●	●
M						●	●		○	●
K				●	●	○		●	○	○
N		●	●	○						
S						●	●			
H				●		●				

HNGJ-LDJ/XNGJ-LDJ3W

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANFNLDJ	12,00	1,54	6,44	1,0	4,48	0,02	12	●	●							
XNGJ0604ANFNLDJ3W	12,00	4,80	7,20	1,6	4,51	0,02	3	●	●							

* For wiper insert XNGJ, 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.

HNGJ-LD/XNGJ-LD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANENLD	12,00	1,54	6,44	1,0	4,48	0,05	12			●	●	●	●	●	●	●
HNGJ060432ANENLD	12,00	–	6,43	3,2	4,48	0,05	12				●	●	●	●	●	●
XNGJ0604ANENLD3W	12,00	4,80	7,20	1,6	4,51	0,05	3			●	●	●	●	●	●	●

* For wiper insert XNGJ, 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.

HNPJ-GD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNGD	12,00	1,45	6,44	1,0	4,45	0,08	12				●	●	●	●	●	●

HNPJ-HD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNHD	12,00	1,45	6,44	1,0	4,40	0,14	12				●	●	●	●	●	●
HNPJ060432ANSNHD	12,00	–	6,43	3,2	4,42	0,10	12				●	●	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	395	**345**	325
	2	–	–	–	–	–	–	–	–	–	–	–	–	330	**290**	240
	3	–	–	–	–	–	–	–	–	–	–	–	–	305	**255**	215
	4	–	–	–	–	–	–	295	**240**	200	–	–	–	270	**225**	180
	5	–	–	–	–	–	–	–	–	–	–	–	–	225	**200**	180
	6	–	–	–	–	–	–	–	–	–	–	–	–	200	**150**	120
M	1	–	–	–	–	–	–	–	–	–	–	–	–	245	**215**	200
	2	–	–	–	–	–	–	–	–	–	–	–	–	225	**190**	160
	3	–	–	–	–	–	–	–	–	–	–	–	–	170	**145**	115
K	1	–	–	–	–	–	–	350	**315**	285	325	**295**	260	275	**250**	220
	2	–	–	–	–	–	–	275	**250**	230	255	**225**	215	215	**195**	180
	3	–	–	–	–	–	–	235	**205**	190	215	**190**	170	180	**160**	145
N	1–2	955	**835**	715	1460	**1300**	1195	770	**685**	630	–	–	–	–	–	–
	3	–	–	–	1300	**1195**	1100	695	**640**	585	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	2	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	3	–	–	–	–	–	–	–	–	–	–	–	–	60	**50**	35
	4	–	–	–	–	–	–	–	–	–	–	–	–	85	**60**	45
H	1	–	–	–	–	–	–	190	**155**	110	–	–	–	145	**110**	85
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM20			KC725M			KCK15			KCPK30		
P	1	660	**580**	535	315	**275**	255	–	–	–	545	**475**	440
	2	410	**370**	330	260	**230**	195	–	–	–	335	**305**	275
	3	370	**330**	305	240	**205**	170	–	–	–	305	**275**	250
	4	275	**255**	230	215	**180**	145	–	–	–	225	**210**	190
	5	330	**300**	275	180	**160**	145	–	–	–	310	**275**	255
	6	230	**200**	175	160	**120**	95	–	–	–	190	**165**	–
M	1	270	**240**	205	205	**180**	165	–	–	–	250	**220**	190
	2	245	**215**	190	185	**160**	130	–	–	–	225	**195**	170
	3	195	**175**	150	140	**120**	95	–	–	–	175	**160**	140
K	1	435	**390**	350	–	–	–	505	**460**	410	355	**320**	285
	2	345	**310**	280	–	–	–	400	**355**	330	280	**255**	230
	3	290	**255**	240	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

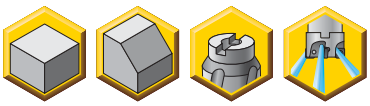
Recommended Starting Feeds [mm]

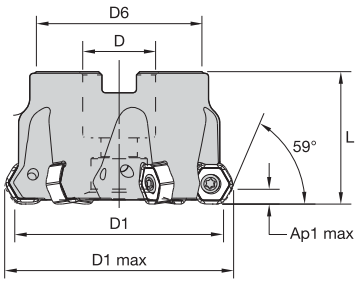
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LDJ
.E..LD	0,12	**0,35**	0,71	0,09	**0,27**	0,53	0,08	**0,23**	0,46	0,07	**0,22**	0,43	0,07	**0,21**	0,42	.E..LD
.S..GD	0,24	**0,54**	0,94	0,18	**0,41**	0,70	0,16	**0,35**	0,61	0,15	**0,33**	0,57	0,14	**0,32**	0,56	.S..GD
.S..HD	0,24	**0,60**	0,97	0,18	**0,45**	0,72	0,16	**0,39**	0,63	0,15	**0,37**	0,59	0,14	**0,36**	0,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

- Twelve cutting edges per insert.
- Higher Ap1 max with standard inserts.
- Productivity booster in all materials.

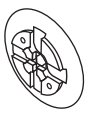




Dodeka Mini 60° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4147022	**KSHR040A04RS60HN06**	40	46,1	22	38	40	4,4	4	0,21	15800
4147713	**KSHR040A05RS60HN06**	40	46,1	22	38	40	4,4	5	0,21	15800
4147714	**KSHR050A04RS60HN06**	50	56,1	22	38	40	4,4	4	0,32	12700
4147715	**KSHR050A05RS60HN06**	50	56,1	22	38	40	4,4	5	0,32	12700
4147716	**KSHR063A04RS60HN06**	63	69,2	22	50	40	4,4	4	0,57	10100
4147717	**KSHR063A06RS60HN06**	63	69,2	22	50	40	4,4	6	0,59	10100
4147718	**KSHR080A05RS60HN06**	80	86,2	27	60	50	4,4	5	1,08	7900
4147719	**KSHR080A08RS60HN06**	80	86,2	27	60	50	4,4	8	1,15	7900
4147720	**KSHR100B06RS60HN06**	100	106,1	32	80	50	4,4	6	1,70	6300
4147721	**KSHR100B09RS60HN06**	100	106,1	32	80	50	4,4	9	1,78	6300
4147722	**KSHR125B08RS60HN06**	125	131,2	40	90	63	4,4	8	2,92	5050
4147723	**KSHR125B12RS60HN06**	125	131,2	40	90	63	4,4	12	2,96	5050

Spare Parts

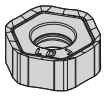


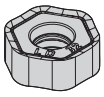
D1	insert screw	Nm	wrench	mounting screw	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
40	**193.492**	3,5	**170.025**	**KLSSM22-39-CG**	–	–	–	–
50	**193.492**	3,5	**170.025**	–	**125.025**	–	–	–
63	**193.492**	3,5	**170.025**	–	**125.025**	–	–	–
80	**193.492**	3,5	**170.025**	–	**125.230**	–	–	–
100	**193.492**	3,5	**170.025**	–	–	**MS2189C**	–	–
125	**193.492**	3,5	**170.025**	–	–	–	**420.200**	**470.232**

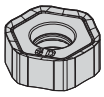
Insert Selection Guide

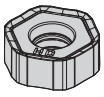
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	–	–	–	–

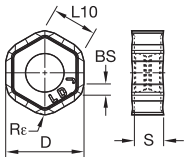
Indexable Inserts


HNGJ-LDJ


HNGJ-LD


HNPJ-GD


HNPJ-HD



● first choice
○ alternate choice

P					○	●		●	●
M					●	●		○	●
K			●	●	○		●	○	○
N	●	●	○						
S					●	●			
H									

Face Mills

HNGJ-LDJ

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANFNLDJ	12,00	1,54	6,44	1,00	4,48	0,02	12	●	●							

HNGJ-LD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0604ANENLD	12,00	1,54	6,44	1,0	4,48	0,05	12			●	●	●	●	●	●	●
HNGJ060432ANENLD	12,00	–	6,43	3,2	4,48	0,05	12				●	●	●	●	●	●

HNPJ-GD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNGD	12,00	1,45	6,44	1,0	4,45	0,08	12				●	●	●	●	●	●

HNPJ-HD

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0604ANSNHD	12,00	1,45	6,44	1,0	4,40	0,14	12				●	●	●	●	●	●
HNPJ060432ANSNHD	12,00	–	6,43	3,2	4,42	0,10	12				●	●	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	395	**345**	325
	2	–	–	–	–	–	–	–	–	–	–	–	–	330	**290**	240
	3	–	–	–	–	–	–	–	–	–	–	–	–	305	**255**	215
	4	–	–	–	–	–	–	295	**240**	200	–	–	–	270	**225**	180
	5	–	–	–	–	–	–	–	–	–	–	–	–	225	**200**	180
	6	–	–	–	–	–	–	–	–	–	–	–	–	200	**150**	120
M	1	–	–	–	–	–	–	–	–	–	–	–	–	245	**215**	200
	2	–	–	–	–	–	–	–	–	–	–	–	–	225	**190**	160
	3	–	–	–	–	–	–	–	–	–	–	–	–	170	**145**	115
K	1	–	–	–	–	–	–	350	**315**	285	325	**295**	260	275	**250**	220
	2	–	–	–	–	–	–	275	**250**	230	255	**225**	215	215	**195**	180
	3	–	–	–	–	–	–	235	**205**	190	215	**190**	170	180	**160**	145
N	1–2	955	**835**	715	1460	**1300**	1195	770	**685**	630	–	–	–	–	–	–
	3	–	–	–	1300	**1195**	1100	695	**640**	585	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	2	–	–	–	–	–	–	–	–	–	–	–	–	50	**45**	35
	3	–	–	–	–	–	–	–	–	–	–	–	–	60	**50**	35
	4	–	–	–	–	–	–	–	–	–	–	–	–	85	**60**	45
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM20			KC725M			KCK15			KCPK30		
P	1	660	**580**	535	315	**275**	255	–	–	–	545	**475**	440
	2	410	**370**	330	260	**230**	195	–	–	–	335	**305**	275
	3	370	**330**	305	240	**205**	170	–	–	–	305	**275**	250
	4	275	**255**	230	215	**180**	145	–	–	–	225	**210**	190
	5	330	**300**	275	180	**160**	145	–	–	–	310	**275**	255
	6	230	**200**	175	160	**120**	95	–	–	–	190	**165**	–
M	1	270	**240**	205	205	**180**	165	–	–	–	250	**220**	190
	2	245	**215**	190	185	**160**	130	–	–	–	225	**195**	170
	3	195	**175**	150	140	**120**	95	–	–	–	175	**160**	140
K	1	435	**390**	350	–	–	–	505	**460**	410	355	**320**	285
	2	345	**310**	280	–	–	–	400	**355**	330	280	**255**	230
	3	290	**255**	240	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

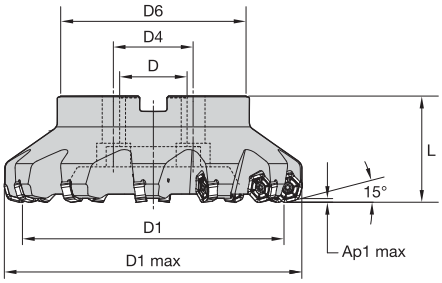
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..LDJ
.E..LD	0,10	**0,29**	0,58	0,07	**0,22**	0,43	0,06	**0,19**	0,38	0,06	**0,18**	0,35	0,06	**0,17**	0,35	.E..LD
.S..GD	0,20	**0,43**	0,70	0,15	**0,32**	0,52	0,13	**0,28**	0,45	0,12	**0,26**	0,43	0,12	**0,26**	0,42	.S..GD
.S..HD	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

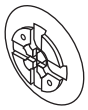
- Twelve cutting edges per insert.
- 2mm depth-of-cut capability.
- High feed rates for rough face milling.



Dodeka High-Feed 15° • Shell Mills

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
4042332	**KSHRHF50A04RS15HN09**	50	67,9	22	–	38	40	2,2	4	0,41	11400
4042533	**KSHRHF63A05RS15HN09**	63	80,9	22	–	50	40	2,2	5	0,65	8950
4042534	**KSHRHF80A06RS15HN09**	80	97,9	27	–	60	50	2,2	6	1,24	7300
4042535	**KSHRHF100B08RS15HN09**	100	117,9	32	–	80	50	2,2	8	1,89	5900
4042536	**KSHRHF125B09RS15HN09**	125	142,9	40	–	90	63	2,2	9	3,23	4800
4042537	**KSHRHF160C12RS15HN09**	160	177,9	40	66,7	110	63	2,2	12	5,14	3900

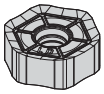
Spare Parts

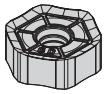


D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
50	**193.492**	3,5	**170.025**	**125.025**	–	–	–
63	**193.492**	3,5	**170.025**	**125.025**	–	–	–
80	**193.492**	3,5	**170.025**	**125.230**	–	–	–
100	**193.492**	3,5	**170.025**	–	**MS2189C**	–	–
125	**193.492**	3,5	**170.025**	–	–	**420.200**	**470.232**
160	**193.492**	3,5	**170.025**	–	–	**420.200**	**470.233**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..GD	KCK15
K3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
S1–S2	.S..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.S..GD	KC725M	**.S..HD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	–	–	–	–


HNGJ-LD
HNGJ-LDJ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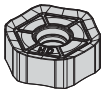
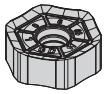
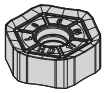
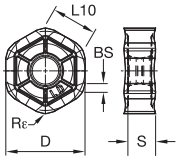

HNGJ-HD


HNPJ-GD


HNPJ-HD



beyond

P				○	●		●	●
M				●	●		○	●
K			●	○		●	○	○
N		●						
S				●	●			
H								

● first choice
○ alternate choice

HNGJ-LD and -LDJ

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANFNLDJ	15,88	5,56	9,00	1,80	1,2	0,02	12	●						
HNGJ0905ANENLD	15,88	5,56	9,00	1,80	1,2	0,05	12		●	●	●	●	●	●

HNGJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANSNGD	15,88	5,56	9,00	1,80	1,2	0,06	12				●	●	●	●

HNGJ-HD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANSNHD	15,88	5,46	8,59	1,66	1,2	0,06	12		●		●	●	●	●
HNGJ090543ANSNHD	15,88	5,44	8,50	–	4,4	0,06	12		●		●	●	●	●

HNPJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0905ANSNGD	15,88	5,56	8,58	1,80	1,2	0,10	12		●	●	●	●		●

HNPJ-HD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0905ANSNHD	15,88	5,46	8,59	1,66	1,2	0,18	12		●	●	●	●		●
HNPJ090543ANSNHD	15,88	5,44	8,50	–	4,3	0,13	12			●	●	●		●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	–	–	–	305	**255**	215	240	**205**	170
	4	–	–	–	–	–	–	270	**225**	180	215	**180**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	–	–	–	225	190	160	185	**160**	130
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	325	**295**	260	275	**250**	220	–	–	–
	2	–	–	–	255	**225**	215	215	**195**	180	–	–	–
	3	–	–	–	215	**190**	170	180	**160**	145	–	–	–
N	1–2	1460	**1300**	1195	–	–	–	–	–	–	–	–	–
	3	1300	**1195**	1100	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	2	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	3	–	–	–	–	–	–	60	**50**	35	55	**45**	30
	4	–	–	–	–	–	–	85	**60**	45	75	**55**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	660	**580**	535	545	**475**	440
	2	–	–	–	410	**370**	330	335	**305**	275
	3	–	–	–	370	**330**	305	305	**275**	250
	4	–	–	–	275	**255**	230	225	**210**	190
	5	–	–	–	330	**300**	275	310	**275**	255
	6	–	–	–	230	**200**	175	190	**165**	–
M	1	–	–	–	270	**240**	205	250	**220**	190
	2	–	–	–	245	**215**	190	225	**195**	170
	3	–	–	–	195	**175**	150	175	**160**	140
K	1	505	**460**	410	435	**390**	350	355	**320**	285
	2	400	**355**	330	345	**310**	280	280	**255**	230
	3	335	**300**	275	290	**255**	240	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

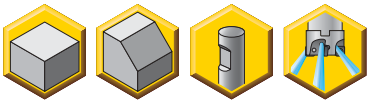
Recommended Starting Feeds [mm]

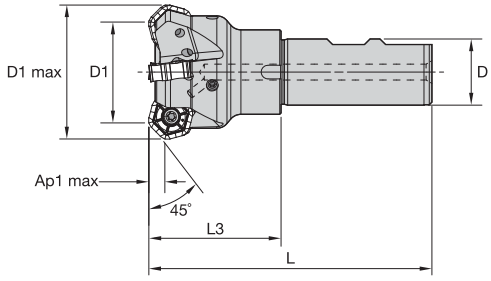
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,33	**0,65**	1,31	0,25	**0,48**	0,97	0,21	**0,42**	0,84	0,20	**0,39**	0,79	0,20	**0,39**	0,77	.F..LDJ
.E..LD	0,33	**0,98**	1,97	0,25	**0,73**	1,46	0,21	**0,63**	1,27	0,20	**0,59**	1,18	0,20	**0,58**	1,16	.E..LD
.S..GD	0,55	**1,37**	2,38	0,41	**1,02**	1,75	0,36	**0,89**	1,52	0,33	**0,83**	1,42	0,33	**0,81**	1,39	.S..GD
.S..HD	0,55	**1,67**	2,70	0,41	**1,23**	1,98	0,36	**1,07**	1,72	0,33	**1,00**	1,60	0,33	**0,98**	1,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

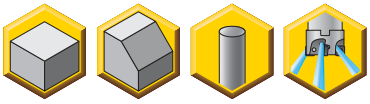
- Twelve cutting edges per insert.
- Soft cutting action.
- Through tool coolant.

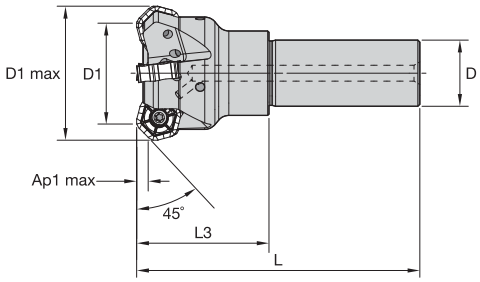




Dodeka 45° • Weldon® End Mills

order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	kg	max RPM
3324829	**KSHR40D03R50B25SHN09**	40	51,0	25	107	50	4,5	3	0,53	15800
3324830	**KSHR40D04R50B25SHN09**	40	51,0	25	107	50	4,5	4	0,52	15800





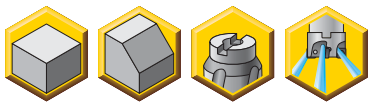
Dodeka 45° • Cylindrical End Mills

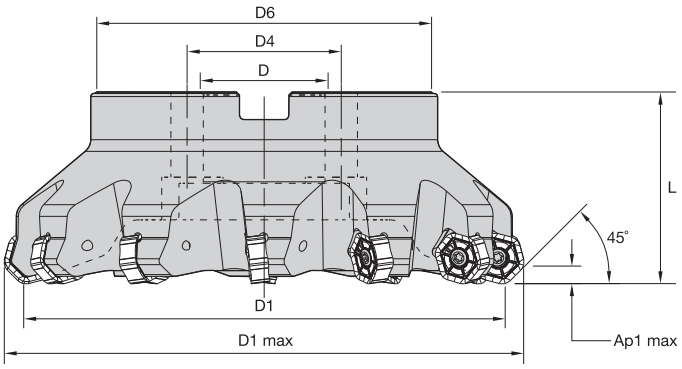
order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	kg	max RPM
3644452	**KSHR40D03R50A25SHN09**	40	51,0	25	107	50	4,5	3	0,53	15800
3645083	**KSHR40D04R50A25SHN09**	40	51,0	25	107	50	4,5	4	0,53	15800

Spare Parts

D1	insert screw	Nm	wrench
40	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Through-coolant standard.
- Soft cutting action.





Dodeka 45° • Shell Mills

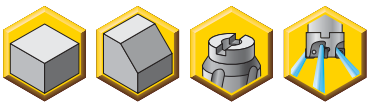
order number	catalogue number	D1	D1 max	D	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
3647201	**KSHR40A04RS45HN09**	40	51,0	22	–	–	39	40	4,5	4	0,25	15800
3324831	**KSHR50A04RS45HN09**	50	61,0	22	–	–	38	40	4,5	4	0,32	12700
3324832	**KSHR50A05RS45HN09**	50	61,0	22	–	–	38	40	4,5	5	0,33	12700
3749959	**KSHR63A05RS45HN09**	63	74,0	22	–	–	50	40	4,5	5	0,60	10100
3325163	**KSHR63A06RS45HN09**	63	74,0	22	–	–	50	40	4,5	6	0,56	10100
3325164	**KSHR63A07RS45HN09**	63	74,0	22	–	–	50	40	4,5	7	0,57	10100
3749960	**KSHR80A05RS45HN09**	80	91,0	27	–	–	60	50	4,5	5	1,12	7900
3325165	**KSHR80A06RS45HN09**	80	91,0	27	–	–	60	50	4,5	6	1,07	7900
3325166	**KSHR80A09RS45HN09**	80	91,0	27	–	–	60	50	4,5	9	1,11	7900
3749961	**KSHR100B06RS45HN09**	100	111,0	32	–	–	80	50	4,5	6	1,73	6300
3325167	**KSHR100B08RS45HN09**	100	111,0	32	–	–	80	40	4,5	8	1,68	6300
3325168	**KSHR100B11RS45HN09**	100	111,0	32	–	–	80	50	4,5	11	1,73	6300
3749962	**KSHR125B08RS45HN09**	125	135,9	40	–	–	90	63	4,5	8	2,84	5050
3325169	**KSHR125B10RS45HN09**	125	135,9	40	–	–	90	63	4,5	10	2,77	5050
3325170	**KSHR125B14RS45HN09**	125	136,0	40	–	–	90	63	4,5	14	2,86	5050
3750013	**KSHR160C10RS45HN09**	160	171,0	40	66,7	–	110	63	4,5	10	4,75	3900
3325171	**KSHR160C12RS45HN09**	160	171,0	40	66,7	–	110	63	4,5	12	4,56	3900
3325172	**KSHR160C16RS45HN09**	160	171,0	40	66,7	–	110	63	4,5	16	4,70	3900
3587732	**KSHR200C16RS45HN09**	200	211,0	60	101,6	–	130	63	4,5	16	6,43	3180
3587753	**KSHR250C20RS45HN09**	250	261,0	60	101,6	–	130	63	4,5	20	9,93	2550
3587754	**KSHR315C24RS45HN09**	315	326,0	60	101,6	177,8	230	80	4,5	24	22,90	2020

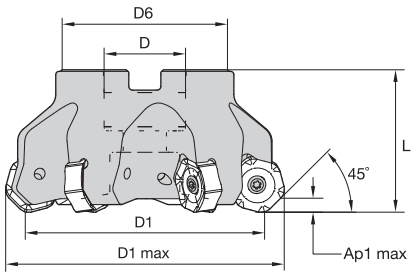
Spare Parts

D1	insert screw	Nm	wrench	mounting screw	low-head cap screw	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
40	**193.492**	3,5	**170.025**	**KLSSM22-39-CG**	–	–	–	–	–
50	**193.492**	3,5	**170.025**	**MS2072CG**	**129.025**	–	–	–	–
63	**193.492**	3,5	**170.025**	**MS1234CG**	–	**125.025**	–	–	–
80	**193.492**	3,5	**170.025**	**MS2038CG**	–	**125.230**	–	–	–
100	**193.492**	3,5	**170.025**	–	–	–	**MS2189C**	–	–
125	**193.492**	3,5	**170.025**	–	–	–	–	**420.200**	**470.232**
160	**193.492**	3,5	**170.025**	–	–	–	–	**420.200**	**470.233**
200	**193.492**	3,5	**170.025**	–	–	–	–	–	**470.234**
250	**193.492**	3,5	**170.025**	–	–	–	–	–	**470.235**
315	**193.492**	3,5	**170.025**	–	–	–	–	–	**470.236**

NOTE: Please order all spare parts separately.

- Twelve cutting edges per insert.
- Through-coolant standard.
- Soft cutting action.





Dodeka 45° • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D6	L	Ap1 max	Z	kg	max RPM
3645084	**KSHR80A06RS45HN09-J**	80	91,0	25,400	1.000	60	50	4,5	6	1,08	7900
3645085	**KSHR80A09RS45HN09-J**	80	91,0	25,400	1.000	60	50	4,5	9	1,21	7900
3645087	**KSHR100B11RS45HN09-J**	100	111,0	31,750	1.250	80	50	4,5	11	1,96	6300
3645086	**KSHR100B08RS45HN09-J**	100	111,0	31,750	1.250	80	50	4,5	8	1,91	6300
3645088	**KSHR125B10RS45HN09-J**	125	135,9	38,100	1.500	90	63	4,5	10	3,16	5050
3645089	**KSHR125B14RS45HN09-J**	125	136,0	38,100	1.500	90	63	4,5	14	3,25	5050
3645090	**KSHR160B12RS45HN09-J**	160	171,0	50,800	2.000	110	63	4,5	12	4,98	3900
3645091	**KSHR160B16RS45HN09-J**	160	171,0	50,800	2.000	110	63	4,5	16	5,14	3900

Spare Parts

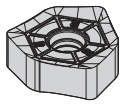
D1	insert screw	Nm	wrench
80	**193.492**	3,5	**170.025**
100	**193.492**	3,5	**170.025**
125	**193.492**	3,5	**170.025**
160	**193.492**	3,5	**170.025**

NOTE: Metric cutter diameters with inch bore sizes.

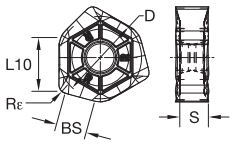
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..GD	KCK15
K3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
S1–S2	.S..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.S..GD	KC725M	**.S..HD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts • Dodeka • XNGJ • Finishing



XNGJ-LDJ3W *
XNGJ-GD3W *



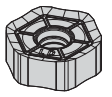
● first choice
○ alternate choice

	KC410M	KC725M	KCK15	KCPM20	KCPK30
P		●		●	●
M		●		○	○
K			●	○	○
N	●				
S		●			
H					

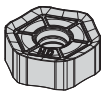
XNGJ-LDJ3W and -GD3W

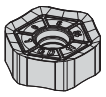
catalogue number	D	S	L10	BS	Rε	cutting edges	KC410M	KC725M	KCK15	KCPM20	KCPK30
XNGJ0905ANFNLDJ3W	15,88	5,51	9,60	6,00	2	3	●				
XNGJ0905ANSNGD3W	15,88	5,51	9,60	6,00	2	3		●	●	●	●

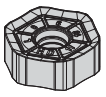
* 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.

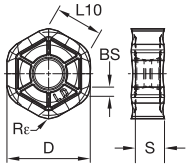

HNGJ-LD
HNGJ-LPJ

HNGJ-GD


HNGJ-HD


HNPJ-GD


HNPJ-HD



beyond

P				○	●		●	●
M				●	●		○	●
K			●	○		●	○	○
N		●						
S				●	●			
H								

● first choice
○ alternate choice

HNGJ-LD and -LDJ

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANFNLDJ	15,88	5,56	9,00	1,80	1,2	0,02	12	●						
HNGJ0905ANENLD	15,88	5,56	9,00	1,80	1,2	0,05	12		●	●	●	●	●	●

HNGJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANSNGD	15,88	5,56	9,00	1,80	1,2	0,06	12				●	●	●	●

HNGJ-HD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ0905ANSNHD	15,88	5,46	8,59	1,66	1,2	0,06	12		●		●	●	●	●
HNGJ090543ANSNHD	15,88	5,44	8,50	–	4,4	0,06	12		●		●	●	●	●

HNPJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0905ANSNGD	15,88	5,56	8,58	1,80	1,2	0,10	12		●	●	●	●		●

HNPJ-HD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ0905ANSNHD	15,88	5,46	8,59	1,66	1,2	0,18	12		●	●	●	●		●
HNPJ090543ANSNHD	15,88	5,44	8,50	–	4,3	0,13	12			●	●	●		●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	–	–	–	305	**255**	215	240	**205**	170
	4	–	–	–	–	–	–	270	**225**	180	215	**180**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	–	–	–	225	**190**	160	185	**160**	130
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	325	**295**	260	275	**250**	220	–	–	–
	2	–	–	–	255	**225**	215	215	**195**	180	–	–	–
	3	–	–	–	215	**190**	170	180	**160**	145	–	–	–
N	1–2	1460	**1300**	1195	–	–	–	–	–	–	–	–	–
	3	1300	**1195**	1100	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	2	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	3	–	–	–	–	–	–	60	**50**	35	55	**45**	30
	4	–	–	–	–	–	–	85	**60**	45	75	**55**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	660	**580**	535	545	**475**	440
	2	–	–	–	410	370	330	335	**305**	275
	3	–	–	–	370	**330**	305	305	**275**	250
	4	–	–	–	275	**255**	230	225	**210**	190
	5	–	–	–	330	**300**	275	310	**275**	255
	6	–	–	–	230	**200**	175	190	**165**	–
M	1	–	–	–	270	**240**	205	250	**220**	190
	2	–	–	–	245	**215**	190	225	**195**	170
	3	–	–	–	195	**175**	150	175	**160**	140
K	1	505	**460**	410	435	**390**	350	355	**320**	285
	2	400	**355**	330	345	**310**	280	280	**255**	230
	3	335	**300**	275	290	**255**	240	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LDJ
.E..LD	0,12	**0,35**	0,71	0,09	**0,27**	0,53	0,08	**0,23**	0,46	0,07	**0,22**	0,43	0,07	**0,21**	0,42	.E..LD
.S..GD	0,20	**0,50**	0,86	0,15	**0,37**	0,64	0,13	**0,32**	0,56	0,12	**0,30**	0,52	0,12	**0,30**	0,51	.S..GD
.S..HD	0,20	**0,60**	0,97	0,15	**0,45**	0,72	0,13	**0,39**	0,63	0,12	**0,37**	0,59	0,12	**0,36**	0,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

KM4X™

The Next Generation Spindle Interface for Heavy-Duty Machining!

KM4X is designed to take on your most aggressive machining jobs. This next generation KM spindle interface should be your first choice for heavy-duty machining applications. It's especially suited for large structural components, like titanium aerospace components.

We engineered these rotating and static tool adaptors to handle 3x more bending capacity than similar competitive models.

What does this mean for you?

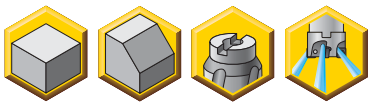
- Enables full use of machine and cutting tools for the highest productivity.
- Higher metal removal rates.
- Can retrofit to existing machines to boost throughput without buying new equipment.
- Ideal for aerospace and transportation industry machining jobs.

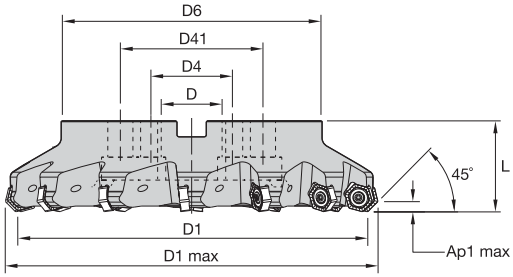
Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

- Twelve cutting edges per insert.
- 25% lower cutting forces.
- Laser-hardened pocket seats.

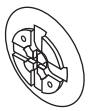




Dodeka MAX 45° • Shell Mills

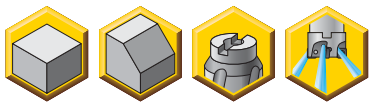
order number	catalogue number	D1	D1 max	D	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4059463	**KSHR80A04RS45HN13**	80	97,3	27	–	–	60	50	8,0	4	1,26	7900
4060935	**KSHR100B05RS45HN13**	100	117,3	32	–	–	80	50	8,0	5	1,81	6300
4060936	**KSHR125B06RS45HN13**	125	142,3	40	–	–	90	63	8,0	6	3,07	5050
4059485	**KSHR160C09RS45HN13**	160	177,3	40	66,7	–	110	63	8,0	9	4,34	3900
4060912	**KSHR200C10RS45HN13**	200	217,3	60	101,6	–	130	63	8,0	10	6,41	3180
4060937	**KSHR200C12RS45HN13**	200	217,3	60	101,6	–	130	63	8,0	12	6,48	3180
4060933	**KSHR250C12RS45HN13**	250	267,3	60	101,6	–	130	63	8,0	12	10,30	2550
4060938	**KSHR250C14RS45HN13**	250	267,3	60	101,6	–	130	63	8,0	14	10,27	2550
4060934	**KSHR315C14RS45HN13**	315	332,3	60	101,6	177,8	230	80	8,0	14	24,04	2020
4059486	**KSHR315C18RS45HN13**	315	332,3	60	101,6	177,8	230	80	8,0	18	24,62	2020

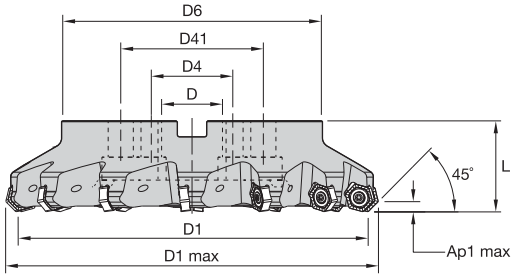
Spare Parts



D1	insert screw	Nm	Torx Plus wrench	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
80	**193.531**	8,0	**TTP25**	**125.230**	–	–	–
100	**193.531**	8,0	**TTP25**	–	**MS2189C**	–	–
125	**193.531**	8,0	**TTP25**	–	–	**420.200**	**470.232**
160	**193.531**	8,0	**TTP25**	–	–	**420.200**	**470.233**
200	**193.531**	8,0	**TTP25**	–	–	–	**470.234**
250	**193.531**	8,0	**TTP25**	–	–	–	**470.235**
315	**193.531**	8,0	**TTP25**	–	–	–	**470.236**

- Twelve cutting edges per insert.
- 25% lower cutting forces.
- Laser-hardened pocket seats.

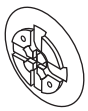




Dodeka MAX 45° • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4060996	**KSHR80A04RS45HN13J**	80	97,3	25,400	1.000	–	–	60	50	8,0	4	1,23	7900
4060997	**KSHR100B05RS45HN13J**	100	117,3	31,750	1.250	–	–	80	50	8,0	5	1,82	6300
4060998	**KSHR125B06RS45HN13J**	125	142,3	38,100	1.500	–	–	90	63	8,0	6	3,20	5050
4060999	**KSHR160C09RS45HN13J**	160	177,3	50,800	2.000	–	–	110	63	8,0	9	4,45	3900
4060993	**KSHR200C10RS45HN13J**	200	217,3	47,625	1.875	101,6	–	130	63	8,0	10	7,69	3180
4061000	**KSHR200C12RS45HN13J**	200	217,3	47,625	1.875	101,6	–	130	63	8,0	12	7,81	3180
4060994	**KSHR250C12RS45HN13J**	250	267,3	47,625	1.875	101,6	–	130	63	8,0	12	11,75	2550
4061001	**KSHR250C14RS45HN13J**	250	267,3	47,625	1.875	101,6	–	130	63	8,0	14	11,81	2550
4060995	**KSHR315C14RS45HN13J**	315	332,3	47,625	1.875	101,6	177,8	230	80	8,0	14	25,38	2020
4061002	**KSHR315C18RS45HN13J**	315	332,3	47,625	1.875	101,6	177,8	230	80	8,0	18	25,51	2020

Spare Parts

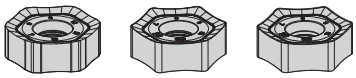


D1	insert screw	Nm	Torx Plus wrench	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
80	**193.531**	8,0	**TTP25**	**125.230**	–	–	–
100	**193.531**	8,0	**TTP25**	–	**MS2220C**	–	–
125	**193.531**	8,0	**TTP25**	–	–	**420.200**	**470.380**
160	**193.531**	8,0	**TTP25**	–	–	**420.240**	**470.381**
200	**193.531**	8,0	**TTP25**	–	–	–	**470.242**
250	**193.531**	8,0	**TTP25**	–	–	–	**470.243**
315	**193.531**	8,0	**TTP25**	–	–	–	**470.244**

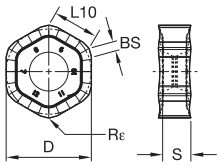
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..GD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.E..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



HNGJ-GD HNPJ-GD HNPJ-HD



● first choice
○ alternate choice

P			●		●
M			●		○
K	●			●	●
N					
S			●		
H					

Face Mills

HNGJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNGJ1307ANENGD	22,23	7,41	12,83	1,88	1,2	0,05	12		●	●	●

HNPJ-GD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNPJ130720ANSNGD	22,23	7,53	12,83	–	2,0	0,13	12	●	●	●	●

HNPJ-HD

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNPJ1307ANSNHD	22,23	7,31	12,83	1,88	1,2	0,25	12	●	●	●	●
HNPJ130720ANSNHD	22,23	7,42	12,83	–	2,0	0,23	12	●	●	●	●
HNPJ130735ANSNHD	22,23	7,33	12,83	–	3,5	0,23	12	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	315	**275**	255	–	–	–	545	**475**	440
	2	–	–	–	260	**230**	195	–	–	–	335	**305**	275
	3	–	–	–	240	**205**	170	–	–	–	305	**275**	250
	4	–	–	–	215	**180**	145	–	–	–	225	**210**	190
	5	–	–	–	180	**160**	145	–	–	–	310	**275**	255
	6	–	–	–	160	**120**	95	–	–	–	190	**165**	–
M	1	–	–	–	205	**180**	165	–	–	–	250	**220**	190
	2	–	–	–	185	**160**	130	–	–	–	225	**195**	170
	3	–	–	–	140	**120**	95	–	–	–	175	**160**	140
K	1	325	**295**	260	–	–	–	505	**460**	410	355	**320**	285
	2	255	**225**	215	–	–	–	400	**355**	330	280	**255**	230
	3	215	**190**	170	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GD	0,17	**0,35**	0,65	0,13	**0,27**	0,49	0,11	**0,23**	0,42	0,10	**0,22**	0,40	0,10	**0,21**	0,39	.E..GD
.S..GD	0,24	**0,46**	0,84	0,18	**0,35**	0,63	0,16	**0,30**	0,55	0,15	**0,28**	0,51	0,14	**0,28**	0,50	.S..GD
.S..HD	0,24	**0,60**	0,97	0,18	**0,45**	0,72	0,16	**0,39**	0,63	0,15	**0,37**	0,59	0,14	**0,36**	0,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

MEGA 45° • Superior Heavy-Duty Milling

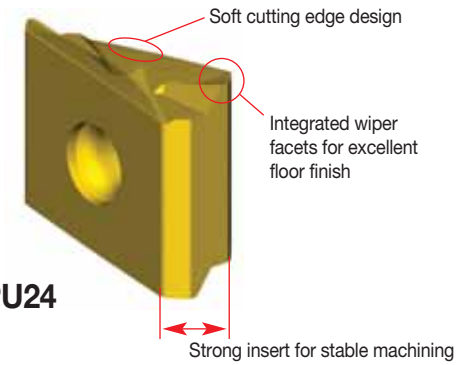
Primary Application

With four true cutting edges per heavy-duty MEGA 45° insert, you know you are getting the low cost per edge and high productivity you need and have come to expect from Kennametal. The soft cutting edge design enables 30% lower cutting forces, and the carbide shim provides protection to the cutter body. Choose MEGA 45° inserts for all of your steel and cast iron indexable milling needs.

Features and Benefits

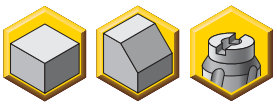
Features	Benefits
Four true cutting edges per heavy-duty MEGA 45° insert.	Low cost per edge and high productivity.
Soft cutting edge design.	30% lower cutting forces.
Up to 30% increased Metal Removal Rates (MRR).	Performance leader in steel and cast iron materials.
Carbide pocket shims.	Excellent cutter body protection.

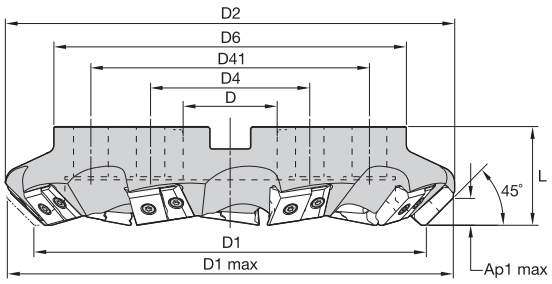
4 True Cutting Edges



LNPU24

- Four cutting edges per insert.
- Ap1 max = 17mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.

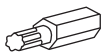




MEGA45 • Shell Mills

order number	catalogue number	D1	D1 max	D	D2	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4040931	**MEGA45D125B06LN24**	125	160,3	40	169	–	–	90	63	17,2	6	4,40	12620
4040932	**MEGA45D160C07LN24**	160	195,4	40	201	66,7	–	130	63	17,2	7	6,46	11150
4102923	**MEGA45D200C07LN24**	200	235,4	60	239	101,6	–	160	63	17,2	7	8,41	9970
4040953	**MEGA45D200C09LN24**	200	235,4	60	239	101,6	–	160	63	17,2	9	8,83	9970
4102924	**MEGA45D250C09LN24**	250	285,4	60	287	101,6	177,8	225	63	17,2	9	13,54	8920
4040954	**MEGA45D250C11LN24**	250	285,4	60	287	101,6	177,8	225	63	17,2	11	13,97	8920
4102925	**MEGA45D315C10LN24**	315	350,4	60	352	101,6	177,8	225	80	17,2	10	22,57	7950
4040955	**MEGA45D315C13LN24**	315	350,4	60	352	101,6	177,8	225	80	17,2	13	23,03	7950

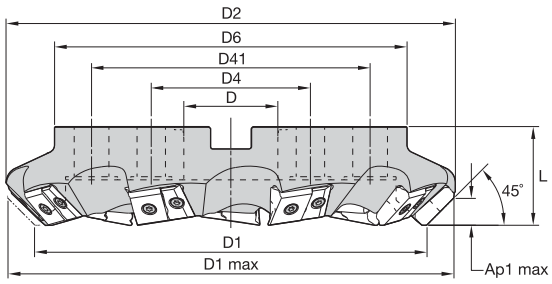
Spare Parts



D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

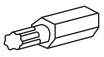
- Four cutting edges per insert.
- Ap1 max = 17mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.
- JIS standard.



MEGA45 • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D												
		D1	D1 max	mm	in	D2	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4040956	**MEGA45D125B06LN24J**	125	160,3	38,100	1.500	169	—	—	97	63	17,2	6	4,87	12620
4040957	**MEGA45D160C07LN24J**	160	195,4	50,800	2.000	201	101,6	—	130	63	17,2	7	7,10	11150
4102926	**MEGA45D200C07LN24J**	200	235,4	47,625	1.875	239	101,6	—	160	63	17,2	7	9,21	9970
4040958	**MEGA45D200C09LN24J**	200	235,4	47,625	1.875	239	101,6	—	160	63	17,2	9	9,63	9970
4102927	**MEGA45D250C09LN24J**	250	285,4	47,625	1.875	287	101,6	177,8	225	63	17,2	9	14,97	8920
4040959	**MEGA45D250C11LN24J**	250	285,4	47,625	1.875	287	101,6	177,8	225	63	17,2	11	15,40	8920
4102928	**MEGA45D315C10LN24J**	315	350,4	47,625	1.875	352	101,6	177,8	225	80	17,2	10	23,48	7950
4040960	**MEGA45D315C13LN24J**	315	350,4	47,625	1.875	352	101,6	177,8	225	80	17,2	13	23,94	7950

Spare Parts



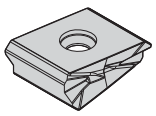
D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

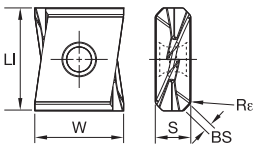
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KC520M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



LNPU-HD



● first choice
○ alternate choice

beyond

	KC520M	KC725M	KCK15	KCPK30
P		●		●
M				
K	●		●	○
N				
S				
H				

LNPU-HD

catalogue number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU2410ANSRHD	29,00	2,25	25,02	1,20	10,00	0,23	4	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	**–**	–	315	**275**	255	–	**–**	–	545	**475**	440
	2	–	**–**	–	260	**230**	195	–	**–**	–	335	**305**	275
	3	–	**–**	–	240	**205**	170	–	**–**	–	305	**275**	250
	4	–	**–**	–	215	**180**	145	–	**–**	–	225	**210**	190
	5	–	**–**	–	180	**160**	145	–	**–**	–	310	**275**	255
	6	–	**–**	–	160	**120**	95	–	**–**	–	190	**165**	–
M	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
K	1	325	**295**	260	–	**–**	–	505	**460**	410	355	**320**	285
	2	255	**225**	215	–	**–**	–	400	**355**	330	280	**255**	230
	3	215	**190**	170	–	**–**	–	335	**300**	275	235	**210**	195
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..HD	0,24	**0,54**	0,97	0,18	**0,41**	0,72	0,16	**0,35**	0,63	0,15	**0,33**	0,59	0,14	**0,32**	0,57	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

MEGA 15, 60, and 90

Primary Application

The real performance booster in heavy-duty milling. With four true cutting edges per heavy-duty insert, you know you are getting the low cost per edge and high productivity you need and have come to expect from Kennametal. The soft cutting edge design enables 30% lower cutting forces, and the carbide shim provides protection to the cutter body. Choose MEGA 15, MEGA 60, and MEGA 90 for all of your steel and cast iron indexable milling needs.

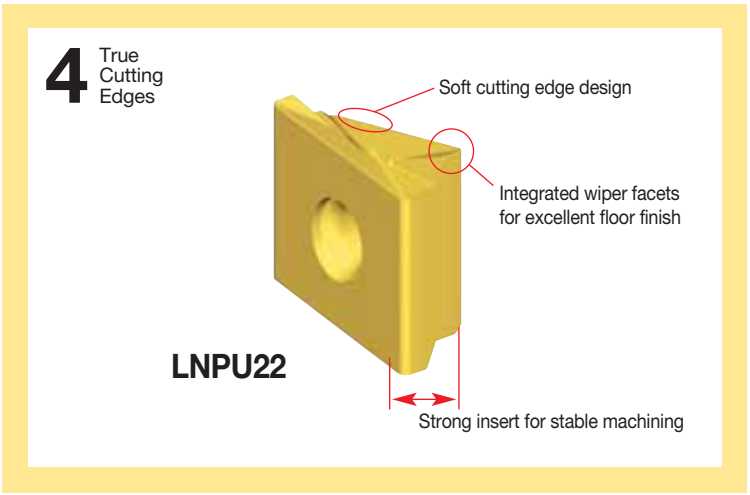
Features and Benefits

Features

- Four true cutting edges per heavy-duty insert.
- One insert style for MEGA 15, MEGA 60, and MEGA 90.
- Soft cutting edge design.
- Up to 30% increased Metal Removal Rates (MRR).
- Carbide pocket shims.

Benefits

- Low cost per edge and high productivity.
- Maximum flexibility to address application needs.
- 30% lower cutting forces.
- Performance leader in steel and cast iron materials.
- Excellent cutter body protection.

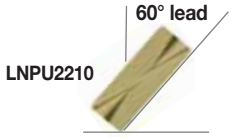


One Insert Style for MEGA 15, MEGA 60, and MEGA 90

MEGA 15

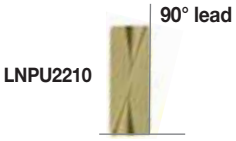
Ap1 max = 6mm

MEGA 60



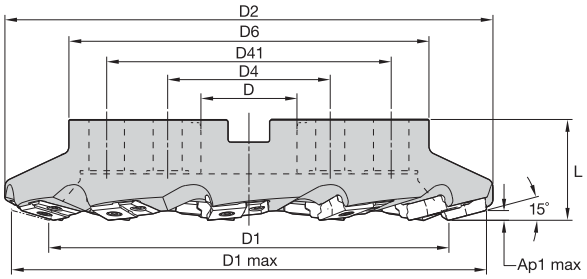
Ap1 max = 21mm

MEGA 90



Ap1 max = 25mm

- Four cutting edges per insert.
- Ap1 max = 6mm.
- High-Feed capability.
- Cutter body protection with carbide shims.



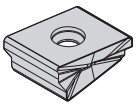
MEGA15 • High-Feed • Shell Mills

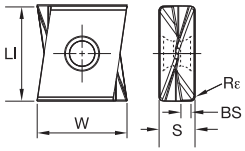
order number	catalogue number	D1	D1 max	D	D2	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4163319	**MEGA15D125B06LN22**	125	172,2	40	185	–	–	100	63	6,1	6	4,72	9200
4163320	**MEGA15D160C07LN22**	160	207,1	40	220	66,7	–	130	63	6,1	7	6,49	8130
4163321	**MEGA15D200C09LN22**	200	247,0	60	260	101,6	–	160	63	6,1	9	9,72	7270
4163322	**MEGA15D250C11LN22**	250	296,9	60	305	101,6	177,8	225	63	6,1	11	14,36	6500
4163703	**MEGA15D315C13LN22**	315	361,8	60	372	101,6	177,8	225	80	6,0	13	21,52	5790

NOTE: For spare parts, see page O40.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–


LNPU-HD



beyond

● first choice
○ alternate choice

P			●		●
M					
K		●		●	○
N					
S					
H					

LNPU-HD

catalogue number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU221012PNSRHD	26,50	2,31	25,01	1,20	10,00	0,23	4	●	●	●	●

Recommended Starting Speeds and Feeds

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	**–**	–	315	**275**	255	–	**–**	–	545	**475**	440
	2	–	**–**	–	260	**230**	195	–	**–**	–	335	**305**	275
	3	–	**–**	–	240	**205**	170	–	**–**	–	305	**275**	250
	4	–	**–**	–	215	**180**	145	–	**–**	–	225	**210**	190
	5	–	**–**	–	180	**160**	145	–	**–**	–	310	**275**	255
	6	–	**–**	–	160	**120**	95	–	**–**	–	190	**165**	–
M	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
K	1	325	**295**	260	–	**–**	–	505	**460**	410	355	**320**	285
	2	255	**225**	215	–	**–**	–	400	**355**	330	280	**255**	230
	3	215	**190**	170	–	**–**	–	335	**300**	275	235	**210**	195
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

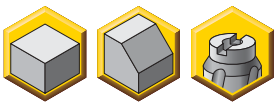
Recommended Starting Feeds [mm]

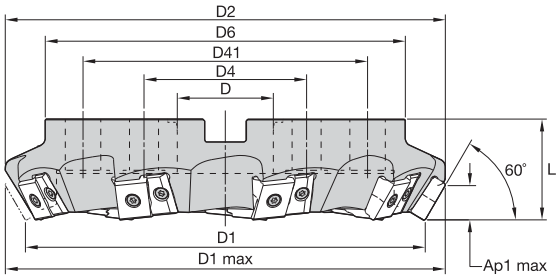
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..HD	0,66	**1,50**	2,27	0,49	**1,11**	1,67	0,43	**0,97**	1,45	0,40	**0,90**	1,36	0,39	**0,88**	1,33	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

- Four cutting edges per insert.
- Ap1 max = 21mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.

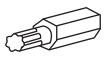




MEGA60 • Shell Mills

order number	catalogue number	D1	D1 max	D	D2	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4147458	**MEGA60D125B06LN22**	125	150,0	40	155	–	–	90	63	21,4	6	3,76	11130
4147459	**MEGA60D160C07LN22**	160	184,9	40	190	66,7	–	130	63	21,4	7	5,73	9830
4147460	**MEGA60D200C07LN22**	200	224,9	60	225	101,6	–	160	63	21,4	7	8,17	8790
4147461	**MEGA60D200C09LN22**	200	224,9	60	225	101,6	–	160	63	21,4	9	8,26	8790
4147462	**MEGA60D250C09LN22**	250	274,9	60	275	101,6	177,8	225	63	21,4	9	12,93	7870
4147483	**MEGA60D250C11LN22**	250	274,9	60	275	101,6	177,8	225	63	21,4	11	13,09	7870
4147484	**MEGA60D315C10LN22**	315	339,9	60	340	101,6	177,8	225	80	21,4	10	21,29	7010
4147485	**MEGA60D315C13LN22**	315	339,9	60	340	101,6	177,8	225	80	21,4	13	21,39	7010

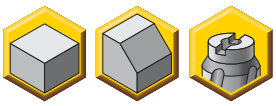
Spare Parts

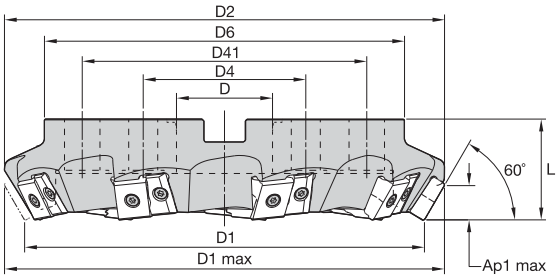


D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

- Four cutting edges per insert.
- Ap1 max = 21mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.
- JIS standard.

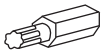




MEGA60 • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D2	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4147486	**MEGA60D125B06LN22J**	125	150,0	38,100	1.500	155	–	–	97	63	21,4	6	4,15	11130
4147487	**MEGA60D160C07LN22J**	160	184,9	50,800	2.000	190	–	–	130	63	21,4	7	6,27	9830
4147488	**MEGA60D200C07LN22J**	200	224,9	47,625	1.875	225	101,6	–	160	63	21,4	7	9,02	8790
4147489	**MEGA60D200C09LN22J**	200	224,9	47,625	1.875	225	101,6	–	160	63	21,4	9	9,11	8790
4147490	**MEGA60D250C09LN22J**	250	274,9	47,625	1.875	275	101,6	177,8	225	63	21,4	9	14,47	7870
4147491	**MEGA60D250C11LN22J**	250	274,9	47,625	1.875	275	101,6	177,8	225	63	21,4	11	14,63	7870
4147492	**MEGA60D315C10LN22J**	315	339,9	47,625	1.875	340	101,6	177,8	225	80	21,4	10	22,94	7010
4147493	**MEGA60D315C13LN22J**	315	339,9	47,625	1.875	340	101,6	177,8	225	80	21,4	13	23,04	7010

Spare Parts



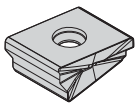
D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

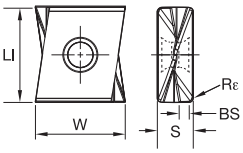
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts

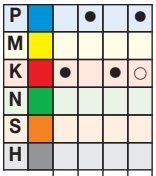


LNPU-HD



beyond

● first choice
○ alternate choice



Face Mills

LNPU-HD

catalogue number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU221012PNSRHD	26,50	2,31	25,01	1,20	10,00	0,23	4	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	315	**275**	255	–	–	–	545	**475**	440
	2	–	–	–	260	**230**	195	–	–	–	335	**305**	275
	3	–	–	–	240	**205**	170	–	–	–	305	**275**	250
	4	–	–	–	215	**180**	145	–	–	–	225	**210**	190
	5	–	–	–	180	**160**	145	–	–	–	310	**275**	255
	6	–	–	–	160	**120**	95	–	–	–	190	**165**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	325	**295**	260	–	–	–	505	**460**	410	355	**320**	285
	2	255	**225**	215	–	–	–	400	**355**	330	280	**255**	230
	3	215	**190**	170	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

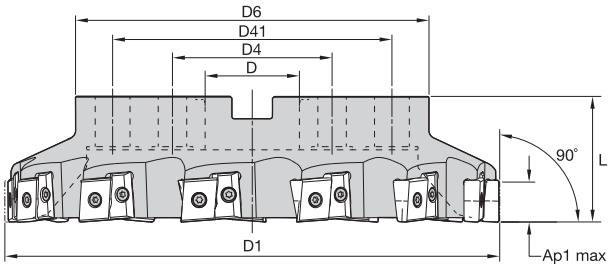
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..HD	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

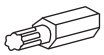
- Four cutting edges per insert.
- Ap1 max = 25mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.



MEGA90 • Shell Mills

order number	catalogue number	D1	D	D4	D41	D6	L	Ap1 max	Z	kg	max RPM
4129656	**MEGA90D125B06LN22**	125	40	–	–	90	63	25,5	6	3,19	10070
4129657	**MEGA90D160C07LN22**	160	40	66,7	–	130	63	25,5	7	4,86	8900
4129658	**MEGA90D200C07LN22**	200	60	101,6	–	160	63	25,5	7	6,85	7960
4129659	**MEGA90D200C09LN22**	200	60	101,6	–	160	63	25,5	9	6,92	7960
4129660	**MEGA90D250C09LN22**	250	60	101,6	–	160	63	25,5	9	9,82	7120
4129661	**MEGA90D250C11LN22**	250	60	101,6	–	160	63	25,5	11	9,95	7120
4129662	**MEGA90D315C10LN22**	315	60	101,6	177,8	225	80	25,5	10	17,66	6340
4129664	**MEGA90D315C13LN22**	315	60	101,6	177,8	225	80	25,5	13	17,78	6340

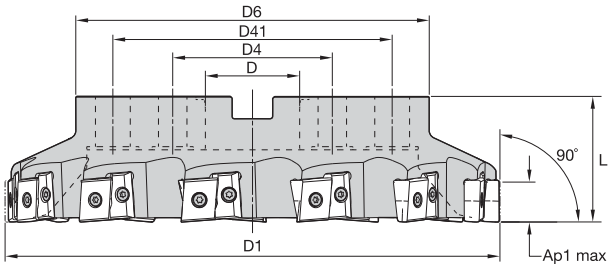
Spare Parts



D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

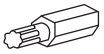
- Four cutting edges per insert.
- Ap1 max = 25mm.
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.
- JIS standard.



MEGA90 • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D			D4	D41	D6	L	Ap1 max	Z	kg	max RPM
		D1	mm	in								
4129665	**MEGA90D125B06LN22J**	125	38,100	1.500	—	—	97	63	25,5	6	3,44	10070
4129666	**MEGA90D160C07LN22J**	160	50,800	2.000	—	—	130	63	25,5	7	5,63	8900
4129667	**MEGA90D200C07LN22J**	200	47,625	1.875	101,6	—	160	63	25,5	7	7,63	7960
4129668	**MEGA90D200C09LN22J**	200	47,625	1.875	101,6	—	160	63	25,5	9	7,70	7960
4129669	**MEGA90D250C09LN22J**	250	47,625	1.875	101,6	—	160	63	25,5	9	11,09	7120
4129670	**MEGA90D250C11LN22J**	250	47,625	1.875	101,6	—	160	63	25,5	11	11,22	7120
4129671	**MEGA90D315C10LN22J**	315	47,625	1.875	101,6	177,8	225	80	25,5	10	19,31	6340
4129672	**MEGA90D315C13LN22J**	315	47,625	1.875	101,6	177,8	225	80	25,5	13	19,46	6340

Spare Parts



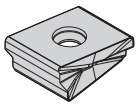
D1	insert screw	Nm	shim	universal bit torque driver	drive bit
125	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
160	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
200	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
250	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**
315	**MS1162**	5,0	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

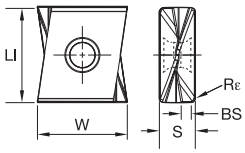
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



LNPU-HD



beyond

P			●		●
M					
K		●		●	○
N					
S					
H					

● first choice
○ alternate choice

LNPU-HD

catalogue number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU221012PNSRHD	26,50	2,31	25,01	1,20	10,00	0,23	4	●	●	●	●

Face Mills

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	260	**230**	215	–	–	–	455	**395**	370
	2	–	–	–	220	**190**	160	–	–	–	280	**255**	230
	3	–	–	–	200	**170**	140	–	–	–	255	**230**	205
	4	–	–	–	180	**150**	120	–	–	–	190	**175**	160
	5	–	–	–	150	**135**	120	–	–	–	260	**230**	210
	6	–	–	–	130	**100**	80	–	–	–	160	**135**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	270	**245**	215	–	–	–	420	**385**	340	295	**265**	240
	2	210	**190**	175	–	–	–	335	**295**	275	235	**210**	190
	3	175	**160**	145	–	–	–	280	**250**	230	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

Beyond BLAST™ • KSSM™ 45

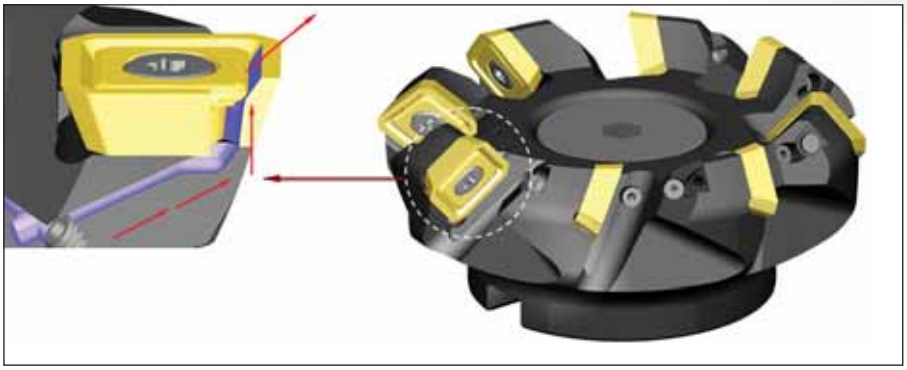
More than just the right tool — the ultimate solution.

Primary Application

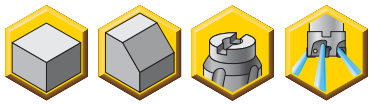
The Beyond BLAST KSSM 45° utilises Precision Coolant Technology (PCT) to aggressively apply coolant directly to the cutting area. Not only does this reduce heat at the cutting edge, but it also assists with reducing tool and chip friction, increasing chip evacuation, and relieving shear stress. Because the Beyond BLAST technology can be applied in low-pressure conditions, there is no need to invest in additional equipment. It's so easy to convert from conventional to Beyond BLAST technology, it can be done directly on the floor — virtually eliminating costly downtime. See what the performance leader can do for your titanium machining.

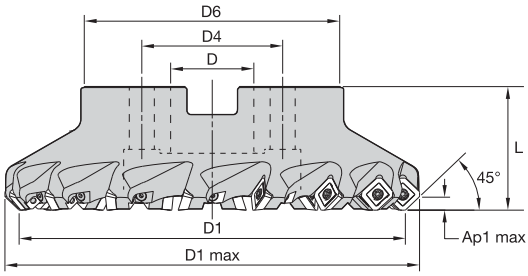
Features and Benefits

Features	Benefits
PCT — Precision Coolant Technology.	Coolant delivery exactly to the cutting area.
Increased heat transfer.	Less tool/chip friction and shear stress.
Improved chip control.	True internal coolant assists chip evacuation.
Beyond BLAST also works with regular low-pressure conditions.	No need for investments in high-pressure equipment.
Easy to convert from conventional to Beyond BLAST Technology.	Shop-floor-proven handling reduces costly downtime.
Up to 100% better tool life.	Performance leader in machining titanium.



- Precision Coolant Technology (PCT).
- Coolant delivery exactly to cutting area.
- Increased heat transfer.
- Improved chip control.
- Productivity booster for machining titanium.





beyond BLAST™

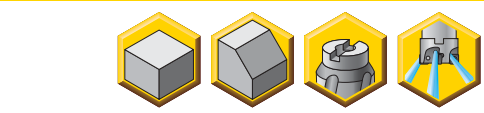
BB Shell Mills 45°

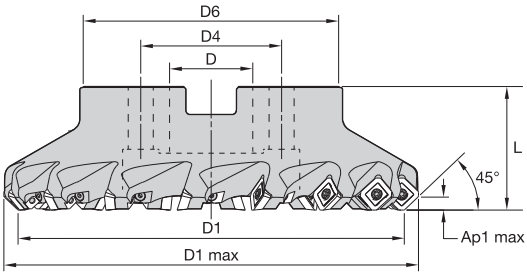
order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
4137779	50A04RS45SE14BB	50	63,9	22	–	50	40	6,6	4	0,47	18400
4137780	63A05RS45SE14BB	63	76,8	22	–	50	40	6,6	5	0,61	16400
4137781	80A06RS45SE14BB	80	93,8	27	–	60	50	6,6	6	1,19	14500
4137782	100B07RS45SE14BB	100	113,7	32	–	80	50	6,6	7	1,89	13000
4147354	100B10RS45SE14BB	100	113,7	32	–	80	50	6,6	10	1,91	13000
4137783	125B08RS45SE14BB	125	138,7	40	–	90	63	6,6	8	3,36	11600
4147355	125B12RS45SE14BB	125	138,7	40	–	90	63	6,6	12	3,35	11600
4137784	160C10RS45SE14BB	160	173,6	40	66,7	100	63	6,6	10	4,33	10300
4147356	160C14RS45SE14BB	160	173,6	40	66,7	100	63	6,6	14	4,35	10300
4137785	200C12RS45SE14BB	200	213,6	60	101,6	130	63	6,6	12	6,47	9200
4147357	200C16RS45SE14BB	200	213,6	60	101,6	130	63	6,6	16	6,84	9200

Spare Parts

D1	insert screw	Nm	Torx Plus driver	low-head cap screw	socket-head cap screw	coolant lock screw	coolant shower plate assembly
50	MS2078	4,0	DT15IP	129.025	–	–	–
63	MS2078	4,0	DT15IP	129.025	–	–	–
80	MS2078	4,0	DT15IP	–	MS2038	–	–
100	MS2078	4,0	DT15IP	–	–	MS2195C	–
125	MS2078	4,0	DT15IP	–	–	MS2187C	–
160	MS2078	4,0	DT15IP	–	–	–	MCCM16001
200	MS2078	4,0	DT15IP	–	–	–	MCC080001

- Precision Coolant Technology (PCT).
- Coolant delivery exactly to cutting area.
- Increased heat transfer.
- Improved chip control.
- Productivity booster for machining titanium.





beyond BLAST

BB Shell Mills 45° • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D4	D6	L	Ap1 max	Z	kg	max RPM
4137786	**80A06RS45SE14BBJ**	80	93,8	25,400	1.000	–	56	50	6,6	6	1,13	14500
4137787	**100B07RS45SE14BBJ**	100	113,7	31,750	1.250	–	73	50	6,6	7	1,76	13000
4147358	**100B10RS45SE14BBJ**	100	113,7	31,750	1.250	–	73	50	6,6	10	1,79	13000
4137788	**125B08RS45SE14BBJ**	125	138,7	38,100	1.500	–	97	63	6,6	8	3,62	11600
4147359	**125B12RS45SE14BBJ**	125	138,7	38,100	1.500	–	97	63	6,6	12	3,62	11600
4137789	**160B10RS45SE14BBJ**	160	173,6	50,800	2.000	–	100	63	6,6	10	4,99	10300
4147360	**160B14RS45SE14BBJ**	160	173,6	50,800	2.000	–	100	63	6,6	14	5,01	10300
4137790	**200C12RS45SE14BBJ**	200	213,6	47,625	1,875	101,6	130	63	6,6	12	7,07	9200
4147361	**200C16RS45SE14BBJ**	200	213,6	47,625	1,875	101,6	130	63	6,6	16	7,08	9200

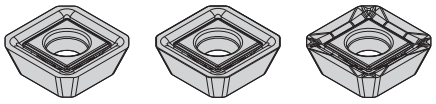
Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw	coolant lock screw	coolant shower plate assembly
80	**MS2078**	4,0	**DT15IP**	**125.230**	–	–
100	**MS2078**	4,0	**DT15IP**	–	**MS2220C**	–
125	**MS2078**	4,0	**DT15IP**	–	**MS2244C**	–
160	**MS2078**	4,0	**DT15IP**	–	**MS2245C**	–
200	**MS2078**	4,0	**DT15IP**	–	–	**MCC080001**

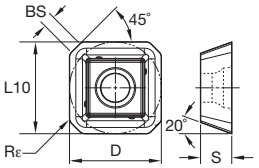
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..GD2	KC725M	**.E..GN**	**KC725M**	.S..GN	KC725M
H1	–	–	–	–	–	–

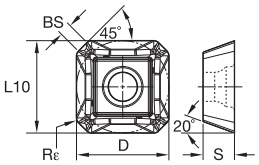
Indexable Inserts • BB KSSM 45°



SECX-ENGN SECX-SNGN SECX-GD2



SECX-GN



SECX-GD2

beyond BLAST™

● first choice
○ alternate choice

P	
M	
K	
N	
S	●
H	

Face Mills

SECX-GN

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	KC725M
SECX1404AEENGN	14,00	1,85	14,00	1,00	4,76	0,06	4	●
SECX1404AESNGN	14,00	1,85	14,00	1,00	4,76	0,08	4	●

SECX-GD2

catalogue number	D	BS	L10	Rε	S	hm	cutting edges	KC725M
SECX1404AEENGD2	14,00	1,85	14,00	1,00	4,76	0,06	4	

Recommended Starting Speeds [m/min]

Material Group		KC725M		
P	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
	5	–	–	–
	6	–	–	–
M	1	–	–	–
	2	–	–	–
	3	–	–	–
K	1	–	–	–
	2	–	–	–
	3	–	–	–
N	1–2	–	–	–
	3	–	–	–
S	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	75	**55**	35
H	1	–	–	–
	2	–	–	–
	3	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GD2	0,17	**0,26**	0,36	0,12	**0,19**	0,27	0,11	**0,17**	0,24	0,10	**0,16**	0,22	0,10	**0,15**	0,22	.E..GD2
.E..GN	0,17	**0,26**	0,36	0,12	**0,19**	0,27	0,11	**0,17**	0,24	0,10	**0,16**	0,22	0,10	**0,15**	0,22	.E..GN
.S..GN	0,21	**0,31**	0,44	0,15	**0,23**	0,33	0,13	**0,20**	0,29	0,13	**0,19**	0,27	0,12	**0,18**	0,26	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

KSSM™ 45°

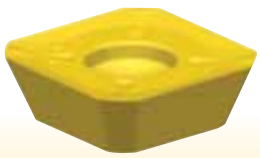
Primary Application

Universal face mill for conventional machining.

Features and Benefits

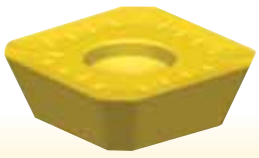
- Insert SE.T1404.
- Ap1 max = 6,6mm.
- Four true cutting edges.
- Pocket seat protection with carbide shims.
- Easy handling and rapid insert change.

-LD2



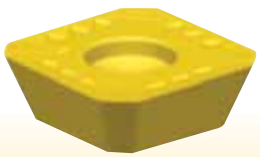
For light machining and semi-finishing, light edge prep.

-GP2



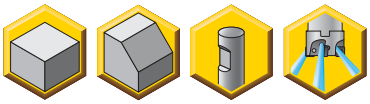
For medium roughing, medium edge prep.

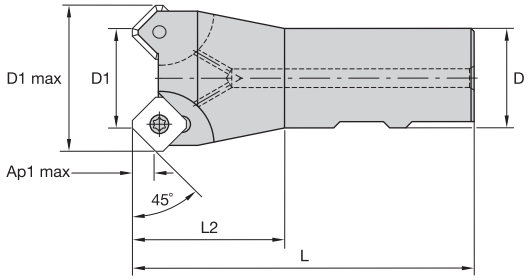
-GB2



For heavy roughing, strongest edge protection.

- Consumes less power.
- Rapid insert changes.

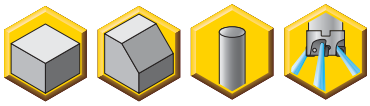


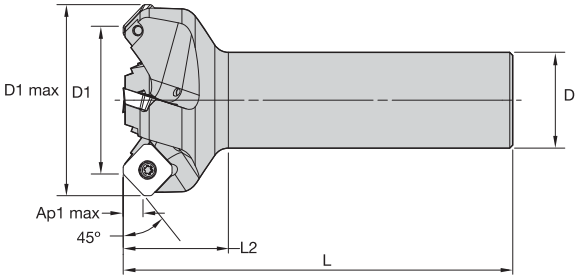


KSSM 45° • Weldon® End Mills

order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	kg	max RPM
1926943	40D3R049B32SSE14G	40	54,0	32	110	49	6,6	3	0,70	26000

- Rapid insert changes.
- Suitable for a wide variety of workpiece materials.





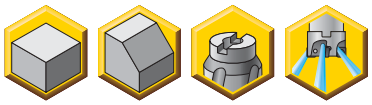
KSSM 45° • Cylindrical End Mills

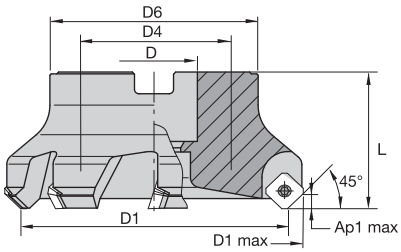
order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	kg	max RPM
3127213	50D4R049A32SSE14G	50	63,9	32	130	49	6,6	4	0,92	23250
3127216	63D5R049A32SSE14G	63	76,8	32	130	49	6,6	5	1,08	20710
3127217	80D6R049A32SSE14G	80	93,8	32	130	49	6,6	6	1,36	18380

Spare Parts

D1	insert screw	Nm	Torx Plus driver
40	MS2078	4	DT15IP
50	MS2078	4	DT15IP
63	MS2078	4	DT15IP
80	MS2078	4	DT15IP

- Rapid insert changes.
- Carbide shims for pocket protection.

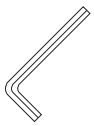




KSSM 45° • Shell Mills

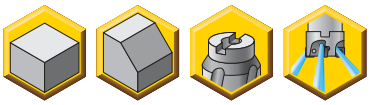
order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
1926850	**40A03RS45SE14EG**	40	54,0	16	–	44	40	6,6	3	0,30	26000
1926812	**50A03RS45SE14EG**	50	63,9	22	–	50	40	6,6	3	0,40	22500
1926900	**50A04RS45SE14EG**	50	63,9	22	–	50	40	6,6	4	0,40	22500
1926899	**63A04RS45SE14EG**	63	76,8	22	–	50	40	6,6	4	0,50	20200
1926897	**63A05RS45SE14EG**	63	76,8	22	–	50	40	6,6	5	0,60	20200
1926894	**80A05RS45SE14EG**	80	93,8	27	–	60	50	6,6	5	1,10	18000
1926893	**80A06RS45SE14EG**	80	93,8	27	–	60	50	6,6	6	1,20	18000
1926926	**100B05RS45SE14EG**	100	113,7	32	–	80	50	6,6	5	1,70	16000
1926925	**100B07RS45SE14EG**	100	113,7	32	–	80	50	6,6	7	1,80	16000
1926924	**125B06RS45SE14EG**	125	138,7	40	–	90	63	6,6	6	2,90	14400
1926911	**125B08RS45SE14EG**	125	138,7	40	–	90	63	6,6	8	3,00	14400
1926909	**160C07RS45SE14EG**	160	173,6	40	66,7	100	63	6,6	7	4,10	12500
1926908	**160C10RS45SE14EG**	160	173,6	40	66,7	100	63	6,6	10	4,30	12500

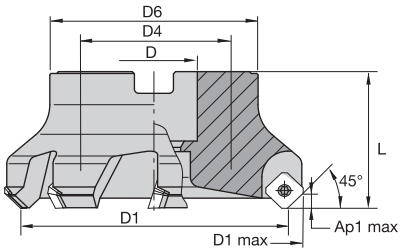
Spare Parts

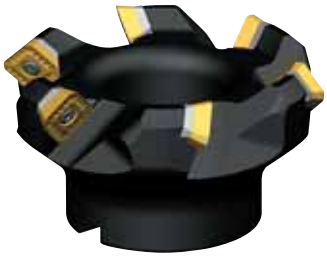


D1	insert screw	Nm	Torx Plus driver	shim	shim screw	hex driver	low-head cap screw	socket-head cap screw
40	**MS2078**	4,0	**DT15IP**	–	–	–	**MS2040**	–
50	**MS2078**	4,0	**DT15IP**	–	–	–	**129.025**	–
63	**MS2078**	4,0	**DT15IP**	–	–	–	**129.025**	–
80	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	–	**MS2038**
100	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	–	–
125	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	–	–
160	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	–	–

- Rapid insert changes.
- Carbide shims for pocket protection.



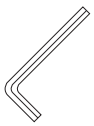




KSSM 45° • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D6	L	Ap1 max	Z	kg	max RPM
3669080	**80A05RS45SE14EG-J**	80	93,8	25,400	1.000	60	50	6,6	5	1,13	18000
3127218	**80A06RS45SE14EG-J**	80	93,8	25,400	1.000	60	50	6,6	6	1,16	18000
3669081	**100B05RS45SE14EG-J**	100	113,7	31,750	1.250	80	50	6,6	5	1,70	16000
3127219	**100B07RS45SE14EG-J**	100	113,7	31,750	1.250	80	50	6,6	7	1,80	16000
3669082	**125B06RS45SE14EG-J**	125	138,7	38,100	1.500	90	63	6,6	6	3,26	14400
3127220	**125B08RS45SE14EG-J**	125	138,7	38,100	1.500	90	63	6,6	8	3,09	14400
3669693	**160B07RS45SE14EG-J**	160	173,6	50,800	2.000	100	63	6,6	7	4,58	12500
3127221	**160B10RS45SE14EG-J**	160	173,6	50,800	2.000	100	63	6,6	10	—	12500

Spare Parts

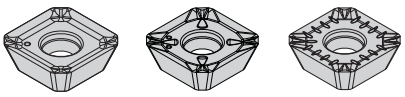


D1	insert screw	Nm	Torx Plus driver	shim	shim screw	hex driver
80	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**
100	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**
125	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**
160	**MS2078**	4,0	**DT15IP**	**SM455**	**SRS3**	**DH35M**

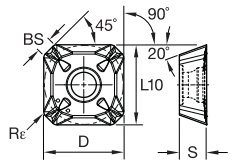
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GP2**	**KC725M**	.E..GB2	KC725M
P3–P4	.E..GP2	KCPK30	**.E..GB2**	**KCPK30**	.S..GP2	KCPK30
P5–P6	.E..GB2	KCPM20	**.S..GP2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..GP2	KC725M	**.E..GB2**	**KC725M**	.S..GP2	KC725M
M3	.E..GB2	KCPK30	**.S..GP2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..GP2	KCK15	**.E..GB2**	**KCK15**	.S..GP2	KCK15
K3	.E..GB2	KCPK30	**.S..GP2**	**KCPK30**	.S..GB2	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GP2**	**KC725M**	.E..GB2	KC725M
S3	.E..GP2	KC725M	**.E..GB2**	**KC725M**	.S..GP2	KC725M
S4	.S..GP2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts



SECT-LE SECT-LD2 SEKT-GP2



SECT/SEKT/SEPT

beyond

● first choice
○ alternate choice

		KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				●		●	●	
M				●		○	○	
K			●		●	○	○	●
N		●						
S				●				
H								

Face Mills

SECT-LE

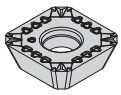
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECT1404AEFNLE	14,00	4,76	14,00	2,65	1,0	0,02	4	●						

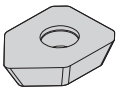
SECT-LD2

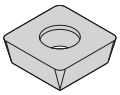
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECT1404AEENLD2	14,00	4,76	14,00	2,65	1,0	0,04	4			●		●		

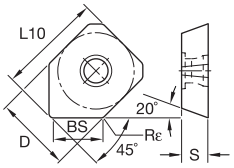
SEKT-GP2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SEKT1404AEENGP2	14,00	4,76	14,00	2,65	1,0	0,05	4		●	●	●	●	●	
SEKT1404AESNGP2	14,00	4,76	14,00	2,65	1,0	0,11	4		●	●	●	●	●	


SEPT-GB2


SECW-GNW


SECW-GN



SECW-GNW

beyond

● first choice
○ alternate choice

P			●		●	●	
M			●		○	○	
K		●		●	○	○	●
N	●						
S			●				
H							

SEPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SEPT1404AEENGB2	14,00	4,76	14,00	2,65	1,0	0,08	4		●	●	●	●	●	
SEPT1404AESNGB2	14,00	4,76	14,00	2,65	1,0	0,13	4		●	●	●	●	●	

SECW-GNW

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECW1404AEENGNW	14,00	4,76	8,26	8,26	0,8	0,04	2		●	●				

SECW-GN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECW1404AESNGN	14,00	4,76	14,00	2,65	1,0	0,16	4							●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC725M			KCK15		
P	1	–	–	–	–	–	–	315	**275**	255	–	–	–
	2	–	–	–	–	–	–	260	**230**	195	–	–	–
	3	–	–	–	–	–	–	240	**205**	170	–	–	–
	4	–	–	–	–	–	–	215	**180**	145	–	–	–
	5	–	–	–	–	–	–	180	**160**	145	–	–	–
	6	–	–	–	–	–	–	160	**120**	95	–	–	–
M	1	–	–	–	–	–	–	205	**180**	165	–	–	–
	2	–	–	–	–	–	–	185	**160**	130	–	–	–
	3	–	–	–	–	–	–	140	**120**	95	–	–	–
K	1	–	–	–	325	**295**	260	–	–	–	505	**460**	410
	2	–	–	–	255	**225**	215	–	–	–	400	**355**	330
	3	–	–	–	215	**190**	170	–	–	–	335	**300**	275
N	1–2	1460	**1300**	1195	–	–	–	–	–	–	–	–	–
	3	1300	**1195**	1100	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	45	**35**	30	–	–	–
	2	–	–	–	–	–	–	45	**35**	30	–	–	–
	3	–	–	–	–	–	–	55	**45**	30	–	–	–
	4	–	–	–	–	–	–	75	**55**	35	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM20			KCPK30			KY3500		
P	1	660	**580**	535	545	**475**	440	–	–	–
	2	410	**370**	330	335	**305**	275	–	–	–
	3	370	**330**	305	305	**275**	250	–	–	–
	4	275	**255**	230	225	**210**	190	–	–	–
	5	330	**300**	275	310	**275**	255	–	–	–
	6	230	**200**	175	190	**165**	–	–	–	–
M	1	270	**240**	205	250	**220**	190	–	–	–
	2	245	**215**	190	225	**195**	170	–	–	–
	3	195	**175**	150	175	**160**	140	–	–	–
K	1	435	**390**	350	355	**320**	285	965	**880**	780
	2	345	**310**	280	280	**255**	230	765	**685**	635
	3	290	**255**	240	235	**210**	195	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LE
.E..LD2	0,13	**0,27**	0,50	0,10	**0,20**	0,38	0,08	**0,18**	0,33	0,08	**0,16**	0,31	0,08	**0,16**	0,30	.E..LD2
.E..GP2	0,17	**0,29**	0,54	0,13	**0,22**	0,41	0,11	**0,19**	0,35	0,10	**0,18**	0,33	0,10	**0,17**	0,32	.E..GP2
.E..GB2	0,20	**0,32**	0,58	0,15	**0,24**	0,43	0,13	**0,21**	0,38	0,12	**0,20**	0,35	0,12	**0,19**	0,34	.E..GB2
.S..GP2	0,24	**0,38**	0,64	0,18	**0,29**	0,48	0,16	**0,25**	0,42	0,15	**0,23**	0,39	0,14	**0,23**	0,38	.S..GP2
.S..GB2	0,24	**0,44**	0,69	0,18	**0,33**	0,52	0,16	**0,29**	0,45	0,15	**0,27**	0,42	0,14	**0,26**	0,41	.S..GB2
.S..GN	0,24	**0,47**	0,72	0,18	**0,35**	0,54	0,16	**0,31**	0,47	0,15	**0,29**	0,44	0,14	**0,28**	0,43	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

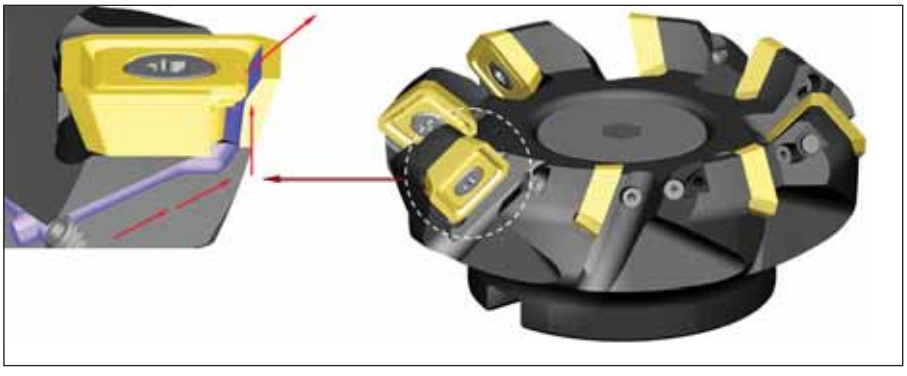
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

KSOM™ Mini • KSOM™

Primary Application

Super soft cutting due to super positive rake face.

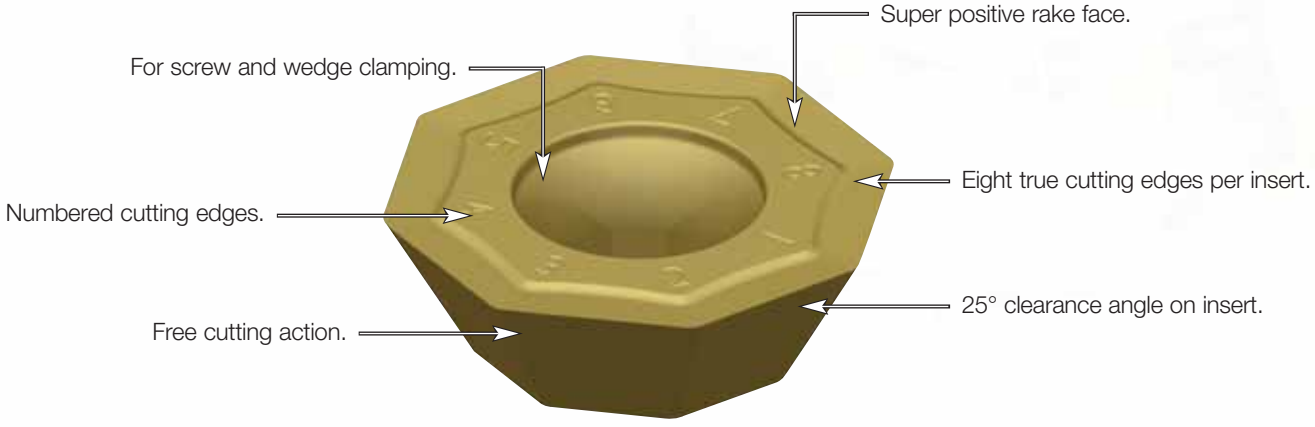
Features and Benefits

Features

- KSOM Mini: insert OFKT06/OFPT06.
- KSOM: insert OFKT07/OFPT07.
- KSOM Mini: Ap1 max = 3,5mm (8 indexes); Ap2 max = 9mm (4 indexes).
- KSOM: Ap1 max = 5mm (8 indexes); Ap2 max = 12mm (4 indexes).

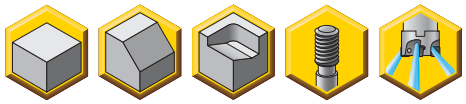
Benefits

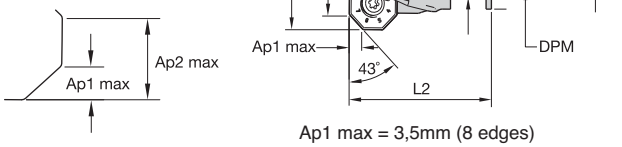
- Low cutting forces deliver higher feed capability.
- Excellent performance in stainless steel and super alloys.
- First choice solution in machining turbochargers.



Insert OF.T06/OF.T07

- Eight cutting edges per insert.
- Super soft cutting.

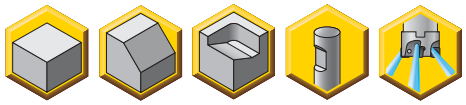


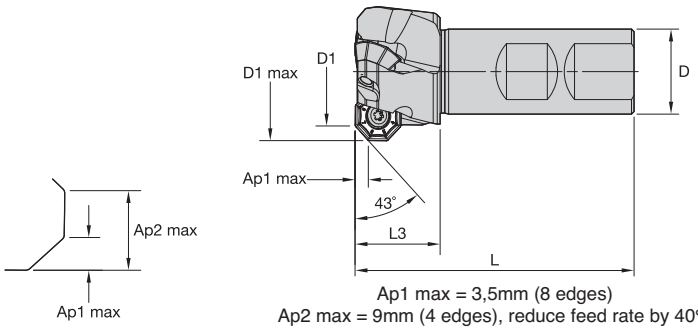


Ap1 max = 3,5mm (8 edges)
Ap2 max = 9mm (4 edges), reduce feed rate by 40%

KSOM Mini • Screw-On End Mills

order number	catalogue number	D1	D1 max	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3115896	**KSOM32R02M16OF06**	32	41,1	29	17	M16	40	22	3,5	2	11.0°	0,23	19890
3115895	**KSOM32R03M16OF06**	32	41,1	29	17	M16	40	22	3,5	3	11.0°	0,21	19890
3115901	**KSOM40R03M16OF06**	40	49,0	29	17	M16	40	22	3,5	3	7.5°	0,27	15920
3115900	**KSOM40R04M16OF06**	40	49,0	29	17	M16	40	22	3,5	4	7.5°	0,27	15920





Ap1 max = 3,5mm (8 edges)
Ap2 max = 9mm (4 edges), reduce feed rate by 40%

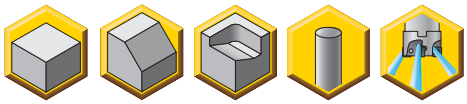
KSOM Mini • Weldon® End Mills

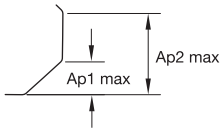
order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	max ramp angle	kg	max RPM
3115894	**KSOM32R02B20OF06**	32	41,1	20	76	25	3,5	2	11.0°	0,25	19890
3115893	**KSOM32R03B20OF06**	32	41,1	20	76	25	3,5	3	11.0°	0,23	19890
3115882	**KSOM32R03B25OF06**	32	41,1	25	82	25	3,5	3	11.0°	0,32	19890
3115899	**KSOM40R03B25OF06**	40	49,0	25	82	25	3,5	3	7.5°	0,37	15920
3115898	**KSOM40R04B25OF06**	40	49,0	25	82	25	3,5	4	7.5°	0,37	15920
3115897	**KSOM40R04B32OF06**	40	49,0	32	110	49	3,5	4	7.5°	0,67	15920

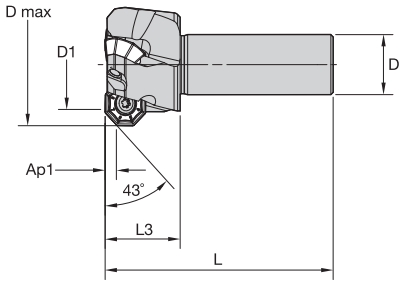
Spare Parts

D1	insert screw	Nm	Torx Plus wrench
32	**193.433**	6	**TTP15**
40	**193.433**	6	**TTP15**

- Eight cutting edges per insert.
- Super soft cutting.







Ap1 max = 3,5mm (8 edges)
Ap2 max = 9mm (4 edges), reduce feed rate by 40%

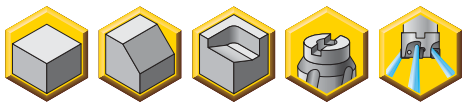
KSOM Mini • Cylindrical End Mills

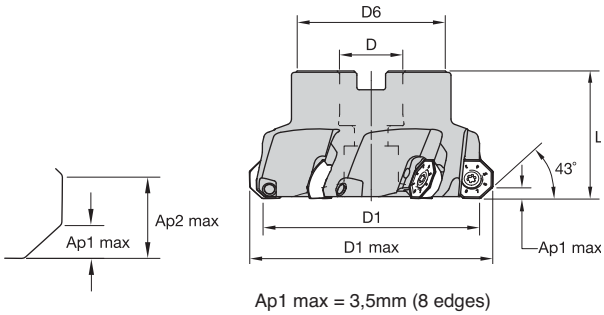
order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	max ramp angle	kg	max RPM
3660311	**KSOM32R02A20OF06**	32	41,1	20	76	25	3,5	2	11.0°	0,25	19890
3660312	**KSOM32R03A20OF06**	32	41,1	20	76	25	3,5	3	11.0°	0,24	19890
3660943	**KSOM32R03A25OF06**	32	41,1	25	82	25	3,5	3	11.0°	0,32	19890
3660944	**KSOM40R03A25OF06**	40	49,0	25	82	25	3,5	3	7.5°	0,38	15920
3660945	**KSOM40R04A25OF06**	40	49,0	25	82	25	3,5	4	7.5°	0,37	15920
3660946	**KSOM40R04A32OF06**	40	49,0	32	110	49	3,5	4	7.5°	0,68	15920

Spare Parts

D1	insert screw	Nm	Torx Plus wrench
32	**193.433**	6	**TTP15**
40	**193.433**	6	**TTP15**

- Eight cutting edges per insert.
- Super soft cutting.



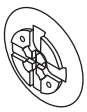


Ap1 max = 3,5mm (8 edges)
Ap2 max = 9mm (4 edges), reduce feed rate by 40%

KSOM Mini • Shell Mills

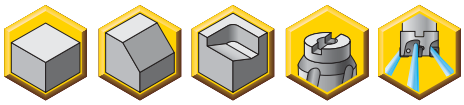
order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3115903	**KSOM50R04OF06**	50	58,9	22	–	38	43	3,5	4	5.0°	0,35	12730
3115902	**KSOM50R06OF06**	50	58,9	22	–	38	43	3,5	6	5.0°	0,35	12730
3115905	**KSOM63R05OF06**	63	71,8	22	–	50	43	3,5	5	3.9°	0,62	10110
3115904	**KSOM63R07OF06**	63	71,8	22	–	50	43	3,5	7	3.9°	0,63	10110
3115907	**KSOM80R06OF06**	80	88,7	27	–	60	50	3,5	6	2.9°	1,10	7960
3115906	**KSOM80R09OF06**	80	88,7	27	–	60	50	3,5	9	2.9°	1,12	7960
3115909	**KSOM100R07OF06**	100	108,6	32	–	80	50	3,5	7	2.2°	1,71	6370
3115908	**KSOM100R10OF06**	100	108,6	32	–	80	50	3,5	10	2.2°	1,75	6370
3115911	**KSOM125R08OF06**	125	133,6	40	–	94	63	3,5	8	1.7°	2,74	5090
3115910	**KSOM125R12OF06**	125	133,6	40	–	94	63	3,5	12	1.7°	2,83	5090
3115913	**KSOM160R10OF06**	160	168,5	40	66,7	114	63	3,5	10	1.3°	4,30	3980
3115912	**KSOM160R16OF06**	160	168,5	40	66,7	114	63	3,5	16	1.3°	4,46	3980

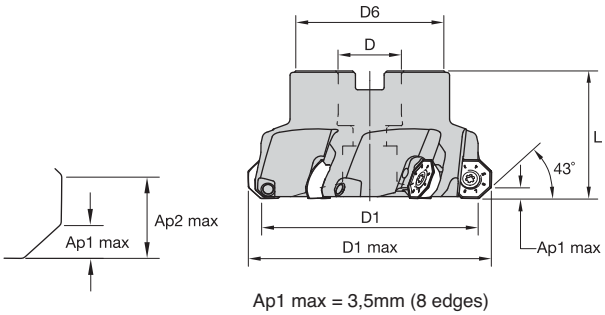
Spare Parts



D1	insert screw	Nm	Torx Plus wrench	low-head cap screw	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
50	**193.433**	6,0	**TTP15**	**129.025**	–	–	–	–
63	**193.433**	6,0	**TTP15**	–	**125.025**	–	–	–
80	**193.433**	6,0	**TTP15**	–	**125.230**	–	–	–
100	**193.433**	6,0	**TTP15**	–	–	**MS2189C**	–	–
125	**193.433**	6,0	**TTP15**	–	–	–	**420.200**	**470.232**
160	**193.433**	6,0	**TTP15**	–	–	–	**420.200**	**470.233**

- Eight cutting edges per insert.
- Super soft cutting.





Ap1 max = 3,5mm (8 edges)
Ap2 max = 9mm (4 edges), reduce feed rate by 40%

KSOM Mini • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D6	L	Ap1 max	Z	kg	max RPM
3660947	**KSOM80R06OF06-J**	80	88,7	25,400	1.000	60	50	3,5	6	1,22	7960
3660948	**KSOM80R09OF06-J**	80	88,7	25,400	1.000	60	50	3,5	9	1,24	7960
3660949	**KSOM100R07OF06-J**	100	108,6	31,750	1.250	80	50	3,5	7	1,96	6370
3660950	**KSOM100R10OF06-J**	100	108,6	31,750	1.250	80	50	3,5	10	1,99	6370
3660951	**KSOM125R08OF06-J**	125	133,6	38,100	1.500	90	63	3,5	8	2,77	5090
3660952	**KSOM125R12OF06-J**	125	133,6	38,100	1.500	90	63	3,5	12	3,19	5090
3660953	**KSOM160R10OF06-J**	160	168,5	50,800	2.000	110	63	3,5	10	4,66	3980
3660954	**KSOM160R16OF06-J**	160	168,5	50,800	2.000	110	63	3,5	16	4,80	3980

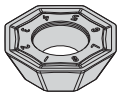
Spare Parts

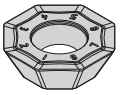
D1	insert screw	Nm	Torx Plus wrench
80	**193.433**	6,0	**TTP15**
100	**193.433**	6,0	**TTP15**
125	**193.433**	6,0	**TTP15**
160	**193.433**	6,0	**TTP15**

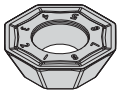
Insert Selection Guide

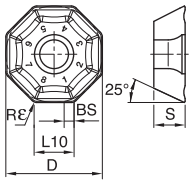
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
P3–P4	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
P5–P6	.E..GB	KCPK30	**.E..GB**	**KCPM20**	.S..HB	KCPM20
M1–M2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
M3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
K1–K2	.E..LB	KCK15	**.E..GB**	**KCK15**	.S..HB	KCK15
K3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
N1–N2	.F..LBJ	KC410M	**.F..LBJ**	**KC410M**	.F..LNJ	KC410M
N3	.F..LBJ	KC410M	**.F..LNJ**	**KC410M**	.E..LBJ	KC422M
S1–S2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S3	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S4	.E..GB	KC725M	**.S..HB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts


OF.T-LNJ


OF.T-LBJ


OF.T-LB



beyond

P					○	●		●	●
M						●	●		○	○
K				●	○		●	○	○
N		●	●						
S						●	●		
H									

● first choice
○ alternate choice

OFKT-LNJ

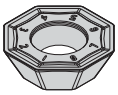
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT06L5AFFNLNJ	14,70	5,00	6,00	–	0,8	0,02	8	●							

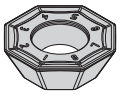
OFKT-LBJ

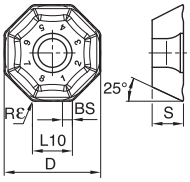
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT06L5AFFNLBJ	14,70	5,00	6,00	–	0,8	0,02	8	●							
OFKT06L5AFENLBJ	14,70	5,00	6,00	–	0,8	0,03	8		●						

OFKT-LB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT06L5AFENLB	14,70	5,00	6,00	1,23	0,8	0,10	8				●	●	●		●
OFKT06L5AFSNLB	14,70	5,00	6,00	1,21	0,8	0,22	8			●	●	●			●


OF.T-GB


OF.T- HB



beyond

● first choice
○ alternate choice

P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H								

OFKT-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT06L5AFENGB	14,70	5,00	6,00	—	0,8	0,15	8			●	●	●	●	●	●

OFKT-HB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT06L5AFSNHB	14,70	5,00	6,00	—	0,8	0,21	8				●	●		●	●

OFPT-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFPT06L5AFENGB	14,70	5,00	6,00	—	0,8	0,15	8			●		●	●	●	●

OFPT-HB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFPT06L5AFSNHB	14,70	5,00	6,00	—	0,8	0,21	8			●		●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	395	**345**	325
	2	–	–	–	–	–	–	–	–	–	330	**290**	240
	3	–	–	–	–	–	–	–	–	–	305	**255**	215
	4	–	–	–	–	–	–	–	–	–	270	**225**	180
	5	–	–	–	–	–	–	–	–	–	225	**200**	180
	6	–	–	–	–	–	–	–	–	–	200	**150**	120
M	1	–	–	–	–	–	–	–	–	–	245	**215**	200
	2	–	–	–	–	–	–	–	–	–	225	**190**	160
	3	–	–	–	–	–	–	–	–	–	170	**145**	115
K	1	–	–	–	–	–	–	325	**295**	260	275	**250**	220
	2	–	–	–	–	–	–	255	**225**	215	215	**195**	180
	3	–	–	–	–	–	–	215	**190**	170	180	**160**	145
N	1–2	1460	**1300**	1195	1285	**1135**	1050	–	–	–	–	–	–
	3	1300	**1195**	1100	1135	**1050**	915	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	50	**45**	35
	2	–	–	–	–	–	–	–	–	–	50	**45**	35
	3	–	–	–	–	–	–	–	–	–	60	**50**	35
	4	–	–	–	–	–	–	–	–	–	85	**60**	45
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	315	**275**	255	–	–	–	660	**580**	535	545	**475**	440
	2	260	**230**	195	–	–	–	410	**370**	330	335	**305**	275
	3	240	**205**	170	–	–	–	370	**330**	305	305	**275**	250
	4	215	**180**	145	–	–	–	275	**255**	230	225	**210**	190
	5	180	**160**	145	–	–	–	330	**300**	275	310	**275**	255
	6	160	**120**	95	–	–	–	230	**200**	175	190	**165**	–
M	1	205	**180**	165	–	–	–	270	**240**	205	250	**220**	190
	2	185	**160**	130	–	–	–	245	**215**	190	225	**195**	170
	3	140	**120**	95	–	–	–	195	**175**	150	175	**160**	140
K	1	–	–	–	505	**460**	410	435	**390**	350	355	**320**	285
	2	–	–	–	400	**355**	330	345	**310**	280	280	**255**	230
	3	–	–	–	335	**300**	275	290	**255**	240	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	45	**35**	30	–	–	–	–	–	–	–	–	–
	2	45	**35**	30	–	–	–	–	–	–	–	–	–
	3	55	**45**	30	–	–	–	–	–	–	–	–	–
	4	75	**55**	35	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

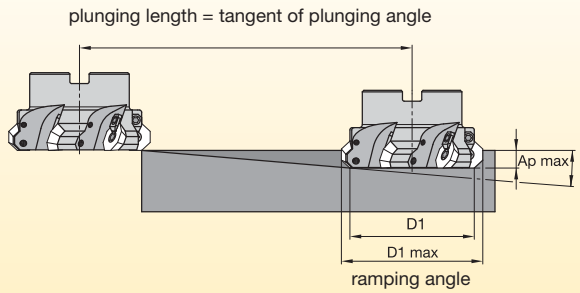
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LBJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LBJ
.F..LNJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LNJ
.E..LBJ	0,12	**0,27**	0,50	0,09	**0,20**	0,37	0,08	**0,18**	0,32	0,07	**0,16**	0,30	0,07	**0,16**	0,30	.E..LBJ
.E..LB	0,24	**0,37**	0,59	0,18	**0,27**	0,44	0,16	**0,24**	0,39	0,15	**0,22**	0,36	0,14	**0,22**	0,35	.E..LB
.S..LB	0,24	**0,59**	0,90	0,18	**0,44**	0,67	0,16	**0,38**	0,58	0,15	**0,36**	0,54	0,14	**0,35**	0,53	.S..LB
.E..GB	0,24	**0,51**	0,71	0,18	**0,38**	0,53	0,16	**0,33**	0,46	0,15	**0,31**	0,43	0,14	**0,30**	0,42	.E..GB
.S..HB	0,24	**0,59**	0,97	0,18	**0,44**	0,72	0,16	**0,38**	0,63	0,15	**0,36**	0,59	0,14	**0,35**	0,57	.S..HB

NOTE: Use “Light Machining” values as starting feed rate.

KSOM Mini Application • OF.T06L5

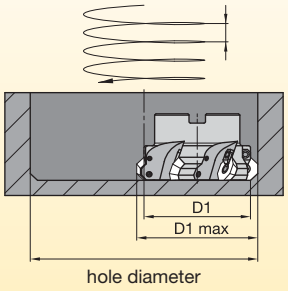
Ramping



Metric Version

D1 mm	D1 max mm	Ap max mm	ramping angle (°)	ramping length mm
32	41,1	9	11,0	46,3
40	49,0	9	7,5	68,4
50	58,9	9	5,0	102,9
63	71,8	9	3,9	132,0
80	88,7	9	2,9	177,7
100	108,6	9	2,2	234,3
125	133,6	9	1,7	303,2
160	168,5	9	1,3	396,6

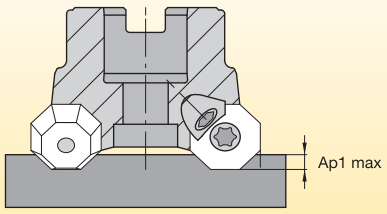
Helical Interpolation



Metric Version

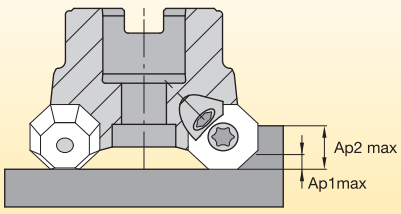
D1 mm	D1 max mm	hole diameter min mm	hole diameter max mm	Ap/rev mm
32	41,1	61,7	81,7	4,7
40	49,0	77,5	97,6	4,7
50	58,9	97,4	117,4	4,7
63	71,8	123,3	143,3	4,7
80	88,7	157,2	177,2	4,7
100	108,6	197,2	217,1	4,7
125	133,6	247,1	267,0	4,7
160	168,5	317,1	377,0	4,7

Plunging



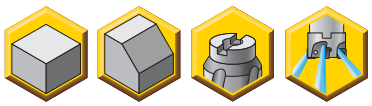
max plunging depth	mm
Ap1 max	3,2

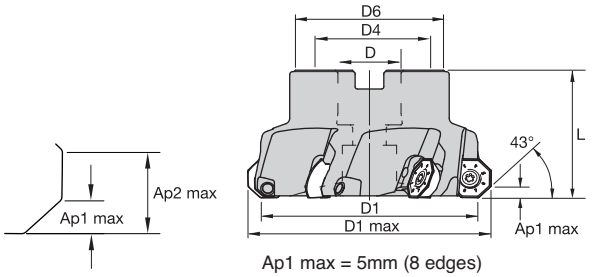
Face Milling



max DOC Ap	mm	chipload (fz)
Ap1 max	3,5	1 x fx
Ap2 max	9,0	0,6 x fz

- Eight cutting edges per insert.
- Super soft cutting.



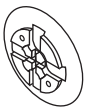


Ap1 max = 5mm (8 edges)
Ap2 max = 11mm (4 edges), reduce feed rate by 40%

KSOM • Shell Mills

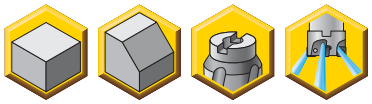
order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3115873	**KSOM63R04OF07**	63	74,3	22	–	50	43	5,0	4	5.5°	0,61	10100
3115582	**KSOM63R05OF07**	63	74,3	22	–	50	43	5,0	5	5.5°	0,55	10100
3115875	**KSOM80R04OF07**	80	91,2	27	–	60	50	5,0	4	4.0°	1,14	7900
3115874	**KSOM80R06OF07**	80	91,2	27	–	60	50	5,0	6	4.0°	1,06	7900
3115877	**KSOM100R05OF07**	100	110,9	32	–	80	50	5,0	5	3.0°	1,66	6300
3115876	**KSOM100R08OF07**	100	110,9	32	–	80	50	5,0	8	3.0°	1,57	6300
3115879	**KSOM125R06OF07**	125	136,0	40	–	90	63	5,0	6	2.3°	2,56	5000
3115878	**KSOM125R10OF07**	125	136,0	40	–	90	63	5,0	10	2.3°	2,68	5000
3115881	**KSOM160R07OF07**	160	170,9	40	66,7	110	63	5,0	7	1.7°	4,20	3900
3115880	**KSOM160R12OF07**	160	170,9	40	66,7	110	63	5,0	12	1.7°	4,34	3900

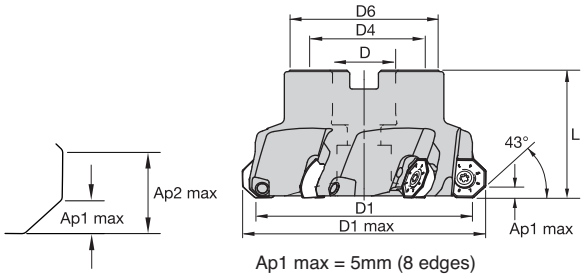
Spare Parts



D1	insert screw	Nm	Torx Plus wrench	socket-head cap screw	coolant lock screw assembly	mill cutter lock screw	coolant shower plate
63	**193.409**	6,0	**TTP20**	**125.025**	–	–	–
80	**193.409**	6,0	**TTP20**	**125.230**	–	–	–
100	**193.409**	6,0	**TTP20**	–	**MS2189C**	–	–
125	**193.409**	6,0	**TTP20**	–	–	**420.200**	**470.232**
160	**193.409**	6,0	**TTP20**	–	–	**420.200**	**470.233**

- Eight cutting edges per insert.
- Super soft cutting.





Ap1 max = 5mm (8 edges)
Ap2 max = 11mm (4 edges), reduce feed rate by 40%

KSOM • Shell Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3652091	**KSOM80R04OF07-J**	80	91,2	25,400	1.000	50	50	5,0	4	4.0°	0,94	7900
3652092	**KSOM80R06OF07-J**	80	91,2	25,400	1.000	50	50	5,0	6	4.0°	1,03	7900
3652093	**KSOM100R05OF07-J**	100	110,5	31,750	1.250	60	50	5,0	5	3.0°	1,26	6300
3652094	**KSOM100R08OF07-J**	100	110,5	31,750	1.250	60	50	5,0	8	3.0°	1,41	6300
3652095	**KSOM125R06OF07-J**	125	136,0	38,100	1.500	80	63	5,0	6	2.3°	2,43	5000
3652096	**KSOM125R10OF07-J**	125	136,0	38,100	1.500	80	63	5,0	10	2.3°	3,10	5000
3652097	**KSOM160R07OF07-J**	160	170,9	50,800	2.000	100	63	5,0	7	1.7°	4,22	3900
3652098	**KSOM160R12OF07-J**	160	170,9	50,800	2.000	100	63	5,0	12	1.7°	4,14	3900

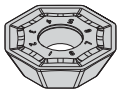
Spare Parts

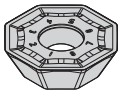
D1	insert screw	Nm	Torx Plus wrench
80	**193.409**	6,0	**TTP20**
100	**193.409**	6,0	**TTP20**
125	**193.409**	6,0	**TTP20**
160	**193.409**	6,0	**TTP20**

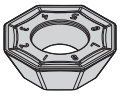
Insert Selection Guide

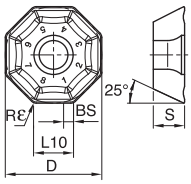
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
P3–P4	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
P5–P6	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
M1–M2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
M3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
K1–K2	.E..LB	KCK15	**.E..GB**	**KCK15**	.S..HB	KCK15
K3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
N1–N2	.F..LNJ	KC410M	**.F..LNJ**	**KC410M**	.F..LNJ	KC410M
N3	.F..LNJ	KC410M	**.F..LNJ**	**KC410M**	.F..LNJ	KC410M
S1–S2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S3	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S4	.E..GB	KC725M	**.S..HB**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts


OF.T-LNJ


OF.T-LB


OF.T-GB



● first choice
○ alternate choice

	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
P			○	●		●
M			●	●		○
K		●	○		●	○
N	●		○			
S			●	●		
H						

OFKT-LNJ

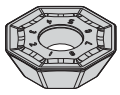
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT07L6AFFNLNJ	18,70	6,00	7,50	–	1,2	0,02	8	●					

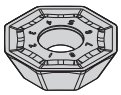
OFKT-LB

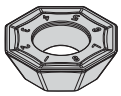
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT07L6AFENLB	18,70	6,00	7,50	2,10	1,2	0,10	8		●	●	●	●	●
OFKT07L6AFSNLB	18,70	6,00	7,50	2,10	1,2	0,22	8				●		●

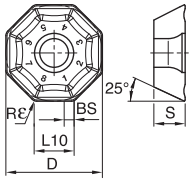
OFKT-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT07L6AFENGB	18,70	6,00	7,50	–	1,2	0,15	8		●	●	●		●


OF.T- HB


OF.T-LB


OF.T-GB



● first choice
○ alternate choice

P				○	●		●
M				●	●		○
K			●	○		●	○
N		●		○			
S				●	●		
H							

OFKT-HB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT07L6AFSNHB	18,70	6,00	7,50	–	1,2	0,21	8		●	●	●	●	●

OFPT-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFPT07L6AFENGB	18,70	6,00	7,50	–	1,2	0,15	8		●	●	●	●	●

OFPT- HB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFPT07L6AFSNHB	18,70	6,00	7,50	–	1,2	0,21	8		●	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M		
P	1	–	–	–	–	–	–	395	**345**	325
	2	–	–	–	–	–	–	330	**290**	240
	3	–	–	–	–	–	–	305	**255**	215
	4	–	–	–	–	–	–	270	**225**	180
	5	–	–	–	–	–	–	225	**200**	180
	6	–	–	–	–	–	–	200	**150**	120
M	1	–	–	–	–	–	–	245	**215**	200
	2	–	–	–	–	–	–	225	**190**	160
	3	–	–	–	–	–	–	170	**145**	115
K	1	–	–	–	325	**295**	260	275	**250**	220
	2	–	–	–	255	**225**	215	215	**195**	180
	3	–	–	–	215	**190**	170	180	**160**	145
N	1–2	1460	**1300**	1195	–	–	–	–	–	–
	3	1300	**1195**	1100	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35
	2	–	–	–	–	–	–	50	**45**	35
	3	–	–	–	–	–	–	60	**50**	35
	4	–	–	–	–	–	–	85	**60**	45
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	315	**275**	255	–	–	–	660	**580**	535	545	**475**	440
	2	260	**230**	195	–	–	–	410	**370**	330	335	**305**	275
	3	240	**205**	170	–	–	–	370	**330**	305	305	**275**	250
	4	215	**180**	145	–	–	–	275	**255**	230	225	**210**	190
	5	180	**160**	145	–	–	–	330	**300**	275	310	**275**	255
	6	160	**120**	95	–	–	–	230	**200**	175	190	**165**	–
M	1	205	**180**	165	–	–	–	270	**240**	205	250	**220**	190
	2	185	**160**	130	–	–	–	245	**215**	190	225	**195**	170
	3	140	**120**	95	–	–	–	195	**175**	150	175	**160**	140
K	1	–	–	–	505	**460**	410	435	**390**	350	355	**320**	285
	2	–	–	–	400	**355**	330	345	**310**	280	280	**255**	230
	3	–	–	–	335	**300**	275	290	**255**	240	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	45	**35**	30	–	–	–	–	–	–	–	–	–
	2	45	**35**	30	–	–	–	–	–	–	–	–	–
	3	55	**45**	30	–	–	–	–	–	–	–	–	–
	4	75	**55**	35	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

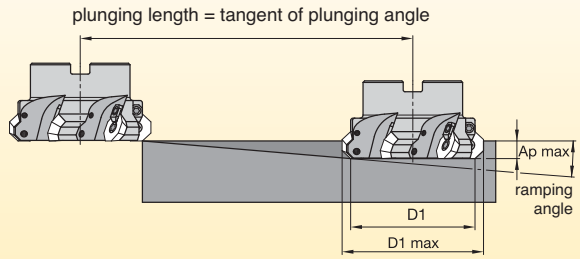
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LNJ	0,12	**0,24**	0,47	0,09	**0,18**	0,35	0,08	**0,15**	0,31	0,07	**0,14**	0,29	0,07	**0,14**	0,28	.F..LNJ
.E..LB	0,24	**0,37**	0,59	0,18	**0,27**	0,44	0,16	**0,24**	0,39	0,15	**0,22**	0,36	0,14	**0,22**	0,35	.E..LB
.S..LB	0,24	**0,59**	0,90	0,18	**0,44**	0,67	0,16	**0,38**	0,58	0,15	**0,36**	0,54	0,14	**0,35**	0,53	.S..LB
.E..GB	0,24	**0,51**	0,71	0,18	**0,38**	0,53	0,16	**0,33**	0,46	0,15	**0,31**	0,43	0,14	**0,30**	0,42	.E..GB
.S..HB	0,24	**0,59**	0,97	0,18	**0,44**	0,72	0,16	**0,38**	0,63	0,15	**0,36**	0,59	0,14	**0,35**	0,57	.S..HB

NOTE: Use “Light Machining” values as starting feed rate.

KSOM Mini Application • OF.T07L6

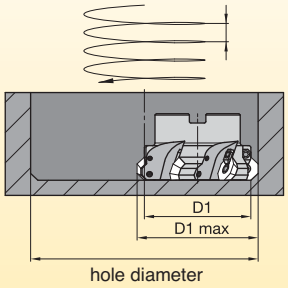
Ramping



Metric Version

D1 mm	D1 max mm	Ap max mm	ramping angle (°)	ramping length mm
63	74,2	9	5,5	121,5
80	91,1	9	4,0	167,3
100	111,0	9	3,0	223,2
125	135,9	9	2,3	291,3
160	170,8	9	1,7	394,2

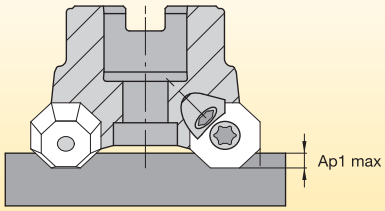
Helical Interpolation



Metric Version

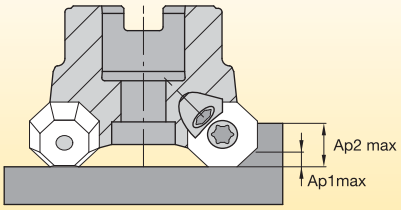
D1 mm	D1 max mm	hole diameter		Ap/rev mm
		min mm	max mm	
63	74,2	122,7	145,0	6,3
80	91,1	156,6	178,0	6,3
100	111,0	196,5	218,7	6,3
125	135,9	246,4	268,7	6,3
160	170,8	316,9	338,6	6,3

Plunging



max plunging depth	mm
Ap1 max	4,2

Face Milling



max DOC Ap	mm	chipload (fz)
Ap1 max	5,0	1 x fx
Ap2 max	11,0	0,6 x fz

Fix-Perfect™ Cast Iron Rougher and Finisher

Primary Application

Performance booster in machining cast iron materials. Based on workpiece requirements, Fix-Perfect covers all face- and shoulder-milling applications when machining cast iron materials with best-in-class productivity. Eight true cutting edges per insert deliver low cost per edge and best CPP ceramic inserts available as standard line items.

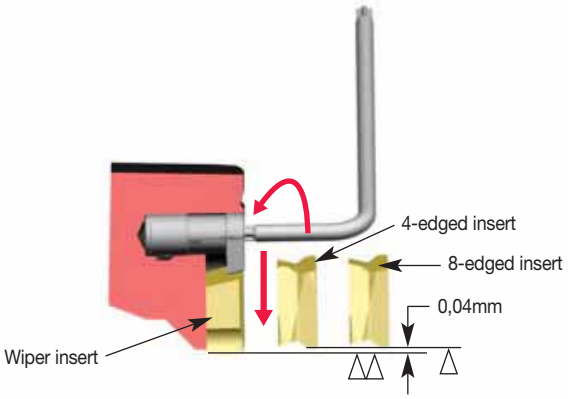
Features and Benefits

Fix-Perfect Cast Iron 70° and 90° Roughing and Finishing in One Tool

- Innovative tangential insert clamping.
- First choice for high feed rates.
- Protection of non-cutting edges.
- Adjustable element for fine finishing with wiper inserts.
- PCBN-tipped wiper inserts available for excellent floor finish.
- Micro-precise runout setup.

Fix-Perfect Cast Iron Finisher Best-in-Class Fine-Finishing Concept

- Rigid and stable cutter design.
- High-precision pocket seat.
- Perfect axial runout without insert adjustment.
- Reliable, excellent floor finish and flatness.
- Easy handling and low-cost cutter setup.

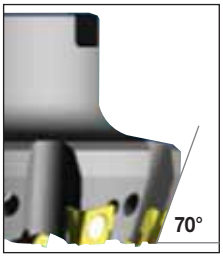


Fix-Perfect™ Finisher

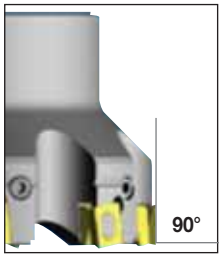
Fix-Perfect Cast Iron

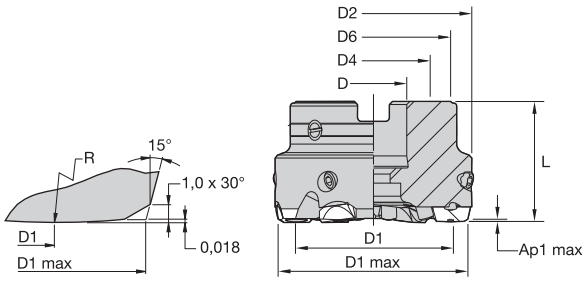
Fix-Perfect Cast Iron 70° and 90°

Fix-Perfect 70°



Fix-Perfect 90°

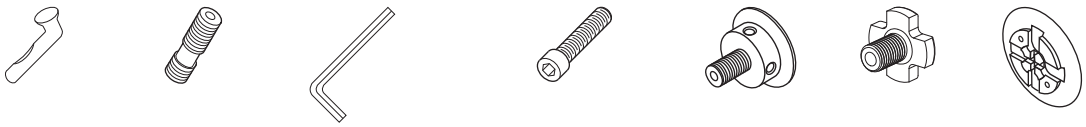




Finishing Face Mills • Shell Mills • Right Hand

order number	catalogue number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	kg	max RPM
1998359	**63A04RP00MD10CF**	52	63,0	22	65	–	55	40	1,0	4	0,70	20200
1998358	**63A06RP00MD10CF**	52	63,0	22	65	–	55	40	1,0	6	0,73	20200
1893753	**80A06RP00MD10CF**	69	80,0	27	82	–	64	50	1,0	6	1,25	15900
1886327	**80A09RP00MD10CF**	69	80,0	27	82	–	64	50	1,0	9	1,35	15900
1893754	**100B08RP00MD10CF**	89	100,0	32	102	–	84	50	1,0	8	1,85	12750
1886328	**100B12RP00MD10CF**	89	100,0	32	102	–	84	50	1,0	12	2,20	12750
1893755	**125B10RP00MD10CF**	114	125,0	40	127	–	104	63	1,0	10	3,75	10200
1886329	**125B16RP00MD10CF**	114	125,0	40	127	–	104	63	1,0	16	3,85	10200
1893756	**160C12RP00MD10CF**	149	160,0	40	162	66,7	140	63	1,0	12	6,60	7950
1886330	**160C20RP00MD10CF**	149	160,0	40	162	66,7	140	63	1,0	20	6,75	7950
1893757	**200C14RP00MD10CF**	189	200,0	60	202	101,6	180	63	1,0	14	9,70	6350
1886331	**200C24RP00MD10CF**	189	200,0	60	202	101,6	180	63	1,0	24	9,85	6350
1893758	**250C18RP00MD10CF**	239	250,0	60	252	101,6	230	63	1,0	18	16,65	5100
1886332	**250C30RP00MD10CF**	239	250,0	60	252	101,6	230	63	1,0	30	16,85	5100

Spare Parts

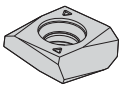


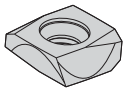
D1 max	clamp stud	clamp screw	hex wrench	Nm	mounting screw	coolant screw	mill cutter lock screw	coolant shower plate
63	**410.085**	**420.060**	**170.003**	5,0	**125.025**	**420.104**	–	–
80	**410.085**	**420.060**	**170.003**	5,0	**125.230**	**420.120**	–	–
100	**410.085**	**420.060**	**170.003**	5,0	–	**420.160**	–	–
125	**410.085**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.232**
160	**410.085**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.233**
200	**410.085**	**420.060**	**170.003**	5,0	–	–	–	**470.234**
250	**410.085**	**420.060**	**170.003**	5,0	–	–	–	**470.235**

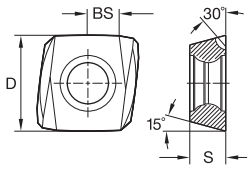
NOTE: Please order spare parts separately.
For diameters of 125mm and 160mm, use the coolant screw and coolant cap spare parts together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

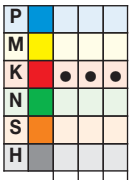
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.F..GD4W	KC520M	**.F..GD4W**	**KC520M**	.F..GD4W	KC520M
K3	.E..GD4W	KC520M	**.E..GD4W**	**KC520M**	.E..GD4W	KC520M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


MDHX-GD


MDHX-GD4W



● first choice
○ alternate choice

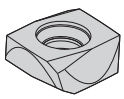


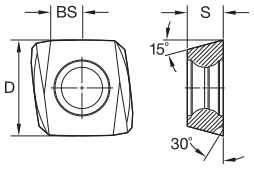
MDHX-GD • Right Hand

catalogue number	D	S	BS	hm	cutting edges	K110M	KC520M	KTPK20
MDHX1004ZDERGD	12,70	4,76	0,80	0,04	4	●	●	●

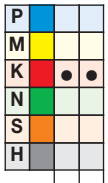
MDHX-GD4W • Right Hand

catalogue number	D	S	BS	hm	cutting edges	K110M	KC520M	KTPK20
MDHX1004ZDERGD4W	12,70	4,76	4,23	0,04	4	●	●	●
MDHX1004ZDFRGD4W	12,70	4,76	4,23	0,02	4	●	●	●


MDHX-GD4W
Left Hand



● first choice
○ alternate choice



MDHX-GD4W • Left Hand

catalogue number	D	S	BS	hm	cutting edges	K110M	KC520M
MDHX1004ZDFLGD4W	12,70	4,76	4,23	0,02	4	●	●

Recommended Starting Speeds [m/min]

Material Group		K110M			KC520M			KTPK20		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	155	**145**	135	325	**295**	260	275	**235**	195
	2	135	**130**	120	255	**225**	215	220	**180**	160
	3	120	**105**	95	215	**190**	170	185	**150**	130
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

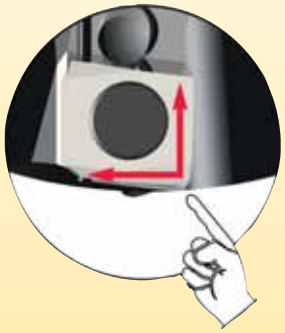
Light Machining	General Purpose	Heavy Machining

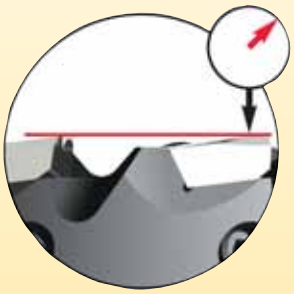
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..GD4W	0,11	**0,13**	0,17	0,08	**0,10**	0,13	0,07	**0,09**	0,11	0,07	**0,08**	0,10	0,06	**0,08**	0,10	.F..GD4W
.E..GD4W	0,13	**0,16**	0,20	0,10	**0,12**	0,15	0,09	**0,10**	0,13	0,08	**0,10**	0,12	0,08	**0,10**	0,12	.E..GD4W
.E..GD	0,13	**0,16**	0,20	0,10	**0,12**	0,15	0,09	**0,10**	0,13	0,08	**0,10**	0,12	0,08	**0,10**	0,12	.E..GD

NOTE: Use “Light Machining” values as starting feed rate.

Insert Loading Procedure

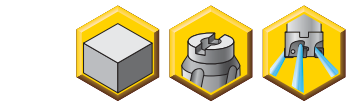
1. Clean insert and insert pocket seat.
2. Load insert — push insert against pin and axial pocket wall.
3. Tighten screw to a torque of 5 Nm.
4. Check the axial runout.
5. Do not exceed the maximum recommended RPM.

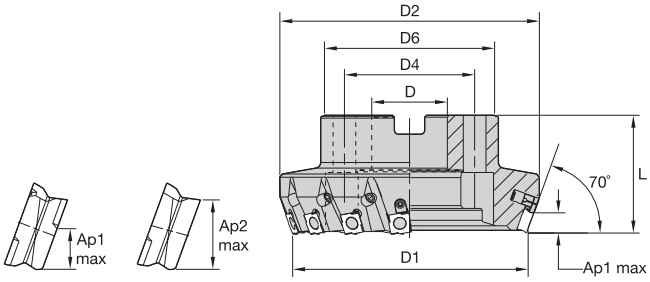




tool diameter (mm)	maximum axial runout	maximum RPM
63	10 µm	20000
80	10 µm	15900
100	10 µm	12750
125	10 µm	10200
160	15 µm	7950
200	15 µm	6350
250	15 µm	5100

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts deliver higher feed rates.
- Adjustable pockets (D1 = 80–160mm).



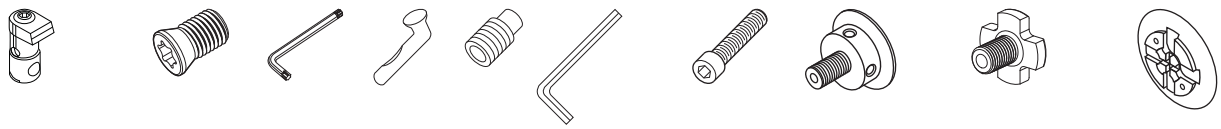


Ap1 max = 5,9mm (8 edges)
Ap2 max = 9,5mm (4 edges), reduce feed rate by 30%

Shell Mills

order number	catalogue number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1503027	**50A04RP70SP12CFP**	50	22	62	–	42	43	5,9	4	0	0,50	6300
1887100	**50A05RP70SP12CFP**	50	22	62	–	42	43	5,9	5	0	0,50	6300
1501666	**50A06RP70SP12CFP**	50	22	62	–	42	43	5,9	6	0	0,50	6300
1503029	**63B05RP70SP12CFP**	63	22	75	–	54	40	5,9	5	0	0,70	5000
1887101	**63B07RP70SP12CFP**	63	22	75	–	54	40	5,9	7	0	0,75	5000
1501667	**63B08RP70SP12CFP**	63	22	75	–	54	40	5,9	8	0	0,75	5000
1503038	**80B06RP70SP12C1WFP**	80	27	92	–	64	50	5,9	6	1	1,20	4000
1887102	**80B08RP70SP12C2WFP**	80	27	92	–	64	50	5,9	8	2	1,30	4000
1501668	**80B10RP70SP12CFP**	80	27	92	–	64	50	5,9	10	0	1,30	4000
1503034	**100B08RP70SP12C2WFP**	100	32	112	–	84	50	5,9	8	2	2,00	3200
1887173	**100B12RP70SP12C3WFP**	100	32	112	–	84	50	5,9	12	3	2,10	3200
1501701	**100B14RP70SP12CFP**	100	32	112	–	84	50	5,9	14	0	2,00	3200
1503049	**125B10RP70SP12C2WFP**	125	40	137	–	94	63	5,9	10	2	3,20	2500
1887174	**125B15RP70SP12C3WFP**	125	40	137	–	94	63	5,9	15	3	3,30	2500
1503054	**160C12RP70SP12C3WFP**	160	40	173	66,7	94	63	5,9	12	3	4,20	2000
1887175	**160C18RP70SP12C3WFP**	160	40	173	66,7	94	63	5,9	18	3	4,40	2000
1503057	**200C16RP70SP12C4WFP**	200	60	212	101,6	134	63	5,9	16	4	6,50	1600

Spare Parts

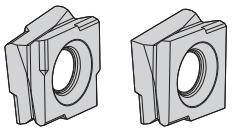


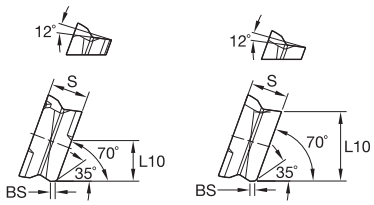
D1	adjusting element	adjusting element screw	Torx wrench	clamp stud	set screw	hex wrench	Nm	socket-head cap screw	coolant lock screw	mill cutter lock screw	coolant shower plate
50	–	–	–	**410.081**	**121.612**	**170.003**	5,0	**125.025**	**420.100**	–	–
63	–	–	–	**410.081**	**121.612**	**170.003**	5,0	–	**420.102**	–	–
80	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	5,0	–	**420.122**	–	–
100	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	5,0	–	**420.160**	–	–
125	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	5,0	–	–	**420.200**	**470.232**
160	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	5,0	–	–	**420.200**	**470.233**
200	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	5,0	–	–	–	**470.234**

NOTE: Please order spare parts separately.
For diameters of 125mm and 160mm, use the coolant screw and coolant cap spare parts together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GP	KC520M	**.E..GP**	**KCK15**	.S..GP	KCK15
K3	.E..GP	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


SPHX–GP SPHX–GP4S



SPHX–GP SPHX–GP4S

● first choice
○ alternate choice

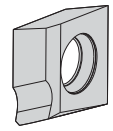
P							
M							
K	●	●	●	○	○	●	
N							
S							
H							

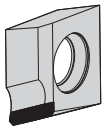
SPHX-GP • Roughing

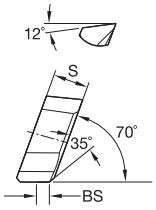
catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCELGP	5,41	5,50	0,70	0,04	8		●	●			
SPHX1205ZCTRGP	5,41	5,50	0,70	0,24	8				●		
SPHX1205ZCTRGPK	5,41	5,50	0,70	0,24	8						●
SPHX1205ZCTLGPK	5,41	5,50	0,70	0,24	8						●
SPHX1205ZCERGP	5,41	5,50	0,70	0,04	8		●	●		●	
SPHX1205ZCSRGP	5,41	5,50	0,70	0,14	8			●		●	

SPHX-GP4S • Roughing

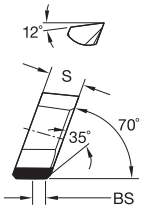
catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCERGP4S	10,04	5,50	0,70	0,04	4		●	●			
SPHX1205ZCTRGP4SK	10,06	5,50	0,70	0,24	4						●


SPHX–W-GN


SPHX–W-GNT1W



SPHX–W–GN



SPHX–W-GNT1W

● first choice
○ alternate choice

		KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
P							
M							
K		●	●	●	○	○	●
N							
S							
H							

SPHX-W • Finishing • GN

catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCFLGN1W	10,00	5,50	2,00	0,02	1			●			
SPHX1205ZCERGNT1W	10,00	5,50	2,00	0,02	1	●					
SPHX1205ZCFRGN1WK	10,00	5,50	2,00	0,02	1						●
SPHX1205ZCFRGN1W	10,00	5,50	2,00	0,02	1		●	●			

NOTE: SPHX-W: Wiper Facet BS = 2mm.

SPHX-W • Finishing • GP

catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCTR-GP1WK	10,00	5,50	–	0,24	1						●
SPHX1205ZCER-GP1W	10,00	5,50	2,00	0,02	1		●	●			

NOTE: SPHX-W: Wiper Facet BS = 2mm.

Recommended Starting Speeds [m/min]

Material Group		KB1340			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	1645	**1100**	585	325	**295**	260	505	**460**	410
	2	–	–	–	255	**225**	215	400	**355**	330
	3	–	–	–	215	**190**	170	335	**300**	275
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	275	**235**	195	355	**320**	285	965	**880**	780
	2	220	**180**	160	280	**255**	230	765	**685**	635
	3	185	**150**	130	235	**210**	195	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.
KY3500™ can be used for machining of low tensile ductile irons (e.g., 65-45-12).

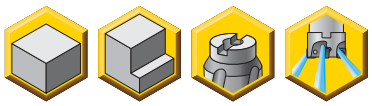
Recommended Starting Feeds [mm]

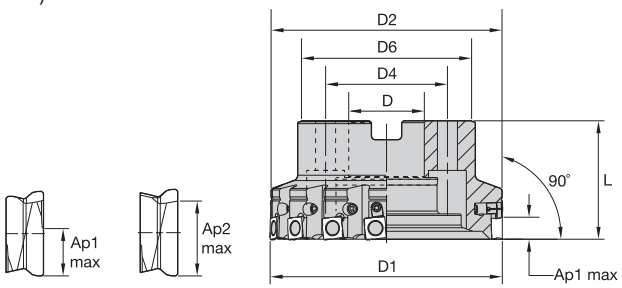
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GP	0,13	**0,25**	0,46	0,10	**0,19**	0,35	0,09	**0,16**	0,30	0,08	**0,15**	0,28	0,08	**0,15**	0,28	.E..GP
.T..GP	0,19	**0,43**	0,84	0,14	**0,32**	0,62	0,13	**0,28**	0,54	0,12	**0,26**	0,51	0,11	**0,26**	0,50	.T..GP
.S..GP	0,17	**0,40**	0,78	0,12	**0,30**	0,58	0,11	**0,26**	0,51	0,10	**0,24**	0,48	0,10	**0,24**	0,47	.S..GP

NOTE: Use “Light Machining” values as starting feed rate.

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts enable higher feed rates.
- Adjustable pockets (D1 = 80–200mm).





Ap1 max = 6mm (8 edges)
Ap2 max = 10mm (4 edges), reduce feed rate by 30%

Shell Mills

order number	catalogue number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1503007	**50A04RP90SP12CFP**	50	22	48	–	41	43	6	4	0	0,35	6300
1501652	**50A05RP90SP12CFP**	50	22	48	–	41	43	6	5	0	0,36	6300
1503012	**63A06RP90SP12CFP**	63	22	61	–	51	40	6	6	0	0,59	5000
1887178	**63A07RP90SP12CFP**	63	22	61	–	51	40	6	7	0	0,60	5000
1501653	**63A08RP90SP12CFP**	63	22	61	–	51	40	6	8	0	0,60	5000
1503013	**80A06RP90SP12C1WFP**	80	27	79	–	64	50	6	6	1	1,12	4000
1887179	**80A08RP90SP12C2WFP**	80	27	79	–	64	50	6	8	2	1,15	4000
1501655	**80A10RP90SP12CFP**	80	27	79	–	64	50	6	10	0	1,15	4000
1503015	**100B08RP90SP12C2WFP**	100	32	99	–	84	50	6	8	2	1,70	3200
1887180	**100B12RP90SP12C3WFP**	100	32	99	–	84	50	6	12	3	1,80	3200
1501660	**100B14RP90SP12CFP**	100	32	98	–	84	50	6	14	0	1,90	3200
1503018	**125B10RP90SP12C2WFP**	125	40	123	–	94	63	6	10	2	2,85	2500
1887181	**125B15RP90SP12C3WFP**	125	40	123	–	94	63	6	15	3	3,00	2500
1503021	**160C12RP90SP12C3WFP**	160	40	158	66,7	94	63	6	12	3	3,90	2000
1887193	**160C18RP90SP12C3WFP**	160	40	158	66,7	94	63	6	18	3	4,00	2000
1503022	**200C16RP90SP12C4WFP**	200	60	199	101,6	134	63	6	16	4	6,10	1600
1887194	**200C24RP90SP12C4WFP**	200	60	199	101,6	134	63	6	24	4	6,30	1600
1501664	**200C28RP90SP12CFP**	200	60	199	101,6	134	63	6	28	0	6,30	1600

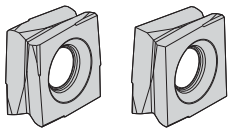
Spare Parts

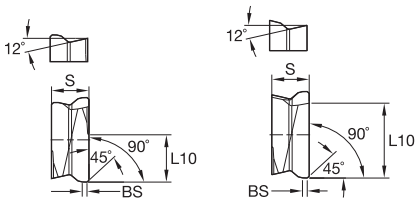
D1	adjusting element	Torx wrench	clamp stud	set screw	hex wrench	Nm	low-head cap screw	socket-head cap screw	coolant lock screw	mill cutter lock screw	coolant shower plate
50	–	–	**410.081**	**121.612**	**170.003**	6,0	**129.025**	–	–	–	–
63	–	–	**410.081**	**121.612**	**170.003**	6,0	–	**125.025**	**420.100**	–	–
80	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	6,0	–	**125.230**	**420.120**	–	–
100	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	6,0	–	–	**420.160**	–	–
125	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	6,0	–	–	–	**420.200**	**470.232**
160	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	6,0	–	–	–	**420.200**	**470.233**
200	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	6,0	–	–	–	–	**470.234**

NOTE: Please order spare parts separately.
For 125mm and 160mm diameter milling cutters, always use the coolant screw and coolant cap together.
Adjusting element 479.100 includes adjusting element screw 193.300.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GPB	KC520M	**.E..GPB**	**KCK15**	.S..GPB	KCK15
K3	.E..GPB	KCPK30	**.S..GPB**	**KCPK30**	.S..GPB	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


SPHX-GPB SPHX-GP4S



SPHX-GPB SPHX-GP4S

● first choice
○ alternate choice

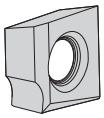
P							
M							
K	●	●	●	○	○	●	
N							
S							
H							

SPHX-GPB • Roughing

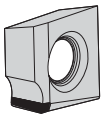
catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCERGPB	6,57	5,50	0,70	0,02	8		●	●		●	
SPHX1205PCSRGPB	6,57	5,50	0,70	0,14	8			●		●	
SPHX1205PCTRGPB	6,57	5,50	0,70	0,24	8				●		
SPHX1205PCTRGPBK	6,57	5,50	0,70	0,24	8						●
SPHX1205PCTLGPBK	6,57	5,50	0,70	0,24	8						●

SPHX-GP4S • Roughing

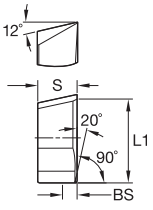
catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCERGP4SB	11,07	5,50	0,70	0,02	4		●	●			
SPHX1205PCTRGP4SBK	11,08	5,50	0,70	0,24	4						●



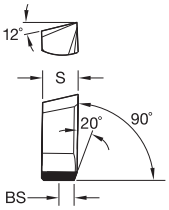
SPHX-GN1WB
SPHX-GN1WBK



SPHX-GNT1WB



SPHX-GN1WB
SPHX-GN1WBK



SPHX-GNT1WB

● first choice
○ alternate choice

P							
M							
K	●	●	●	○	○	●	
N							
S							
H							

SPHX-W • Finishing • GN

catalogue number	L1	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCFRGN1WB	11,00	5,20	2,00	0,02	1		●	●	●		
SPHX1205PCFLGN1WB	11,00	5,50	2,00	0,02	1			●			
SPHX1205PCERGN1WB	11,00	5,20	2,00	0,04	1					●	
SPHX1205PCERGNT1WB	11,00	5,50	2,00	0,02	1	●					
SPHX1205PCFRGN1WBK	11,00	5,20	2,00	0,02	1						●

SPHX-W • Finishing • GP

catalogue number	L1	S	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCER-GP1WB	11,00	5,50	0,02	1		●	●			
SPHX1205PCTR-GP1WBK	11,00	5,50	0,24	1						●

NOTE: SPHX-W-GP: Wiper Facet BS = 2mm.

Recommended Starting Speeds [m/min]

Material Group		KB1340			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	1370	**915**	490	270	**245**	215	420	**385**	340
	2	–	–	–	210	**190**	175	335	**295**	275
	3	–	–	–	175	**160**	145	280	**250**	230
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	230	**195**	160	295	**265**	240	805	**730**	650
	2	185	**150**	130	235	**210**	190	635	**570**	530
	3	150	**130**	105	195	**175**	160	535	**475**	435
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.
KY3500™ is only recommended for machining of low tensile ductile iron (e.g., 65-45-12).

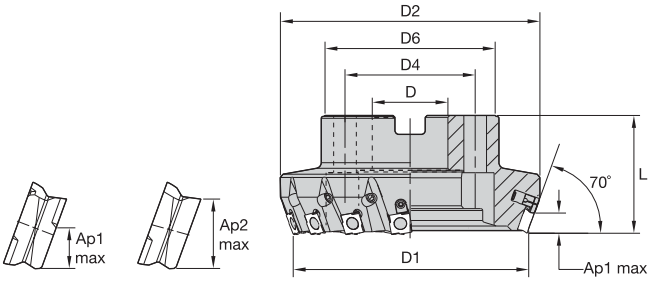
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GPB	0,08	**0,20**	0,40	0,06	**0,15**	0,30	0,06	**0,13**	0,26	0,05	**0,12**	0,24	0,05	**0,12**	0,24	.E..GPB
.T..GPB	0,17	**0,36**	0,75	0,13	**0,27**	0,56	0,11	**0,24**	0,48	0,10	**0,22**	0,45	0,10	**0,22**	0,44	.T..GPB
.S..GPB	0,17	**0,33**	0,67	0,13	**0,25**	0,50	0,11	**0,21**	0,44	0,10	**0,20**	0,41	0,10	**0,20**	0,40	.S..GPB

NOTE: Use “Light Machining” values as starting feed rate.

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts deliver higher feed rates.
- Adjustable pockets.

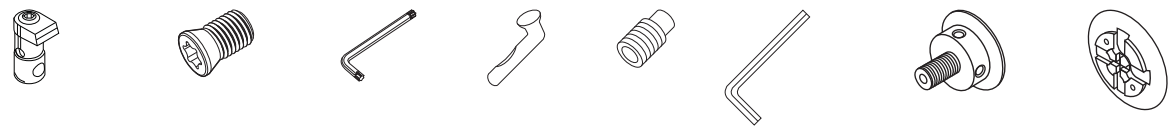


Ap1 max = 6,5mm (8 edges)
Ap2 max = 9,5mm (4 edges), reduce feed rate by 30%

Shell Mills

order number	catalogue number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1802594	**80A07RP70SP15C1WFP**	80	27	94	–	64	50	6,5	7	1	1,50	4000
1777661	**100B09RP70SP15C2WFP**	100	32	114	–	84	50	6,5	9	2	2,20	3200
1798198	**125B08RP70SP15C2WFP**	125	40	139	–	94	63	6,5	8	2	3,30	2500
1802595	**125B12RP70SP15C2WFP**	125	40	139	–	94	63	6,5	12	2	3,40	2500
1798199	**160C10RP70SP15C2WFP**	160	40	174	66,7	94	63	6,5	10	2	4,60	2000
1802596	**160C16RP70SP15C4WFP**	160	40	174	66,7	94	63	6,5	16	4	4,80	2000
1798200	**200C12RP70SP15C2WFP**	200	60	214	101,6	134	63	6,5	12	2	6,90	1600
1798201	**250C15RP70SP15C3WFP**	250	60	264	101,6	134	63	6,5	15	3	10,80	1300

Spare Parts

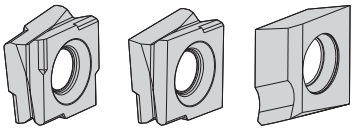


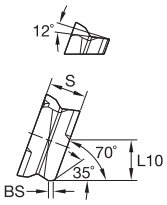
D1	adjusting element	adjusting element screw	Torx wrench	clamp stud	set screw	hex wrench	Nm	coolant lock screw	coolant shower plate
80	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	5,0	**420.120**	–
100	**479.100**	**193.300**	**KT9**	**410.084**	**121.612**	**170.003**	5,0	**420.160**	–
125	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	5,0	**420.220**	**470.232**
160	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	5,0	**420.200**	**470.233**
200	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	5,0	–	**470.234**
250	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	5,0	–	**470.235**

NOTE: Please order spare parts separately.
For diameters of 125mm and 160mm, use the coolant screw and coolant cap spare parts together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

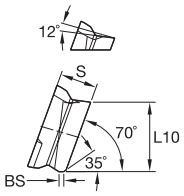
Insert Selection Guide

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GP	KC520M	**.E..GP**	**KCK15**	.S..GP	KCPK30
K3	.E..GP	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

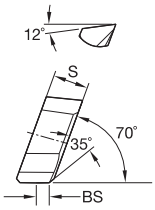

SPHX–GP SPHX–GP4S SPHX–W-GN



SPHX–GP

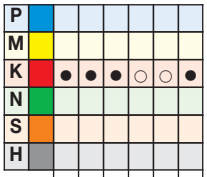


SPHX–GP4S



SPHX–W-GN

● first choice
○ alternate choice



SPHX-GP • Roughing

catalogue number	L10	S	BS	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCERGP	6,52	6,60	1,20	0,02	8		●	●		●	
SPHX15T6ZCSRGP	6,52	6,60	1,20	0,14	8	●				●	
SPHX15T6ZCTRGP	6,50	6,60	1,20	0,24	8				●		
SPHX15T6ZCTRGPK	6,50	6,60	1,20	0,24	8						●

SPHX-GP4S • Roughing

catalogue number	L10	S	BS	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCERGP4S	12,49	6,60	1,20	0,04	4			●			
SPHX15T6ZCTRGP4SK	12,51	6,60	1,20	0,24	4						●

SPHX-W • Finishing

catalogue number	L10	S	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCFRGN1W	11,00	6,60	0,02	1			●			
SPHX15T6ZCFRGN1WK	11,00	6,60	0,02	1						●

NOTE: SPHX-W: Wiper Facet BS = 2,7mm.

Recommended Starting Speeds [m/min]

Material Group		KC110M			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	155	**145**	135	325	**295**	260	505	**460**	410
	2	135	**130**	120	255	**225**	215	400	**355**	330
	3	120	**105**	95	215	**190**	170	335	**300**	275
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	275	**235**	195	355	**320**	285	965	**880**	780
	2	220	**180**	160	280	**255**	230	765	**685**	635
	3	185	**150**	130	235	**210**	195	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.
KY3500™ can be used for machining of low tensile ductile irons (e.g., 65-45-12).

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

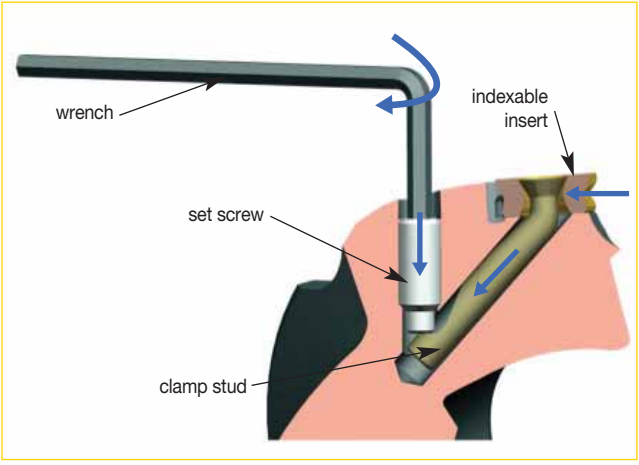
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GP	0,13	**0,25**	0,46	0,10	**0,19**	0,35	0,09	**0,16**	0,30	0,08	**0,15**	0,28	0,08	**0,15**	0,28	.E..GP
.T..GP	0,19	**0,43**	0,84	0,14	**0,32**	0,62	0,13	**0,28**	0,54	0,12	**0,26**	0,51	0,11	**0,26**	0,50	.T..GP
.S..GP	0,17	**0,40**	0,78	0,12	**0,30**	0,58	0,11	**0,26**	0,51	0,10	**0,24**	0,48	0,10	**0,24**	0,47	.S..GP

NOTE: Use “Light Machining” values as starting feed rate.

Fix-Perfect Cast Iron 70°/90°

Innovative tangential insert clamping.

- First choice for high feed rates.
- Rigid and stable pocket seat.
- Protection of non cutting edges.
- Medium- and fine-pitch cutter design.



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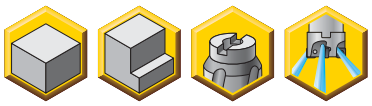
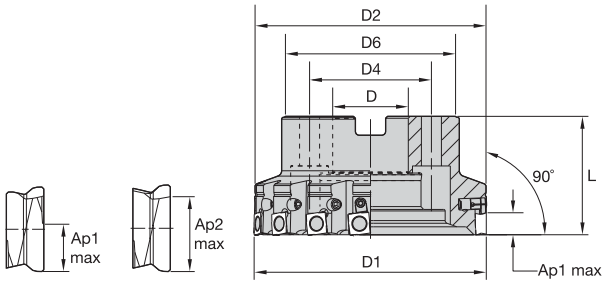


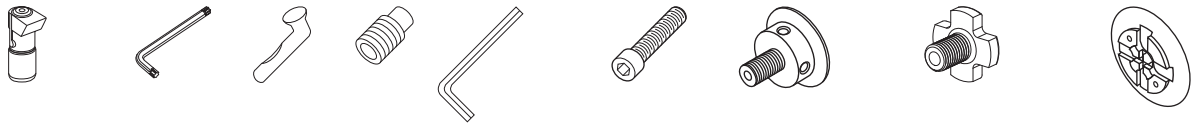


Ap1 max = 8mm (8 edges)
Ap2 max = 12mm (4 edges), reduce feed rate by 30%

Shell Mills

order number	catalogue number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1795217	**80A05RP90SP15C1WFP**	80	27	78	–	64	50	8,0	5	1	1,12	4000
1798604	**80A06RP90SP15C1WFP**	80	27	78	–	64	50	8,0	6	1	1,20	4000
1777658	**100B08RP90SP15C2WFP**	100	32	99	–	84	50	8,0	8	2	1,80	3200
1795218	**125B08RP90SP15C2WFP**	125	40	123	–	94	63	8,0	8	2	3,00	2500
1798605	**125B10RP90SP15C2WFP**	125	40	123	–	94	63	8,0	10	2	3,00	2500
1795286	**160C10RP90SP15C2WFP**	160	40	158	66,7	94	63	8,0	10	2	4,10	2000
1795288	**200C12RP90SP15C2WFP**	200	60	198	101,6	134	63	8,0	12	2	6,40	1600

Spare Parts

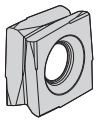


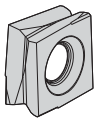
D1	adjusting element	Torx wrench	clamp stud	set screw	hex wrench	Nm	socket-head cap screw	coolant lock screw	mill cutter lock screw	coolant shower plate
80	**479.100**	**KT9**	**410.084**	**121.616**	**170.003**	6,0	**125.230**	**420.120**	–	–
100	**479.100**	**KT9**	**410.084**	**121.612**	**170.003**	6,0	–	**420.160**	–	–
125	**479.100**	**KT9**	**410.084**	**121.616**	**170.003**	6,0	–	–	**420.200**	**470.232**
160	**479.100**	**KT9**	**410.084**	**121.616**	**170.003**	6,0	–	–	**420.200**	**470.233**
200	**479.100**	**KT9**	**410.084**	**121.616**	**170.003**	6,0	–	–	–	**470.234**

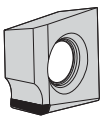
NOTE: Please order spare parts separately.
For 125mm and 160mm diameter milling cutters, the coolant screw and coolant cap should always used together.
Adjusting element 479.100 includes adjusting element screw 193.300.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

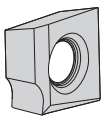
Insert Selection Guide

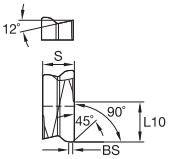
Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GP	KC520M	**.E..GP**	**KCK15**	.S..GP	KCPK30
K3	.E..GP	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


SPHX-GP

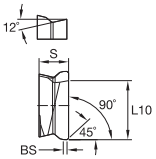

SPHX-GP4S


SPHX-GNT1W

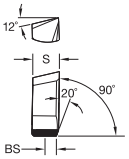

SPHX-GN1W
SPHX-GN1WK



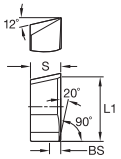
SPHX-GP



SPHX-GP4S



SPHX-GNT1W



SPHX-GN1W
SPHX-GN1WK

● first choice
○ alternate choice

P						
M						
K	●	●	●	○	●	
N						
S						
H						

SPHX-GP • Roughing

catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KCPK30	KY3500
SPHX15T6PCERGP	8,15	6,60	1,20	0,02	8		●	●	●	
SPHX15T6PCSRGP	8,16	6,60	1,20	0,14	8				●	
SPHX15T6PCTRGPK	8,15	6,60	1,20	0,24	8					●

SPHX-GP4S • Roughing

catalogue number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KCPK30	KY3500
SPHX15T6PCERGP4S	13,88	6,60	1,20	0,04	4		●	●		

SPHX-W • Finishing

catalogue number	L1	S	hm	cutting edges	KB1340	KC520M	KCK15	KCPK30	KY3500
SPHX15T6PCERGNT1W	14,40	6,20	0,02	1	●				
SPHX15T6PCFRGN1W	14,40	6,20	0,02	1			●		
SPHX15T6PCFRGN1WK	14,40	6,20	0,02	1					●

NOTE: SPHX-W: Wiper Facet BS = 2,7mm.

Recommended Starting Speeds [m/min]

Material Group		KB1340			KC520M			KCK15			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1370	**915**	490	270	**245**	215	420	**385**	340	295	**265**	240	805	**730**	650
	2	–	–	–	210	**190**	175	335	**295**	275	235	**210**	190	635	**570**	530
	3	–	–	–	175	**160**	145	280	**250**	230	195	**175**	160	535	**475**	435
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.
KY3500™ is only recommended for machining of low tensile ductile iron (e.g., 65-45-12).

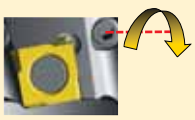
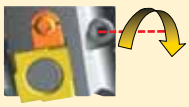
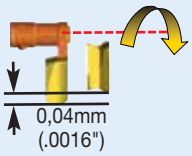
Recommended Starting Feeds [mm]

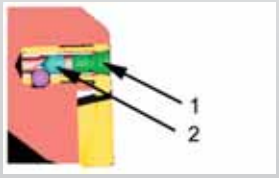
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GPB	0,08	**0,20**	0,40	0,06	**0,15**	0,30	0,06	**0,13**	0,26	0,05	**0,12**	0,24	0,05	**0,12**	0,24	.E..GPB
.T..GPB	0,17	**0,36**	0,75	0,13	**0,27**	0,56	0,11	**0,24**	0,48	0,10	**0,22**	0,45	0,10	**0,22**	0,44	.T..GPB
.S..GPB	0,17	**0,33**	0,67	0,13	**0,25**	0,50	0,11	**0,21**	0,44	0,10	**0,20**	0,41	0,10	**0,20**	0,40	.S..GPB

NOTE: Use “Light Machining” values as starting feed rate.

Introduction to Fitting Cutting Bodies

procedures:	roughing		roughing/finishing	
	fixed pocket	adjustable pocket	fixed pocket	adjustable pocket
1 Reset adjusting element T x T9	–		–	
2 Insert roughing insert Tighten SW 3 M_{An} = 5 Nm				–
3 Tighten adjusting element gently	–		–	–
4 Insert finishing insert and pre-tighten SW 3 M_{VG} = 1 Nm	–	–	–	
5 The finishing insert is positioned 0,04mm in front of the highest roughing insert	–	–	–	 0,04mm (.0016")
6 Tighten the finishing insert M_{An} = 5 Nm	–	–	–	



NOTE: This process must be repeated whenever an indexable insert is changed. The ball is loose.

Changing the adjusting element

1. Remove the taper screw (1).
2. Loosen the SW 1,5 screw (2).
3. Remove the adjusting element.

ATTENTION: The maximum permissible cutting speed of the milling cutter heads is vc max = 1000 m/min. Only use original parts when clamping the indexable inserts.

HexaCut™ Series

Primary Application

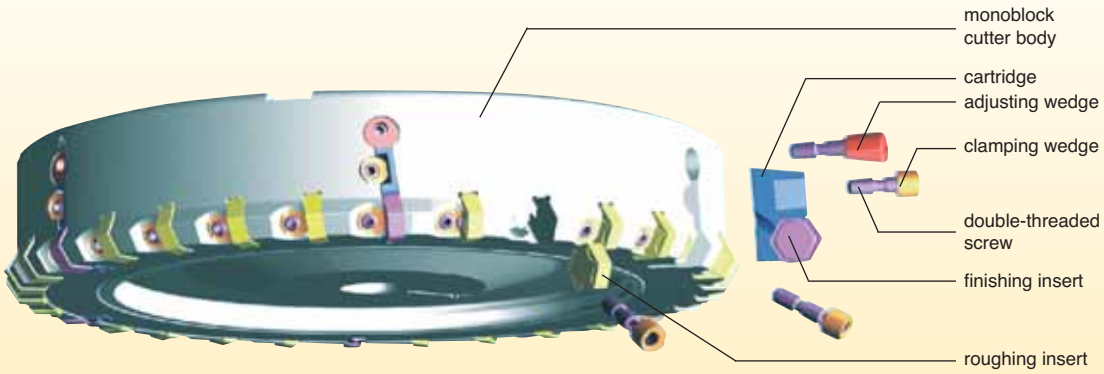
The Kennametal HexaCut face milling program is specifically engineered for rough and semi-finish face milling of cast, ductile, and compacted graphite iron. Twelve cutting edges drastically reduce your cost per edge and increase tool life. Shorter setup times and excellent cutter accuracy allow you to apply the HexaCut program to the most demanding jobs. One ceramic and eight carbide grades with six insert geometries deliver high feed rates and will enable you to reach optimum horsepower.

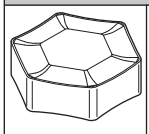
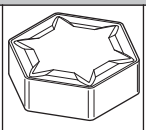
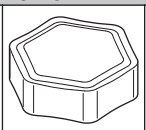
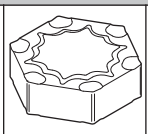
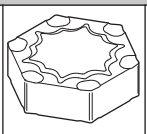
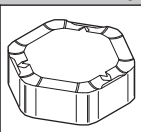
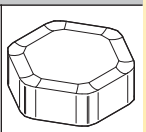
Features and Benefits

Tailor-Made Platform for Machining Automotive Components in Cast Iron Materials

- First choice for machining GCI and CGI materials.
- 45° lead cutter bodies engineered with fixed pockets for roughing applications up to Ap1 max = 6mm.
- 60° lead cutter bodies engineered with fixed and adjustable pockets for roughing and combined roughing/finishing applications up to Ap1 max = 8mm.
- Fine-pitch cutter density for best productivity in machining cast iron materials.
- Comprehensive standard offering of different insert geometries to match every application for light, medium, and heavy machining.
- Easy handling and cutter body setup.
- Twelve true cutting edges per insert for low cost per edge and excellent CPP.
- Split case design with adaptor flange available as preferred engineered solution standard for D1 = 250mm and D1 = 315mm.

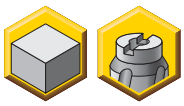
HexaCut 60° Cutter Body Design with Fixed and Adjustable Pocket Seats

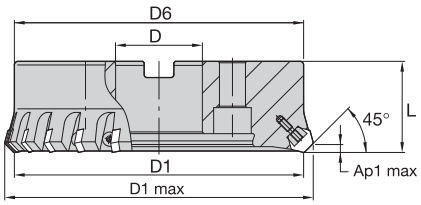


			▼ = roughing indexable insert						▼▼ = finishing indexable insert
									
Recommended combination of standard indexable inserts and geometries			HNGX 090516 -MR Z = 12	HNGX 090508 -MH Z = 12	HNGX 090520 -ML Z = 12	HNGX 090520 -MM Z = 12	HNGX 090504 -MM Z = 12	HNGF 090504 -MT Z = 6+6	HNGF 090504 -MF Z = 12
Operation	Lead	Ap max							
▼	45°	6	■ OR	■ OR	■ OR	■			
▼	60°	8	■ OR	■ OR	■ OR	■			
▼▼	60°	1			■ OR	■ OR	■		■
▼/▼▼	60°	8	■ OR	■ OR	■ OR	■		■	

NOTE: Z = number of cutting edges

- Monoblock cutter design.
- Twelve cutting edges per insert.
- High feed rates.
- CGI milling solution.



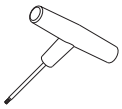


HexaCut 45° • Shell Mills • Monoblock Design • Right Hand

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
2016107	**80A10RF45HN09C**	80	92,8	27	–	80	50	6,5	10	1,60	3900
2016109	**100B14RF45HN09C**	100	112,8	32	–	100	50	6,5	14	2,30	3400
2016111	**125B18RF45HN09C**	125	137,8	40	–	125	63	6,5	18	4,60	3000
2016133	**160C22RF45HN09C**	160	172,8	40	66,7	160	63	6,5	22	7,40	2600
2016135	**200C28RF45HN09C**	200	212,8	60	101,6	200	63	6,5	28	11,60	2300

NOTE: Split case design with adaptor flange for D1 = 250mm and D1 = 315mm can be ordered as preferred engineered solution standard.

Spare Parts

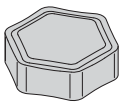


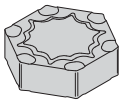
D1	clamp wedge	wedge screw	Nm	wrench 3mm
80	**12748358200**	**12748600900**	7,0	**12148044900**
100	**12748358200**	**12748600900**	7,0	**12148044900**
125	**12748358200**	**12748600900**	7,0	**12148044900**
160	**12748358200**	**12748600900**	7,0	**12148044900**
200	**12748358200**	**12748600900**	7,0	**12148044900**

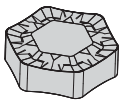
Insert Selection Guide

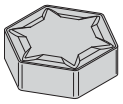
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	...ML	KCK15	**...MM**	**KC917M**	...MR	KC917M
K3	...MM	KCK15	**...MM**	**KCK15**	...MR	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

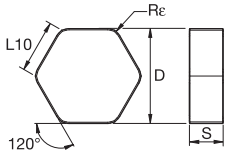
Indexable Inserts • HexaCut • HN..0905...


HNGX-ML


HNGX-MM


HNGX-MCI


HNGX-MH



HNGX/HNPX

● first choice
○ alternate choice

P	
M	
K	● ● ● ● ● ● ● ● ●
N	
S	
H	

HNGX-ML

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090520ML	16,20	5,56	9,35	2,0	0,04	12	●		●	●	●		●	●	

HNGX-MM

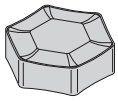
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090504MM	16,20	5,56	9,35	0,4	0,10	12					●		●		
HNGX090520MM	16,20	5,56	9,35	2,0	0,10	12	●				●	●	●		
HNGX090530MM	16,20	5,56	9,35	3,0	0,10	12			●	●					

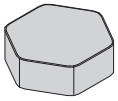
HNGX-MCI

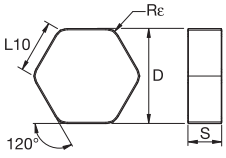
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090530MCI	16,20	5,56	9,35	3,0	0,10	12							●		

HNGX-MH

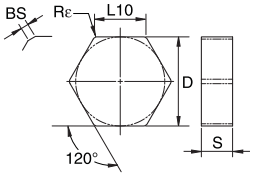
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090508MH	16,20	5,56	9,35	0,8	0,05	12	●	●			●	●	●	●	


HNGX-MR


HNEN-SN



HNGX/HNPX



HNEN

● first choice
○ alternate choice

P										
M										
K	●	●	●	●	●	●	●	●	●	●
N										
S										
H										

HNGX-MR

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090516MR	16,20	5,56	9,35	1,6	0,10	12	●	●	●	●	●	●	●	●	
HNGX090530MR	16,20	5,56	9,35	3,0	0,10	12	●						●		

HNEN-SN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNEN090508MSN	15,88	5,56	9,17	–	0,8	0,20	12									●
HNEN0905AMSN	15,88	5,65	9,17	–	–	0,20	12									●
HNEN0905XNSN	16,20	5,56	9,35	1,30	–	0,20	12									●

HNPX-MCI

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090530MCI	16,20	5,56	9,35	–	3,0	0,10	12							●		

HNPX-MH

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090508MH	16,20	5,56	9,35	–	0,8	0,06	12							●		

HNPX-MR

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090516MR	16,20	5,56	9,35	–	1,6	0,10	12			●	●			●		
HNPX090530MR	16,20	5,56	9,35	–	3,0	0,10	12			●	●			●		

Recommended Starting Speeds [m/min]

Material Group		KCK15			KCPK30			KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	505	**460**	410	355	**320**	285	480	**350**	255	450	**320**	230	490	**365**	305
	2	400	**355**	330	280	**255**	230	420	**280**	205	390	**250**	190	385	**300**	250
	3	335	**300**	275	235	**210**	195	335	**260**	200	300	**225**	160	300	**250**	200
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KC924M			KY3500		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	420	**360**	300	360	**300**	240	350	**275**	200	965	**880**	780
	2	360	**300**	250	300	**240**	200	275	**220**	175	765	**685**	635
	3	300	**250**	200	240	**200**	160	220	**175**	140	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
...ML	0,13	**0,21**	0,43	0,10	**0,16**	0,32	0,09	**0,14**	0,28	0,08	**0,13**	0,26	0,08	**0,12**	0,25	...ML
...MM	0,24	**0,43**	0,64	0,18	**0,32**	0,48	0,16	**0,28**	0,42	0,15	**0,26**	0,39	0,14	**0,25**	0,38	...MM
...MR	0,24	**0,47**	0,71	0,18	**0,35**	0,53	0,16	**0,31**	0,46	0,15	**0,29**	0,43	0,14	**0,28**	0,42	...MR
...MCI	0,24	**0,47**	0,76	0,18	**0,35**	0,56	0,16	**0,31**	0,49	0,15	**0,29**	0,46	0,14	**0,28**	0,45	...MCI
...MH	0,20	**0,41**	0,67	0,15	**0,31**	0,50	0,13	**0,27**	0,44	0,12	**0,25**	0,41	0,12	**0,25**	0,40	...MH

NOTE: Use “Light Machining” values as starting feed rate.

Adjustment Instructions

Before Being Used for the First Time

- The milling cutter must be carefully cleaned of anti-corrosive materials, dust, etc.
- The milling cutter should only be washed when all components have been dismantled.
- Only the double-threaded screws of the clamping or adjusting wedge should be lubricated with copper grease; all other components must have clean metallic surfaces.
- A torque wrench is recommended to tighten the double-threaded screws.
- When fitting indexable inserts on the milling cutter, ensure that they are inserted in the correct position in a clean insert seat and that they are held in position during clamping.

For 45° Roughing Mills without Anvils

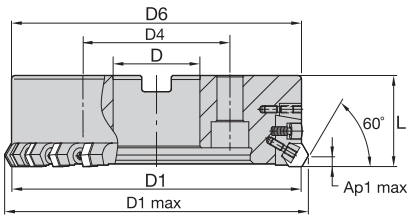
- The double-threaded screws on the clamping wedges for the indexable inserts are first pre-tightened to approximately 2 Nm and then tightened to a final torque of 7 Nm.

ATTENTION

At each tool adjustment, the body, indexable inserts, and spare parts must be checked and replaced, if necessary. Before each tool use, the double-threaded screws of the indexable inserts and the stops must be tightened in the specified order to a torque of 7 Nm. In addition, even if the cartridges have not been adjusted, the double-threaded screws of the adjusting wedges must be checked to see if these have been tightened to a torque of 3 Nm. If not, they must be re-tightened to this torque.

NOTE: The tools must only be used in accordance with their function. We accept no liability for their improper use. Changes of any kind and/or printing errors are not valid grounds for claims.

- Monoblock cutter design.
- Twelve cutting edges per insert.
- High feed rates.
- CGI milling solution.
- Excellent floor surface finish.

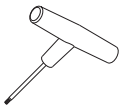


HexaCut 60° Shell Mills • Monoblock Cutter Design with Adjustable Pockets • Right Hand

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
2016165	**80A62RF60HN09C**	80	89	27	–	80	50	8,0	8	2	0,80	3900
2016167	**100B82RF60HN09C**	100	109	32	–	100	50	8,0	10	2	2,30	3400
2016169	**125B123RF60HN09C**	125	134	40	–	125	63	8,0	15	3	4,60	3000
2016171	**160C164RF60HN09C**	160	169	40	67	160	63	8,0	20	4	7,20	2600
2016193	**200C205RF60HN09C**	200	209	60	102	200	63	8,0	25	5	11,40	2300

NOTE: Split case design with adaptor flange for D1 = 250mm and D1 = 315mm can be ordered as preferred engineered solution standard.

Spare Parts

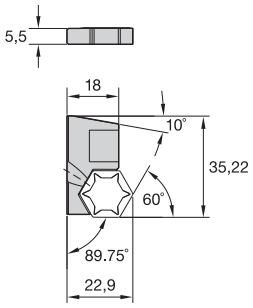


D1	clamp wedge	axial adjustment wedge	wedge screw	Nm	wrench 3mm
80	**12748358200**	**12748308500**	**12748600900**	7,0	**12148044900**
100	**12748358200**	**12748308500**	**12748600900**	7,0	**12148044900**
125	**12748358200**	**12748308500**	**12748600900**	7,0	**12148044900**
160	**12748358200**	**12748308500**	**12748600900**	7,0	**12148044900**
200	**12748358200**	**12748308500**	**12748600900**	7,0	**12148044900**

Roughing

For a cutting depth of <8mm and an achievable surface finish of Ra >3.2.

Roughing insert: HNGX090516-MR, HNGX090508-MH, HNGX090520-MM, or HNGX090520-ML in all insert seats.



order number	catalogue number
2018164	12748500200

NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

Roughing/Finishing

a) For a cutting depth of <8mm and an achievable surface finish of Ra 3.2.

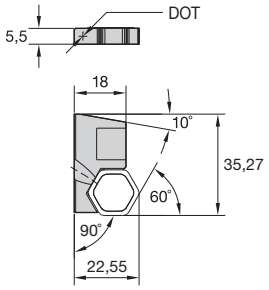
Roughing insert: HNGX090516-MR, HNGX090508-MH, HNGX090520 MM, HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MT in the finishing cartridge.

b) For a cutting depth of <1mm and an achievable surface finish of Ra 1.6.

Roughing insert: HNGX090504-MM, HNGX090520-MM, or HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MF in the finishing cartridge.



order number	catalogue number
2018166	12748500400

NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

Roughing/Finishing Corrected (reduced axial cutting force)

a) For a cutting depth of <8mm and an achievable surface finish of Ra 3.2.

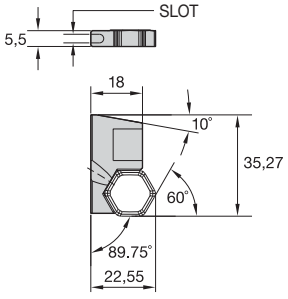
Roughing insert: HNGX090516-MR, HNGX090508-MH, HNGX090520-MM, or HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MT in the finishing cartridge.

b) For a cutting depth of <1mm and an achievable surface finish of Ra 1.6.

Roughing insert: HNGX090504-MM, HNGX090520-MM, HNGX090520-ML, in the fixed insert seats.

Finishing insert: HNGF090504-MF in the finishing cartridge.



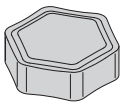
order number	catalogue number
2033468	12748503400

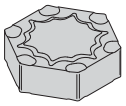
NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

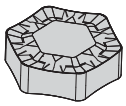
Insert Selection Guide

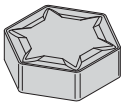
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	...ML	KCK15	**...MM**	**KC917M**	...MR	KC917M
K3	...MM	KCK15	**...MM**	**KCK15**	...MR	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

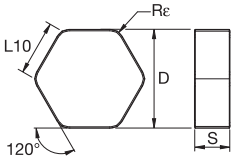
Indexable Inserts • HNG..0905...


HNGX-ML


HNGX-MM


HNGX-MCI


HNGX-MH



HNGX/HNPX

● first choice
○ alternate choice

P	
M	
K	●
N	
S	
H	

Face Mills

HNGX-ML

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090520ML	16,20	5,56	9,35	2,0	0,04	12	●		●	●	●		●	●	

HNGX-MM

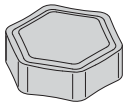
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090504MM	16,20	5,56	9,35	0,4	0,10	12					●		●		
HNGX090520MM	16,20	5,56	9,35	2,0	0,10	12	●				●	●	●		
HNGX090530MM	16,20	5,56	9,35	3,0	0,10	12			●	●					

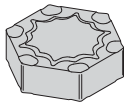
HNGX-MCI

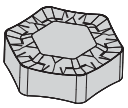
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090530MCI	16,20	5,56	9,35	3,0	0,10	12							●		

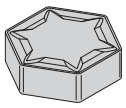
HNGX-MH

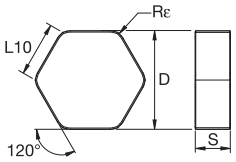
catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090508MH	16,20	5,56	9,35	0,8	0,05	12	●	●			●	●	●	●	


HNGX-ML

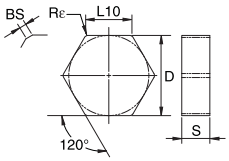

HNGX-MM


HNGX-MCI


HNGX-MH



HNGX/HNPX



HNEN

● first choice
○ alternate choice

P										
M										
K	●	●	●	●	●	●	●	●	●	●
N										
S										
H										

HNGX-MR

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090516MR	16,20	5,56	9,35	1,6	0,10	12	●	●	●	●	●	●	●	●	
HNGX090530MR	16,20	5,56	9,35	3,0	0,10	12	●						●		

HNEN-SN

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNEN090508MSN	15,88	5,56	9,17	0,8	0,20	12									●
HNEN0905AMSN	15,88	5,65	9,17	–	0,20	12									●
HNEN0905XNSN	16,20	5,56	9,35	–	0,20	12									●

HNGF-MF

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGF090504MF	15,88	5,56	9,16	0,4	0,04	12			●		●	●	●	●	
HNGF090512MF	15,88	5,56	9,16	1,2	0,03	12	●								

HNGF-MT

catalogue number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGF090504MT	15,88	5,56	9,16	0,4	0,04	6					●	●	●	●	
HNGF090512MT	15,88	5,56	9,16	1,2	0,03	6	●								

HNPX-MCI

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090530MCI	16,20	5,56	9,35	–	3,0	0,10	12							●		

HNPX-MH

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090508MH	16,20	5,56	9,35	–	0,8	0,06	12							●		

HNPX-MR

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX090516MR	16,20	5,56	9,35	–	1,6	0,10	12			●	●			●		
HNPX090530MR	16,20	5,56	9,35	–	3,0	0,10	12			●	●			●		

Recommended Starting Speeds [m/min]

Material Group		KCK15			KCPK30			KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	505	**460**	410	355	**320**	285	480	**350**	255	450	**320**	230	490	**365**	305
	2	400	**355**	330	280	**255**	230	420	**280**	205	390	**250**	190	385	**300**	250
	3	335	**300**	275	235	**210**	195	335	**260**	200	300	**225**	160	300	**250**	200
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KC924M			KY3500		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	420	**360**	300	360	**300**	240	350	**275**	200	965	**880**	780
	2	360	**300**	250	300	**240**	200	275	**220**	175	765	**685**	635
	3	300	**250**	200	240	**200**	160	220	**175**	140	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Face Mills

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

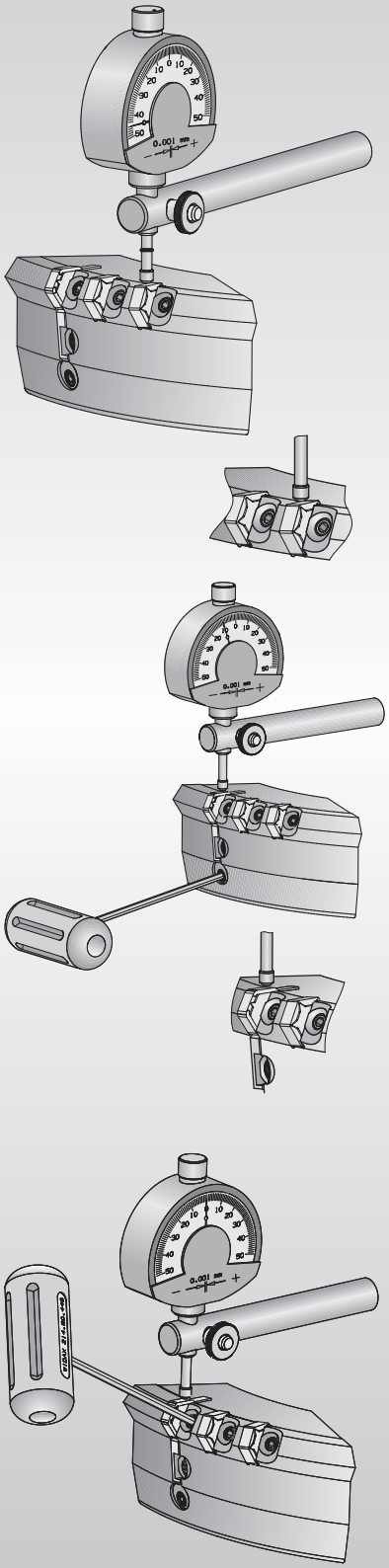
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
...ML	0,11	**0,16**	0,31	0,08	**0,12**	0,23	0,07	**0,11**	0,20	0,07	**0,10**	0,19	0,07	**0,10**	0,18	...ML
...MM	0,20	**0,33**	0,46	0,15	**0,25**	0,35	0,13	**0,21**	0,30	0,12	**0,20**	0,28	0,12	**0,20**	0,28	...MM
...MR	0,20	**0,43**	0,58	0,15	**0,32**	0,43	0,13	**0,28**	0,38	0,12	**0,26**	0,35	0,12	**0,25**	0,35	...MR
...MCI	0,20	**0,42**	0,64	0,15	**0,32**	0,48	0,13	**0,28**	0,42	0,12	**0,26**	0,39	0,12	**0,25**	0,38	...MCI
...MH	0,16	**0,34**	0,51	0,12	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,20**	0,30	...MH

NOTE: Use “Light Machining” values as starting feed rate.

Insert setting procedure

This procedure is to be used on all 60° lead roughing/finishing mills using the unmarked roughing cartridge, the finishing cartridge (marked ●) and the corrected edge cartridge (marked ▬). These steps must be followed when adjusting the cutters for finishing inserts.

1. Clean all insert pockets.
2. Mount all wedges and cartridges. Torque the cartridge lock wedge screw to 3 Nm.
3. Mount all inserts, making sure they are seated properly in the pocket, and torque the insert lock wedge screws to 3 Nm.
4. Torque the wedge screws for all fixed pocket inserts to 7 Nm.
5. Loosen the cartridge insert wedge screw and the cartridge lock wedge screw.
6. Pressing the insert into the cartridge pocket, adjust the cartridge to 0,20–0,30mm below the fixed pocket inserts.
7. Torque the insert lock wedge screw and the cartridge lock wedge screw to 3 Nm.
8. Adjust the axial position to 0,03–0,04mm above the fixed pocket inserts.
9. Loosen the cartridge insert lock wedge screws and then re-torque to 3 Nm.
10. Adjust the axial position to the final dimension, 0,04–0,05mm above the highest fixed pocket insert.
11. Torque the insert lock wedge screws and the cartridge lock wedge screws to 7 Nm.
12. Conduct a final check of the axial runout and position.



The NEW KSSR™ 84°

Primary Application

Kennametal's new line of KSSR 84° inserts are versatile, easy-to-use, and right- or left-hand neutral, making them ideal for automotive machining operations or any other industry that relies on transfer line manufacturing. Available in carbide and ceramic grades for applications in cast and ductile irons and alloy steels, choose KSSR 84° inserts for all your fine and coarse pitch styles.

Features and Benefits

KSSR 84° Features

- Available in metric, JIS, and inch products, diameters from 63–250mm.
- Fine and coarse pitch styles.
- Easy-to-use and to adjust with shorter setup time.
- New wiper inserts in carbide and ceramic will provide excellent surface quality.

Improved Versatility

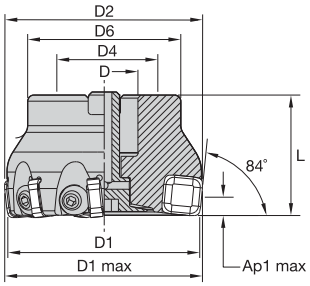
- Proven solution on the automotive segment.
- Right- and left-hand cutters, ideal for transfer lines.
- Premium grades in carbide and ceramic for applications in cast and ductile irons and alloy steels.
- Inserts are neutral and can be used for right- or left-hand cutting.

Unrivaled Benefits

- Capability: 5mm maximum depth of cut.
- Excellent accuracy:

  Radial = +/- 0,025mm
  Axial = adjustable +/- 0,002mm
- Inserts have eight true cutting edges.

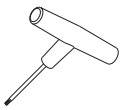
- Eight cutting edges per insert.
- Fast and easy insert indexing.
- Highest feed rates.
- CGI specialist.

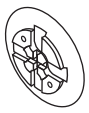


KSSR 84° • Shell Mills • Right Hand

order number	catalogue number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	kg	max RPM
3331277	**63A06RF84SN12B**	63	65,0	22	62	–	50	40	5,0	6	0,61	7600
2465831	**63A09RF84SN12B**	63	65,0	22	64	–	50	40	5,0	9	0,60	7600
3331279	**80A08RF84SN12B**	80	82,0	27	79	–	60	50	5,0	8	1,26	6000
2443937	**80A12RF84SN12B**	80	82,0	27	80	–	60	50	5,0	12	1,25	6000
3120845	**100B10RF84SN12B**	100	102,0	32	99	–	78	50	5,0	10	1,78	4800
2443938	**100B15RF84SN12B**	100	102,0	32	100	–	78	50	5,0	15	1,75	4800
3031139	**125B12RF84SN12B**	125	127,0	40	123	–	89	63	5,0	12	3,11	3800
2465832	**125B18RF84SN12B**	125	127,0	40	125	–	89	63	5,0	18	3,10	3800
3396660	**160C14RF84SN12B**	160	162,0	40	160	66,7	90	63	5,0	14	4,04	3000
2466093	**160C24RF84SN12B**	160	162,0	40	160	66,7	90	63	5,0	24	3,90	3000
3396661	**200C20RF84SN12B**	200	202,0	60	200	101,6	130	63	5,0	20	6,52	2400
2466094	**200C30RF84SN12B**	200	202,0	60	200	101,6	130	63	5,0	30	6,40	2400
3396662	**250C24RF84SN12B**	250	252,0	60	250	101,6	130	63	5,0	24	9,87	1900
2466095	**250C36RF84SN12B**	250	252,0	60	250	101,6	130	63	5,0	36	10,00	1900

Spare Parts

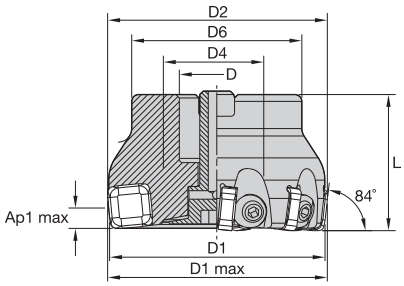




D1	clamp wedge	wedge screw	Nm	wrench 3mm	coolant screw	mill cutter lock screw	coolant shower plate
63	**12748358200**	**12748600900**	7,0	**12148044900**	**420.100**	–	–
80	**12748358200**	**12748600900**	7,0	**12148044900**	**420.120**	–	–
100	**12748358200**	**12748600900**	7,0	**12148044900**	**420.163**	–	–
125	**12748358200**	**12748600900**	7,0	**12148044900**	–	**420.200**	**470.232**
160	**12748358200**	**12748600900**	7,0	**12148044900**	–	**420.200**	**470.233**
200	**12748358200**	**12748600900**	7,0	**12148044900**	–	–	**470.234**
250	**12748358200**	**12748600900**	7,0	**12148044900**	–	–	**470.235**

NOTE: Coolant screw and coolant cap must be ordered separately.
2466094 and 2466095 are non-stock standard.

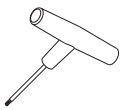
- Eight cutting edges per insert.
- Fast and easy insert indexing.
- Highest feed rates.
- CGI specialist.

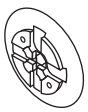


KSSR 84° • Shell Mills • Left Hand

order number	catalogue number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	kg	max RPM
3397543	**63A06LF84SN12B**	63	65,0	22	62	–	50	40	5,0	6	0,61	7600
3397544	**80A08LF84SN12B**	80	82,0	27	79	–	60	50	5,0	8	1,27	6000
3397545	**100B10LF84SN12B**	100	102,0	32	99	–	78	50	5,0	10	1,78	4800
3397546	**125B12LF84SN12B**	125	127,0	40	123	–	89	63	5,0	12	3,11	3800
2466099	**125B18LF84SN12B**	125	127,0	40	125	–	89	63	5,0	18	3,10	3800
3397547	**160C14LF84SN12B**	160	162,0	40	160	66,7	90	63	5,0	14	4,04	3000
2466100	**160C24LF84SN12B**	160	162,0	40	160	66,7	90	63	5,0	24	3,90	3000
3397548	**200C20LF84SN12B**	200	202,0	60	200	101,6	130	63	5,0	20	6,52	2400
2466101	**200C30LF84SN12B**	200	202,0	60	200	101,6	130	63	5,0	30	6,40	2400
3397549	**250C24LF84SN12B**	250	252,0	60	250	101,6	130	63	5,0	24	9,87	1900
2466102	**250C36LF84SN12B**	250	252,0	60	250	101,6	130	63	5,0	36	10,00	1900

Spare Parts

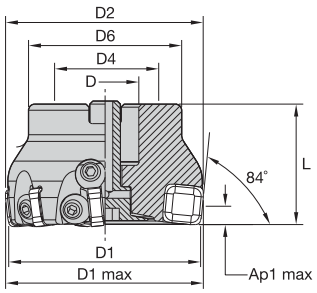




D1	clamp wedge	wedge screw	Nm	wrench 3mm	coolant screw	mill cutter lock screw	coolant shower plate
63	**12748358200**	**12748600900**	7,0	**12148044900**	**420.100**	–	–
80	**12748358200**	**12748600900**	7,0	**12148044900**	**420.120**	–	–
100	**12748358200**	**12748600900**	7,0	**12148044900**	**420.163**	–	–
125	**12748358200**	**12748600900**	7,0	**12148044900**	–	**420.200**	**470.232**
160	**12748358200**	**12748600900**	7,0	**12148044900**	–	**420.200**	**470.233**
200	**12748358200**	**12748600900**	7,0	**12148044900**	–	–	**470.234**
250	**12748358200**	**12748600900**	7,0	**12148044900**	–	–	**470.235**

NOTE: Coolant screw and coolant cap must be ordered separately.
All left-hand KSSR cutter bodies are non-stocked standards.

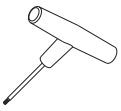
- Eight cutting edges per insert.
- With adjustable pockets for fine machining.
- New wiper inserts in carbide and ceramic.

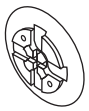


KSSR 84° • Shell Mills • Adjustable Pockets

order number	catalogue number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
	right hand												
4004750	63A09RF84SN12B1W	63	65,1	22	62	–	50	40	5,0	9	1	0,67	7600
4004751	80A12RF84SN12B2W	80	82,1	27	79	–	60	50	5,0	12	2	1,33	6000
4004752	100B15RF84SN12B3W	100	102,1	32	99	–	78	50	5,0	15	3	1,85	4800
4004793	125B18RF84SN12B3W	125	127,1	40	123	–	89	63	5,0	18	3	3,20	3800
4004794	160C24RF84SN12B3W	160	162,1	40	158	67	90	63	5,0	24	3	4,14	3000
4004795	200C30RF84SN12B4W	200	202,1	60	198	102	130	63	5,0	30	4	6,62	2400
4004796	250C36RF84SN12B4W	250	252,1	60	248	102	130	63	5,0	36	4	9,86	1900
	left hand												
4004797	63A09LF84SN12B1W	63	65,1	22	62	–	50	40	5,0	9	1	0,67	7600
4004798	80A12LF84SN12B2W	80	82,1	27	79	–	60	50	5,0	12	2	1,33	6000
4004799	100B15LF84SN12B3W	100	102,1	32	99	–	78	50	5,0	15	3	1,85	4800
4004800	125B18LF84SN12B3W	125	127,1	40	123	–	89	63	5,0	18	3	3,20	3800
4004801	160C24LF84SN12B3W	160	162,1	40	158	67	90	63	5,0	24	3	4,14	3000
4004802	200C30LF84SN12B4W	200	202,1	60	198	102	130	63	5,0	30	4	6,62	2400
4004803	250C36LF84SN12B4W	250	252,1	60	248	102	130	63	5,0	36	4	9,86	1900

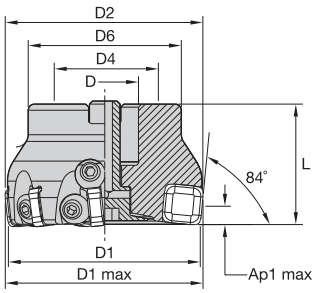
Spare Parts





D1	clamp wedge	wedge screw	Nm	wrench	coolant lock screw	mill cutter lock screw	coolant shower plate
63	12748358200	12748600900	7,0	12148044900	420.100	–	–
80	12748358200	12748600900	7,0	12148044900	420.120	–	–
100	12748358200	12748600900	7,0	12148044900	420.163	–	–
125	12748358200	12748600900	7,0	12148044900	–	420.200	470.232
160	12748358200	12748600900	7,0	12148044900	–	420.200	470.233
200	12748358200	12748600900	7,0	12148044900	–	–	470.234
250	12748358200	12748600900	7,0	12148044900	–	–	470.235

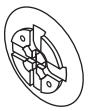
- Eight cutting edges per insert.
- With adjustable pockets for fine machining.
- New wiper inserts in carbide and ceramic.



KSSR 84° • Shell Mills • Adjustable Pocket • JIS (Japanese Industry Standard)

order number	catalogue number	D1	D1 max	D mm	D in	D2	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
	right hand													
4005359	80A12RF84SN12B2WJ	80	82,1	25,400	1.000	79	–	60	50	5,0	12	2	1,22	6000
4005360	100B15RF84SN12B3WJ	100	102,1	31,750	1.250	99	–	78	50	5,0	15	3	1,68	4800
4005361	125B18RF84SN12B3WJ	125	127,1	38,100	1.500	123	–	89	63	5,0	18	3	3,12	3800
4005362	160B24RF84SN12B3WJ	160	162,1	50,800	2.000	158	–	90	63	5,0	24	3	3,91	3000
4005383	200C30RF84SN12B4WJ	200	202,1	63,500	2.500	198	101,6	130	63	5,0	30	4	6,58	2400
4005384	250C36RF84SN12B4WJ	250	252,1	63,500	2.500	248	101,6	130	63	5,0	36	4	9,78	1900
	left hand													
4005385	80A12LF84SN12B2WJ	80	82,1	25,400	1.000	79	–	60	50	5,0	12	2	1,22	6000
4005386	100B15LF84SN12B3WJ	100	102,1	31,750	1.250	99	–	78	50	5,0	15	3	1,68	4800
4005387	125B18LF84SN12B3WJ	125	127,1	38,100	1.500	123	–	89	63	5,0	18	3	3,12	3800
4005388	160B24LF84SN12B3WJ	160	162,1	50,800	2.000	158	–	90	63	5,0	24	3	3,91	3000
4005389	200C30LF84SN12B4WJ	200	202,1	63,500	2.500	198	101,6	130	63	5,0	30	4	6,58	2400
4005390	250C36LF84SN12B4WJ	250	252,1	63,500	2.500	248	101,6	130	63	5,0	36	4	9,78	1900

Spare Parts

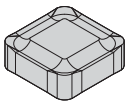


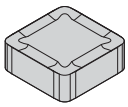
D1	clamp wedge	wedge screw	Nm	wrench	coolant lock screw	mill cutter lock screw	coolant shower plate
80	12748358200	12748600900	7,0	12148044900	420.120	–	–
100	12748358200	12748600900	7,0	12148044900	420.163	–	–
125	12748358200	12748600900	7,0	12148044900	–	420.200	–
160	12748358200	12748600900	7,0	12148044900	–	–	–
200	12748358200	12748600900	7,0	12148044900	–	–	470.242
250	12748358200	12748600900	7,0	12148044900	–	–	470.243

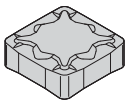
Insert Selection Guide

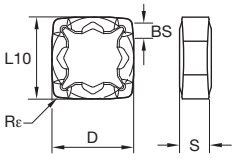
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..LD	KC917M	**.S..GP**	**KC917M**	.S..HE	KC524M
K3	.E..LD	KC917M	**.S..GP**	**KC524M**	.S..HE	KC524M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • KSSR


SNXF-LD

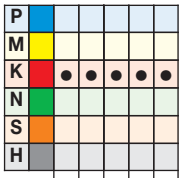

SNXF-GP


SNXF-HE



SNXF

● first choice
○ alternate choice



Face Mills

SNXF-LD

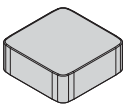
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF120412ENLD	12,70	4,56	12,70	–	1,2	0,03	8	●	●		●	
SNXF43ZNENLD	12,70	4,42	12,70	–	1,6	0,04	8	●	●	●	●	

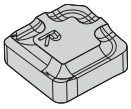
SNXF-GP

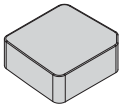
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF120412SNGP	12,70	4,68	12,70	–	1,2	0,06	8	●	●		●	
SNXF1204ZNSNGP	12,70	4,68	12,70	1,00	1,2	0,07	8	●	●		●	

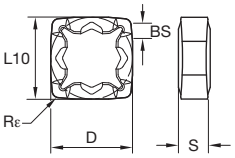
SNXF-HE

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF120412SNHE	12,70	4,66	12,70	–	1,2	0,05	8		●		●	
SNXF1204ZNSNHE	12,70	4,66	12,70	1,00	1,2	0,05	8	●	●		●	

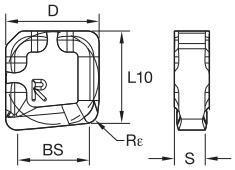

SNXF-SN


XNXF-LDW

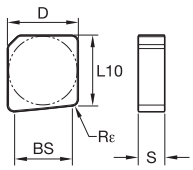

XNXF-ENW



SNXF



XNXF-LDW



XNXF-ENW

● first choice
○ alternate choice

		KC907M	KC914M	KC917M	KY3500
P					
M					
K		●	●	●	●
N					
S					
H					

SNXF-SN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
SNXF120412AMSN	12,70	4,76	12,70	–	1,2	0,20	8				●
SNXF1204ZNAMSN	12,70	4,76	12,70	1,00	1,2	0,20	8				●

XNXF-LDW

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
XNXF1204ZNENLDW	12,70	4,42	12,70	9,50	1,6	0,04	2	●	●	●	

XNXF-ENW

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
XNXF1204ZNENW	12,70	4,76	12,70	9,50	1,2	0,20	2				●

Recommended Starting Speeds [m/min]

Material Group		KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	480	**350**	255	450	**320**	230	490	**365**	305
	2	420	**280**	205	390	**250**	190	385	**300**	250
	3	335	**260**	200	300	**225**	160	300	**250**	200
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	420	**360**	300	360	**300**	240	965	**880**	780
	2	360	**300**	250	300	**240**	200	765	**685**	635
	3	300	**250**	200	240	**200**	160	645	**570**	525
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

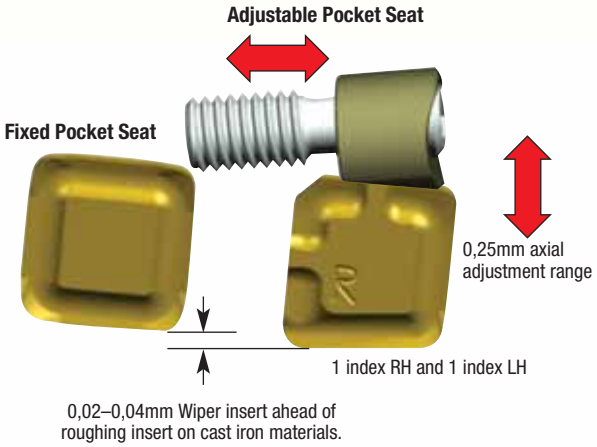
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,09	**0,17**	0,30	0,07	**0,13**	0,23	0,06	**0,11**	0,20	0,06	**0,11**	0,18	0,06	**0,10**	0,18	.E..LD
.S..GP	0,15	**0,25**	0,55	0,12	**0,19**	0,41	0,10	**0,16**	0,36	0,09	**0,15**	0,33	0,09	**0,15**	0,33	.S..GP
.S..HE	0,15	**0,30**	0,65	0,11	**0,23**	0,48	0,10	**0,20**	0,42	0,09	**0,18**	0,39	0,09	**0,18**	0,38	.S..HE

NOTE: Use “Light Machining” values as starting feed rate.

KSSR™ 84°
Adjustable Pockets

- Clamping and adjustment wedge with double thread screw.
- Eight true cutting edges.
- Wiper insert ahead of roughing insert on cast iron materials.
- Wiper insert can also be loaded into cutters with only fixed pockets.



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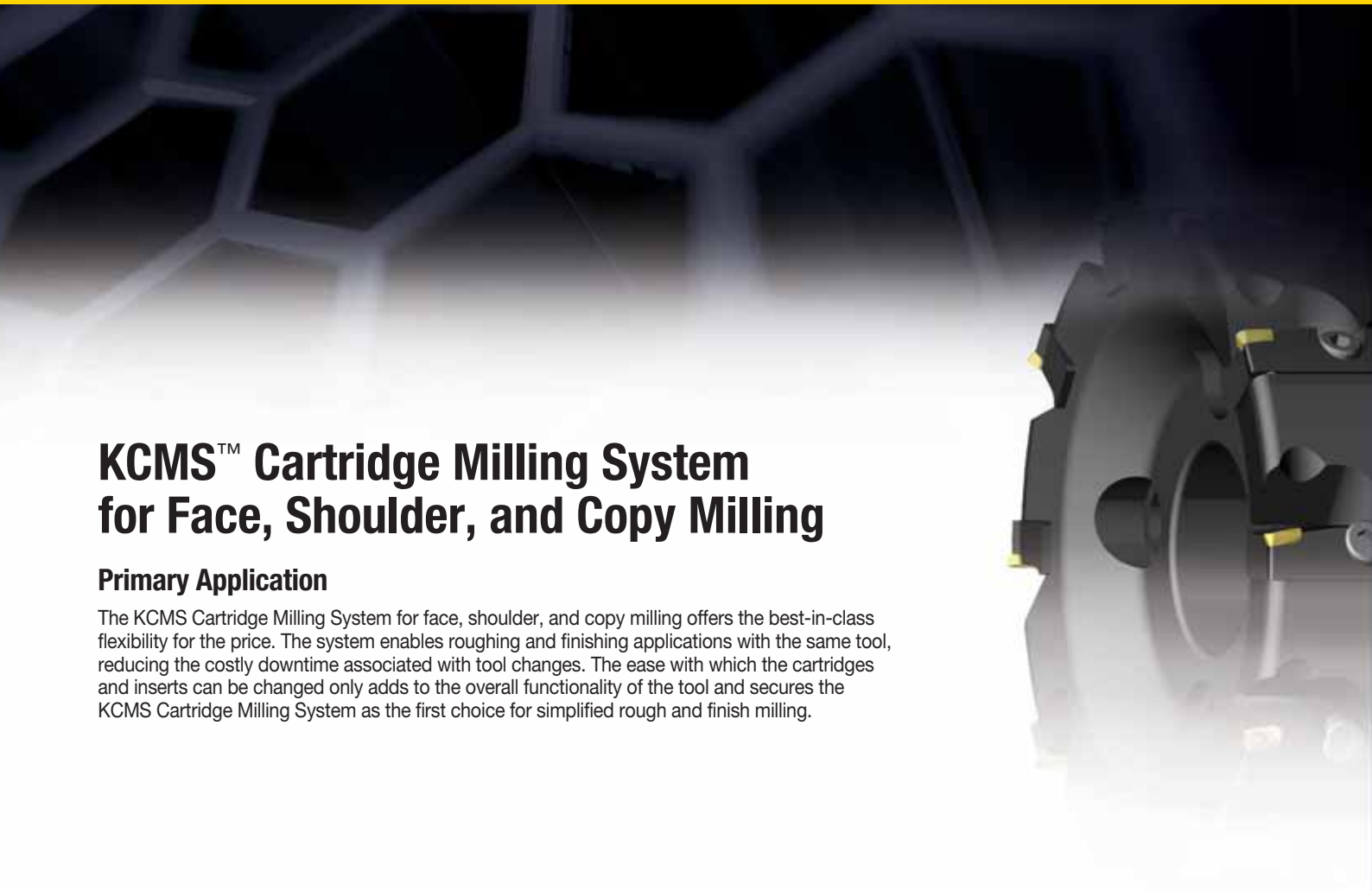


KCMS™ Cartridge Milling System for Face, Shoulder, and Copy Milling

Primary Application

The KCMS Cartridge Milling System for face, shoulder, and copy milling offers the best-in-class flexibility for the price. The system enables roughing and finishing applications with the same tool, reducing the costly downtime associated with tool changes. The ease with which the cartridges and inserts can be changed only adds to the overall functionality of the tool and secures the KCMS Cartridge Milling System as the first choice for simplified rough and finish milling.

Features and Benefits

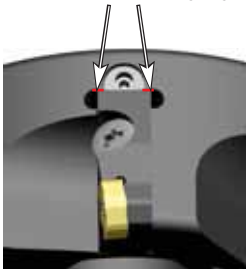
Features	Benefits
Roughing and finishing solution with the same tool.	Adjustable pockets in combination with quick cartridge stop feature.
Easy change of cartridges with different insert styles and lead angles.	Best-in-class flexibility for less money.
Quick cartridge stop feature.	Ready to go in a minute with excellent runout and no adjustment for roughing.
Easy runout adjustment.	For finishing operations to obtain a perfect floor finish.

KCMS™ Key Features — Roughing and Finishing with the Same Tool

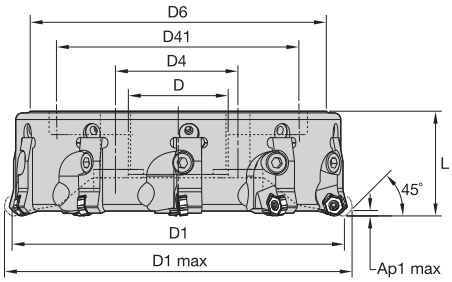
• Axial adjustment wedge.

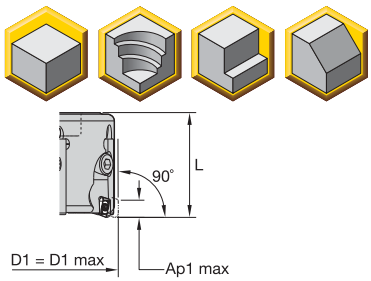
Standard Offering
D1 = 125–315mm

• Quick cartridge stop.
• Ready to go in a minute with no adjustment for roughing.



- Roughing and finishing with one single tool.
- Quick cartridge stop feature.
- Easy runout adjustment.
- Easy change of cartridges with different insert styles and lead angles.





KCMS Cartridge Milling System • Shell Mills

order number	catalogue number	D1	D	D4	D41	D6	L	number of cartridges	kg
4136313	**KCMS125Z06ADJ**	125	40	–	–	108	68	6	3,83
4136314	**KCMS125Z08ADJ**	125	40	–	–	108	68	8	3,54
4136315	**KCMS160Z08ADJ**	160	40	66,7	–	137	63	8	5,78
4136316	**KCMS160Z12ADJ**	160	40	66,7	–	137	63	12	5,20
4136317	**KCMS200Z10ADJ**	200	60	101,6	–	178	63	10	8,80
4136318	**KCMS200Z14ADJ**	200	60	101,6	–	178	80	14	12,57
4136319	**KCMS250Z12ADJ**	250	60	101,6	–	228	63	12	14,78
4136320	**KCMS250Z18ADJ**	250	60	101,6	–	228	63	18	13,93
4136321	**KCMS315Z16ADJ**	315	60	101,6	177,8	293	80	16	30,74
4136322	**KCMS315Z22ADJ**	315	60	101,6	177,8	293	80	22	25,42

Spare Parts • Diameter 125mm–315mm

cartridge screw	Nm	wedge	adjusting screw
MS1294	20,0	**12748308500**	**12748600900**

NOTE: Mounting screw MS-1241 for KCMS200Z14ADJ (order number 4136318).

Cartridges

order number	catalogue number	insert style	master platform *	insert screw I.D. drive size	Ap1 max
4160408	**KCMS-AD1505CA**	AD.T1505	–	T15	14,0
4160406	**KCMS-AP1003CA**	AP.T1003	–	T8	8,0
4160407	**KCMS-AP1604CA**	AP.T1604	–	T15	15,0
4160403	**KCMS-ED10CA**	ED.T10T3	Mill 1-10	7 IP	10,0
3648533	**KCMS-ED14CA**	EC14/ED14	Mill 1-14	9 IP	14,0
4160404	**KCMS-ED18CA**	ED.T1805	Mill 1-18	15 IP	18,0
4160280	**KCMS-HN06CA**	HN.J0604/XNGJ0604	Dodeka Mini	T15	3,2
4160282	**KCMS-HN06HDCA**	HN.J0604	Dodeka Mini	T15	4,4
4160281	**KCMS-HN06HFCA**	HN.J0604	Dodeka Mini	T15	1,6
4160393	**KCMS-HN09CA**	HN.J0905/XNGJ0905	Dodeka	T15	4,5
4160394	**KCMS-HN09HFCA**	HN.J0905	Dodeka	T15	2,0
4160402	**KCMS-MDHX10CA**	MDHX1004	Fix-Perfect Finisher	T20	0,7
2511343	**KCMS-OF06CA**	OF.T06L5	KSOM Mini	15 IP	9,0
2245926	**KCMS-OF07CA**	OF.T07L6	KSOM	20 IP	11,0
4160409	**KCMS-RP1204CA**	RP.T1204	KSRM Daisy	15 IP	6,0
4160410	**KCMS-RP1605CA**	RP.T1605	KSRM Daisy	15 IP	8,0
2266872	**KCMS-SD12CA**	SD.T1204	KSSM90	15 IP	9,2
4160395	**KCMS-SE1203CA**	SE.N1203/SE.R1203	–	T20	6,0
4160396	**KCMS-SE1204CA**	SE.N1204/SE.R1204	–	T20	6,0
2267054	**KCMS-SE14CA**	SE.T1404/SECW1404	KSSM45	15 IP	6,6
4160397	**KCMS-SE1504CA**	SE.N1504/SE.R1504	–	T20	8,0
4160405	**KCMS-SP10CA**	SP.T10T3	KSSM90	9 IP	6,6
4160398	**KCMS-SP1203CA**	SP.N1203	–	T20	9,0
4160399	**KCMS-SP1504CA**	SP.N1504	–	T20	12,0
4160400	**KCMS-TP1603CA**	TP.N1603	–	T20	12,0
4160401	**KCMS-TP2204CA**	TP.N2204/TP.R2204	–	T20	18,0

* For all details regarding insert offering and cutting conditions, please refer to the master platforms.

	KCMS-MDHX10CA	KCMS-HN06HFCA	KCMS-HN06CA	KCMS-HN06HDCA	KCMS-HN09HFCA	KCMS-HN09CA	KCMS-OF06CA	KCMS-OF07CA	KCMS-SE14CA
	order number 4160402	order number 4160281	order number 4160280	order number 4160282	order number 4160394	order number 4160393	order number 2511343	order number 2245926	order number 2267054
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
125	125	138	134,8	131	143,9	136	133,5	136	139
160	160	173	169,8	166	178,9	171	168,5	171	174
200	200	213	209,8	206	218,9	211	208,5	211	214
250	250	263	259,8	256	268,9	261	258,5	261	264
315	315	328	324,8	321	333,9	326	323,5	326	329

	KCMS-ED10CA	KCMS-ED14CA	KCMS-ED18CA	KCMS-AP1003CA	KCMS-AD1505CA	KCMS-AP1604CA	KCMS-SP10CA	KCMS-SD12CA
	order number 4160403	order number	order number 4160404	order number 4160406	order number 4160408	order number 4160407	order number 4160405	order number 2266872
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
125	125	125	125	125	125	125	125	125
160	160	160	160	160	160	160	160	160
200	200	200	200	200	200	200	200	200
250	250	250	250	250	250	250	250	250
315	315	315	315	315	315	315	315	315

	KCMS-RP1204CA	KCMS-RP1605CA	KCMS-SE1203CA	KCMS-SE1204CA	KCMS-SE1504CA	KCMS-SP1203CA	KCMS-SP1504CA	KCMS-TP1603CA	KCMS-TP2204CA
	order number 4160409	order number 4160410	order number 4160395	order number 4160396	order number 4160397	order number 4160398	order number 4160399	order number 4160400	order number 4160401
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
125	125	125	139	139	143	131,6	133,2	125	125
160	160	160	174	174	178	166,6	168,2	160	160
200	200	200	214	214	218	206,6	208,2	200	200
250	250	250	264	264	268	256,6	258,2	250	250
315	315	315	329	329	333	321,6	323,2	315	315

NOTE: Please order KCMS cutter bodies and cartridges separately.
KCMS-RN1204CA: Cartridge for Rodeka™, IC12 with 12 cutting edge indexes.
KCMS-WO0905CA: Cartridge for KenFeed 2X, High-Feed platform with 6 effective cutting edges per insert.

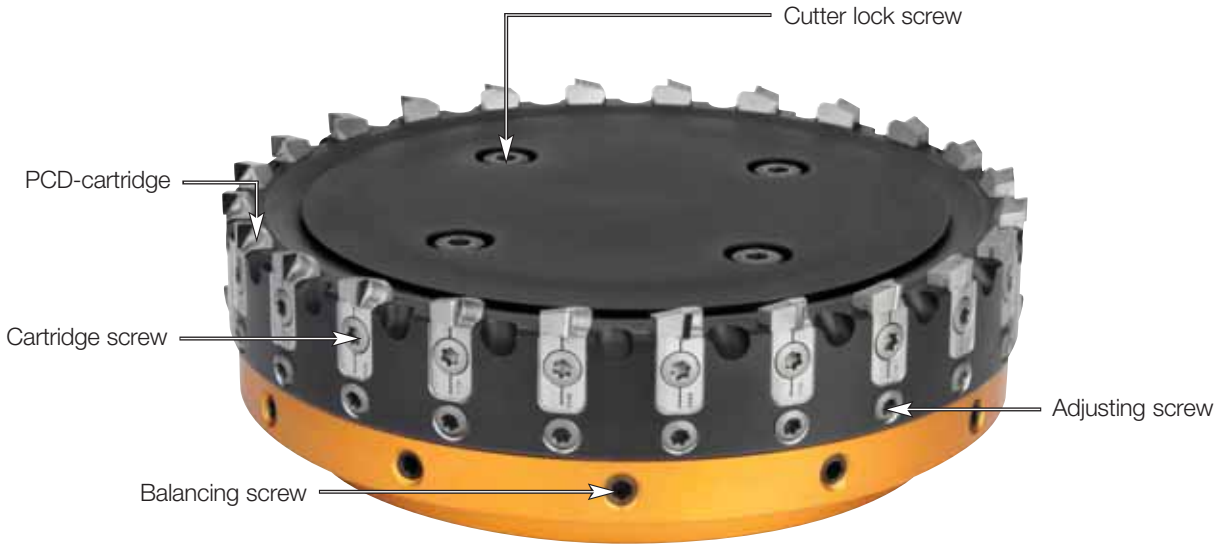
KSCM™ AluMill™

Primary Application

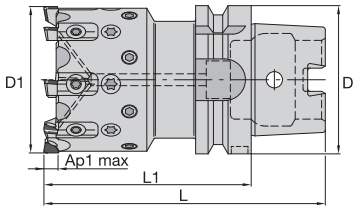
The KSCM AluMill face milling program is specifically engineered to deliver best-in-class performance in high-volume aluminium machining operations. Runs at higher speeds with no chatter while still easy to adjust. The new PCD KD1420™ grade provides long tool life, and with the Kennametal Blue Box™ program for reconditioning worn cartridges, you can reduce your inventory costs as well!

Features and Benefits

- Anti-vibration cutter design.
- Best rigidity for high feed rates.
- Unique dovetail wedge clamping design.
- No radial movement of cartridges.
- Centrifugal force protection cartridge design.
- Integrated chip gash into cartridge.
- Quick setup and easy adjust concept.
- Flexible cartridge configuration.
- No burr cartridges for fine finishing.
- Blue Box service.



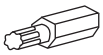
- Productivity booster in aluminium face milling.
- Rough and finish in one operation.
- Precision balanceable cutter bodies produce mirror-finish surfaces.



KSCM AluMill • Monoblock HSK63A

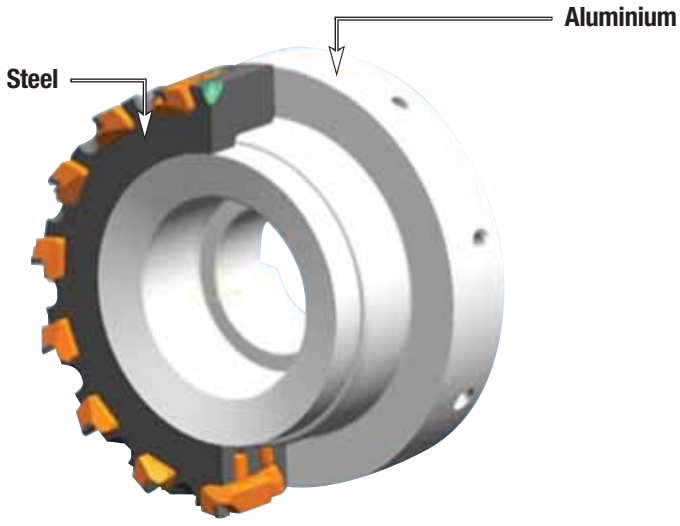
order number	catalogue number	CSMS system size	D1	D	L	L1	Ap1 max	Z	Z S	kg	max RPM
2880630	**KSCM63R08CAH63A090**	HSK63A	63	63	122	90	3,0	8	8	1,84	37900

Spare Parts

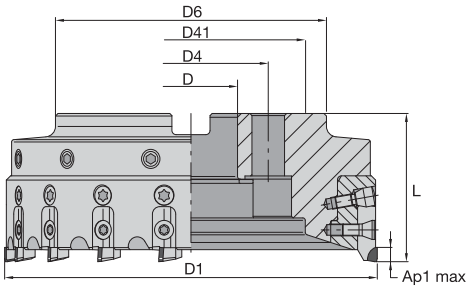


D1	adjusting screw	cartridge screw	drive bit	balancing screw
63	**193.464**	**193.465**	**170.279**	**193.461**

NOTE: Ap1 max is dependent on the cartridge configuration; see the values listed under the cartridges.



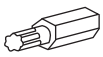
- Productivity booster in aluminium face milling.
- Rough and finish in one operation.
- Precision balanceable cutter bodies produce mirror-finish surfaces.

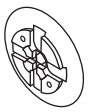


KSCM AluMill • Shell Mills

order number	catalogue number	D1	D	D4	D6	D41	L	Ap1 max	Z	Z ADJ	kg	max RPM
2881349	**KSCM80R10CAB27**	80	27	–	63	–	50	3,0	10	10	1,26	29900
2881352	**KSCM100R12CAB32**	100	32	–	96	–	50	3,0	12	12	1,54	23900
2881505	**KSCM125R16CAB40**	125	40	–	92	–	63	3,0	16	16	2,48	19100
2881509	**KSCM160R18CAB40**	160	40	66,7	116	–	63	3,0	18	18	3,74	15000
2881510	**KSCM200R24CAB60**	200	60	101,6	166	–	63	3,0	24	24	5,20	12000
2881511	**KSCM250R30CAB60**	250	60	101,6	166	–	63	3,0	30	30	7,85	9600
2881584	**KSCM315R36CAB60**	315	60	101,6	260	178	80	3,0	36	36	14,51	7600

Spare Parts



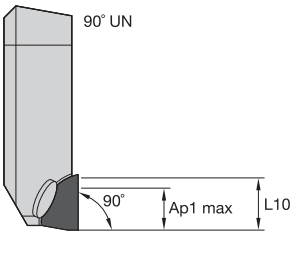


D1	adjusting screw	cartridge screw	drive bit	coolant lock screw	mill cutter lock screw	coolant shower plate	balancing screw
80	**193.464**	**193.465**	**170.279**	**470.269**	–	–	**193.460**
100	**193.464**	**193.465**	**170.279**	**470.270**	–	–	**193.461**
125	**193.464**	**193.465**	**170.279**	**470.271**	–	–	**193.462**
160	**193.464**	**193.465**	**170.279**	–	**420.200**	**470.272**	**193.462**
200	**193.464**	**193.465**	**170.279**	–	–	**470.273**	**193.462**
250	**193.464**	**193.465**	**170.279**	–	–	**470.274**	**193.463**
315	**193.464**	**193.465**	**170.279**	–	–	**470.275**	**193.463**

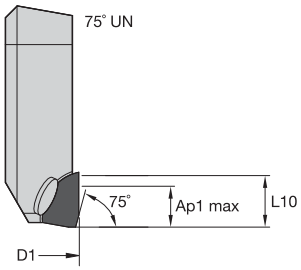
NOTE: All cutters are bimetallic except the 80mm diameter.
Dependent on the cartridge configuration; see the values listed under the cartridges.
Please order KSCM cutter bodies and cartridges separately.

Cartridge Selection Guide

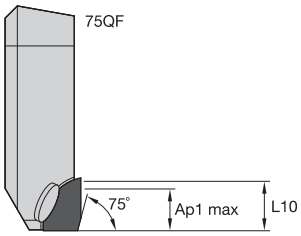
Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	..CA90..	KD1420	**..CA90..**	**KD1420**	..CA90..	KD1420
N3	..CA90..	KD1420	**..CA90..**	**KD1420**	..CA90..	KD1420
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–



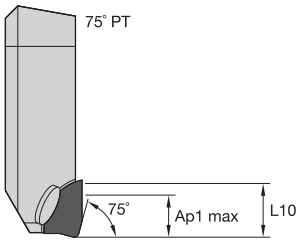
-90° UN
Ap1 max = 3mm



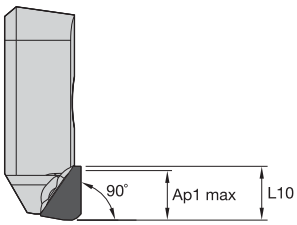
-75° UN
Ap1 max = 3mm



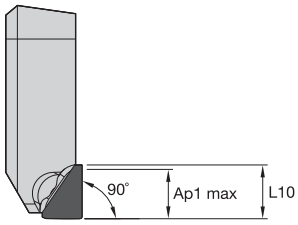
-75° QF
Ap1 max = 3mm



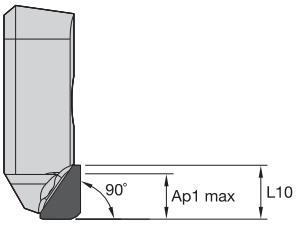
-75° PT
Ap1 max = 3mm



-90° UNBF (Burr free)
Ap1 max = 3mm



-90° QF
Ap1 max = 3mm



-90° UNQFBF (Burr free)
Ap1 max = 3mm

cartridge combination	ratio	max app	surface quality
UN	–	3	Rz 2 - Rz 4
UN + QF	3:1	3	Rz 1,5 - Rz 2,5
PT + UN	X:1	3	Rz 3,2 - Rz 17

● first choice
○ alternate choice

P	
M	
K	
N	●
S	
H	

order number	catalogue number	KRI	L10	HM	KD1420
2884902	**KSCMCA75UN**	75	6,10	0,02	●
2884919	**KSCMCA75PT**	75	6,10	0,02	●
2884918	**KSCMCA75QF**	75	6,10	0,02	●
2884915	**KSCMCA90UN**	90	6,10	0,02	●
4170408	**KSCMCA90QF**	90	6,20	0,02	●
4170410	**KSCMCA90UNBF**	90	6,15	0,02	●
4170411	**KSCMCA90QFBF**	90	6,20	0,02	●

NOTE: KSCMA: Blanks without PCD segment, if cutter is not fully loaded with cartridges.
For low horsepower machines and cutter configurations with less number of effective teeth.

Recommended Starting Speeds [m/min]

Material Group		KD1420		
P	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
	5	–	–	–
	6	–	–	–
M	1	–	–	–
	2	–	–	–
	3	–	–	–
K	1	–	–	–
	2	–	–	–
	3	–	–	–
N	1–2	4810	**4205**	3585
	3	1920	**1795**	1685
S	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
H	1	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, speed should be decreased.

Recommended Starting Feeds [mm]

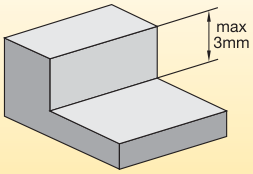
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
CA75../CA90..	0,08	**0,17**	0,26	0,06	**0,13**	0,20	0,06	**0,11**	0,17	0,05	**0,10**	0,16	0,05	**0,10**	0,16	CA75../CA90..

NOTE: Use “Light Machining” values as starting feed rate.

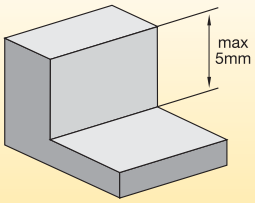
Tool Configuration • Universal Cartridge

Face milling cutter fitted entirely with universal cartridges



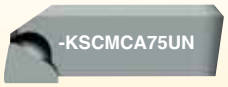
Depth of Cut:
max 3mm

Surface Quality:
Rz2 - Rz4



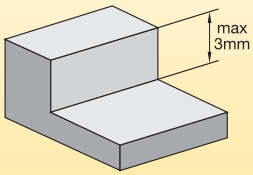
Contouring:
PCD cutting edge length = 5mm

Tool Configuration • Universal Cartridge



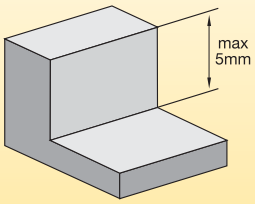
+ Finishing Cartridge

Fitting the face milling cutter with universal and finishing cartridges in a ratio of approximately 3:1



Depth of Cut:
max 3mm

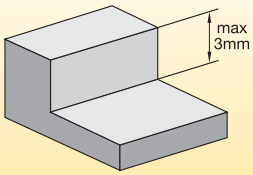
Surface Quality:
Rz1,5 - Rz2,5



Contouring:
PCD cutting edge length = 5mm

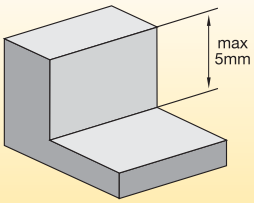
Tool Configuration • Edge Cartridge

Fitting the face milling cutter entirely with edge cartridges



Depth of Cut:
max 3mm

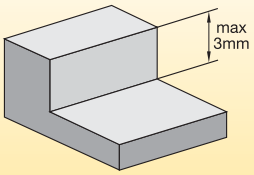
Surface Quality:
Rz2 - Rz4



Contouring:
PCD cutting edge length = 5mm

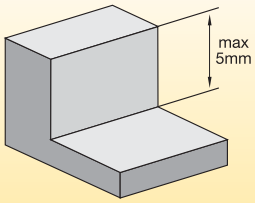
Tool Configuration • Cartridge for Defined Surfaces

Fitting the face milling cutter entirely with cartridges for defined surfaces



Depth of Cut:
max 3mm

Surface Quality:
Rz3,2 - Rz17



Contouring:
PCD cutting edge length = 5mm

Tool Configuration • Universal Cartridge, 75° Face Milling

1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 10 Nm.
3. Screw in the adjusting screws (RH), and tighten to 3 Nm.

4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

Tool Configuration • Universal Cartridge + Finishing Cartridge (Ratio Approx. 3:1), 75°

1. Insert universal cartridges at ratio of approximately 4:1 in the body. Make sure they are evenly distributed!
2. Screw in the clamping screws (RH), and tighten to 10 Nm.
3. Screw in the adjusting screws (RH), and tighten to 3 Nm.

4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

6. Insert finishing cartridges as described in Steps 1–5 but with an axial advance of 0,008 +0,002mm. Max permitted runout error of 3 µm with finishing cartridges.

Tool Configuration • Edge Cartridges, 90° Shoulder Milling

1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 10 Nm.
3. Screw in the adjusting screws (RH), and tighten to 3 Nm.

4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

Tool Configuration • Cartridge for Defined Surface, 75°

1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 10 Nm.
3. Screw in the adjusting screws (RH), and tighten to 3 Nm.

4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

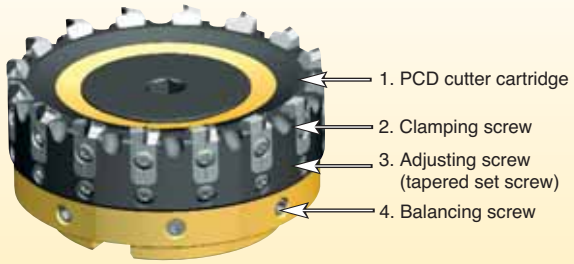
NOTE:

The process must be repeated when the cartridges are changed. To dismantle, remove the adjusting element (Part 3), clamping screw (Part 2), and cartridge (Part 1).

Instruction for Mounting the Face Milling Cutter on the Appropriate Toolholder

User Information:

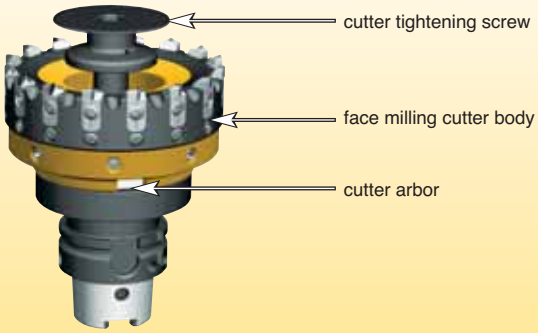
- Tools conform to EN ISO 15641.
- Absolute cleanliness must be observed when assembling the face milling cutter.
- An optimum cutting result will only be achieved by adjusting and balancing the complete tool system (face milling cutter + toolholder).
- Balancing is achieved with the aid of the balancing screws. Quality class G2.5 DIN-ISO 1940.
- The balancing screw must not protrude above the body.
- The balancing and adjustment screws have an adhesive coating according to DIN 267, Part 28. If, after repeated use, the coating is no longer adequate to secure the screws, the screws must be replaced.
- The maximum permitted operating speed (quoted on the tool) must not be exceeded.
- The maximum permitted operating speed is only permitted with clamping systems manufactured by Kennametal in accordance with DIN 69982 Form B with enlarged plane bearing surface. Reduce the operating speed if clamping systems with increased projection length or made by other manufacturers are used.
- Tools and fittings are to be serviced and repaired by Kennametal.
- Screws sealed with lacquer have been adjusted by the manufacturer, and must not be moved.



Instructions for Fitting the Cutter Cartridge • Tool Construction

When mounting the face milling cutter (dimensions similar to DIN 8030 Form B), place the body of the face milling cutter on the arbor. Ensure that the contact faces are clean. Screw in the cutter fastening bolt (RH) and tighten with the appropriate torque.

Tightening torque for the central cutter tightening screw:
M20 (adaptor diameter 40): **250 Nm**
M16 (adaptor diameter 32): **150 Nm**
M12 (adaptor diameter 27): **80 Nm**

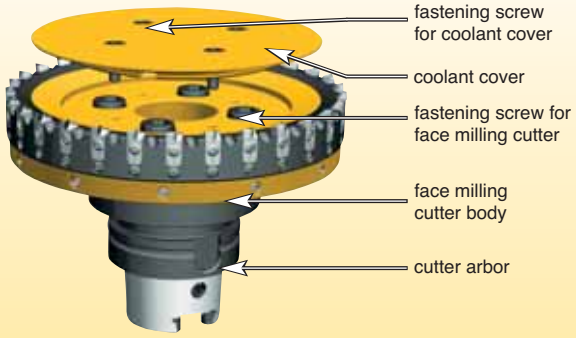


Mounting the Face Milling Cutter (Dimensions Similar to DIN 8030 Form C)

Place the body of the face milling cutter on the arbor. Ensure that the contact faces are clean. Screw in the fastening bolt (RH) and tighten with the appropriate torque. Put the aluminium coolant cover in place and fasten with the Torx fastening screws.

Tightening torque for the face milling cutter fastening screws:
M20: 250 Nm
M16: 110 Nm
M12: 50 Nm

Tightening torque for the coolant cover fastening screws:
M8: 18 Nm



KSCM AluMill
Reconditioning Service

New Supply

On request, the face mill will be delivered with cartridges already mounted and adjusted.

Service Level • PCD Insert Reconditioning

Reconditioning of PCD cartridges up to three times.

- **Tool diameter and length remain constant.**

Face mill will be delivered with exchanged cartridges already mounted, adjusted, and balanced.

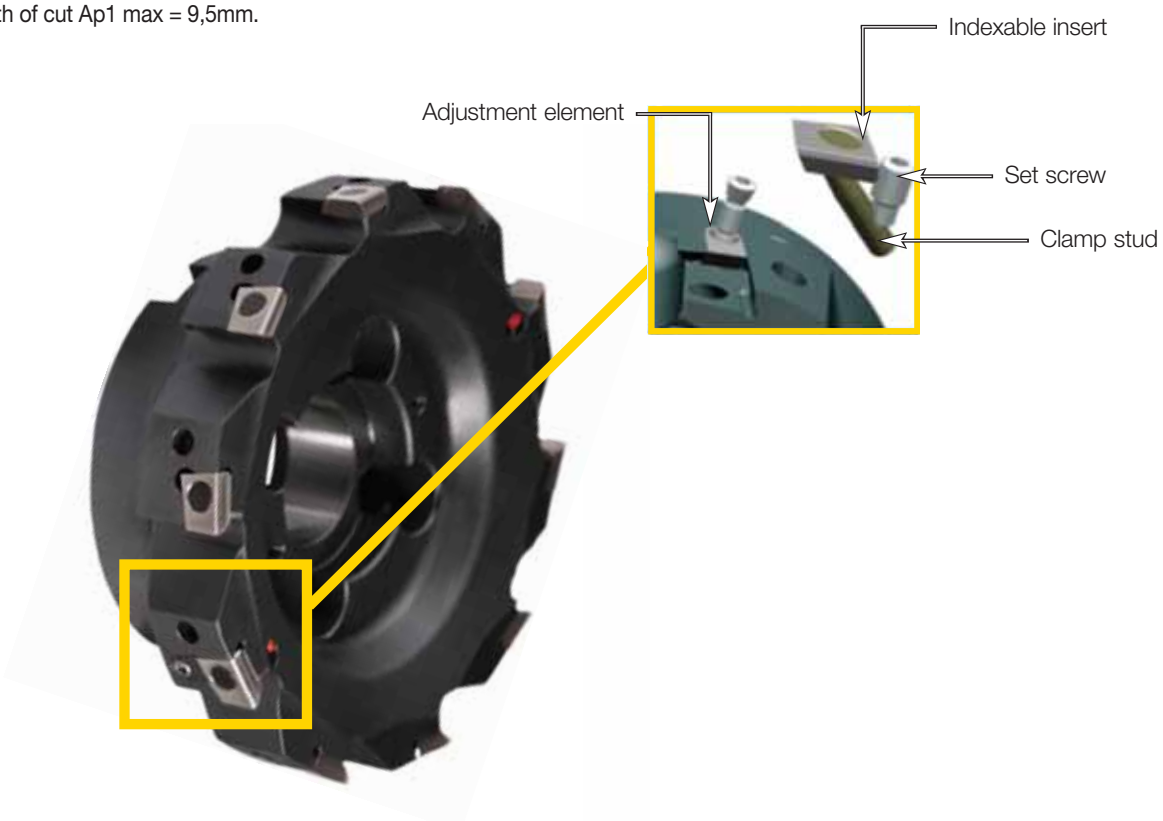
Fix-Perfect™ 90° Aluminium

Primary Application

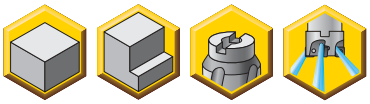
The Fix-Perfect 90° is excellent in machining aluminium and non-ferrous materials.
24° positive rake provides free cutting action while producing superior finishes and flatness.

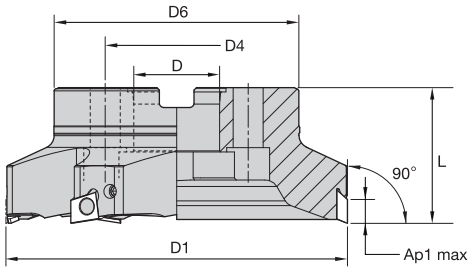
Features and Benefits

- True 90° shoulder achievable.
- Roughing and finishing in one tool.
- Full safety first insert clamping.
- Easy adjustable pocket seats for fine finishing (PM, HPM, HSM Line).
- Achievable floor surface quality: Ra = 0.5.
- Real soft cutting action.
- Axial depth of cut Ap1 max = 9,5mm.



- Excellent for milling aluminium and non-ferrous materials.
- Good choice for thin wall or poorly fixtured workpieces.
- 24° positive rake provides free cutting action.
- Produces excellent finish and flatness.
- Maximum speed is 2000 m/min.
- All pockets are fixed pockets.





Fix-Perfect • Shell Mills • M Line • Fixed Pockets

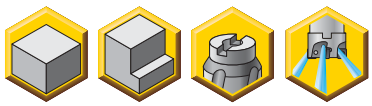
order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	kg	max RPM
2210826	**40A02RP90BG15CM**	40	16	–	35,4	40	9,5	2	0,20	15920
2210827	**50A03RP90BG15CM**	50	22	–	42,0	40	9,5	3	0,33	12730
2033774	**63A03RP90BG15CM**	63	22	–	51,0	40	9,5	3	0,49	10110
2210828	**80A03RP90BG15CM**	80	27	–	64,0	50	9,5	3	1,02	7960
2210829	**100B04RP90BG15CM**	100	32	–	84,0	50	9,5	4	1,55	6370
2210830	**125B05RP90BG15CM**	125	40	–	94,0	63	9,5	5	2,54	5090
2210831	**160C06RP90BG15CM**	160	40	66,7	114,0	63	9,5	6	4,11	3980
2210832	**200C08RP90BG15CM**	200	60	101,6	134,0	63	9,5	8	5,57	3180

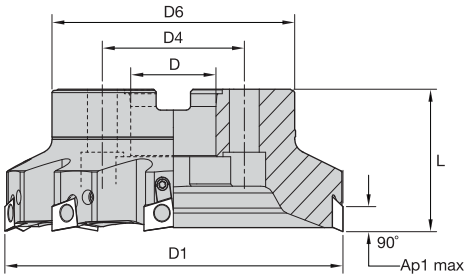
Spare Parts

D1	clamp stud	set screw	hex wrench	Nm	socket-head cap screw	coolant lock screw	coolant lock screw	coolant shower plate
40	**410.083**	**420.060**	**170.003**	5,0	**129.830**	**420.080**	–	–
50	**410.083**	**420.060**	**170.003**	5,0	**125.025**	**420.100**	–	–
63	**410.083**	**420.060**	**170.003**	5,0	**125.025**	**420.100**	–	–
80	**410.083**	**420.060**	**170.003**	5,0	**125.230**	**420.120**	–	–
100	**410.083**	**420.060**	**170.003**	5,0	–	**420.160**	–	–
125	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.232**
160	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.233**
200	**410.083**	**420.060**	**170.003**	5,0	–	–	–	**470.234**

NOTE: Please order spare parts separately.
For 125mm and 160mm diameter milling cutters, always use the coolant lock screw and coolant cap together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

- Fixed and adjustable pockets.
- High-speed machining.

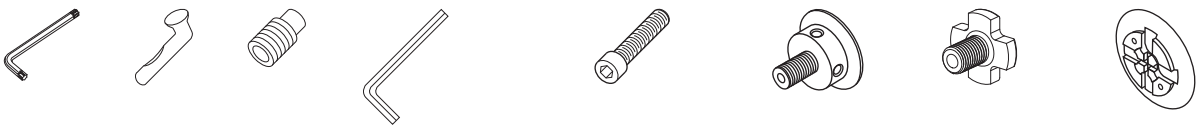




Fix-Perfect • Shell Mills • PM Line • Fixed and Adjustable Pockets

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1797183	**40A02RP90BG15CPM**	40	16	–	35,4	40	9,5	2	0	0,21	31830
1758493	**50A03RP90BG15CPM**	50	22	–	42,0	40	9,5	3	0	0,35	28660
1757331	**63A04RP90BG15C1WPM**	63	22	–	51,0	40	9,5	4	1	0,52	20210
1758495	**80A05RP90BG15C1WPM**	80	27	–	64,0	50	9,5	5	1	1,12	15916
1758572	**80A06RP90BG15C2WPM**	80	27	–	64,0	50	9,5	6	2	1,12	17910
1758496	**100B06RP90BG15C2WPM**	100	32	–	84,0	50	9,5	6	2	1,68	12732
1758573	**100B08RP90BG15C2WPM**	100	32	–	84,0	50	9,5	8	2	1,75	12732
1758497	**125B08RP90BG15C2WPM**	125	40	–	94,0	63	9,5	8	2	2,80	10186
1758574	**125B10RP90BG15C2WPM**	125	40	–	94,0	63	9,5	10	2	3,05	11460
1758498	**160C10RP90BG15C2WPM**	160	40	66,7	114,0	63	9,5	10	2	4,64	7958
1758499	**200C12RP90BG15C3WPM**	200	60	101,6	134,0	63	9,5	12	3	6,00	6366
1758500	**250C16RP90BG15C4WPM**	250	60	101,6	134,0	63	9,5	16	4	9,37	5093

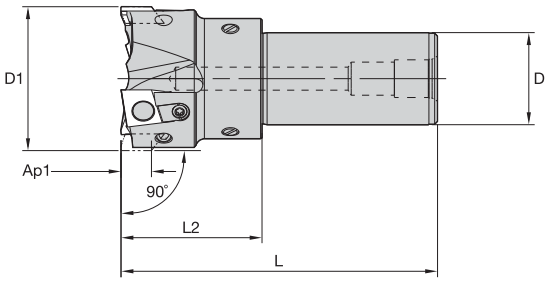
Spare Parts



D1	Torx wrench	clamp stud	set screw	hex wrench	Nm	socket-head cap screw	coolant lock screw	coolant lock screw	coolant shower plate
40	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**129.830**	**420.080**	–	–
50	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**125.025**	**420.100**	–	–
63	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**125.025**	**420.100**	–	–
80	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**125.230**	**420.120**	–	–
100	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	**420.160**	–	–
125	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.232**
160	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.233**
200	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	–	**470.234**
250	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	–	**470.235**

NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.337**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
For 125mm and 160mm diameter milling cutters, be sure to always use the coolant lock screw and coolant cap together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

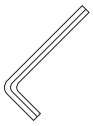
- All pockets are adjustable.
- High-speed machining.



Fix-Perfect • End Mills • HPM Line • All Pockets Adjustable

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z ADJ	kg	max RPM
1758580	**50A03R049A32PBG15S3WHPM**	50	32	110	49	9,5	3	3	0,83	25465

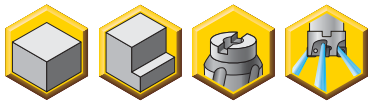
Spare Parts

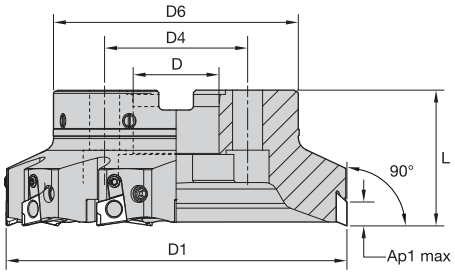


D1	Torx wrench	clamp stud	set screw	hex wrench	Nm
50	**KT15**	**410.083**	**420.060**	**170.003**	5,0

NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.326**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

- All pockets are adjustable.
- High-speed machining.

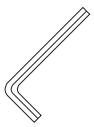


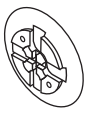


Fix-Perfect • Shell Mills • HPM Line • All Pockets Adjustable

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	Z ADJ	kg	max RPM
1758592	**63A04RP90BG15C4WHPM**	63	22	–	51,0	40	9,5	4	4	0,51	20210
1758593	**80A05RP90BG15C5WHPM**	80	27	–	64,0	50	9,5	5	5	1,08	15916
1762369	**100B06RP90BG15C6WHPM**	100	32	–	84,0	50	9,5	6	6	0,70	12732
1762370	**125B08RP90BG15C8WHPM**	125	40	–	94,0	63	9,5	8	8	1,15	10186
1762451	**160C10RP90BG15C10WHPM**	160	40	66,7	114,0	63	9,5	10	10	1,77	7959
1982560	**200C12RP90BG15C12WHPM**	200	60	101,6	134,0	63	9,5	12	12	2,40	6400
1998364	**315C20RP90BG15C20WHPM**	315	60	101,6	225,0	80	9,5	20	20	7,60	4042

Spare Parts

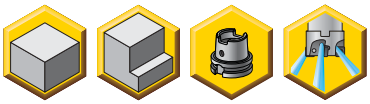


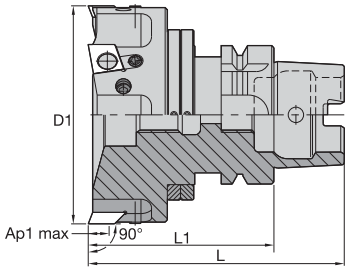


D1	Torx wrench	clamp stud	set screw	hex wrench	Nm	socket-head cap screw	coolant lock screw	coolant lock screw	coolant shower plate
63	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**125.025**	**420.100**	–	–
80	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**125.230**	**420.120**	–	–
100	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	**420.160**	–	–
125	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.232**
160	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	**420.200**	**470.233**
200	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	–	**470.234**
315	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–	–	**470.236**

NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.326**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
For 125mm and 160mm diameter milling cutters, always use the coolant lock screw and coolant cap together.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

- All pockets are adjustable.
- High-speed machining.

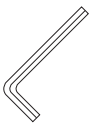




Fix-Perfect • Shell Mills • HSM Line • All Pockets Adjustable

order number	catalogue number	D1	L	L1	Ap1 max	Z	Z ADJ	CSMS system size	kg	max RPM
1782709	**50A03R060S63PBG15S3WHSM**	50	92	60	9,5	3	3	HSK63A	1,00	28660
1782710	**63A04R070S63PBG15S4WHSM**	63	102	70	9,5	4	4	HSK63A	1,30	22750
1782711	**80A05R090S63PBG15S5WHSM**	80	122	90	9,5	5	5	HSK63A	2,12	17910

Spare Parts



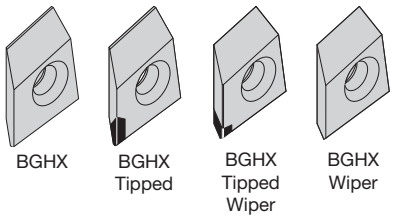
D1	Torx wrench	clamp stud	set screw	hex wrench	Nm	coolant lock screw	balance ring
50	**KT15**	**410.083**	**420.060**	**170.003**	5,0	–	–
63	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**420.100**	–
80	**KT15**	**410.083**	**420.060**	**170.003**	5,0	**420.120**	**SHVBR0635M**

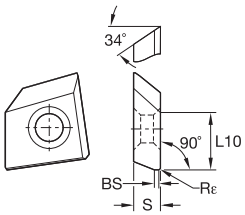
NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.326**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

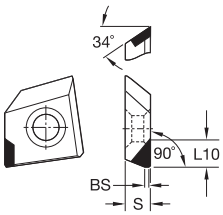
Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	.F..GG	K110M	**.F..GG**	**KC510M**	.T..GG	KC510M
N3	.F..GG	KC510M	**.T..GG**	**KC510M**	.T..GG	KC510M
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • Fix-Perfect • BGHX15L5...

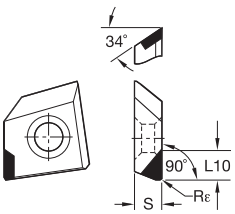




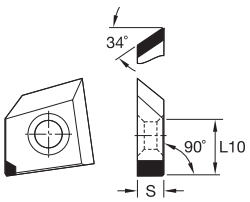
BGHX



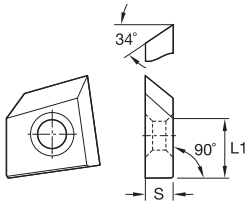
BGHX Tipped



BGHX Tipped with RE



BGHX Tipped Wiper



BGHX Wiper

● first choice
○ alternate choice

P				
M				
K				
N	●	●	●	●
S				
H				

Face Mills

BGHX • Roughing

catalogue number	L10	S	BS	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L5PCERGGTM	2,50	5,00	1,20	0,02	1			●	
BGHX15L5PCERGGT	5,20	5,00	0,90	0,02	1			●	●
BGHX15L5PCELGGT	6,00	5,00	0,90	0,02	1				●
BGHX15L5PCTRHET	6,00	5,00	0,90	0,02	1			●	
BGHX15L5PCSRLET	8,00	5,00	0,90	0,02	1			●	●
BGHX15L5PCFLGG	10,50	5,00	1,22	0,02	2	●	●		
BGHX15L5PCFRGG	10,50	5,00	1,22	0,02	2	●	●		
BGHX15L5PCTRGG	10,50	5,00	1,22	0,02	2	●	●		

BGHX • Roughing with Radius

catalogue number	L10	S	BS	Rε	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L504ERGET	5,20	5,00	–	0,4	0,02	1				●
BGHX15L504PCFRGG	10,50	5,00	1,20	0,4	0,02	2	●			
BGHX15L508PCFRGG	10,50	5,00	1,20	0,8	0,02	2	●	●		
BGHX15L515PCFRGG	10,50	5,00	1,20	1,5	0,02	2	●	●		

BGHX • Finishing

catalogue number	L1	S	BS	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L5PCERGGT1W	10,50	5,00	2,00	0,02	1				●
BGHX15L5PCFRGG1W	10,50	5,00	2,00	0,02	1	●	●		
BGHX15L5PCTRGG1W	10,50	5,00	2,00	0,02	1	●	●		

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KD1410			KD1415		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
N	1–2	505	**475**	450	640	**570**	525	4010	**3505**	2990	4010	**3505**	2990
	3	410	**365**	320	580	**535**	490	1600	**1495**	1400	1600	**1495**	1400
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

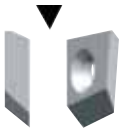
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..LET	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.S..LET
.F..GG	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..GG
.E..GGT	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.E..GGT
.T..GG	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.T..GG
.T..HET	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.T..HET

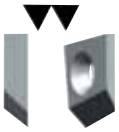
NOTE: Use “Light Machining” values as starting feed rate.

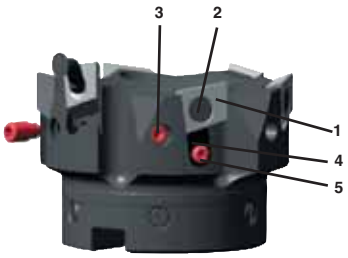
Introduction to Fitting Cutting Bodies

Roughing indexable inserts
BGHX15L5PC..GG.

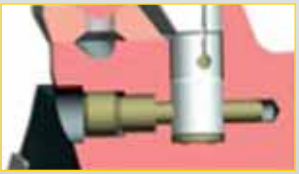


Finishing indexable inserts
BGHX15L5PC..GG.1W





Clean dust, grease, etc., from the insert seat, insert (1), and clamp stud (2).

	PM	HPM/HSM	PM/HPM/HSM
1	Loosen the adjusting element (4). Loosen the adjusting screw (5).	Loosen the adjusting element (4). Loosen the adjusting screw (5).	Loosen the adjusting element (4). Loosen the adjusting screw (5).
2	Insert the indexable inserts and tighten with the clamping screw (3) 5 Nm. ATTENTION: Ensure that the insert is correctly positioned in the insert seat.	Insert the indexable inserts and pre-tighten with the clamping screw (3) 1,5 Nm. ATTENTION: Ensure that the insert is correctly positioned in the insert seat. Determine which cutting body is the highest on the axis.	Insert the indexable inserts and pre-tighten with the clamping screw (3) 1,5 Nm. ATTENTION: Ensure that the insert is correctly positioned in the insert seat. Determine which cutting body is the highest on the axis.
3	Tension the adjusting element (4) by tightening the adjusting screw (5) to the specified torque of 0,5 Nm. 	Extract by 0,02mm the insert that is axially the highest by turning the adjusting screw (5). Adjust the remaining inserts to the desired runout with maximum travel of the inserts 0,2mm.	Adjust the finishing indexable insert(s) to the desired projection, preferably 0,04mm by turning the adjusting screw (5). ATTENTION: Ensure that the insert is correctly positioned in the insert seat.
4	 **Adjustment element to be replaced by Kennametal Service Center only.**	Clamp the insert by tightening the clamping screw (3) to the specified torque of 5 Nm. 	Clamp the insert by tightening the clamping screw (3) to the specified torque of 5 Nm.

Chamfer Mills

Primary Application

Countersinking and external/internal chamfer milling.

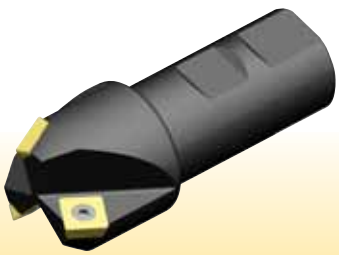
Features and Benefits

- One insert style fits into all pockets to cover 30°, 45°, and 60° chamfering.
- Soft cutting action.
- Chamfer milling front and back.

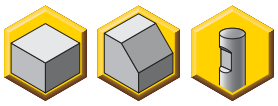
30° lead angle

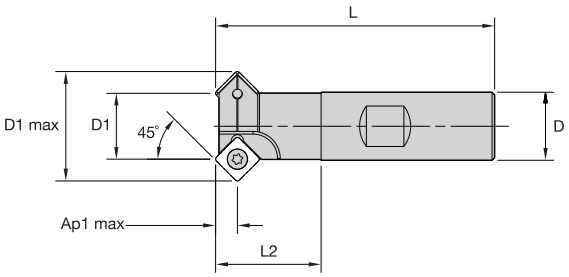
45° lead angle

60° lead angle



• Countersinking and chamfering front and back.





Chamfer End Mills • 45° • Weldon® Shank • SD09

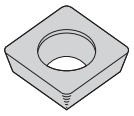
order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1024578	**10D1R032B16SSD09**	10	22	16	83	34	6,5	1	33780	SD__0903___
1024579	**12D1R032B16SSD09**	12	24	16	83	34	6,5	1	30860	SD__0903___
1024580	**16D1R025B16SSD09**	16	28	16	76	27	6,5	1	26710	SD__0903___
1024581	**20D2R030B20SSD09**	20	32	20	83	32	6,5	2	23900	SD__0903___

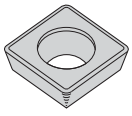
Spare Parts

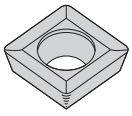
D1	insert screw	Nm	Torx wrench
10	**MS1168**	3,0	**FT15**
12	**MS1168**	3,0	**FT15**
16	**MS1168**	3,0	**FT15**
20	**MS1168**	3,0	**FT15**

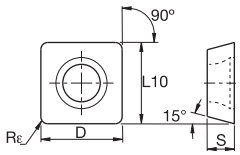
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	KC725M	–	**KC725M**	.T..	KC725M
P3–P4	–	KC725M	**.T..**	**KCPK30**	.T..	KC725M
P5–P6	–	KC725M	**.T..**	**KCPK30**	.T..	KCPK30
M1–M2	–	KC725M	–	**KC725M**	.T..	KC725M
M3	–	KC725M	**.T..**	**KCPK30**	.T..	KC725M
K1–K2	–	KCK15	–	**KCK15**	.T..	KCPK30
K3	–	KCK15	**.T..**	**KCPK30**	.T..	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	KC725M	–	**KC725M**	.T..	KC725M
S3	–	KC725M	**.T..**	**KC725M**	.T..	KC725M
S4	–	KC725M	**.T..**	**KC725M**	–	–
H1	–	–	–	–	–	–

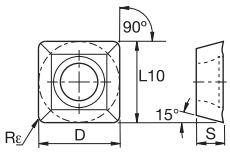

SDCW


SDCW-T


SDMT



SDCW
SDCW-T



SDMT

● first choice
○ alternate choice

		KC725M	KCK15	KCPK30
P		●		●
M		●		○
K			●	○
N				
S		●		
H				

SDCW

catalogue number	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SDCW090308	9,53	3,18	9,53	0,8	0,04	4	●	●	●

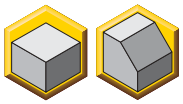
SDCW-T

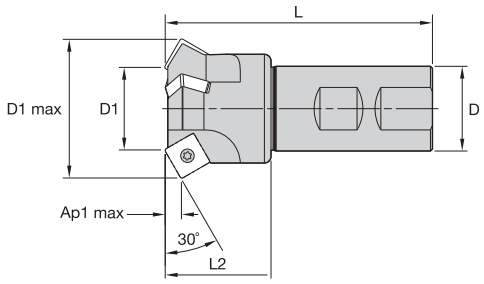
catalogue number	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SDCW090308T	9,53	3,18	9,53	0,8	0,11	4	●		

SDMT

catalogue number	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SDMT090308	9,53	3,18	9,53	0,8	0,04	4	●		
SDMT090316	9,53	3,18	9,53	1,6	0,04	4	●		

• Countersinking and chamfering front and back.





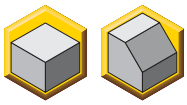
Chamfer End Mills • 30° • Weldon® Shank • SP12

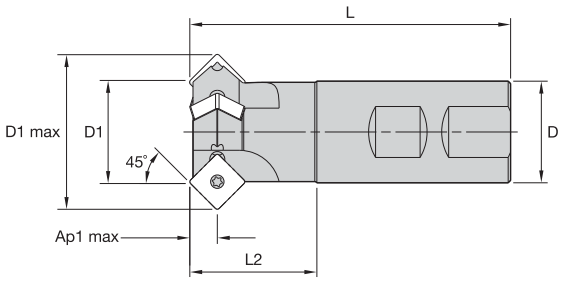
order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1024604	**32Y3R038B32SSP12**	32	52	32	101	40	6,5	3	14670	SP__1204___

Spare Parts

D1	insert screw	Nm	Torx driver
32	**MS1129**	3,0	**DT15**

• Countersinking and chamfering front and back.





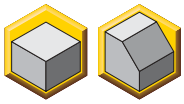
Chamfer End Mills • 45° • Weldon Shank • SP12

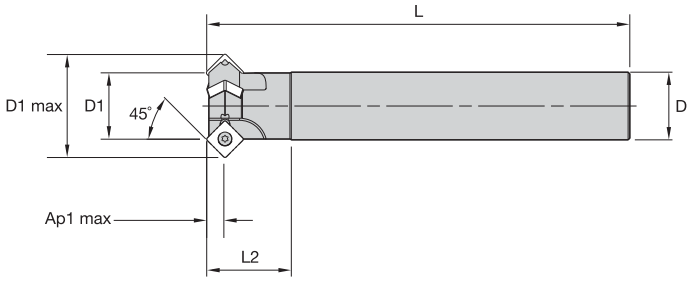
order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1024583	**32D3R038B32SSP12**	32	49	32	101	40	9,0	3	14670	SP__1204___

Spare Parts

D1	insert screw	Nm	Torx driver
32	**MS1129**	3,0	**DT15**

• Countersinking and chamfering front and back.



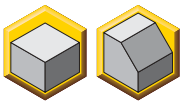


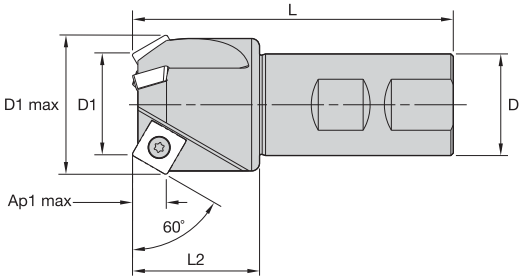
Chamfer End Mills • 45° • Cylindrical Shank • Long Version • SP12

order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1024609	**32D3R138A32SSP12**	32	49	32	200	40	9,0	3	14670	SP__1204___

Spare Parts

D1	insert screw	Nm	Torx driver
32	**MS1129**	3,000	**DT15**





End Mills • 60° Lead • Weldon® Shank • SP12

order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1024605	**32C3R038B32SSP12**	32	44	32	101	40,0	10,0	3	14670	SP__1204___

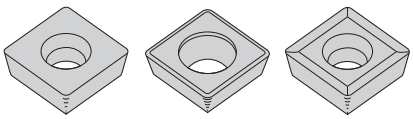
Spare Parts

D1	insert screw	Nm	Torx driver
32	**MS1129**	3,0	**DT15**

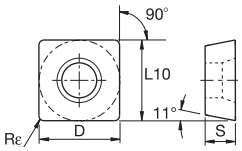
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	KC725M	–	**KC725M**	.T..	KC725M
P3–P4	–	KC725M	–	**KCPK30**	.T..	KC725M
P5–P6	–	KC725M	–	**KCPK30**	–	KCPK30
M1–M2	–	KC725M	–	**KC725M**	.T..	KC725M
M3	–	KC725M	–	**KCPK30**	.T..	KC725M
K1–K2	–	KCK15	–	**KCK15**	–	KCPK30
K3	–	KCK15	–	**KCPK30**	–	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	KC725M	–	**KC725M**	.T..	KC725M
S3	–	KC725M	–	**KC725M**	.T..	KC725M
S4	–	KC725M	**.T..**	**KC725M**	–	–
H1	–	–	–	–	–	–

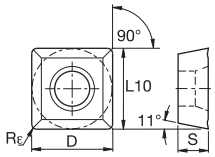
Indexable Inserts • SP..12...



SPCW SPCW-T SPMT



SPCW
SPCW-T



SPMT

● first choice
○ alternate choice

P		●		●
M		●		○
K			●	○
N				
S		●		
H				

Face Mills

SPCW

catalogue number	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SPCW120408	12,70	4,76	12,70	0,8	0,04	4	●	●	

SPCW-T

catalogue number	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SPCW120408T	12,70	4,76	12,70	0,8	0,17	4	●		●

SPMT

catalogue numbers	D	S	L10	Rε	hm	cutting edges	KC725M	KCK15	KCPK30
SPMT120408	12,70	4,76	12,70	0,8	0,04	4	●		●

Recommended Starting Speeds [m/min]

Material Group		KC725M			KCK15			KCPK30		
P	1	315	**275**	255	–	–	–	545	**475**	440
	2	260	**230**	195	–	–	–	335	**305**	275
	3	240	**205**	170	–	–	–	305	**275**	250
	4	215	**180**	145	–	–	–	225	**210**	190
	5	180	**160**	145	–	–	–	310	**275**	255
	6	160	**120**	95	–	–	–	190	**165**	–
M	1	205	**180**	165	–	–	–	250	**220**	190
	2	185	**160**	130	–	–	–	225	**195**	170
	3	140	**120**	95	–	–	–	175	**160**	140
K	1	–	–	–	505	**460**	410	355	**320**	285
	2	–	–	–	400	**355**	330	280	**255**	230
	3	–	–	–	335	**300**	275	235	**210**	195
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	45	**35**	30	–	–	–	–	–	–
	2	45	**35**	30	–	–	–	–	–	–
	3	55	**45**	30	–	–	–	–	–	–
	4	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

30° and 45°

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
–	0,24	**0,69**	1,03	0,18	**0,51**	0,77	0,16	**0,45**	0,67	0,15	**0,42**	0,62	0,14	**0,41**	0,61	–
.T..	0,34	**0,85**	1,38	0,25	**0,64**	1,02	0,22	**0,55**	0,89	0,21	**0,52**	0,83	0,20	**0,51**	0,81	.T..

60°

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
–	0,14	**0,39**	0,59	0,10	**0,29**	0,44	0,09	**0,26**	0,39	0,09	**0,24**	0,36	0,08	**0,24**	0,35	–
.T..	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.T..

NOTE: Use “Light Machining” values as starting feed rate.

Shoulder Mills

Mill 1-10 Platform P2–P20

Mill 1-10, 90° Shoulder Milling Cutters P2–P13

Mill 1-10, 90° Helical Shoulder Milling Cutters P14–P20

Mill 1-14 Platform P22–P42

Mill 1-14, 90° Indexable Shoulder Milling, Single Inserts Row. P22–P31

Mill 1-14, 90° Helical Shoulder Milling Cutters P32–P42

Mill 1-18 Platform P44–P55

Mill 1-18, 90° Shoulder Milling Cutters, Increased Axial Depth of Cut P44–P55

Mill 1-25 Platform P56–P62

Mill 1-25, 90° Machining Non-Ferrous Material P56–P62

KSSM P64–P73

KSSM10, 90° Shoulder Milling Cutter, Small Depth of Cut P64–P68

KSSM12, 90° Shoulder Milling Cutter, Medium Depth of Cut P70–P73

KSSM-KSSP, Helical Cutters P74–P78

KSSP, 90° Helical Cutters, End Milling, Shell Mills, Integral Shank P74–P78

KFSR Helical Platform P80–P87

KFSR, 90° Helical Cutters, Serrated Inserts P80–P87

Mill 1-10™ • High-Performance Shoulder Milling Platform

Primary Application

The multifunctional Mill 1-10 platform works with all tool materials in shoulder, ramp, slot, plunge, and helical milling with one insert style to improve productivity and reduce inventory and machining costs. The super positive cutting rake, soft cutting action, and low cutting forces enable higher feed rates and spindle protection. Innovative insert and cutter body designs offer improved ramping capabilities.

Features and Benefits

Versatility

- Works with all tool materials.
- Capable of shoulder, ramp, plunge, and helical milling.
- Internal coolant and air supply.

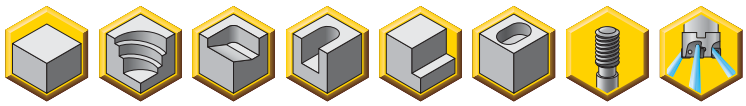
Advantages

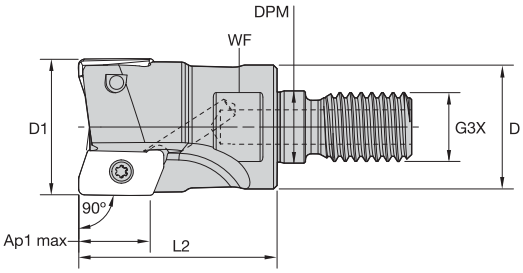
- Optimised soft cutting edge.
- Elliptical edge generates 90° wall.
- Increased ramping capability due to state of the art insert and cutter body design.
- Innovative chip gash design for excellent chip evacuation and perfect cutter body stability.
- All pockets are machined into heat-treated materials, guaranteeing best-in-class runout and pocket strength.
- Inserts feature innovative margin along the main cutting edge, corner nose radius, and wiper facet for perfect edge stability.

*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Screw-On

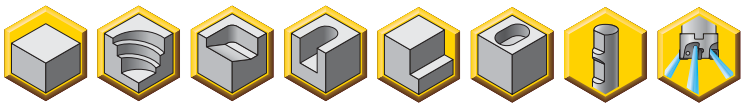
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3745708	**16A02R025M08ED10**	16	13	8,5	M8	25	10	10,1	2	9.5°	0,02	50100
3745709	**20A02R028M10ED10**	20	18	10,5	M10	28	15	10,1	2	6.0°	0,04	44800
3745710	**20A03R028M10ED10**	20	18	10,5	M10	28	15	10,1	3	6.0°	0,05	44800
3745711	**25A03R032M12ED10**	25	21	12,5	M12	32	17	10,0	3	4.0°	0,09	40000
3745712	**25A04R032M12ED10**	25	21	12,5	M12	32	17	10,0	4	4.0°	0,08	40000
3745723	**32A04R040M16ED10**	32	29	17,0	M16	40	24	10,0	4	2.8°	0,19	35400
3745724	**32A05R040M16ED10**	32	29	17,0	M16	40	24	10,0	5	2.8°	0,19	35400
3745725	**40A06R040M16ED10**	40	29	17,0	M16	40	24	9,9	6	2.0°	0,23	31600
3745726	**42A06R040M16ED10**	42	29	17,0	M16	40	24	9,9	6	1.8°	0,23	30900

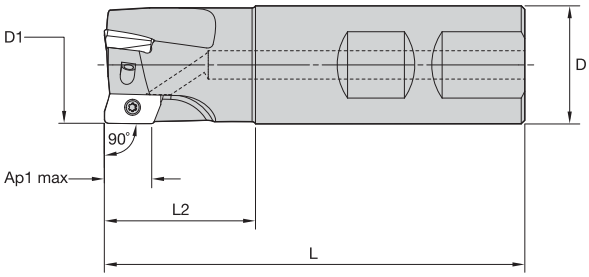
Spare Parts

D1	insert screw	Nm	Torx wrench
16	**MS2205**	1,0	**F7IP**
20	**MS2205**	1,0	**F7IP**
25	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**
40	**MS2205**	1,0	**F7IP**
42	**MS2205**	1,0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Weldon® Shank

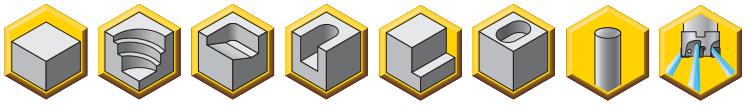
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744633	**16A02R025B16ED10**	16	16	74	25	10,1	2	9.5°	0,09	50100
3744634	**20A02R028B20ED10**	20	20	79	28	10,1	2	6.0°	0,15	44800
3744635	**20A03R028B20ED10**	20	20	79	28	10,1	3	6.0°	0,15	44800
3744636	**25A03R032B25ED10**	25	25	89	32	10,0	3	4.0°	0,28	40000
3744637	**25A04R032B25ED10**	25	25	89	32	10,0	4	4.0°	0,28	40000
3744638	**32A04R040B32ED10**	32	32	101	40	10,0	4	2.8°	0,53	35400
3744639	**32A05R040B32ED10**	32	32	101	40	10,0	5	2.8°	0,53	35400

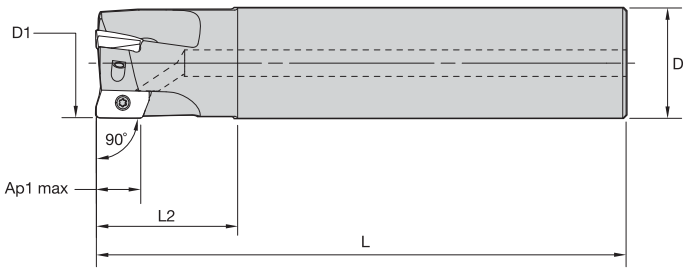
Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

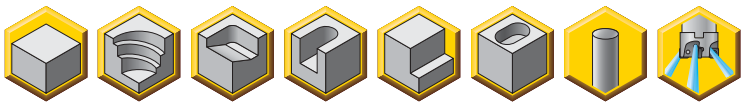
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744538	**12A01R020A16ED10**	12	16	90	20	10,3	1	11.5°	0,12	57800
3744539	**16A02R025A16ED10**	16	16	100	25	10,1	2	9.5°	0,13	50100
3744616	**16A02R025A16ED10-170**	16	16	170	25	10,1	2	9.5°	0,23	50100
3744618	**18A02R028A16ED10-170**	18	16	170	28	10,1	2	7.5°	0,24	47200
3744540	**20A02R028A20ED10**	20	20	110	28	10,1	2	6.0°	0,23	44800
3744619	**20A02R032A20ED10-170**	20	20	170	32	10,1	2	6.0°	0,37	44800
3744541	**20A03R028A20ED10**	20	20	110	28	10,1	3	6.0°	0,22	44800
3744621	**20A03R032A20ED10-170**	20	20	170	32	10,1	3	6.0°	0,36	44800
3744623	**22A03R032A20ED10-170**	22	20	170	32	10,1	3	5.0°	0,37	42700
3744542	**25A03R032A25ED10**	25	25	120	32	10,0	3	4.0°	0,40	40000
3744624	**25A03R040A25ED10-200**	25	25	200	40	10,0	3	4.0°	0,69	40000
3744613	**25A04R032A25ED10**	25	25	120	32	10,0	4	4.0°	0,40	40000
3744626	**25A04R040A25ED10-200**	25	25	200	40	10,0	4	4.0°	0,68	40000
3744628	**28A04R040A25ED10-200**	28	25	200	40	10,0	4	3.3°	0,71	37800
3744614	**32A04R040A32ED10**	32	32	130	40	10,0	4	2.8°	0,72	35400
3744629	**32A04R048A32ED10-200**	32	32	200	48	10,0	4	2.8°	1,14	35400
3744615	**32A05R040A32ED10**	32	32	130	40	10,0	5	2.8°	0,71	35400
3744631	**32A05R048A32ED10-200**	32	32	200	48	10,0	5	2.8°	1,13	35400

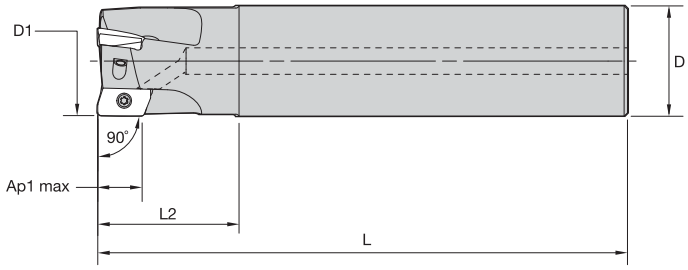
Spare Parts

D1	insert screw	Nm	Torx Plus driver
12	**MS2205**	1,0	**DT7IP**
16	**MS2205**	1,0	**DT7IP**
18	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
22	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
28	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank • Long Length

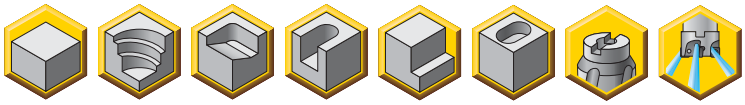
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744617	**16A02R025A16ED10R31-170**	16	16	170	25	9,7	2	8.0°	0,23	50100
3744620	**20A02R032A20ED10R31-170**	20	20	170	32	9,8	2	4.5°	0,37	44800
3744622	**20A03R032A20ED10R31-170**	20	20	170	32	9,8	3	4.5°	0,36	44800
3744625	**25A03R040A25ED10R31-200**	25	25	200	40	9,8	3	3.0°	0,69	40000
3744627	**25A04R040A25ED10R31-200**	25	25	200	40	9,8	4	3.0°	0,68	40000
3744630	**32A04R048A32ED10R31-200**	32	32	200	48	9,7	4	2.0°	1,13	35400
3744632	**32A05R048A32ED10R31-200**	32	32	200	48	9,7	5	2.0°	1,13	35400

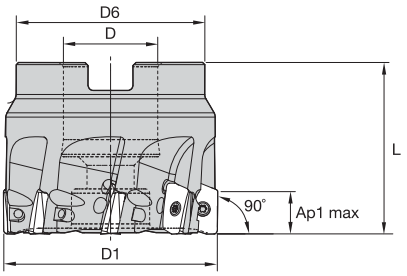
Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: For inserts with corner nose radii 2,4 and 3,1.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Shell Mills

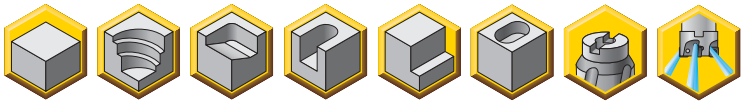
order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745674	**40A04RS90ED10D**	40	16	37	40	9,9	4	2.0°	0,25	31600
3745675	**40A06RS90ED10D**	40	16	37	40	9,9	6	2.0°	0,24	31600
3745676	**50A05RS90ED10D**	50	22	44	40	9,9	5	1.5°	0,38	28300
3745677	**50A08RS90ED10D**	50	22	44	40	9,9	8	1.5°	0,36	28300
3745678	**63A06RS90ED10D**	63	22	44	40	9,9	6	1.0°	0,54	25200
3745679	**63A09RS90ED10D**	63	22	44	40	9,9	9	1.0°	0,53	25200
3745680	**80A08RS90ED10D**	80	27	60	50	9,9	8	0.80°	1,26	22400
3745681	**80A10RS90ED10D**	80	27	60	50	9,9	10	0.80°	1,25	22400
3745682	**100B08RS90ED10D**	100	32	80	50	9,9	8	0.50°	1,88	20000
3745703	**100B12RS90ED10D**	100	32	80	50	9,9	12	0.50°	1,85	20000

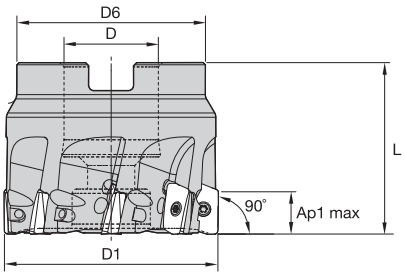
Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	**MS2205**	1,0	**DT7IP**	**MS1294**
50	**MS2205**	1,0	**DT7IP**	**MS1234**
63	**MS2205**	1,0	**DT7IP**	**MS1234**
80	**MS2205**	1,0	**DT7IP**	**MS2038**
100	**MS2205**	1,0	**DT7IP**	–

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mills • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745704	**80A08RS90ED10D-J**	80	25,40	1.000	56	50	9,9	8	0.80°	1,18	22400
3745705	**80A10RS90ED10D-J**	80	25,40	1.000	56	50	9,9	10	0.80°	1,17	22400
3745706	**100B08RS90ED10D-J**	100	31,75	1.250	73	50	9,9	8	0.50°	1,69	20000
3745707	**100B12RS90ED10D-J**	100	31,75	1.250	73	50	9,9	12	0.50°	1,67	20000

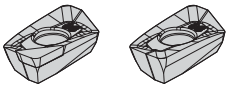
Spare Parts

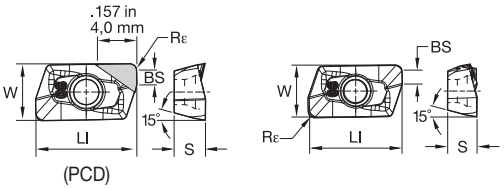
D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
80	**MS2205**	1,0	**DT7IP**	**MS2038**
100	**MS2205**	1,0	**DT7IP**	**–**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–


EDCT-PCD EDCT-F.LDJ



beyond

P					○		○	●		●	●	
M							●	●		○	○	
K					●	●	○		●	○	○	
N	●	●	●	○								●
S							●	●				
H					●		●			○		
	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410	

● first choice
○ alternate choice

EDCT-PCD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDFR-PCD	12,04	6,75	3,75	2,10	0,4	0,02	1											●
EDCT10T308PDFR-PCD	12,05	6,74	3,75	1,71	0,8	0,02	1											●

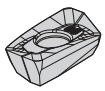
EDCT-F.LDJ

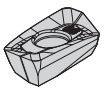
catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDFRLDJ	12,05	6,75	3,75	2,29	0,2	0,02	2	●	●									
EDCT10T304PDFRLDJ	12,05	6,75	3,75	1,98	0,4	0,02	2	●	●									
EDCT10T308PDFRLDJ	12,05	6,74	3,75	1,70	0,8	0,02	2	●	●									
EDCT10T312PDFRLDJ	12,06	6,74	3,75	1,30	1,2	0,02	2	●	●									
EDCT10T316PDFRLDJ	12,06	6,74	3,75	0,90	1,6	0,02	2	●	●									
EDCT10T320PDFRLDJ	12,06	6,73	3,75	0,49	2,0	0,02	2	●	●									
EDCT10T324PDFRLDJ	12,06	6,73	3,75	0,11	2,4	0,02	2	●	●									
EDCT10T331PDFRLDJ	11,52	6,71	3,75	–	3,1	0,02	2	●	●									

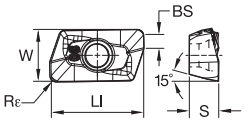
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–

Indexable Inserts

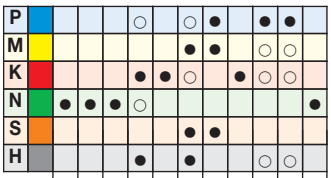

EDCT-E.LDJ


EDCT-LD



beyond

● first choice
○ alternate choice



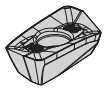
Shoulder Mills

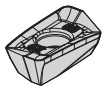
EDCT-E.LDJ

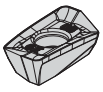
catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDERLDJ	12,05	6,75	3,75	1,98	0,4	0,03	2			●								
EDCT10T308PDERLDJ	12,05	6,74	3,75	1,70	0,8	0,03	2			●								
EDCT10T312PDERLDJ	12,06	6,74	3,75	1,30	1,2	0,03	2			●								
EDCT10T316PDERLDJ	12,06	6,74	3,75	0,90	1,6	0,03	2			●								
EDCT10T320PDERLDJ	12,06	6,73	3,75	0,49	2,0	0,03	2			●								
EDCT10T324PDERLDJ	12,06	6,73	3,75	0,11	2,4	0,03	2			●								
EDCT10T331PDERLDJ	11,52	6,71	3,75	–	3,1	0,03	2			●								

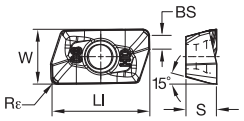
EDCT-LD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDERLD	12,04	6,75	3,75	2,29	0,2	0,04	2						●	●		●	●	
EDCT10T304PDERLD	12,05	6,75	3,75	1,98	0,4	0,04	2				●	●	●	●		●	●	
EDCT10T308PDERLD	12,05	6,74	3,75	1,70	0,8	0,04	2				●	●	●	●	●	●	●	
EDCT10T312PDERLD	12,06	6,74	3,75	1,30	1,2	0,04	2					●	●	●			●	
EDCT10T316PDERLD	12,06	6,74	3,75	0,90	1,6	0,04	2					●	●	●			●	
EDCT10T320PDERLD	12,06	6,73	3,75	0,49	2,0	0,04	2						●	●			●	
EDCT10T324PDERLD	12,06	6,73	3,75	0,11	2,4	0,04	2						●	●		●	●	
EDCT10T331PDERLD	11,52	6,71	3,75	–	3,1	0,04	2					●	●	●		●	●	


EDPT-E.HD


EDPT-S.GE


EDPT-S.GD



beyond

● first choice
○ alternate choice

P						○	●		●	●		
M						●	●		○	○		
K				●	●	○		●	○	○		
N	●	●	●								●	
S						●	●					
H				●		●			○	○		

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDERHD	12,05	6,75	3,75	2,07	0,4	0,08	2					●	●	●	●		●	
EDPT10T308PDERHD	12,05	6,74	3,75	1,70	0,8	0,08	2					●	●	●	●		●	
EDPT10T310PDERHD	12,05	6,74	3,75	1,49	1,0	0,08	2						●	●	●		●	
EDPT10T312PDERHD	12,06	6,74	3,75	1,30	1,2	0,08	2					●	●	●	●		●	
EDPT10T316PDERHD	12,06	6,74	3,75	0,90	1,6	0,08	2					●	●	●	●		●	
EDPT10T320PDERHD	12,06	6,74	3,75	0,49	2,0	0,08	2							●			●	
EDPT10T324PDERHD	12,06	6,74	3,75	0,11	2,4	0,08	2							●			●	
EDPT10T331PDERHD	11,52	6,71	3,75	–	3,1	0,08	2					●	●	●			●	

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGE	12,04	6,75	3,75	2,08	0,4	0,14	2						●	●			●	
EDPT10T308PDSRGE	12,05	6,74	3,75	1,70	0,8	0,14	2						●	●			●	
EDPT10T312PDSRGE	12,05	6,74	3,75	1,30	1,2	0,14	2						●	●			●	
EDPT10T316PDSRGE	12,06	6,74	3,75	0,90	1,6	0,14	2						●	●			●	
EDPT10T331PDSRGE	11,51	6,71	3,75	–	3,1	0,14	2						●	●			●	

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGD	12,05	6,75	3,75	2,07	0,4	0,13	2					●		●	●		●	
EDPT10T308PDSRGD	12,05	6,74	3,75	1,70	0,8	0,13	2					●		●	●		●	
EDPT10T312PDSRGD	12,06	6,74	3,75	1,30	1,2	0,13	2					●		●	●		●	
EDPT10T316PDSRGD	12,06	6,74	3,75	0,90	1,6	0,13	2					●		●	●		●	

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC422M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	245	**200**	170	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	190	**170**	150	–	–	–	–	–	–	295	**265**	240	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	–	–	–	230	**205**	190	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	–	–	–	195	**175**	160	175	**160**	145	150	**135**	120
N	1–2	795	**695**	600	1215	**1080**	995	1075	**945**	875	640	**570**	525	–	–	–	–	–	–
	3	–	–	–	1080	**995**	915	945	**875**	760	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	160	**130**	90	–	–	–	120	**90**	70

Material Group		KC725M			KCK15			KCPM20			KCPK30			KD1410		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370	–	–	–
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230	–	–	–
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205	–	–	–
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160	–	–	–
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210	–	–	–
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–	–	–	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155	–	–	–
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140	–	–	–
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115	–	–	–
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240	–	–	–
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190	–	–	–
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	2755	**2450**	2255
	3	–	–	–	–	–	–	–	–	–	–	–	–	2285	**1670**	1355
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

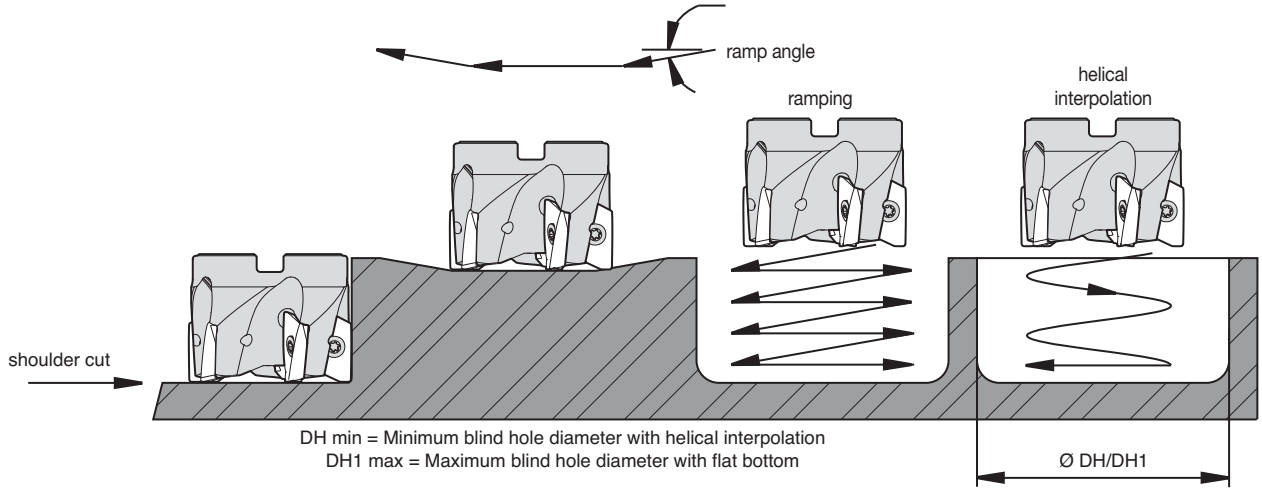
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,13**	0,23	0,06	**0,10**	0,18	0,06	**0,09**	0,15	0,05	**0,08**	0,14	0,05	**0,08**	0,14	.F..LDJ
.F..-PCD	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..-PCD
.E..LDJ	0,08	**0,18**	0,30	0,06	**0,13**	0,23	0,06	**0,11**	0,20	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LDJ
.E..LD	0,09	**0,18**	0,30	0,07	**0,14**	0,22	0,06	**0,12**	0,19	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LD
.S..GE	0,17	**0,2**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GE
.S..GD	0,17	**0,2**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GD
.E..HD	0,17	**0,25**	0,38	0,13	**0,19**	0,29	0,11	**0,17**	0,25	0,10	**0,16**	0,23	0,10	**0,15**	0,23	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

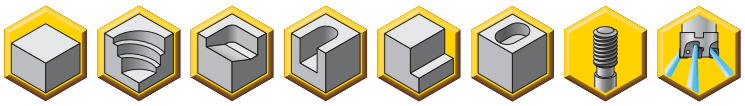
Application Examples

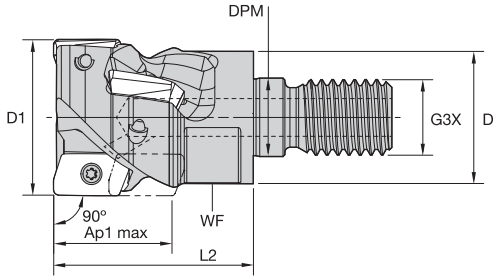


insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	min hole diameter (DH min)	min flat-bottom hole diameter (DH1 min)	max diameter (no flat bottom)
Mill-1, 10mm	12	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	16	9,7°	12,3°	19,50	28,73	32
Mill-1, 10mm	18	7,6°	9,6°	23,29	32,68	63
Mill-1, 10mm	20	6,2°	8,6°	27,25	36,63	40
Mill-1, 10mm	22	5,2°	7,0°	31,25	40,63	44
Mill-1, 10mm	25	4,2°	5,3°	37,26	46,62	50
Mill-1, 10mm	28	3,5°	4,3°	43,26	52,62	56
Mill-1, 10mm	32	2,8°	3,3°	51,27	60,62	64
Mill-1, 10mm	40	2,0°	2,3°	67,30	76,61	80
Mill-1, 10mm	42	1,9°	2,1°	71,32	80,60	82
Mill-1, 10mm	50	1,5°	1,6°	87,53	96,86	100
Mill-1, 10mm	63	1,2°	1,2°	113,54	122,86	126
Mill-1, 10mm	80	0,9°	0,9°	147,54	156,85	160
Mill-1, 10mm	100	0,7°	0,7°	187,54	196,85	200

NOTE: Max ramp angle decreases as nose radius increases.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Screw-On

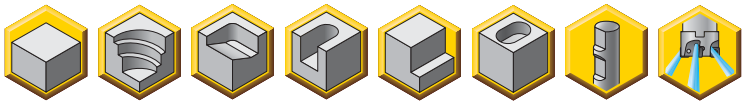
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773810	**M1H20J02R28M10ED10C4**	20	18	10,5	M10	32	15	18,9	4	2	6.0°	0,49	37100
3773811	**M1H25J02R32M12ED10C4**	25	21	12,5	M12	32	17	18,8	4	2	4.0°	0,07	33200
3773812	**M1H32J02R40M16ED10C4**	32	29	17,0	M16	40	24	18,7	4	2	2.8°	0,19	29300
3773813	**M1H32J03R40M16ED10C6**	32	29	17,0	M16	40	24	18,7	6	3	2.8°	0,18	29300

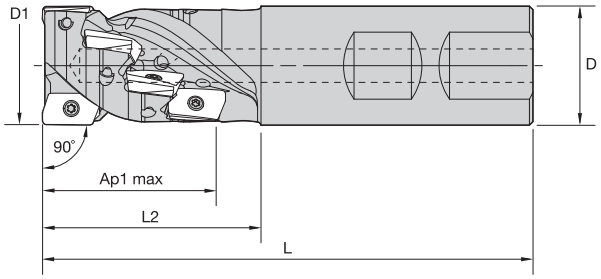
Spare Parts

D1	insert screw	Nm	Torx wrench
20	**MS2205**	1,0	**F7IP**
25	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Weldon® Shank

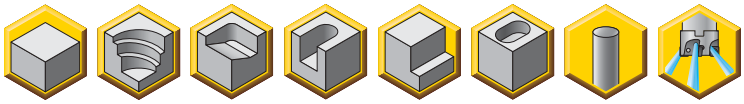
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773118	**M1H20J02R36B20ED10C6**	20	20	87	36	27,7	6	2	6.0°	0,34	37100
3773119	**M1H25J02R46B25ED10C8**	25	25	103	46	36,4	8	2	4.0°	0,29	33200
3773120	**M1H32J02R54B32ED10C10**	32	32	115	54	44,8	10	2	2.8°	0,56	29300
3773121	**M1H32J03R54B32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300

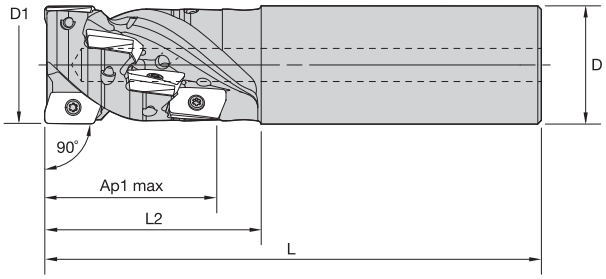
Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

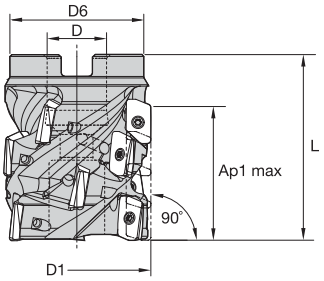
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Cylindrical Shank

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773806	**M1H20J02R28A20ED10C4**	20	20	110	28	18,9	4	2	6.0°	0,48	37100
3773122	**M1H20J02R36A20ED10C6**	20	20	90	36	27,7	6	2	6.0°	0,36	37100
3773807	**M1H25J02R28A25ED10C4**	25	25	120	28	18,8	4	2	4.0°	0,38	33200
3773803	**M1H25J02R46A25ED10C8**	25	25	105	46	36,4	8	2	4.0°	0,30	33200
3773804	**M1H32J02R54A32ED10C10**	32	32	115	54	44,8	10	2	2.8°	0,56	29300
3773805	**M1H32J03R54A32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300
3773808	**M1H32J02R28A32ED10C4**	32	32	130	28	18,7	4	2	2.8°	0,72	29300
3773809	**M1H32J03R28A32ED10C6**	32	32	130	28	18,7	6	3	2.8°	0,71	29300



Helical End Mills • Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773814	**M1H40T03R50A16ED10C12**	40	16	37	50	35,9	12	3	2.0°	0,27	26200
3773815	**M1H40T05R50A16ED10C20**	40	16	37	50	35,9	20	5	2.0°	0,26	26200
3773816	**M1H50T03R60A22ED10C15**	50	22	44	60	44,3	15	3	1.5°	0,62	23400
3773817	**M1H50T05R60A22ED10C25**	50	22	44	60	44,3	25	5	1.5°	0,55	23400

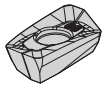
Spare Parts

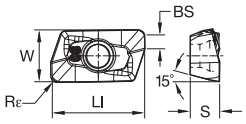
D1	insert screw	Nm	Torx Plus driver
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**
40	**MS2205**	1,0	**DT7IP**
50	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


EDCT-F.LDJ



beyond

● first choice
○ alternate choice

	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P				○		○	●		●	●	
M						●	●		○	○	
K				●	●	○		●	○	○	
N	●	●	●	○							●
S						●	●				
H											

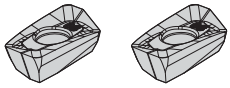
EDCT-F.LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDFRLDJ	12,05	6,75	3,75	2,29	0,2	0,02	2	●	●									
EDCT10T304PDFRLDJ	12,05	6,75	3,75	1,98	0,4	0,02	2	●	●									
EDCT10T308PDFRLDJ	12,05	6,74	3,75	1,70	0,8	0,02	2	●	●									
EDCT10T312PDFRLDJ	12,06	6,74	3,75	1,30	1,2	0,02	2	●	●									
EDCT10T316PDFRLDJ	12,06	6,74	3,75	0,90	1,6	0,02	2	●	●									
EDCT10T320PDFRLDJ	12,06	6,73	3,75	0,49	2,0	0,02	2	●	●									
EDCT10T324PDFRLDJ	12,06	6,73	3,75	0,11	2,4	0,02	2	●	●									
EDCT10T331PDFRLDJ	11,52	6,71	3,75	–	3,1	0,02	2	●	●									

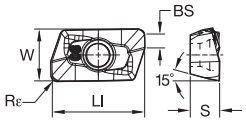
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



EDCT-E.LDJ EDCT-LD



beyond

● first choice
○ alternate choice

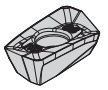
P				○		○	●		●	●			
M						●	●		○	○			
K				●	●	○		●	○	○			
N	●	●	●	○							●		
S						●	●						
H													

EDCT-E.LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDERLDJ	12,05	6,75	3,75	1,98	0,4	0,03	2			●								
EDCT10T308PDERLDJ	12,05	6,74	3,75	1,70	0,8	0,03	2			●								
EDCT10T312PDERLDJ	12,06	6,74	3,75	1,30	1,2	0,03	2			●								
EDCT10T316PDERLDJ	12,06	6,74	3,75	0,90	1,6	0,03	2			●								
EDCT10T320PDERLDJ	12,06	6,73	3,75	0,49	2,0	0,03	2			●								
EDCT10T324PDERLDJ	12,06	6,73	3,75	0,11	2,4	0,03	2			●								
EDCT10T331PDERLDJ	11,52	6,71	3,75	–	3,1	0,03	2			●								

EDCT-LD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDERLD	12,04	6,75	3,75	2,29	0,2	0,04	2						●	●		●	●	
EDCT10T304PDERLD	12,05	6,75	3,75	1,98	0,4	0,04	2				●	●	●	●		●	●	
EDCT10T308PDERLD	12,05	6,74	3,75	1,70	0,8	0,04	2				●	●	●	●	●	●	●	
EDCT10T312PDERLD	12,06	6,74	3,75	1,30	1,2	0,04	2					●	●	●			●	
EDCT10T316PDERLD	12,06	6,74	3,75	0,90	1,6	0,04	2					●	●	●			●	
EDCT10T320PDERLD	12,06	6,73	3,75	0,49	2,0	0,04	2						●	●			●	
EDCT10T324PDERLD	12,06	6,73	3,75	0,11	2,4	0,04	2						●	●			●	
EDCT10T331PDERLD	11,52	6,71	3,75	–	3,1	0,04	2					●	●	●		●	●	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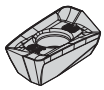
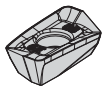
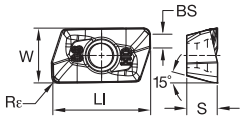

EDPT-S.GE


EDPT-S.GD



beyond

P						○	●		●	●		
M						●	●		○	○		
K					●	●	○		●	○	○	
N	●	●	●									●
S						●	●					
H												

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDERHD	12,05	6,75	3,75	2,07	0,4	0,08	2					●	●	●	●		●	
EDPT10T308PDERHD	12,05	6,74	3,75	1,70	0,8	0,08	2					●	●	●	●		●	
EDPT10T310PDERHD	12,05	6,74	3,75	1,49	1,0	0,08	2						●	●	●		●	
EDPT10T312PDERHD	12,06	6,74	3,75	1,30	1,2	0,08	2					●	●	●	●		●	
EDPT10T316PDERHD	12,06	6,74	3,75	0,90	1,6	0,08	2					●	●	●	●		●	
EDPT10T320PDERHD	12,06	6,74	3,75	0,49	2,0	0,08	2							●			●	
EDPT10T324PDERHD	12,06	6,74	3,75	0,11	2,4	0,08	2							●			●	
EDPT10T331PDERHD	11,52	6,71	3,75	–	3,1	0,08	2					●	●	●			●	

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGE	12,04	6,75	3,75	2,08	0,4	0,14	2						●	●			●	
EDPT10T308PDSRGE	12,05	6,74	3,75	1,70	0,8	0,14	2						●	●			●	
EDPT10T312PDSRGE	12,05	6,74	3,75	1,30	1,2	0,14	2						●	●			●	
EDPT10T316PDSRGE	12,06	6,74	3,75	0,90	1,6	0,14	2						●	●			●	
EDPT10T331PDSRGE	11,51	6,71	3,75	–	3,1	0,14	2						●	●			●	

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGD	12,05	6,75	3,75	2,07	0,4	0,13	2					●		●	●		●	
EDPT10T308PDSRGD	12,05	6,74	3,75	1,70	0,8	0,13	2					●		●	●		●	
EDPT10T312PDSRGD	12,06	6,74	3,75	1,30	1,2	0,13	2					●		●	●		●	
EDPT10T316PDSRGD	12,06	6,74	3,75	0,90	1,6	0,13	2					●		●	●		●	

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC422M			KC510M			KC520M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	245	**200**	170	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	190	**170**	150	–	–	–	–	–	–	295	**265**	240	270	**245**	215
	2	–	–	–	–	–	–	–	–	–	230	**205**	190	210	**190**	175
	3	–	–	–	–	–	–	–	–	–	195	**175**	160	175	**160**	145
N	1–2	795	**695**	600	1215	**1080**	995	1075	**945**	875	640	**570**	525	–	–	–
	3	–	–	–	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	330	**285**	270	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	275	**240**	200	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	255	**215**	175	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	225	**185**	150	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	185	**170**	150	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	165	**125**	100	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	205	**180**	165	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	185	**160**	130	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	140	**120**	95	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	230	**205**	185	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	180	**160**	150	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	150	**135**	120	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	40	**35**	25	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	40	**35**	25	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	50	**40**	25	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	70	**50**	35	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,13**	0,23	0,06	**0,10**	0,18	0,06	**0,09**	0,15	0,05	**0,08**	0,14	0,05	**0,08**	0,14	.F..LDJ
.E..LDJ	0,08	**0,18**	0,30	0,06	**0,13**	0,23	0,06	**0,11**	0,20	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LDJ
.E..LD	0,09	**0,18**	0,30	0,07	**0,14**	0,22	0,06	**0,12**	0,19	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LD
.S..GE	0,17	**0,20**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GE
.S..GD	0,17	**0,20**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GD
.E..HD	0,17	**0,25**	0,38	0,13	**0,19**	0,29	0,11	**0,17**	0,25	0,10	**0,16**	0,23	0,10	**0,15**	0,23	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

LOIS™ — Mill 1-14™

Load Optimised Insert Spacing with an Unmatched Soft Cutting Action

Boost productivity in all your complex contour milling and full slotting operations!

- Reduced cutting forces.
- Balanced cut.
- Reduced power fluctuation.
- Coolant through tool for machining exotic materials.
- Versatile cutting strategies:
  - Slot
  - Profile
  - Plunge
  - Ramp

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KENNAMETAL®

Mill 1-14™

Primary Application

Mill 1-14 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-14 cutters can be used for profiling, slotting, ramping, helical interpolation, circular interpolation, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-14 inserts also are specially designed to add cutting versatility. Innovative micro-geometry features contribute greatly to enhanced performance, various rake angles, negative T-land, and small hone. Results include significantly reduced cycle times and lower cutting forces. Test results in producing 90° walls have proven excellent as well; try GD2 geometry.

Features and Benefits

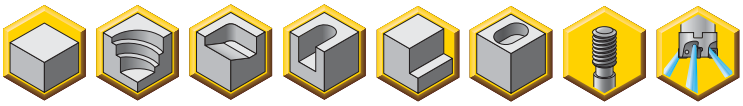
Features

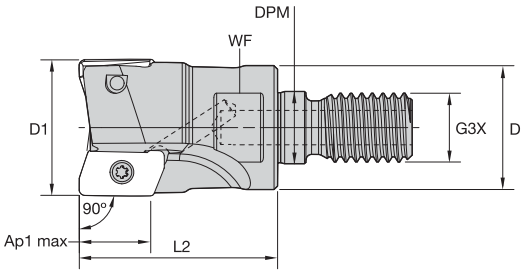
- Insert geometries and grades for most workpiece materials.
- Insert radii from 0,15mm (.016") up to 4mm (.157").
- Axial depth of cut up to 14mm (.551").
- Beyond™ grade technology.

Benefits

- Easy cutting action, kind on entry and also exiting the workpiece.
- Polished geometry for aluminium machining.
- Slotting, profiling, ramping, helical interpolation, and plunging.

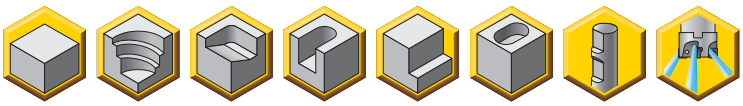
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.

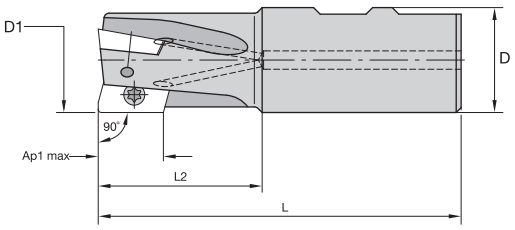




End Mills • Screw-On

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
2968370	**20A02R035M10SED14**	20	18	10,5	M10	35	15	14,7	2	16.8°	0,06	47500
2968371	**25A02R035M12SED14**	25	21	12,5	M12	35	17	14,6	2	10.7°	0,08	39700
3345679	**25A03R035M12SED14**	25	21	12,5	M12	35	17	14,6	3	10.7°	0,09	39700
2968372	**32A03R040M16SED14**	32	29	17,0	M16	40	22	14,6	3	7.0°	0,17	33300
3345680	**32A04R040M16SED14**	32	29	17,0	M16	40	22	14,6	4	7.0°	0,18	33300
2968373	**40A04R040M16SED14**	40	29	17,0	M16	40	22	14,4	4	5.1°	0,23	28700
3345681	**40A05R040M16SED14**	40	29	17,0	M16	40	22	14,4	5	5.1°	0,23	28700





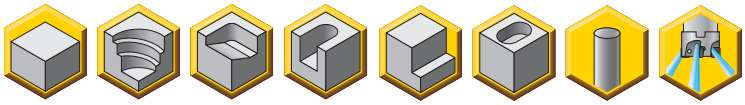
End Mills • Weldon® Shank

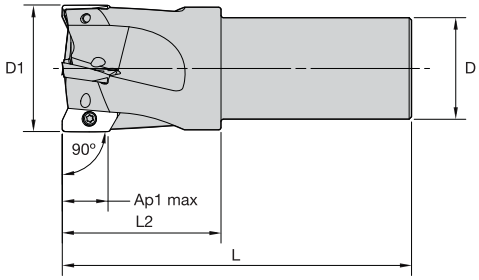
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2622232	**20A02R039B20SED14**	20	20	90	39	14,7	2	16.8°	0,17	47500
2623937	**25A02R044B25SED14**	25	25	100	44	14,6	2	10.7°	0,30	39700
2478640	**25A03R044B25SED14**	25	25	101	44	14,6	3	10.7°	0,30	39700
2623938	**32A03R050B32SED14**	32	32	110	50	14,5	3	7.0°	0,55	33300
2478642	**32A04R050B32SED14**	32	32	110	50	14,5	4	7.0°	0,56	33300
2623939	**40A04R050B32SED14**	40	32	110	50	14,4	4	5.1°	0,69	28700
2623933	**40A05R050B32SED14**	40	32	110	50	14,4	5	5.1°	0,69	28700

Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

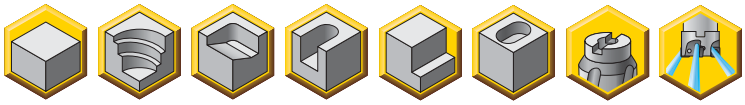
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3345674	**20A02R039A20SED14**	20	20	90	39	14,7	2	16.8°	0,17	47500
2968363	**20A02R050A20SED14-170**	20	20	170	50	14,7	2	16.8°	0,34	47500
3345675	**25A02R044A25SED14**	25	25	100	44	14,6	2	10.7°	0,30	39700
2968367	**25A02R050A25SED14-170**	25	25	170	50	14,6	2	10.7°	0,56	39700
3345676	**25A03R044A25SED14**	25	25	100	44	14,6	3	10.7°	0,31	39700
2968364	**25A03R050A25SED14-170**	25	25	170	50	14,6	3	10.7°	0,56	39700
3345677	**32A03R050A25SED14**	32	25	107	50	14,6	3	7.0°	0,39	33300
3345678	**32A04R050A25SED14**	32	25	107	50	14,6	4	7.0°	0,41	33300
3348765	**32A03R050A32SED14**	32	32	110	50	14,6	3	7.0°	0,55	33300
2968368	**32A03R050A32SED14-200**	32	32	200	50	14,6	3	7.0°	1,10	33300
3348766	**32A04R050A32SED14**	32	32	110	50	14,6	4	7.0°	0,56	33300
2968365	**32A04R050A32SED14-200**	32	32	200	50	14,6	4	7.0°	1,11	33300
3348767	**40A04R050A32SED14**	40	32	110	50	14,4	4	5.1°	0,69	28700
2968369	**40A04R050A32SED14-200**	40	32	200	50	14,4	4	5.1°	1,24	28700
3348768	**40A05R050A32SED14**	40	32	110	50	14,4	5	5.1°	0,70	28700
2968366	**40A05R050A32SED14-200**	40	32	200	50	14,4	5	5.1°	1,25	28700

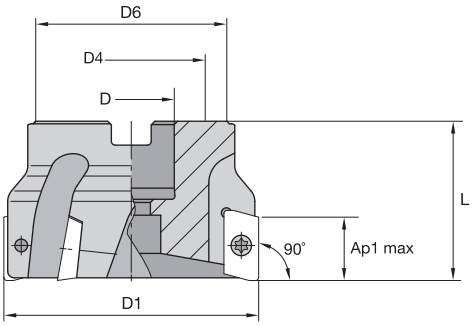
Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.

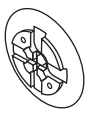




Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2623940	**40A04RS90ED14D**	40	16	–	37	40	14,4	4	5.1°	0,20	28700
2623934	**40A05RS90ED14D**	40	16	–	37	40	14,4	5	5.1°	0,20	28700
2623941	**50A05RS90ED14D**	50	22	–	45	40	14,3	5	3.8°	0,30	25000
2478686	**50A06RS90ED14D**	50	22	–	45	40	14,3	6	3.8°	0,29	25000
2623942	**63A06RS90ED14D**	63	22	–	50	40	14,3	6	2.8°	0,52	21800
2478689	**63A07RS90ED14D**	63	22	–	50	40	14,3	7	2.8°	0,53	21800
2623963	**80A07RS90ED14D**	80	27	–	60	50	14,2	7	2.1°	1,02	19000
2478690	**80A09RS90ED14D**	80	27	–	60	50	14,2	9	2.1°	1,08	19000
2623964	**100A08RS90ED14D**	100	32	–	80	50	14,2	8	1.7°	1,75	16800
2623935	**100A10RS90ED14D**	100	32	–	80	50	14,2	10	1.7°	1,86	16800
2510390	**125B09RS90ED14D**	125	40	–	90	63	14,2	9	1.3°	2,86	14900
2623936	**125B12RS90ED14D**	125	40	–	90	63	14,2	12	1.3°	3,01	14900
2623965	**160C11RS90ED14D**	160	40	66,7	100	63	14,2	11	1.0°	3,95	13100

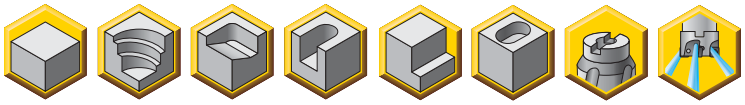
Spare Parts

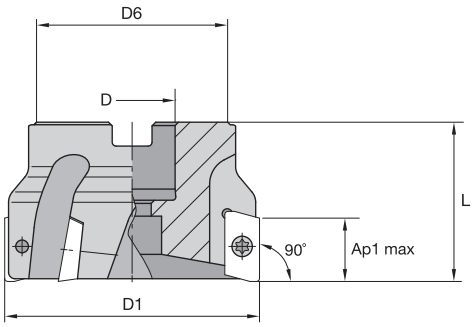


D1	insert screw	Nm	Torx Plus driver	mounting screw	lock screw	low-head cap screw with coolant groove	socket-head cap screw with coolant groove	coolant shower plate
40	**MS2166**	2,3	**DT9IP**	–	–	–	**MS1294CG**	–
40	**MS2166**	2,3	**DT9IP**	**MS1294**	–	–	–	–
50	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2072CG**	–
63	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2072CG**	–
80	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2038CG**	–
100	**MS2166**	2,3	**DT9IP**	**MS1254**	–	–	–	–
100	**MS2166**	2,3	**DT9IP**	–	–	**MS1254CG**	–	–
125	**MS2166**	2,3	**DT9IP**	–	**420.200**	–	–	**470.232**
160	**MS2166**	2,3	**DT9IP**	–	**420.200**	–	–	**470.233**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mill • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3124210	**80A07RS90ED14D-J**	80	25,40	1.000	50	50	14	7	2.1°	0,99	19000
3124211	**80A09RS90ED14D-J**	80	25,40	1.000	50	50	14	9	2.1°	1,07	19000
3124223	**100B08RS90ED14D-J**	100	31,75	1.250	60	50	14	8	1.7°	1,40	16800
3124224	**100B10RS90ED14D-J**	100	31,75	1.250	60	50	14	10	1.7°	1,50	16800
3124226	**125B09RS90ED14D-J**	125	38,10	1.500	80	63	14	9	1.3°	2,89	14900
3124231	**125B12RS90ED14D-J**	125	38,10	1.500	80	63	14	12	1.3°	3,03	14900
3168172	**160B11RS90ED14D-J**	160	50,80	2.000	100	63	14	11	1.0°	3,98	13100
3168213	**160B15RS90ED14D-J**	160	50,80	2.000	100	63	14	15	1.0°	4,25	13100

Spare Parts

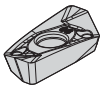
D1	insert screw	Nm	Torx Plus driver	lock screw	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw assembly
80	**MS2166**	2,3	**DT9IP**	**–**	**MS2038**	**MS2038CG**	**–**
100	**MS2166**	2,3	**DT9IP**	**–**	**–**	**–**	**MS2220C**
125	**MS2166**	2,3	**DT9IP**	**420.200**	**–**	**–**	**–**
160	**MS2166**	2,3	**DT9IP**	**–**	**–**	**–**	**–**

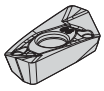
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	.S..GE	KC522M	**.E..HD**	**KC522M**	–	–

Indexable Inserts


EDCT-F.LDJ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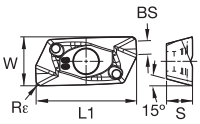


● first choice
○ alternate choice

beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H					○			○	

EDCT-F.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140402PDFRLDJ	17,46	8,49	4,50	3,14	0,2	0,02	2	●							
EDCT140404PDFRLDJ	17,46	8,49	4,50	2,95	0,4	0,02	2	●							
EDCT140408PDFRLDJ	17,47	8,48	4,50	2,56	0,8	0,02	2	●							
EDCT140412PDFRLDJ	17,47	8,46	4,50	2,17	1,2	0,02	2	●							
EDCT140416PDFRLDJ	17,49	8,45	4,50	1,77	1,6	0,02	2	●							
EDCT140431PDFRLDJ	17,50	8,40	4,50	0,26	3,1	0,02	2	●							
EDCT140440PDFRLDJ	16,53	8,34	4,50	–	4,0	0,02	2	●							

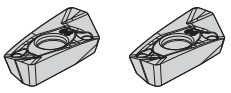
EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLDJ	17,46	8,49	4,50	2,95	0,4	0,03	2		●						
EDCT140408PDERLDJ	17,47	8,48	4,50	2,56	0,8	0,03	2		●						
EDCT140412PDERLDJ	17,48	8,46	4,50	2,17	1,2	0,03	2		●						
EDCT140416PDERLDJ	17,49	8,45	4,50	1,77	1,6	0,03	2		●						
EDCT140424PDERLDJ	17,50	8,42	4,50	0,99	2,4	0,03	2		●						
EDCT140431PDERLDJ	17,50	8,40	4,50	0,26	3,1	0,03	2		●						
EDCT140440PDERLDJ	16,53	8,34	4,50	–	4,0	0,03	2		●						

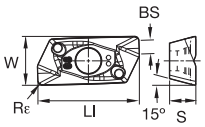
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	.S..GE	KC522M	**.E..HD**	**KC522M**	–	–

Indexable Inserts



EDCT-LD EDCT-E.GD



beyond

● first choice
○ alternate choice

	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

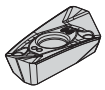
Shoulder Mills

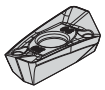
EDCT-LD

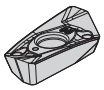
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLD	17,46	8,49	4,50	2,95	0,4	0,04	2				●				
EDCT140408PDERLD	17,47	8,48	4,50	2,56	0,8	0,04	2				●				
EDCT140412PDERLD	17,48	8,46	4,50	2,17	1,2	0,04	2				●				
EDCT140416PDERLD	17,49	8,45	4,50	1,77	1,6	0,04	2				●				
EDCT140431PDERLD	17,50	8,40	4,50	0,26	3,1	0,04	2				●				

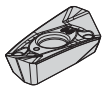
EDCT-E.GD

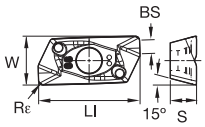
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERGD	17,46	8,49	4,50	2,95	0,4	0,05	2					●		●	
EDCT140408PDERGD	17,47	8,48	4,50	2,56	0,8	0,05	2					●		●	
EDCT140412PDERGD	17,48	8,46	4,50	2,17	1,2	0,05	2					●			
EDCT140416PDERGD	17,49	8,45	4,50	1,77	1,6	0,05	2					●			
EDCT140431PDERGD	17,50	8,40	4,50	0,26	3,1	0,05	2					●		●	


EDPT-E.HD


EDPT-S.GE


EDPT-S.GD


EDPT-S.GD2



beyond

P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDERHD	17,46	8,39	4,50	2,95	0,4	0,08	2			●	●	●	●		●
EDPT140408PDERHD	17,47	8,38	4,50	2,56	0,8	0,08	2			●	●	●	●		●
EDPT140412PDERHD	17,48	8,36	4,50	2,16	1,2	0,08	2			●	●	●	●		●
EDPT140416PDERHD	17,49	8,36	4,50	1,77	1,6	0,08	2			●	●	●	●		●
EDPT140420PDERHD	17,49	8,35	4,50	1,37	2,0	0,08	2				●	●			●
EDPT140424PDERHD	17,50	8,32	4,50	0,99	2,4	0,08	2				●	●			●
EDPT140431PDERHD	17,51	8,30	4,50	0,26	3,1	0,08	2				●	●			●
EDPT140440PDERHD	16,53	8,26	4,50	–	4,0	0,08	2				●	●			●

EDPT-S.GE

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDSRGE	17,43	8,20	4,45	2,80	0,4	0,14	2				●	●		●	●
EDPT140408PDSRGE	17,44	8,17	4,45	2,39	0,8	0,14	2				●	●		●	●
EDPT140412PDSRGE	17,44	8,14	4,45	1,98	1,2	0,14	2				●	●			●
EDPT140416PDSRGE	17,45	8,12	4,45	1,58	1,6	0,14	2				●	●			●
EDPT140431PDSRGE	17,46	8,07	4,45	0,13	3,1	0,14	2				●	●		●	●

EDPT-S.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD	17,47	8,37	4,50	2,55	0,8	0,11	2			●		●			●
EDPT140412PDSRGD	17,48	8,36	4,50	2,17	1,2	0,11	2			●		●			●
EDPT140416PDSRGD	17,49	8,35	4,50	1,77	1,6	0,11	2			●		●			●

EDPT-S.GD2

catalogue number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD2	17,47	8,37	4,50	2,61	0,8	0,11	2			●		●			●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	120	**90**	70

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

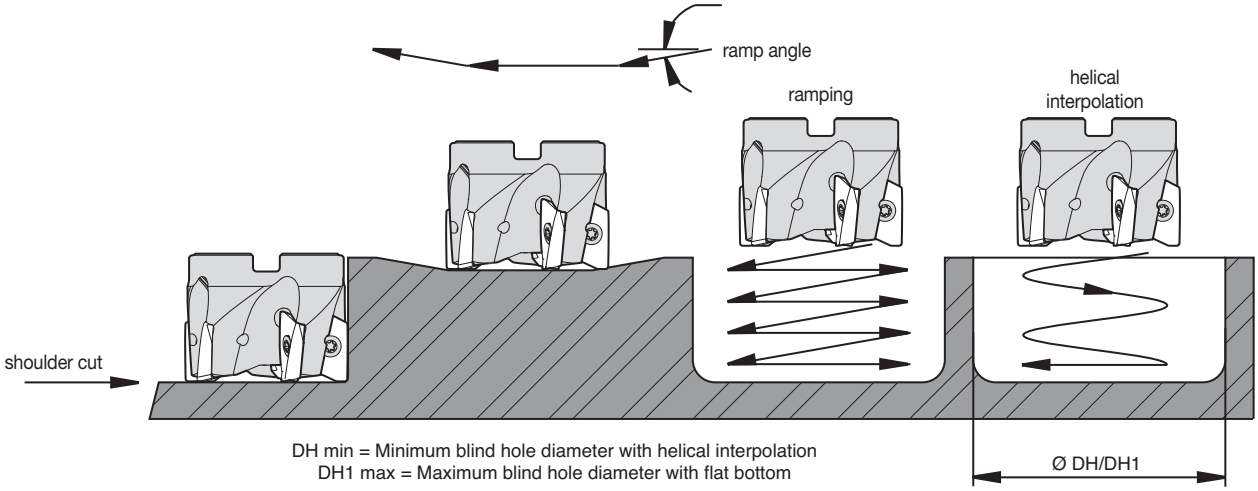
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,20**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,09	**0,20**	0,35	0,07	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LD
.E..GD	0,12	**0,27**	0,43	0,09	**0,20**	0,32	0,08	**0,18**	0,28	0,07	**0,17**	0,26	0,07	**0,16**	0,26	.E..GD
.S..GE	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GE
.S..GD	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GD
.S..GD2	0,17	**0,40**	0,58	0,13	**0,30**	0,43	0,11	**0,26**	0,38	0,10	**0,24**	0,35	0,10	**0,24**	0,35	.S..GD2
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter
Mill 1-14	20	16°	23,74	35,62	40
Mill 1-14	25	11°	33,75	44,44	50
Mill 1-14	32	7°	47,80	59,79	64
Mill 1-14	40	5°	63,76	75,22	80
Mill 1-14	40	5°	64,00	75,47	80
Mill 1-14	50	4°	83,96	96,05	100
Mill 1-14	63	3°	109,93	121,47	126
Mill 1-14	80	2°	143,91	155,47	160
Mill 1-14	100	1°	183,89	199,47	200
Mill 1-14	125	1°	233,88	245,47	250
Mill 1-14	160	1°	303,88	315,47	320

Mill 1-14™ Helical Cutters

Primary Application

The Mill 1-14 helical cutters will increase your axial depth of cut. Designed with axial support pins for added stability, the Mill 1-14 features our essential Load-Optimised Insert Spacing™ (LOIS) technology. LOIS dramatically minimises unwanted vibrations and fluctuations in power requirements, resulting in a much smoother-sounding cut. Up to nine different coolant nozzle diameters enable tailoring to suit each machine tool, providing remarkably consistent, focused coolant flow.

Features and Benefits

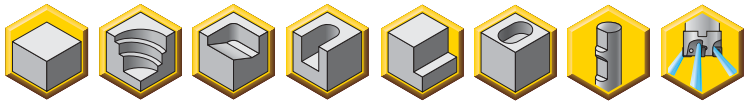
Functions

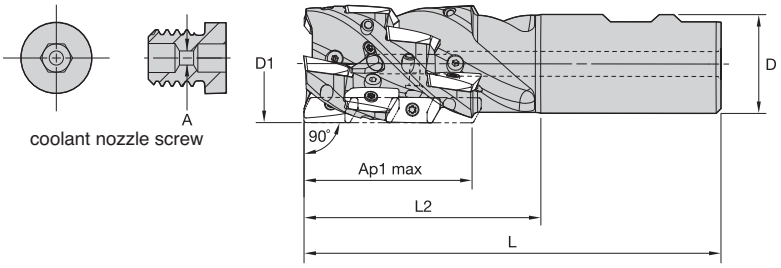
- Improves axial depth of cut better than standard end mills due to the positioning of inserts in helical configuration.
- Up to nine different coolant nozzle diameters tailored to suit each machine tool.
- One tool that offers features common to end mills, but rarely seen on a helical cutter: Helical ramping from solid, slotting, contouring, ramping, and plunging.

Benefits

- Increases depth of cut.
- Consistent, focused coolant flow.
- Built for performance, accuracy, and versatility.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.





Helical End Mills • Weldon® Shank • Slot and Profile

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3742932	M1H32J2R50B32S90ED14C4	32	32	111	50	27,8	4	2	5.4°	0,52	31100
3743033	M1H40J3R50B32S90ED14C6	40	32	111	50	27,6	6	3	3.8°	0,59	28400
3743034	M1H40J3R65B32S90ED14C9	40	32	126	65	40,8	9	3	3.8°	0,66	28400
3743035	M1H40J3R80B32S90ED14C12	40	32	141	80	54,0	12	3	3.8°	0,72	28400
3743038	M1H50J3R80B40S90ED14C12	50	40	151	80	53,5	12	3	2.7°	1,30	24600

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
32	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
50	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

NEW!

Helical Weldon Mills • Profile Only

order number	catalogue number	D1	D	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
5085631	M1H40J4R80B32S90ED14C12	40	32	141	40,8	12	4	3.8°	0,80	28400

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
40	MS2148PKG	2,3	DT9IP	ASPM07001802	MS2191C20

Optional Coolant Nozzle Screw

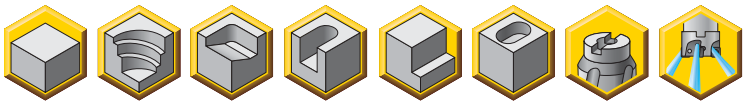
order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

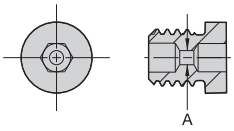
Coolant Nozzle Key

order number	catalogue number	drive size
1993552	THW2M	2 MM

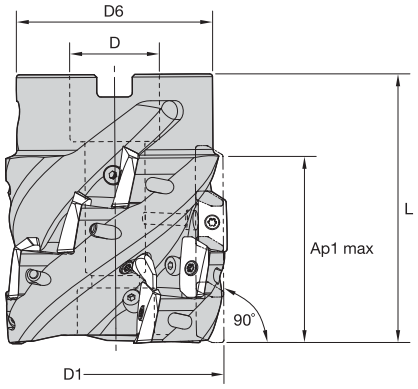
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility with coolant flow.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.





coolant nozzle screw



Helical Shell Mills • Slot and Profile

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3743036	M1H50T3R50A22S90ED14C6	50	22	46	50	27,4	6	3	2.7°	0,44	24600
3743037	M1H50T3R65A22S90ED14C9	50	22	46	65	40,4	9	3	2.7°	0,58	24600
3743039	M1H63T3R50A27S90ED14C6	63	27	60	50	27,0	6	3	2.0°	0,77	22000
3743040	M1H63T3R65A27S90ED14C9	63	27	60	65	39,9	9	3	2.0°	1,01	22000
3743042	M1H63T3R75A27S90ED14C12	63	27	60	75	52,8	12	3	2.0°	1,16	22000
3743041	M1H63T4R65A27S90ED14C12	63	27	60	65	39,9	12	4	2.0°	0,98	22000

Spare Parts

order number	Z	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3743036	6	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1235	MS2191C20
3743037	9	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1233	MS2191C16
3743039	6	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1198	MS2191C20
3743040	9	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1238	MS2191C20
3743042	12	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1433	MS2191C16
3743041	12	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1238	MS2191C16

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Helical Shell Mills • Profile Only

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3831819	M1H63T5R75A27S90ED14C20	63	27	60	75	52,8	20	5	2.0°	1,06	22000

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
63	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1433	MS2191C12

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Optional Coolant Nozzle Screw

order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

Coolant Nozzle Key

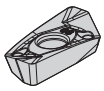
order number	catalogue number	drive size
1993552	THW2M	2 MM

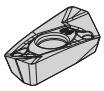
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm (.047") hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility with coolant flow.

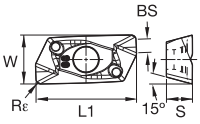
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts


EDCT-F.LDJ


EDCT-E.LDJ



beyond

● first choice
○ alternate choice

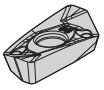
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H								

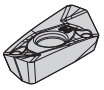
EDCT-F.LDJ

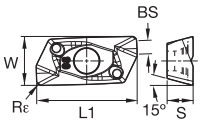
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140402PDFRLDJ	17,46	8,49	4,50	3,14	0,2	0,02	2	●							
EDCT140404PDFRLDJ	17,46	8,49	4,50	2,95	0,4	0,02	2	●							
EDCT140408PDFRLDJ	17,47	8,48	4,50	2,56	0,8	0,02	2	●							
EDCT140412PDFRLDJ	17,47	8,46	4,50	2,17	1,2	0,02	2	●							
EDCT140416PDFRLDJ	17,49	8,45	4,50	1,77	1,6	0,02	2	●							
EDCT140431PDFRLDJ	17,50	8,40	4,50	0,26	3,1	0,02	2	●							
EDCT140440PDFRLDJ	16,53	8,34	4,50	–	4,0	0,02	2	●							

EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLDJ	17,46	8,49	4,50	2,95	0,4	0,03	2		●						
EDCT140408PDERLDJ	17,47	8,48	4,50	2,56	0,8	0,03	2		●						
EDCT140412PDERLDJ	17,48	8,46	4,50	2,17	1,2	0,03	2		●						
EDCT140416PDERLDJ	17,49	8,45	4,50	1,77	1,6	0,03	2		●						
EDCT140424PDERLDJ	17,50	8,42	4,50	0,99	2,4	0,03	2		●						
EDCT140431PDERLDJ	17,50	8,40	4,50	0,26	3,1	0,03	2		●						
EDCT140440PDERLDJ	16,53	8,34	4,50	–	4,0	0,03	2		●						


EDCT-LD


EDCT-E.GD



beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H									

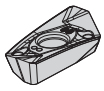
● first choice
○ alternate choice

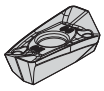
EDCT-LD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLD	17,46	8,49	4,50	2,95	0,4	0,04	2				●				
EDCT140408PDERLD	17,47	8,48	4,50	2,56	0,8	0,04	2				●				
EDCT140412PDERLD	17,48	8,46	4,50	2,17	1,2	0,04	2				●				
EDCT140416PDERLD	17,49	8,45	4,50	1,77	1,6	0,04	2				●				
EDCT140431PDERLD	17,50	8,40	4,50	0,26	3,1	0,04	2				●				

EDCT-E.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERGD	17,46	8,49	4,50	2,95	0,4	0,05	2					●		●	
EDCT140408PDERGD	17,47	8,48	4,50	2,56	0,8	0,05	2					●		●	
EDCT140412PDERGD	17,48	8,46	4,50	2,17	1,2	0,05	2					●			
EDCT140416PDERGD	17,49	8,45	4,50	1,77	1,6	0,05	2					●			
EDCT140431PDERGD	17,50	8,40	4,50	0,26	3,1	0,05	2					●		●	


EDPT-E.HD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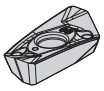
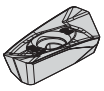

EDPT-S.GD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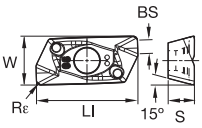


beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H									

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDERHD	17,46	8,39	4,50	2,95	0,4	0,08	2			●	●	●	●		●
EDPT140408PDERHD	17,47	8,38	4,50	2,56	0,8	0,08	2			●	●	●	●		●
EDPT140412PDERHD	17,48	8,36	4,50	2,16	1,2	0,08	2			●	●	●	●		●
EDPT140416PDERHD	17,49	8,36	4,50	1,77	1,6	0,08	2			●	●	●	●		●
EDPT140420PDERHD	17,49	8,35	4,50	1,37	2,0	0,08	2				●	●			●
EDPT140424PDERHD	17,50	8,32	4,50	0,99	2,4	0,08	2				●	●			●
EDPT140431PDERHD	17,51	8,30	4,50	0,26	3,1	0,08	2				●	●			●
EDPT140440PDERHD	16,53	8,26	4,50	–	4,0	0,08	2				●	●			●

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDSRGE	17,43	8,20	4,45	2,80	0,4	0,14	2				●	●		●	●
EDPT140408PDSRGE	17,44	8,17	4,45	2,39	0,8	0,14	2				●	●		●	●
EDPT140412PDSRGE	17,44	8,14	4,45	1,98	1,2	0,14	2				●	●			●
EDPT140416PDSRGE	17,45	8,12	4,45	1,58	1,6	0,14	2				●	●			●
EDPT140431PDSRGE	17,46	8,07	4,45	0,13	3,1	0,14	2				●	●		●	●

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD	17,47	8,37	4,50	2,55	0,8	0,11	2			●		●			●
EDPT140412PDSRGD	17,48	8,36	4,50	2,17	1,2	0,11	2			●		●			●
EDPT140416PDSRGD	17,49	8,35	4,50	1,77	1,6	0,11	2			●		●			●

EDPT-S.GD2

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1408SGD2	.688	.330	.177	.103	.031	.004	2			●		●			●

Shoulder Mills

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

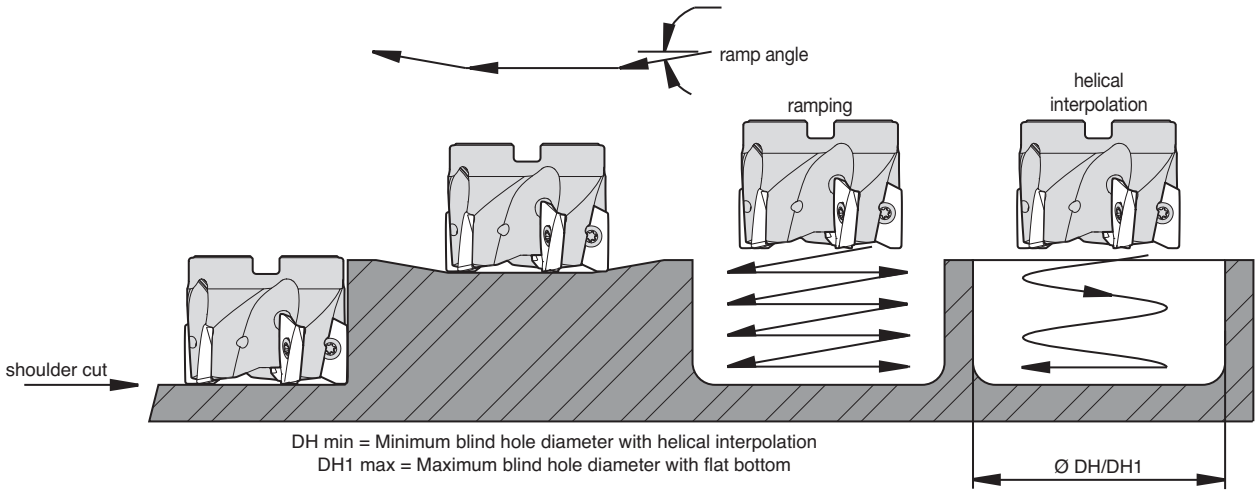
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,1**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,20**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,09	**0,20**	0,35	0,07	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LD
.E..GD	0,12	**0,27**	0,43	0,09	**0,20**	0,32	0,08	**0,18**	0,28	0,07	**0,17**	0,26	0,07	**0,16**	0,26	.E..GD
.S..GE	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GE
.S..GD	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GD
.S..GD2	0,17	**0,40**	0,58	0,13	**0,30**	0,43	0,11	**0,26**	0,38	0,10	**0,24**	0,35	0,10	**0,24**	0,35	.S..GD2
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

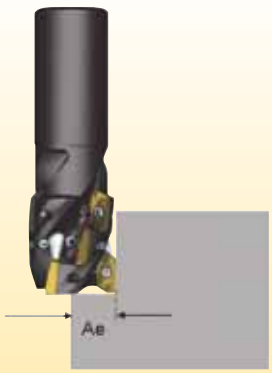
NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



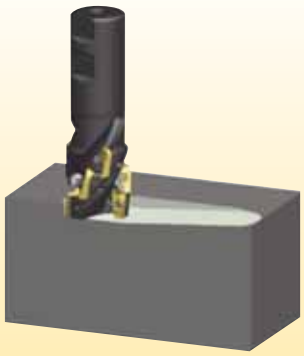
insert style	cutting diameter	max ramp angle	max hole diameter (DH min)	max flat-bottom hole diameter (DHl max)	max diameter
Mill 1-14	32	5.4°	47,80	59,79	64
Mill 1-14	40	3.8°	64,00	75,47	80
Mill 1-14	50	2.7°	83,96	96,05	100
Mill 1-14	63	1.9°	109,93	121,47	126

Best Machining Practices



Contouring/Profiling
Ae = up to 50% of cutter Ø. This can be used with or without coolant/air blast, depending on materials being machined.

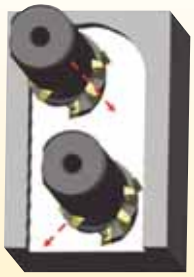
Slotting
Full width cutting or profiling over 50% of the cutter Ø. It is suggested to use coolant or air blast to evacuate chips. If necessary, reduce coolant nozzle hole size, which adds more pressure, and the chip is forced out of the chip gash.



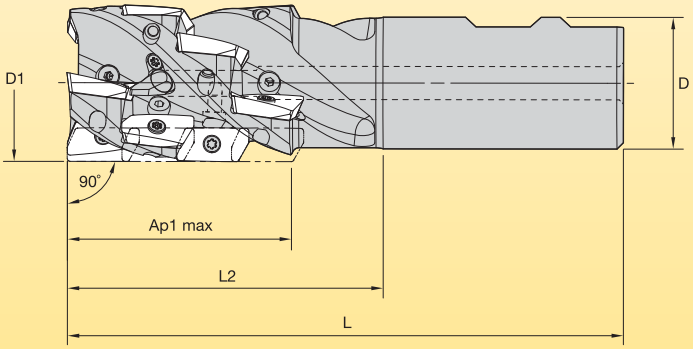
Ramping
Only machine to the depth of the first insert. Observe the ramping angles given in the catalogue.

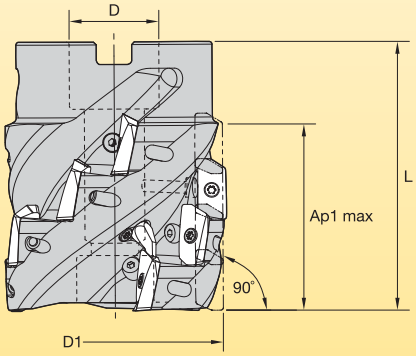
Slotting by Plunging

Slot with the alternate side method, alternating the cuts from side to side. This will enable the cutter to move away from the material prior to moving back up in the Z-axis. The cutter will not be in contact with the workpiece. Follow the direction of the arrows. Move 3 axes simultaneously into the centre of the slot. Maximum step over 8mm (.315").



With multiple Z-axis passes, when the final depth is achieved, move straight back up in the Z-axis, then repeat at the next step over.





LOIS™ Mill 1-14 Helical End Mills

	catalogue number	order number	D1	ZU [1]	Z	Mtg. [2]	D	L2	L	Ap1 max	max Ra [3]	max CR [4]	max RPM
Metric Cutters	M1H32J2R50B32S90ED14C4	3742932	32	2	4	W	32	50	111	27,8	5,4°	2,4	31100
	M1H40J3R50B32S90ED14C6	3743033	40	3	6	W	32	50	111	27,6	3,8°	2,4	28400
	M1H40J3R65B32S90ED14C9	3743034	40	3	9	W	32	65	126	40,8	3,8°	2,4	28400
	M1H40J4R80B32S90ED14C12	5085631	40	4	12	W	32	80	141	40,8	3,8°	2,5	28400
	M1H40J3R80B32S90ED14C12	3743035	40	3	12	W	32	80	141	54,0	3,8°	2,4	28400
	M1H50T3R50A22S90ED14C6	3743036	50	3	6	S	22	–	50	27,3	2,7°	2,4	24600
	M1H50T3R65A22S90ED14C9	3743037	50	3	9	S	22	–	65	40,4	2,7°	2,4	24600
	M1H50J3R80B40S90ED14C12	3743038	63	3	12	W	40	80	151	53,5	1,9°	2,4	24600
	M1H63T3R50A27S90ED14C6	3743039	63	3	6	S	27	–	50	27,0	1,9°	1,6	22000
	M1H63T3R65A27S90ED14C9	3743040	63	3	9	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T4R65A27S90ED14C12	3743041	63	4	12	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T3R75A27S90ED14C12	3743042	63	3	12	S	27	–	75	52,8	1,9°	1,6	22000
[5]	M1H63T5R75A27S90ED14C20	3831819	63	5	20	S	27	–	75	52,8	1,9°	1,6	22000
Inch Cutters	M1HR125E14W125Z2L200C4	3732889	1.25	2	4	W	1.25	2.00	4.28	1.09	5.4°	0.094	31100
	M1HR150E14W125Z3L200C6	3732890	1.50	3	6	W	1.25	2.00	4.28	1.09	4.0°	0.094	28400
	M1HR150E14W125Z3L250C9	3732891	1.50	3	9	W	1.25	2.50	4.78	1.61	4.0°	0.094	28400
	M1HR150E14W125Z3L300C12	3732892	1.50	3	12	W	1.25	3.00	5.28	2.13	4.0°	0.094	28400
	M1HR200E14S075Z3L200C6	3732933	2.00	3	6	S	0.75	–	2.00	1.07	2.6°	0.094	24600
	M1HR200E14S075Z3L250C9	3732934	2.00	3	9	S	0.75	–	2.50	1.59	2.6°	0.094	24600
	M1HR200E14W150Z3L300C12	3732935	2.00	3	12	W	1.50	3.00	5.69	2.10	2.6°	0.094	24600
	M1HR250E14S100Z3L200C6	3732936	2.50	3	6	S	1.00	–	2.00	1.06	1.9°	0.094	22000
	M1HR250E14S100Z3L250C9	3732937	2.50	3	9	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z4L250C12	3732938	2.50	4	12	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z3L300C12	3732939	2.50	3	12	S	1.00	–	3.00	2.07	1.9°	0.062	22000
[5]	M1HR250E14S100Z5L300C20	3786638	2.50	5	20	S	1.00	–	3.00	2.07	1.9°	0.062	22000

[1] Number of effective flutes.
[2] Mounting style: W = Weldon®; S = Shell mill.
[3] Max ramp angle when radial depth of cut exceeds 8mm (.31").
[4] Max insert corner radius allowed in first row without cutter body modification.
[5] Recommended for profiling applications only.

Profile, Slot, and Ramp

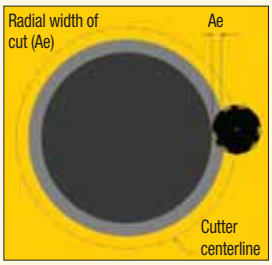
When taking a cut that equals up to 50% of the cutter diameter, you can operate without coolant, unless your material is coolant-dependent. When using more than 50% of the cutter diameter, there is a need to have coolant or an air blast through the nozzles. This will assist with chip evacuation. Please use the feed table when taking a small percentage of the cutter diameter. This will improve the volume of material removed. To achieve a superior surface finish on the base, adjust the feed to suit the finish required.

When using this cutter for plunging, the maximum suggested step over is 3,30mm (.130"). Always try to move the cutter and insert away from the material when retracting in the Z-axis. This can be done when employing the alternate cut method (zig zag method). Use a 3-axis move to get all axes moving at the same time, suggest 0,25mm (.010").

When machining a conventional slot, you have to move straight up in the Z-axis.

Circular and Helical Interpolation

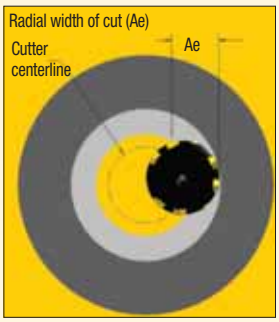
External



When profiling around the external part of a component, it is important to increase the feed rate. This will maintain the chip thickness value.
The programmed feed rate needs to be calculated at the cutter centerline.

For external profiling, adjust the feed rate for feed at the cutter centerline.
Increase the feed rate for external profiling.

Internal



When machining inside a component profile, the area of contact is larger.
The feed rate needs to be slower and at the centerline.

For internal profiling, adjust the feed rate for feed at the cutter centerline.
This will effectively reduce the feed rate as the distance traveled is less than the peripheral distance.

Cutting Data

Reference page P39 for both speed and feed data. Each insert has an average chip thickness value that will enable you to determine the feed per tooth.

Please remember when using less than 50% of the cutter diameter, the feed rate will need to be increased. Failure to do so will result in premature insert failure.

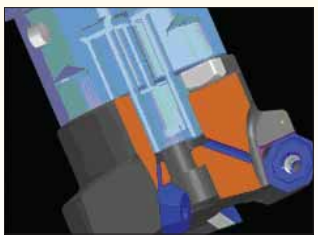
Running too slowly will reduce tool life.

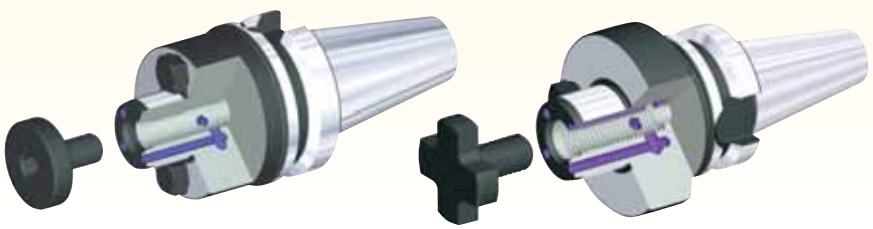
Spare Parts

Please make sure all the spare parts in the cutters are fully tightened prior to using the product.

Shell mill cutters no longer have coolant grooved bolts. We now have adaptors that will enable the coolant to be fed through the adaptor pilot diameter.

True Through Coolant Shell Mill Adaptors





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For bearing milling chucks when grip counts.
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- Pre-balanced to high specifications.
- Versatile as a collet chuck with the use of reduction sleeves.

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KENNAMETAL®

Mill 1-18™

Primary Application

Mill 1-18 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-18 cutters can be used for profiling, slotting, ramping, helical interpolation, plunging, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-18 inserts also are specially designed to add cutting versatility, especially for larger axial depths of cut. Results include significantly reduced cycle times and lower cutting forces.

Features and Benefits

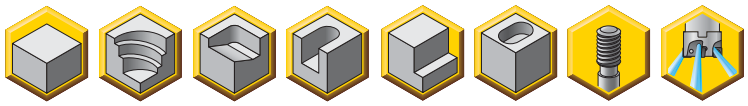
Features

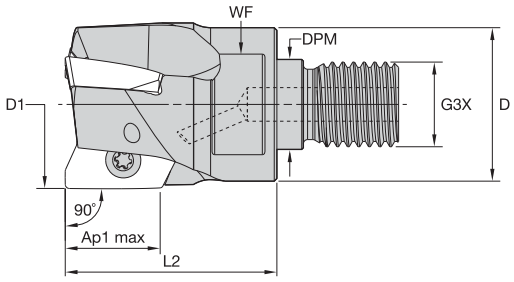
- Inserts for larger axial depth of cut.
- Inserts radii up to 6,35mm (.250").
- Axial depth of cut up to 18mm (.708").
- Cutter diameters up to 160mm (8").
- Beyond™ grade technology.

Benefits

- Slotting, profiling, ramping, helical interpolation, and plunging.
- Angled screw for insert retention.
- Insert geometries and grades for most workpiece materials.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Screw-On

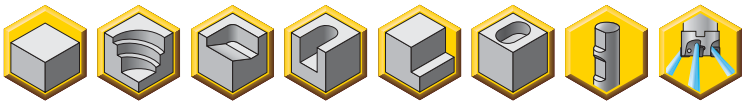
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3349690	**25A02R035M12SED18**	25	21	12,5	M12	35	17	18,0	2	17.0°	0,07	37380
3349691	**32A02R040M16SED18**	32	29	17,0	M16	40	22	18,0	2	10.5°	0,17	32140
3349692	**32A03R040M16SED18**	32	29	17,0	M16	40	22	18,0	3	10.5°	0,16	32140
3349773	**40A03R040M16SED18**	40	29	17,0	M16	40	22	17,8	3	7.5°	0,21	28220
3349774	**40A04R040M16SED18**	40	29	17,0	M16	40	22	17,8	4	7.5°	0,20	28220

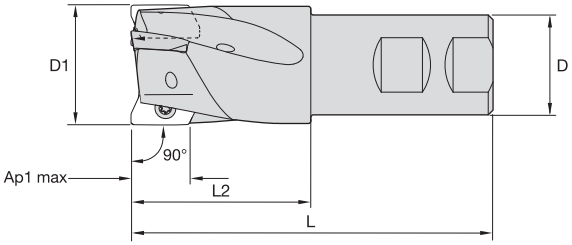
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2126**	4,0	**DT15IP**
32	**MS2126**	4,0	**DT15IP**
40	**MS2126**	4,0	**DT15IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Weldon® Shank

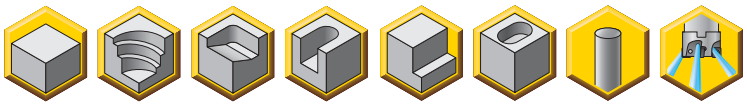
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2390446	**25A02R044B25SED18**	25	25	100	44	18,0	2	17.0°	0,29	37380
2390448	**32A03R050B32SED18**	32	32	110	50	18,0	3	10.5°	0,54	32140
2417191	**40A03R050B32SED18**	40	32	110	50	17,8	3	7.5°	0,67	28220
2390450	**40A04R050B32SED18**	40	32	110	50	17,8	4	7.5°	0,64	28220

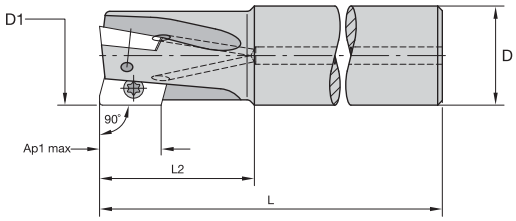
Spare Parts

D1	insert screw	Nm	Torx Plus wrench
25	**MS2126**	4,0	**TTP15**
32	**MS2126**	4,0	**TTP15**
40	**MS2126**	4,0	**TTP15**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

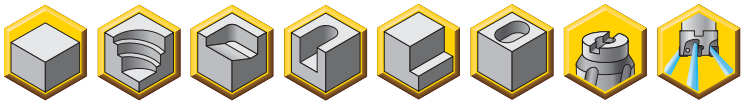
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3349685	25A02R044A25SED18	25	25	100	44	18,0	2	17.0°	0,30	37380
2963873	25A02R044A25SED18-150	25	25	150	44	17,9	2	17.0°	0,48	37380
2613785	25A02R050A25SED18-170	25	25	170	50	18,0	2	17.0°	0,55	37380
3349689	32A03R050A25SED18	32	25	107	50	18,0	3	10.5°	0,39	32140
2613788	32A02R050A32SED18-200	32	32	200	50	18,0	2	10.5°	1,11	32140
3349686	32A03R050A32SED18	32	32	110	50	18,0	3	10.5°	0,55	32140
2613786	32A03R050A32SED18-200	32	32	200	50	18,0	3	10.5°	1,09	32140
2963874	34A03R050A32SED18-250	34	32	250	50	17,9	3	9.5°	1,42	31210
3349687	40A03R050A32SED18	40	32	110	50	17,8	3	7.5°	0,68	28220
2613789	40A03R050A32SED18-200	40	32	200	50	17,8	3	7.5°	1,22	28220
2963875	40A03R050A32SED18-250	40	32	250	50	17,9	3	7.5°	1,47	28220
3349688	40A04R050A32SED18	40	32	110	50	17,8	4	7.5°	0,65	28220
2613787	40A04R050A32SED18-200	40	32	200	50	17,8	4	7.5°	1,19	28220
2963876	40A04R050A32SED18-250	40	32	250	50	17,9	4	7.5°	1,47	28220

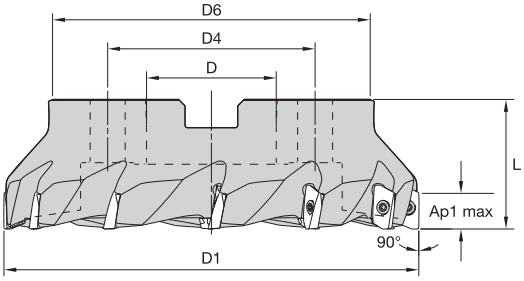
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS2126	4,0	DT15IP
32	MS2126	4,0	DT15IP
40	MS2126	4,0	DT15IP

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.

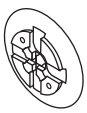




Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2417185	**50A04RS90ED18D**	50	22	–	45	40	17,7	4	5.0°	0,28	24890
2417183	**50A05RS90ED18D**	50	22	–	45	40	17,7	5	5.0°	0,28	24890
2417186	**63A05RS90ED18D**	63	22	–	50	40	17,6	5	4.0°	0,51	21910
2390483	**63A06RS90ED18D**	63	22	–	50	40	17,6	6	4.0°	0,50	21910
2417187	**80A06RS90ED18D**	80	27	–	60	50	17,5	6	3.0°	1,03	19270
2417184	**80A07RS90ED18D**	80	27	–	60	50	17,5	7	3.0°	1,07	19270
2417188	**100A07RS90ED18D**	100	32	–	80	50	17,5	7	2.0°	1,77	17120
2390485	**100A08RS90ED18D**	100	32	–	80	50	17,5	8	2.0°	1,86	17120
2417189	**125B08RS90ED18D**	125	40	–	90	63	17,5	8	1.5°	3,08	15230
2390486	**125B09RS90ED18D**	125	40	–	90	63	17,5	9	1.5°	3,24	15230
2417190	**160C10RS90ED18D**	160	40	66,7	100	63	17,5	10	1.2°	4,15	13400
2390487	**160C12RS90ED18D**	160	40	66,7	100	63	17,5	12	1.2°	4,46	13400

Spare Parts



D1	insert screw	Nm	Torx Plus wrench	mounting screw	mounting screw	coolant cap	mill cutter lock screw
50	**MS2126**	4,0	**TTP15**	**–**	**129.025**	**–**	**–**
63	**MS2126**	4,0	**TTP15**	**–**	**129.025**	**–**	**–**
80	**MS2126**	4,0	**TTP15**	**MS2038**	**–**	**470.233**	**–**
100	**MS2126**	4,0	**TTP15**	**MS1254**	**–**	**–**	**–**
125	**MS2126**	4,0	**TTP15**	**–**	**–**	**470.232**	**420.200**
160	**MS2126**	4,0	**TTP15**	**–**	**–**	**470.233**	**420.200**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Looking for a product that's not shown in this catalogue?

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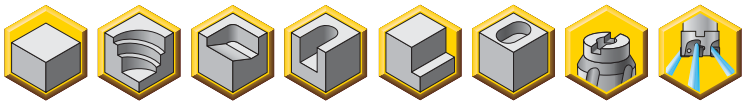
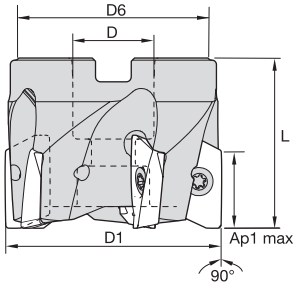
KENNAMETAL

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mill • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2963877	**80A06RS90ED18D-J**	80	25,40	1.000	54	50	18,0	6	3.0°	0,93	19270
2963882	**80A07RS90ED18D-J**	80	25,40	1.000	54	50	18,0	7	3.0°	0,91	19270
2963878	**100B07RS90ED18D-J**	100	31,75	1.250	64	50	18,0	7	2.0°	1,24	17120
2963904	**100B08RS90ED18D-J**	100	31,75	1.250	64	50	18,0	8	2.0°	1,22	17120
2963880	**125B08RS90ED18D-J**	125	38,10	1.500	84	63	18,0	8	1.5°	2,56	15230
2963906	**125B09RS90ED18D-J**	125	38,10	1.500	84	63	18,0	9	1.5°	2,57	15230
2963881	**160B10RS90ED18D-J**	160	50,80	2.000	104	63	18,0	10	1.2°	4,17	13400
2963907	**160B12RS90ED18D-J**	160	50,80	2.000	104	63	18,0	12	1.2°	4,17	13400

Spare Parts

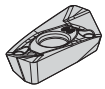
D1	insert screw	Nm	Torx Plus wrench	mounting screw
80	**MS2126**	4,0	**TTP15**	**–**
100	**MS2126**	4,0	**TTP15**	**MS1297**
125	**MS2126**	4,0	**TTP15**	**MS1297**
160	**MS2126**	4,0	**TTP15**	**MS1297**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts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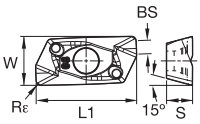


beyond

	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P				○		●		●	●
M				●	●	●		○	○
K			●	○			●	○	○
N	●	●							
S				●	●	●			
H				○				○	

● first choice
○ alternate choice

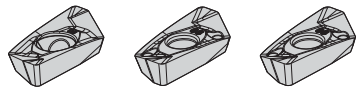
EDCT-F.LDJ

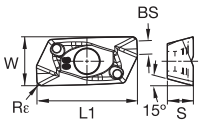
catalogue number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180504PDFRLDJ	21,75	10,98	5,50	3,07	0,4	0,02	2	●								
EDCT180508PDFRLDJ	21,76	10,97	5,50	2,69	0,8	0,02	2	●								
EDCT180512PDFRLDJ	21,77	10,97	5,50	2,29	1,2	0,02	2	●								
EDCT180516PDFRLDJ	21,78	10,96	5,50	1,90	1,6	0,02	2	●								
EDCT180520PDFRLDJ	21,79	10,95	5,50	1,49	2,0	0,02	2	●								
EDCT180524PDFRLDJ	21,79	10,93	5,50	1,11	2,4	0,02	2	●								
EDCT180532PDFRLDJ	21,79	10,91	5,50	0,32	3,2	0,02	2	●								
EDCT180540PDFRLDJ	20,78	10,87	5,50	–	4,0	0,02	2	●								
EDCT180548PDFRLDJ	20,20	10,83	5,50	–	4,8	0,02	2	●								
EDCT180550PDFRLDJ	19,95	10,81	5,50	–	5,0	0,02	2	●								
EDCT180564PDFRLDJ	18,72	10,73	5,50	–	6,4	0,02	2	●								

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts


EDCT-E.LDJ EDCT-LD EDCT-E.GD



beyond

● first choice
○ alternate choice

		KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P					○		●		●	●
M					●	●	●		○	○
K				●	○			●	○	○
N		●	●							
S					●	●	●			
H					○				○	

EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180508PDERLDJ	21,76	10,97	5,50	2,69	0,8	0,03	2		●							
EDCT180512PDERLDJ	21,77	10,97	5,50	2,29	1,2	0,03	2		●							
EDCT180516PDERLDJ	21,78	10,96	5,50	1,90	1,6	0,03	2		●							
EDCT180524PDERLDJ	21,79	10,93	5,50	1,11	2,4	0,03	2		●							
EDCT180532PDERLDJ	21,79	10,91	5,50	0,32	3,2	0,03	2		●							
EDCT180540PDERLDJ	20,78	10,87	5,50	–	4,0	0,03	2		●							
EDCT180548PDERLDJ	20,20	10,83	5,50	–	4,8	0,03	2		●							
EDCT180564PDERLDJ	18,72	10,73	5,50	–	6,4	0,03	2		●							

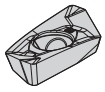
EDCT-LD

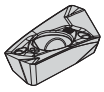
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180508PDERLD	21,76	10,97	5,50	2,69	0,8	0,05	2				●					
EDCT180516PDERLD	21,78	10,96	5,50	1,90	1,6	0,05	2				●					
EDCT180532PDERLD	21,79	10,91	5,50	0,32	3,2	0,05	2				●					
EDCT180540PDERLD	20,78	10,87	5,50	–	4,0	0,05	2				●					
EDCT180548PDERLD	20,20	10,83	5,50	–	4,8	0,05	2				●					
EDCT180564PDERLD	18,72	10,73	5,50	–	6,4	0,05	2				●					

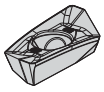
EDCT-E.GD

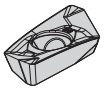
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180504PDERGD	21,75	10,98	5,50	3,07	0,4	0,09	2						●			
EDCT180508PDERGD	21,76	10,97	5,50	2,69	0,8	0,09	2						●		●	
EDCT180512PDERGD	21,77	10,97	5,50	2,29	1,2	0,09	2						●			

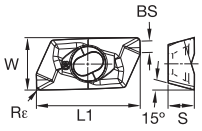
Shoulder Mills


EDPT-E.GD


EDPT-E.HD


EDPT-S.GE


EDPT-S.GD



beyond

P					○		●		●	●
M					●	●	●		○	○
K				●	○			●	○	○
N	●	●								
S					●	●	●			
H					○				○	

● first choice
○ alternate choice

EDPT-E.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDERGD	21,76	10,97	5,50	2,69	0,8	0,09	2			●		●	●			●
EDPT180512PDERGD	21,77	11,00	5,50	2,29	1,2	0,09	2						●			
EDPT180516PDERGD	21,78	10,94	5,50	1,90	1,6	0,09	2			●	●	●	●			●
EDPT180524PDERGD	21,79	10,93	5,50	1,11	2,4	0,09	2						●			
EDPT180532PDERGD	21,79	10,91	5,50	0,32	3,2	0,09	2			●	●	●	●			●
EDPT180548PDERGD	20,20	10,83	5,50	–	4,8	0,09	2				●	●	●			
EDPT180564PDERGD	18,79	10,73	5,50	–	6,4	0,09	2				●	●	●			●

EDPT-E.HD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDERHD	21,77	10,89	5,50	2,69	0,8	0,08	2						●			●
EDPT180512PDERHD	21,77	10,88	5,50	2,29	1,2	0,08	2						●			●
EDPT180516PDERHD	21,78	10,87	5,50	1,90	1,6	0,08	2						●			●
EDPT180532PDERHD	21,79	10,83	5,50	0,31	3,2	0,08	2						●			●
EDPT180540PDERHD	20,92	10,77	5,50	–	4,0	0,08	2						●			●
EDPT180548PDERHD	20,16	10,75	5,50	–	4,8	0,08	2						●			●
EDPT180564PDERHD	18,79	10,66	5,50	–	6,4	0,08	2						●			●

EDPT-S.GE

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDSRGE	21,73	10,70	5,45	2,42	0,8	0,14	2				●		●		●	●
EDPT180512PDSRGE	21,77	10,68	5,45	2,00	1,2	0,14	2				●		●		●	●
EDPT180516PDSRGE	21,74	10,66	5,45	1,59	1,6	0,14	2				●		●		●	●
EDPT180532PDSRGE	21,75	10,62	5,45	0,07	3,2	0,14	2				●		●		●	●

EDPT-S.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDSRGD	21,76	10,90	5,50	2,69	0,8	0,15	2						●	●		●
EDPT180512PDSRGD	21,77	10,89	5,50	2,29	1,2	0,15	2						●	●		●
EDPT180516PDSRGD	21,78	10,88	5,50	1,90	1,6	0,15	2						●	●		●
EDPT180532PDSRGD	21,79	10,83	5,50	0,32	3,2	0,15	2						●			●
EDPT180548PDSRGD	20,20	10,75	5,49	–	4,8	0,13	2						●			
EDPT180564PDSRGD	18,77	10,64	5,50	–	6,4	0,13	2						●			

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M			KC525M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270	220	**200**	180
	2	–	–	–	–	–	–	–	–	–	275	**240**	200	180	**160**	150
	3	–	–	–	–	–	–	–	–	–	255	**215**	175	160	**150**	140
	4	–	–	–	–	–	–	–	–	–	225	**185**	150	140	**130**	120
	5	–	–	–	–	–	–	–	–	–	185	**170**	150	150	**140**	130
	6	–	–	–	–	–	–	–	–	–	165	**125**	100	130	**120**	110
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165	150	**140**	130
	2	–	–	–	–	–	–	–	–	–	185	**160**	130	130	**120**	110
	3	–	–	–	–	–	–	–	–	–	140	**120**	95	90	**80**	70
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25	60	**55**	50
	2	–	–	–	–	–	–	–	–	–	40	**35**	25	60	**55**	50
	3	–	–	–	–	–	–	–	–	–	50	**40**	25	50	**45**	40
	4	–	–	–	–	–	–	–	–	–	70	**50**	35	60	**50**	40
H	1	–	–	–	–	–	–	–	–	–	120	**90**	70	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–		–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

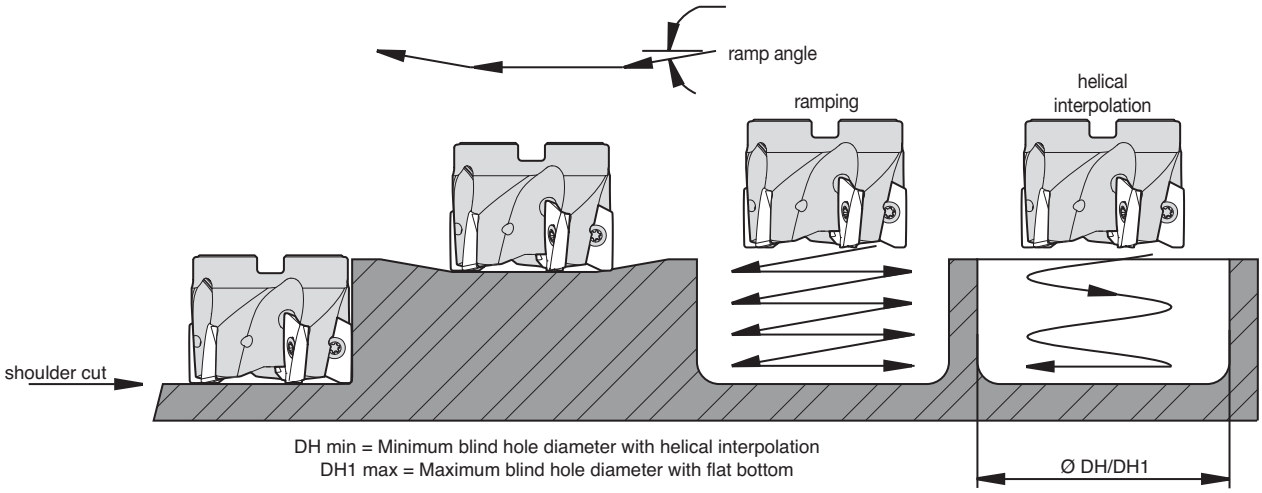
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,2**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,12	**0,27**	0,47	0,09	**0,20**	0,35	0,08	**0,18**	0,31	0,07	**0,17**	0,29	0,07	**0,16**	0,28	.E..LD
.E..GD	0,17	**0,3**	0,52	0,13	**0,22**	0,39	0,11	**0,19**	0,34	0,10	**0,18**	0,32	0,10	**0,18**	0,31	.E..GD
.S..GE	0,17	**0,34**	0,57	0,13	**0,26**	0,43	0,11	**0,22**	0,37	0,10	**0,21**	0,35	0,10	**0,21**	0,34	.S..GE
.S..GD	0,17	**0,38**	0,64	0,13	**0,29**	0,48	0,11	**0,25**	0,41	0,10	**0,23**	0,39	0,10	**0,23**	0,38	.S..GD
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Mill-1, 18mm	25	17°	29,24	45,84	50
Mill-1, 18mm	32	11°	42,98	59,84	64
Mill-1, 18mm	40	8°	58,92	75,84	80
Mill-1, 18mm	50	5°	78,88	95,84	100
Mill-1, 18mm	63	4°	104,86	121,84	126
Mill-1, 18mm	80	3°	139,02	156,5	160
Mill-1, 18mm	100	2°	179,00	196,5	200
Mill-1, 18mm	125	2°	228,98	246,5	250
Mill-1, 18mm	160	1°	298,98	316,5	320

NOTE: Max ramp angle decreases as nose radius increases.

Mill 1-25™

Primary Application

Also known as Mill1 Max, the Mill 1-25 cutter is made specifically for aluminium machining but is also useful when machining cast iron. High-Feed capabilities enable routing applications with an axial depth of cut of up to 25mm (.98").

Features and Benefits

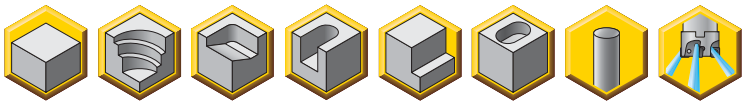
Functions

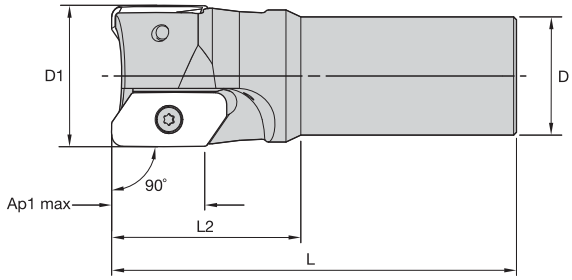
- Strong, thick inserts over 5,2mm (.200") thick.
- Axial depth of cut up to 25mm (.98").
- Cylindrical, monoblock/HSK63A, and shell mills.

Benefits

- Made for machining aluminium, but also useful for machining cast iron.
- High-Feed capability for routing applications.
- Balanced-by-design — if running over 10,000 RPM, balance the cutter assembly.

- For aluminium machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.





End Mills • Cylindrical Shank

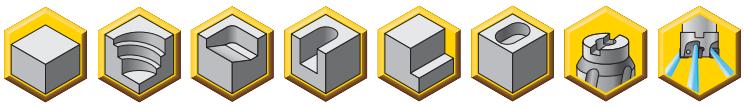
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2649569	**40A02R50A32SKE25**	40	32	111	50	25,0	2	15.0°	0,61	24300
2479504	**40A02R80A32SKE25**	40	32	141	80	25,0	2	15.0°	0,86	24300
2649571	**50A02R100A32SKE25**	50	32	161	100	24,9	2	10.0°	1,43	20600
2500741	**50A03R80A32SKE25**	50	32	141	80	24,9	3	10.0°	1,10	20600
2649572	**50A03R100A32SKE25**	50	32	161	100	24,9	3	10.0°	1,39	20600

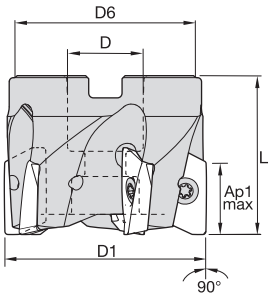
Spare Parts

D1	insert screw	Nm	Torx driver
40	**MS1374**	3,9	**DT15**
50	**MS1374**	3,9	**DT15**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- For aluminium machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.





Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2878139	**52A02RS90KE25**	52	22	49	58	24,8	2	9.5°	0,50	20000
2954527	**63A02RS90KE25**	63	22	50	55	24,7	2	7.0°	0,69	17600
2954528	**63A03RS90KE25**	63	22	50	55	24,7	3	7.0°	0,59	17600
2954529	**100B04RS90KE25**	100	32	78	60	24,7	4	3.5°	1,73	13200

Spare Parts

D1	insert screw	Nm	Torx driver	socket-head cap screw with coolant groove	coolant lock screw assembly
52	**MS1374**	3,9	**DT15**	**MS1235CG**	**–**
63	**MS1374**	3,9	**DT15**	**MS1242CG**	**–**
100	**MS1374**	3,9	**DT15**	**–**	**MS2188C**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

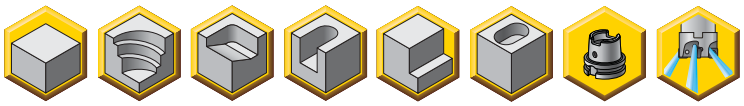
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

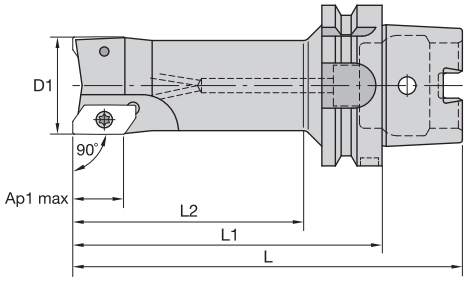
By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

- For aluminium machining.
- High-speed capability.
- All integral shank tools are balanced to G2.5 at 10.000 RPM.
- Insert screws should be changed when inserts are changed.





Monoblocks • HSK63A

order number	catalogue number	shank taper	D1	L	L1	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2880434	**40A02R110S63SKE25**	HSK63A	40	142	110	77,65	25,0	2	15.0°	1,17	24300
2880435	**40A02R140S63SKE25**	HSK63A	40	172	140	114,00	24,9	2	15.0°	1,17	24300
2880436	**50A02R110S63SKE25**	HSK63A	50	142	110	84,00	24,9	2	10.0°	1,51	20600
2880438	**50A03R110S63SKE25**	HSK63A	50	142	110	84,00	24,9	3	10.0°	1,44	20600
2880437	**50A02R140S63SKE25**	HSK63A	50	172	140	114,00	25,0	2	10.0°	1,91	20600
2880439	**50A03R140S63SKE25**	HSK63A	50	172	140	114,00	24,9	3	10.0°	1,81	20600

Spare Parts

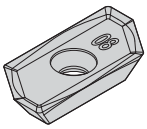
D1	insert screw	Nm	Torx driver	balancing screw
40	**MS1374**	3,9	**DT15**	**KUAM27**
50	**MS1374**	3,9	**DT15**	**KUAM27**

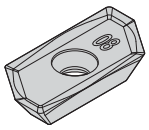
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

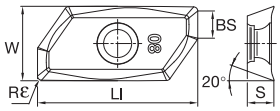
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	.F..LNJ	K313	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
N3	.E..LDJ	KC410M	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • KE...25L5


KEGT-LDJ


KEGT-LDJ2



● first choice
○ alternate choice

P
M
K
N ●
S
H

KEGT-LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KEGT25L508PEERLDJ	31,47	14,60	5,21	5,34	0,8	0,03	2	●
KEGT25L512PEERLDJ	31,47	14,60	5,21	4,94	1,2	0,03	2	●
KEGT25L516PEERLDJ	31,47	14,60	5,21	4,55	1,6	0,03	2	●
KEGT25L520PEERLDJ	31,47	14,60	5,21	4,15	2,0	0,03	2	●
KEGT25L524PEERLDJ	31,47	14,60	5,21	3,78	2,4	0,03	2	●
KEGT25L531PEERLDJ	31,47	14,60	5,21	3,06	3,1	0,03	2	●
KEGT25L540PEERLDJ	31,47	14,60	5,21	2,16	4,0	0,03	2	●
KEGT25L547PEERLDJ	31,47	14,60	5,21	1,40	4,8	0,03	2	●
KEGT25L550PEERLDJ	31,47	14,60	5,21	1,14	5,0	0,03	2	●
KEGT25L560PEERLDJ	31,47	14,60	5,21	0,13	6,0	0,03	2	●
KEGT25L564PEERLDJ	29,99	14,60	5,21	–	6,4	0,03	2	●

KEGT-LDJ2

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KEGT25L508PEERLDJ2	31,39	14,59	5,21	7,30	0,8	–	2	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			K313		
P	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
	5	–	–	–	–	–	–
	6	–	–	–	–	–	–
M	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
K	1	–	–	–	190	**170**	150
	2	–	–	–	–	–	–
	3	–		–	–	–	–
N	1–2	1215	**1080**	995	795	**695**	600
	3	1080	**995**	915	–	–	–
S	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
H	1	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LNJ	0,08	**0,33**	0,67	0,06	**0,25**	0,50	0,06	**0,22**	0,44	0,05	**0,20**	0,41	0,05	**0,20**	0,40	.F..LNJ
.E..LDJ	0,08	**0,43**	0,77	0,06	**0,32**	0,57	0,06	**0,28**	0,50	0,05	**0,26**	0,47	0,05	**0,25**	0,46	.E..LDJ

NOTE: Use “Light Machining” values as starting feed rate.

More than just the right tool • the ultimate solution for titanium machining

That's **Beyond BLAST.**™

That's **Different Thinking.**

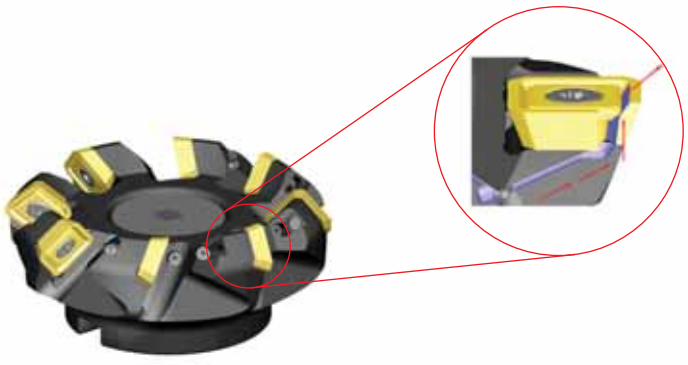
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

KSSM™ • Platform

Primary Application

The Kennametal KSSM platform is a versatile solution providing three insert sizes that cover a wide range of applications: face milling, shoulder milling, slotting, profiling, and Z-axis (plunge milling).

Features and Benefits

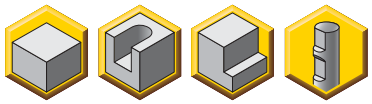
KSSM IC10

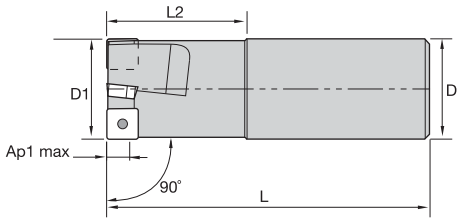
- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.

KSSM IC12

- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.
- Increased depth of cut.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





End Mills • Weldon® Shank

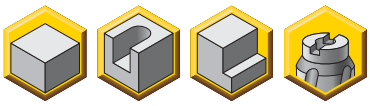
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
1981679	**25A02R039B25SSP10G**	25	25	96	39	6,6	2	0,3	37100
1981788	**32A03R039B32SSP10G**	32	32	100	39	6,6	3	0,5	33200
1981790	**40A04R049B32SSP10G**	40	32	110	49	6,6	4	0,7	30300

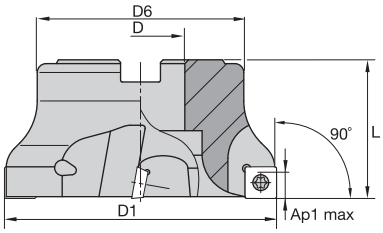
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2148**	1,5	**DT9IP**
32	**MS2148**	1,5	**DT9IP**
40	**MS2148**	1,5	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





End Mills • Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
1981677	**50A05RS90SP10DG**	50	22	47	40	6,6	5	0,4	26300
1981678	**63A06RS90SP10DG**	63	22	50	40	6,6	6	0,5	23500
1981853	**80A08RS90SP10DG**	80	27	60	50	6,6	8	1,1	21450
1981854	**100B10RS90SP10DG**	100	32	80	50	6,6	10	1,7	18600

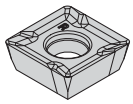
Spare Parts

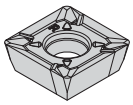
D1	insert screw	Nm	Torx Plus driver	mounting screw
50	**MS2148**	1,5	**DT9IP**	**MS1234**
63	**MS2148**	1,5	**DT9IP**	**MS1234**
80	**MS2148**	1,5	**DT9IP**	**MS1556**
100	**MS2148**	1,5	**DT9IP**	**–**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


SPCT-LE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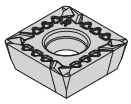
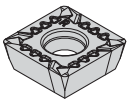
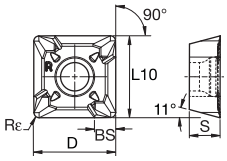

SPET-GB2


SPPT-GB2



● first choice
○ alternate choice

beyond

P			●		●	●
M			●		○	○
K		●		●	○	○
N	●					
S			●			
H						

SPCT-LE

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPFRLE	10,00	3,97	10,00	2,70	0,4	0,02	4	●					
SPCT10T3PPFRLE	10,00	3,97	10,00	2,70	0,8	0,02	4	●					
SPCT10T312PPFRLE	10,00	3,97	10,00	2,70	1,2	0,02	4	●					
SPCT10T316FNLE	10,00	3,97	10,00	–	1,6	0,02	4	●					
SPCT10T320FNLE	10,00	3,97	10,00	–	2,0	0,02	4	●					

SPCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPERLD2	10,00	3,97	10,00	2,70	0,4	0,04	4			●		●	
SPCT10T308PPERLD2	10,00	3,97	10,00	2,70	0,8	0,04	4		●	●		●	
SPCT10T312PPERLD2	10,00	3,97	10,00	2,70	1,2	0,04	4			●			
SPCT10T316ENLD2	10,00	3,97	10,00	–	1,6	0,04	4			●			
SPCT10T320ENLD2	10,00	3,97	10,00	–	2,0	0,04	4			●			

SPET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPET10T304PPERGB2	10,00	3,97	10,00	2,70	0,4	0,08	4			●	●		●
SPET10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4		●	●	●		●
SPET10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4		●	●	●		●

SPPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPPT10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4				●	●	●
SPPT10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4				●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	–	–	–	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	–	–	–	–	–	–	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	–	–	–	–	–	–	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	–	–	–	–	–	–	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	–	–	–	–	–	–	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	–	–	–	–	–	–	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	–	–	–	–	–	–	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	–	–	–	–	–	–	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	–	–	–	–	–	–	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	270	**245**	215	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	210	**190**	175	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	175	**160**	145	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,25**	0,49	0,07	**0,19**	0,37	0,06	**0,17**	0,32	0,05	**0,16**	0,30	0,05	**0,15**	0,29	.E..LD2
.E..GB2	0,17	**0,36**	0,61	0,13	**0,27**	0,46	0,11	**0,23**	0,40	0,10	**0,22**	0,37	0,10	**0,21**	0,36	.E..GB2
.S..GB2	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GB2

NOTE: Use “Light Machining” values as starting feed rate.

Beyond BLAST™ · KSSM™ 45°

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- Coolant delivery exactly to the cutting area.
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- Improved chip control.
- True internal coolant assists chip evacuation.
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- Four cutting edges per insert.
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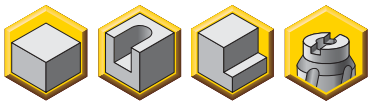
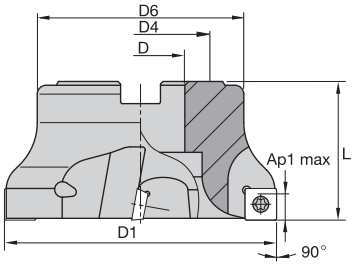
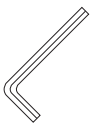




End Mills • Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	kg	max RPM
1926939	**50A03RS90SD12DG**	50	22	–	45	40	9,2	3	0,30	20600
1926938	**50A04RS90SD12DG**	50	22	–	46	40	9,2	4	0,30	20600
1926936	**63A04RS90SD12DG**	63	22	–	50	40	9,2	4	0,50	18300
1926933	**63A05RS90SD12DG**	63	22	–	50	40	9,2	5	0,50	18300
1926901	**80A05RS90SD12DG**	80	27	–	60	50	9,2	5	1,00	16300
1926898	**80A06RS90SD12DG**	80	27	–	60	50	9,2	6	1,00	16300
1926841	**100B06RS90SD12DG**	100	32	–	80	50	9,2	6	1,60	14600
1926840	**100B08RS90SD12DG**	100	32	–	80	50	9,2	8	1,70	14600
1926839	**125B07RS90SD12DG**	125	40	–	90	63	9,2	7	2,80	13000
1926837	**125B10RS90SD12DG**	125	40	–	90	63	9,2	10	2,90	13000
1926836	**160C08RS90SD12DG**	160	40	66,7	100	63	9,2	8	4,30	11500
1926983	**160C12RS90SD12DG**	160	40	66,7	100	63	9,2	12	4,40	11500
1926942	**200C11RS90SD12DG**	200	60	101,6	130	63	9,2	11	6,80	10300
1926941	**200C14RS90SD12DG**	200	60	101,6	130	63	9,2	14	6,83	10300

Spare Parts

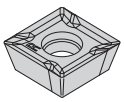


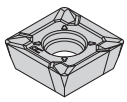
D1	insert screw	Nm	Torx Plus driver	shim	shim screw	hex driver	mounting screw
50	**MS2078**	4,0	**DT15IP**	–	–	–	**MS1234**
63	**MS2078**	4,0	**DT15IP**	–	–	–	**129.025**
80	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	**MS2038**
100	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
125	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
160	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
200	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–

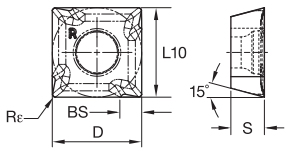
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


SDCT-LE


SDCT-LD2



● first choice
○ alternate choice

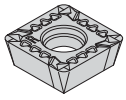
P			○	●		●	●	
M			●	●		○	○	
K		●	○		●	○	○	●
N	●							
S			●	●				
H								

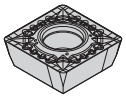
SDCT-LE

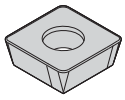
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDFRLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●							
SDCT1204PDFRLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●							
SDCT120412PDFRLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●							
SDCT120416FNLE	12,70	4,76	12,70	–	1,6	0,02	4	●							
SDCT120420FNLE	12,70	4,76	12,70	–	2,0	0,02	4	●							
SDCT120424FNLE	12,70	4,76	12,70	–	2,4	0,02	4	●							
SDCT120432FNLE	12,70	4,76	12,70	–	3,2	0,02	4	●							

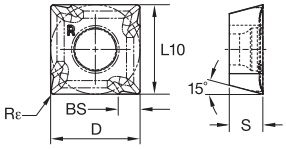
SDCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDERLD2	12,70	4,76	12,70	2,93	0,4	0,04	4				●		●		
SDCT1204PDERLD2	12,70	4,76	12,70	3,32	0,8	0,04	4		●		●		●		
SDCT120412PDERLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●				
SDCT120416ENLD2	12,70	4,76	12,70	–	1,6	0,04	4				●				
SDCT120420ENLD2	12,70	4,76	12,70	–	2,0	0,04	4				●				
SDCT120424ENLD2	12,70	4,76	12,70	–	2,4	0,04	4				●				
SDCT120432ENLD2	12,70	4,76	12,70	–	3,2	0,04	4			●	●				
SDCT120464ENLD2	12,70	4,76	12,70	–	6,3	0,04	2				●				


SDET-GB2


SDET-GB
SDPT-GB2


SDCW-GN



● first choice
○ alternate choice

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				○	●		●	●	
M				●	●		○	○	
K			●	○		●	○	○	●
N		●							
S				●	●				
H									

SDET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●		●	
SDET1204PDSRGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●		●	
SDET120412PDERGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●		●	
SDET120416SNGB2	12,70	4,76	12,70	–	1,6	0,13	4		●		●	●		●	
SDET120420SNGB2	12,70	4,76	12,70	–	2,0	0,13	4		●		●	●		●	
SDET120424SNGB2	12,70	4,76	12,70	–	2,4	0,13	4		●		●	●		●	
SDET120432XENGB2	12,70	4,76	12,70	–	3,2	0,08	2				●				
SDET120432SNGB2	12,70	4,76	12,70	–	3,2	0,13	4		●		●	●		●	
SDET120464SNGB2	12,70	4,76	12,70	–	6,4	0,13	2					●		●	

SDET-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB	12,70	4,76	12,70	3,36	0,8	0,07	4		●						
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	0,15	4				●			●	
SDET120412PDERGB	12,70	4,76	12,70	3,36	1,2	0,07	4				●				
SDET120464SNGB	12,70	4,76	12,70	–	6,4	0,15	2				●				

SDPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT1204PDERGB2	12,70	4,76	12,70	2,70	0,8	0,08	4				●	●	●	●	
SDPT1204PDSRGB2	12,70	4,76	12,70	2,70	0,8	0,13	4				●	●	●	●	

SDCW-GN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW1204PDSRGN	12,70	4,76	12,70	3,32	0,8	0,16	4								●
SDCW43EDSR8GN	12,70	4,76	12,70	3,36	0,8	0,16	4								●
SDCW120412PDSRGN	12,70	4,76	12,70	3,05	1,2	0,16	4								●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–
	3	1080	**995**	915	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	2	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	3	–	–	–	–	–	–	50	**40**	25	45	**35**	25
	4	–	–	–	–	–	–	70	**50**	35	60	**45**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30			KY3500		
P	1	–	–	–	550	**485**	450	455	**395**	370	–	–	–
	2	–	–	–	340	**310**	275	280	**255**	230	–	–	–
	3	–	–	–	310	**275**	255	255	**230**	205	–	–	–
	4	–	–	–	230	**215**	190	190	**175**	160	–	–	–
	5	–	–	–	275	**250**	230	260	**230**	210	–	–	–
	6	–	–	–	190	**170**	145	160	**135**	–	–	–	–
M	1	–	–	–	225	**200**	175	205	**185**	155	–	–	–
	2	–	–	–	205	**175**	160	185	**160**	140	–	–	–
	3	–	–	–	160	**145**	125	145	**130**	115	–	–	–
K	1	420	**385**	340	360	**325**	295	295	**265**	240	805	**730**	650
	2	335	**295**	275	285	**255**	235	235	**210**	190	635	**570**	530
	3	280	**250**	230	240	**215**	200	195	**175**	160	535	**475**	435
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD2
.E..GB	0,17	**0,35**	0,59	0,12	**0,26**	0,44	0,11	**0,23**	0,38	0,10	**0,21**	0,36	0,10	**0,21**	0,35	.E..GB
.E..GB2	0,17	**0,36**	0,60	0,13	**0,27**	0,45	0,11	**0,23**	0,39	0,10	**0,22**	0,36	0,10	**0,21**	0,36	.E..GB2
.S..GB	0,17	**0,37**	0,61	0,13	**0,27**	0,46	0,11	**0,24**	0,40	0,10	**0,22**	0,37	0,10	**0,22**	0,37	.S..GB
.S..GB2	0,17	**0,37**	0,62	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	0,10	**0,22**	0,37	.S..GB2
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

KSSM-KSSP Helical

Primary Application

The KSSM-KSSP helical cutters were originally developed and proven for the aerospace industry but are now available for all industries. The proprietary variable rake design minimises vibration and chatter.

Features and Benefits

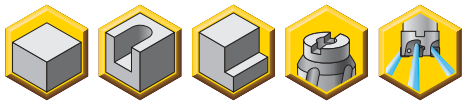
Features

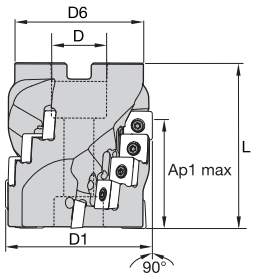
- Patented HARVI™ technology.
- Progressive helical rakes.
- Unique coolant supply.

Benefits

- Increased tool life in titanium.
- Increased metal removal rates.
- Lower power consumption.
- Ensures chip evacuation, even on exotic materials.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





Shell Mills • Standard Pitch

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	kg	max RPM
2400693	**50A3RS90SD12L32**	50	22	44	55	32,4	9	3	0,46	16400
2400694	**63A3RS90SD12L50**	63	27	55	70	51,2	15	3	1,00	14600
2400695	**80A4RS90SD12L61**	80	32	70	80	61,6	24	4	2,13	12950

Spare Parts

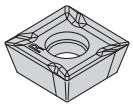
D1	insert screw	Nm	socket-head cap screw	Torx wrench
50	**MS1273**	4,0	**MS1235**	**TT15**
63	**MS1273**	4,0	**MS1238**	**TT15**
80	**MS1273**	4,0	**MS1241**	**TT15**

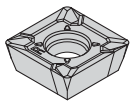
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts • SD.T1204


SDCT-LE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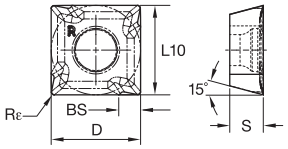
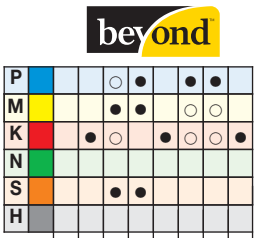


● first choice
○ alternate choice



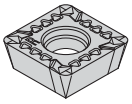
Shoulder Mills

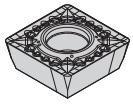
SDCT-LE

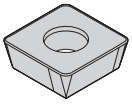
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDFRLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●							
SDCT1204PDFRLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●							
SDCT120412PDFRLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●							
SDCT120416FNLE	12,70	4,76	12,70	–	1,6	0,02	4	●							
SDCT120420FNLE	12,70	4,76	12,70	–	2,0	0,02	4	●							
SDCT120424FNLE	12,70	4,76	12,70	–	2,4	0,02	4	●							
SDCT120432FNLE	12,70	4,76	12,70	–	3,2	0,02	4	●							

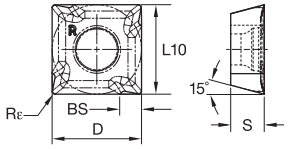
SDCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDERLD2	12,70	4,76	12,70	2,93	0,4	0,04	4				●		●		
SDCT1204PDERLD2	12,70	4,76	12,70	3,32	0,8	0,04	4		●		●		●		
SDCT120412PDERLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●				
SDCT120416ENLD2	12,70	4,76	12,70	–	1,6	0,04	4				●				
SDCT120420ENLD2	12,70	4,76	12,70	–	2,0	0,04	4				●				
SDCT120424ENLD2	12,70	4,76	12,70	–	2,4	0,04	4				●				
SDCT120432ENLD2	12,70	4,76	12,70	–	3,2	0,04	4			●	●				
SDCT120464ENLD2	12,70	4,76	12,70	–	6,3	0,04	2				●				


SDET-GB2
SDPT-GB2


SDET-GB


SDCW-GN



beyond

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				○	●		●	●	
M				●	●		○	○	
K			●	○		●	○	○	●
N		●							
S				●	●				
H									

● first choice
○ alternate choice

SDET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●		●	
SDET1204PDSRGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●		●	
SDET120412PDERGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●		●	
SDET120416SNGB2	12,70	4,76	12,70	–	1,6	0,13	4		●		●	●		●	
SDET120420SNGB2	12,70	4,76	12,70	–	2,0	0,13	4		●		●	●		●	
SDET120424SNGB2	12,70	4,76	12,70	–	2,4	0,13	4		●		●	●		●	
SDET120432XENGB2	12,70	4,76	12,70	–	3,2	0,08	2				●				
SDET120432SNGB2	12,70	4,76	12,70	–	3,2	0,13	4		●		●	●		●	
SDET120464SNGB2	12,70	4,76	12,70	–	6,4	0,13	2					●		●	

SDET-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB	12,70	4,76	12,70	3,36	0,8	0,07	4		●						
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	0,15	4				●			●	
SDET120412PDERGB	12,70	4,76	12,70	3,36	1,2	0,07	4				●				
SDET120464SNGB	12,70	4,76	12,70	–	6,4	0,15	2				●				

SDPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT1204PDERGB2	12,70	4,76	12,70	2,70	0,8	0,08	4				●	●	●	●	
SDPT1204PDSRGB2	12,70	4,76	12,70	2,70	0,8	0,13	4				●	●	●	●	

SDCW-GN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW1204PDSRGN	12,70	4,76	12,70	3,32	0,8	0,16	4								●
SDCW43EDSR8GN	12,70	4,76	12,70	3,36	0,8	0,16	4								●
SDCW120412PDSRGN	12,70	4,76	12,70	3,05	1,2	0,16	4								●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	35	30	25
	2	–	–	–	–	–	–	40	**35**	25	35	30	25
	3	–	–	–	–	–	–	50	**40**	25	45	35	25
	4	–	–	–	–	–	–	70	**50**	35	60	45	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	550	**485**	450	455	**395**	370
	2	–	–	–	340	**310**	275	280	**255**	230
	3	–	–	–	310	**275**	255	255	**230**	205
	4	–	–	–	230	**215**	190	190	**175**	160
	5	–	–	–	275	**250**	230	260	**230**	210
	6	–	–	–	190	**170**	145	160	**135**	
M	1	–	–	–	225	**200**	175	205	**185**	155
	2	–	–	–	205	**175**	160	185	**160**	140
	3	–	–	–	160	**145**	125	145	**130**	115
K	1	420	**385**	340	360	**325**	295	295	**265**	240
	2	335	**295**	275	285	**255**	235	235	**210**	190
	3	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,2	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD2
.E..GB	0,17	**0,35**	0,59	0,12	**0,26**	0,44	0,11	**0,23**	0,38	0,10	**0,21**	0,36	0,10	**0,21**	0,35	.E..GB
.E..GB2	0,17	**0,36**	0,6	0,13	**0,27**	0,45	0,11	**0,23**	0,39	0,10	**0,22**	0,36	0,10	**0,21**	0,36	.E..GB2
.S..GB	0,17	**0,37**	0,61	0,13	**0,27**	0,46	0,11	**0,24**	0,40	0,10	**0,22**	0,37	0,10	**0,22**	0,37	.S..GB
.S..GB2	0,17	**0,37**	0,62	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	0,10	**0,22**	0,37	.S..GB2
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

Screw-On Milling Cutter Adaptors

The Complete Solution to Milling

Features and Benefits

- High metal removal rates.
- High runout accuracy.
- Maximum performance capability.
- Optimising productivity with long reach and short overhang to support all types of applications.
- Cutter is kept on centre for precision and maximum performance compared to Weldon® shank system.
- Ability to extend with standard offering extensions and reducers.
- Ground face contact for rigidity and accuracy.

NOTE: Consult the Kennametal Tooling Systems catalogue for information on holders.

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KENNAMETAL®

KFSR™ Heavy-Duty Cutter

Primary Application

The KFSR heavy-duty cutter is specifically engineered for heavy-duty milling of steel and cast iron — with unparalleled chip control and large axial depth of cut. Engineered for applications requiring higher cutting speeds and feed rates with low cutting forces, it is ideally suited for the automotive, heavy automotive, rail, shipbuilding, construction vehicles, and general engineering industries.

Features and Benefits

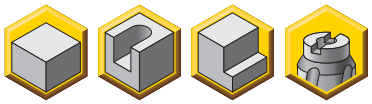
Features

- Enables heavy machining with low cutting forces and less vibration.
- Uses less horsepower with increased metal removal rates.
- Inserts with three and four serrations generate small chips for easy evacuation.
- Cutter design alternates the two insert styles to provide better overall chip control.
- Inserts stacked in helical rows.
- Replaceable shim provides pocket protection for leading insert. (NOTE: 63mm cutters do not contain a shim).

Notching

- Cutter design alternates two insert styles (G3 and G4) to provide better overall chip control.
- Insert serrations reduce cutting forces.
- Special chipbreaker generates small, controllable chips for easy evacuation.

- Lower cutting forces with serrated inserts.
- Small chips for ease of evacuation.
- Improved metal removal rates.
- IMPORTANT: Load the inserts in the correct position; see additional details below.



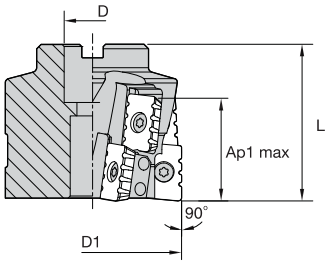


Fig. 1

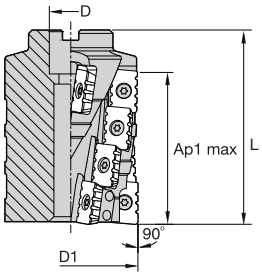


Fig. 2

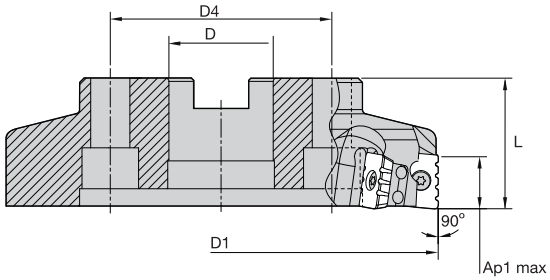


Fig. 3

Shell Mill

order number	catalogue number	D1	D	D4	L	Ap1 max	Z	Z U	figure	kg	max RPM
3588051	**KFSR063R1AP25M**	63	27	–	65	23,5	4	4	FIG 3	0,76	12100
3588253	**KFSR063R2AP25M**	63	27	–	85	45,0	8	4	FIG 1	0,84	12100
3588257	**KFSR080R1AP25M**	80	27	–	50	23,5	4	4	FIG 3	1,12	10000
3588259	**KFSR080R2AP25M**	80	27	–	70	45,0	8	4	FIG 1	1,67	10000
3588261	**KFSR080R4AP25M**	80	27	–	115	90,0	16	4	FIG 2	2,67	10000
3588265	**KFSR100R1AP25M**	100	32	–	50	23,5	6	6	FIG 3	1,67	9100
3588267	**KFSR100R2AP25M**	100	32	–	70	45,0	12	6	FIG 1	2,06	9100
3588269	**KFSR100R4AP25M**	100	32	–	115	90,0	24	6	FIG 2	3,19	9100
3588273	**KFSR125R1AP25M**	125	40	–	60	23,5	6	6	FIG 3	3,40	8000
3588275	**KFSR125R2AP25M**	125	40	–	70	45,0	12	6	FIG 1	3,80	8000
3588277	**KFSR125R4AP25M**	125	40	–	115	90,0	24	6	FIG 2	6,19	8000
3588279	**KFSR160R1AP25M**	160	40	66,7	60	23,5	8	8	FIG 3	5,85	6900
3588281	**KFSR160R2AP25M**	160	40	66,7	70	45,0	16	8	FIG 1	6,50	6900
3588284	**KFSR200R1AP25M**	200	60	101,6	60	23,5	10	10	FIG 3	7,16	6100
3588286	**KFSR200R2AP25M**	200	60	101,6	80	45,0	20	10	FIG 1	9,67	6100
3588288	**KFSR250R1AP25M**	250	60	101,6	60	23,5	12	12	FIG 3	13,71	5400
3588290	**KFSR250R2AP25M**	250	60	101,6	80	45,0	24	12	FIG 1	14,71	5400

Insert pocket detail:

- 63mm cutters do not contain a shim (see Spare Parts table).
- If insert pocket is marked with number “3”, use insert AP ER-G3.
- If insert pocket is marked with number “4”, use insert AP ER-G4.
- It is important to use the correct insert in position 3 or 4. Failure to do so will result in damage to the cutter body.
- Only use inserts with nose radii greater than 0,8mm in the first row.

Spare Parts

D1	insert screw	Nm	Torx wrench	shim screw	Torx driver	shim	socket-head cap screw
63	**MS2209**	53,0	**TT25**	–	–	–	**MS1198**
80	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	**MS1198**
100	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
125	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
160	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
200	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
250	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

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Indexable Milling

Online product catalogue available 24/7

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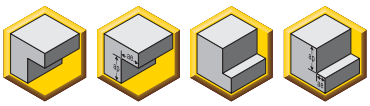
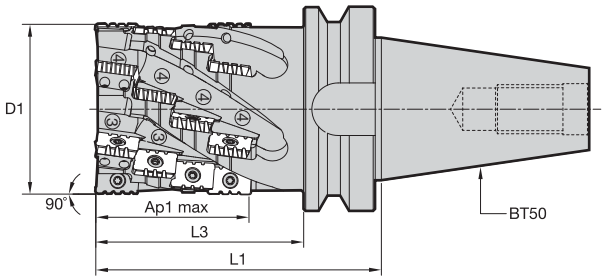
KENNAMETAL®

- Lower cutting forces with serrated inserts.
- Small chips for ease of evacuation.
- Improved metal removal rates.
- IMPORTANT: Load inserts in the correct position; see additional details below.





End Mills • BT50 Taper

order number	catalogue number	shank taper	D1	L1	L3	Ap1 max	Z	Z U	kg	max RPM
3588254	**KFSR063RBT504**	BT50	63	160	122	90,0	16	4	5,36	12100
3588255	**KFSR063RBT505**	BT50	63	180	142	111,0	20	4	6,14	12100
3588262	**KFSR080RBT504**	BT50	80	160	122	90,0	16	4	6,99	10000
3588263	**KFSR080RBT505**	BT50	80	180	142	111,0	20	4	7,30	10000
3588270	**KFSR100RBT504**	BT50	100	160	122	90,0	24	6	9,42	9100
3588271	**KFSR100RBT505**	BT50	100	180	142	111,0	30	6	10,05	9100

Insert pocket detail:

- 63mm cutters do not contain a shim (see Spare Parts table).
- If insert pocket is marked with number “3”, use insert AP ER-G3.
- If insert pocket is marked with number “4”, use insert AP ER-G4.
- It is important to use the correct insert in position 3 or 4. Failure to do so will result in damage to the cutter body.
- Only use inserts with nose radii greater than 0,8mm in the first row.

Spare Parts

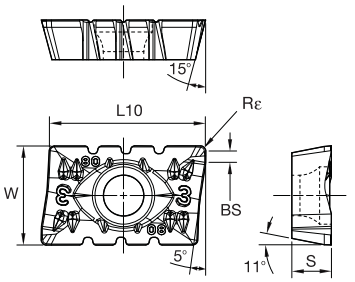
D1	insert screw	Nm	Torx wrench	shim screw	Torx driver	shim
63	**MS2209**	53,0	**TT25**	**–**	**–**	**–**
80	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**
100	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

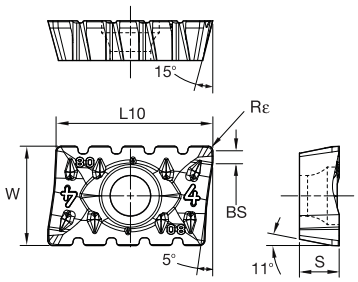
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..L	KC720M	**.E..L**	**KC720M**	.E..L	KC730M
P3–P4	.E..G	KC720M	**.E..G**	**KC720M**	.E..G	KC730M
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..L	KC505M	**.E..L**	**KC505M**	.E..G	KC505M
K3	.E..L	KC505M	**.E..G**	**KC505M**	.E..G	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Insert • Heavy-Duty Cutters

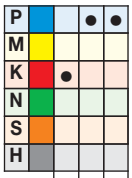


APMT G3



APMT G4
(this must be used in conjunction with insert G3)

● first choice
○ alternate choice



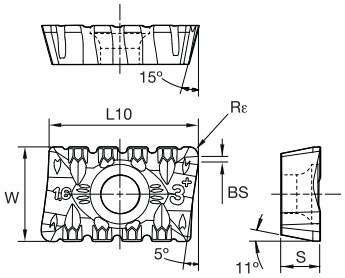
Shoulder Mills

APMT G3

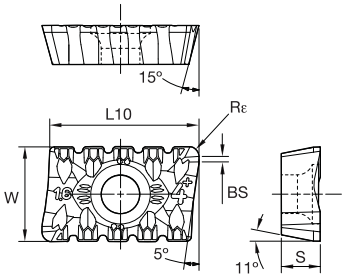
catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG3	6,35	25,00	1,80	0,8	15,88	0,07	2	●		
APMT250616ERG3	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●
APMT250640ERG3	6,35	25,00	0,10	4,0	15,88	0,07	2	●	●	●

APMT G4

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG4	6,35	25,00	1,80	0,8	15,88	0,07	2	●		
APMT250616ERG4	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●
APMT250640ERG4	6,35	25,00	0,10	4,0	15,88	0,07	2	●	●	●



APMT L3P



APMT L4P
(this must be used in conjunction with insert L3P)

● first choice
○ alternate choice

P			●	●
M				
K		●		
N				
S				
H				

APMT L3P

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL3P	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●

APMT L4P

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL4P	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC505M			KC720M			KC730M		
P	1	–	–	–	220	**200**	180	130	**120**	100
	2	–	–	–	200	**180**	160	120	**110**	105
	3	–	–	–	180	**160**	140	110	**100**	90
	4	–	–	–	160	**150**	140	100	**90**	80
	5	–	–	–	140	**120**	100	90	**80**	75
	6	–	–	–	100	**80**	80	80	**75**	70
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	190	**170**	150	–	–	–	–	–	–
	2	175	**155**	135	–	–	–	–	–	–
	3	115	**95**	75	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..L	0,17	**0,35**	0,71	0,12	**0,26**	0,53	0,11	**0,23**	0,46	0,10	**0,21**	0,43	0,10	**0,21**	0,42	.E..L
.E..G	0,17	**0,43**	0,85	0,12	**0,32**	0,64	0,11	**0,28**	0,55	0,10	**0,26**	0,52	0,10	**0,25**	0,51	.E..G

NOTE: Use “Light Machining” values as starting feed rate.

APMT L3P

					(R-1) = one high KFSR100R1AP25		(R-2) = two high KFSR100R2AP25		(R-4) = four high KFSR100R4AP25	
material	**overhang**	**recommended condition (vc * fz)**	**RPM**	**table feed**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**
steel	less than 100mm	vc = 150 fz = 0,2	478	574	20 x 80	918	40 x 40	918	75 x 20	861
	100–200mm	vc = 150 fz = 0,2	478	574	20 x 40	459	40 x 20	459	75 x 10	431
	over 201mm	vc = 100 fz = 0,2	320	380	20 x 30	228	40 x 20	304	75 x 10	285
cast iron	less than 100mm	vc = 180 fz = 0,2	573	688	20 x 80	1100	40 x 40	1100	75 x 20	1032
	100–200mm	vc = 180 fz = 0,2	573	688	20 x 40	550	40 x 20	550	75 x 10	516
	over 201mm	vc = 120 fz = 0,2	380	460	20 x 30	276	40 x 20	368	75 x 10	345
stainless steel	not recommended									
aluminium/copper	not recommended									
high-temp alloys	not recommended									

Slotting Cutters

KTMS • T-Slot Platform Q2–Q6
KVNS • Very Narrow Slotting Cutter Platform Q8–Q13
SN • Popular Square Inserted Cutter Q14–Q17
LN • Adjustable Width Cutter System Q18–Q25
KSSM10 • Neutral and Right- and Left-Hand Cutters, 10mm I/C Q26–Q43
KSSM12 • Neutral and Right- and Left-Hand Cutters, 12mm I/C Q44–Q61

KTMS™ Slotting Cutter

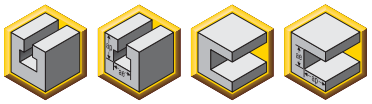
Primary Application

KTMS slotting cutters produce “T” slots in machine beds as well as small radial depths of cut for machining shallow radial slots. There is always a need to prepare the slot before using this type of cutter — preparation is the key to success. See the technical information for information about the pre-machining on Q6.

Features and Benefits

- Only available in metric dimensions.
- Slot widths from 9–22mm.
- Three different insert sizes.
- Preparing the component before slotting is the key to success.
- Prepare workpiece with a slot.
- Honed insert edges.
- Feed rates between 0,10–0,15mm; lower feed rates will induce vibration.
- Use air flow to evacuate chips.
- Always start the cutting process with a new cutting edge.

- Prepare workpiece with a slot.
- Honed insert edges.
- Feed rates between 0,10–0,15mm; lower feed rates will induce vibration.
- Use air flow to evacuate chips.
- Always start the cutting process with a new cutting edge.



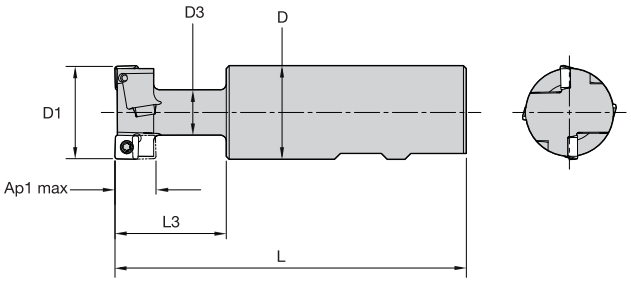


Fig. 1

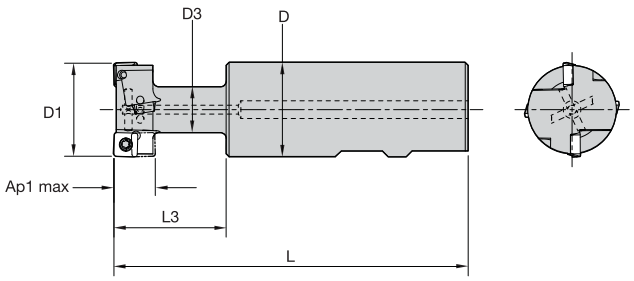


Fig. 2

KTMS • T-Slot Cutter • Metric

order number	catalogue number	D1	D	D3	L	L3	Ap1 max	Z	Z U	figure	insert 1	kg
3577118	**KTMS21S25SD06**	21	25	11	109	29	9,0	2	1	FIG 1	SDMT060304EGG	0,37
3577120	**KTMS25S25SD06**	25	25	13	112	32	11,0	4	2	FIG 1	SDMT060304EGG	0,38
3577122	**KTMS32S32SD08**	32	32	16	120	38	14,0	4	2	FIG 1	SDMT080308EGG	0,62
3577134	**KTMS40S32SD12**	40	32	21	130	50	18,0	4	2	FIG 1	SDMT120408EGG	0,69
3577136	**KTMS50S32SD12**	50	32	27	140	60	22,0	4	2	FIG 1	SDMT120408EGG	0,88

KTMS • T-Slot Cutter • Metric

order number	catalogue number	D1	D	D3	L	L3	Ap1 max	Z	Z U	figure	insert 1	kg
3577119	**KTMS21S25SD06H**	21	25	11	109	29	9,0	2	1	FIG 2	SDMT060304EGG	0,35
3577121	**KTMS25S25SD06H**	25	25	13	112	32	11,0	4	2	FIG 2	SDMT060304EGG	0,36
3577133	**KTMS32S32SD08H**	32	32	16	120	38	14,0	4	2	FIG 2	SDMT080308EGG	0,60
3577135	**KTMS40S32SD12H**	40	32	21	130	50	18,0	4	2	FIG 2	SDMT120408EGG	0,66
3577137	**KTMS50S32SD12H**	50	32	27	140	60	22,0	4	2	FIG 2	SDMT120408EGG	0,85

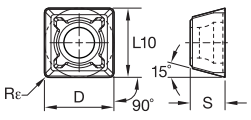
Spare Parts

D1	insert screw	Nm	Torx driver	anti-seize lube
21	**MS2206**	1	**DT8**	**ASL3GT**
25	**MS2206**	1	**DT8**	**ASL3GT**
32	**MS2207**	2	**DT10**	**ASL3GT**
40	**MS2208**	4	**DT15**	**ASL3GT**
50	**MS2208**	4	**DT15**	**ASL3GT**

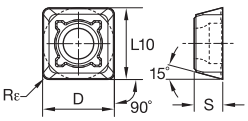
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GG	KC730M	**.E..GG**	**KC730M**	.E..GG	KC735M
P3–P4	.E..GG	KC730M	**.E..GG**	**KC730M**	.E..GG	KC735M
P5–P6	.E..GG	KC730M	**.E..GG**	**KC735M**	.E..GG	KC735M
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.E..GG	K110M	**.E..GG**	**K110M**	.E..GG	KC505M
K3	.E..GG	K110M	**.E..GG**	**KC505M**	.E..GG	KC505M
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–

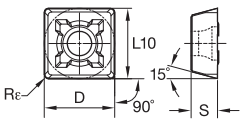
Indexable Insert • T-Slot Cutters SDMT • EGG



SDMT 06



SDMT 08



SDMT 12

● first choice
○ alternate choice

P			●	●
M				
K	●	●		
N				
S				
H				

SDMT Inserts

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC505M	KC730M	KC735M
SDMT060304EGG	6,35	3,18	6,35	0,4	0,06	4	●	●	●	●
SDMT080308EGG	8,00	3,18	8,00	0,8	0,06	4	●	●	●	●
SDMT120408EGG	12,70	4,76	12,70	0,8	0,06	4	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC110M			KC505M			KC730M			KC735M		
P	1	–	–	–	–	–	–	130	**120**	100	160	**140**	130
	2	–	–	–	–	–	–	120	**110**	105	140	**130**	120
	3	–	–	–	–	–	–	110	**100**	90	130	**120**	110
	4	–	–	–	–	–	–	100	**90**	80	120	**110**	100
	5	–	–	–	–	–	–	90	**80**	75	110	**90**	80
	6	–	–	–	–	–	–	80	**75**	70	90	**80**	70
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	130	**120**	115	150	**140**	120	–	–	–	–	–	–
	2	115	**105**	100	140	**120**	105	–	–	–	–	–	–
	3	100	**90**	80	105	**95**	80	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GG	0,14	**0,30**	0,50	0,11	**0,23**	0,38	0,09	**0,20**	0,33	0,09	**0,18**	0,31	0,08	**0,18**	0,30	.E..GG

NOTE: Use “Light Machining” values as starting feed rate.

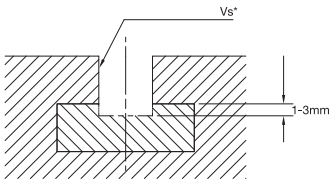


Fig. 1

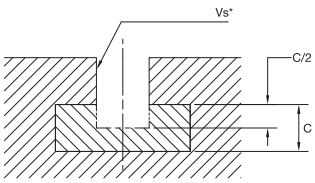


Fig. 2

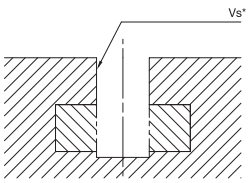
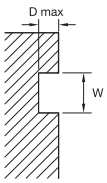


Fig. 3



Side Slotting

Steel

- Machining a vertical slot, depth to be kept at a minimum as shown in Figure 1
- If the depth is greater than Figure 1, chip evacuation problems could occur.
- Vibrations could occur when the T-slot cutter diameter increases; use Figure 1 as the starting point.
- If chattering is a concern, adopt the Figure 2 solution.

Cast Iron

- Fewer problems with chip evacuation and reduced cutting forces enable deeper vertical slots as shown in Figures 2 and 3.
- Air blast is recommended to disperse the chips; this can be used for steel and cast iron.

Cutting Data Table • Slotting

	material type	catalogue number	cutting conditions vc (m/min)	feed per tooth (mm)	Vs*
P	carbon steel/ alloy steel	KTMS21S25SD06H	120	0,10	Figure 1
		KTMS25S25SD06H	120	0,10	Figure 1
		KTMS32S32SD08H	100	0,10	Figure 1
		KTMS40S32SD12H	80	0,15	Figure 2
		KTMS50S32SD12H	not recommended due to frequent chattering		
K	cast iron	KTMS21S25SD06H	120	0,12	Figures 1, 2, 3
		KTMS25S25SD06H	120	0,12	Figures 1, 2, 3
		KTMS32S32SD08H	120	0,12	Figures 1, 2, 3
		KTMS40S32SD12H	120	0,12	Figures 2, 3
		KTMS50S32SD12H	120	0,15	Figure 3

* Vs = Vertical slot preparation for T-slot.

Side Slot Machining

side slot dimension catalogue number	W -0.1/-0.3 mm	D max mm
KTMS21S25SD06H	9	4,4
KTMS25S25SD06H	11	5,4
KTMS32S32SD08H	14	6,9
KTMS40S32SD12H	18	8,9
KTMS50S32SD12H	22	10,9

NOTE: KTMS T-slot is available to side slot as per drawing.

Cutting Data • Side Machining

	material type	catalogue number	cutting conditions vc (m/min)	n (RPM)	feed per tooth (mm)
P	carbon steel/ alloy steel	KTMS21S25SD06H	120	1820	0,10
		KTMS25S25SD06H	120	1530	0,10
		KTMS32S32SD08H	120	1190	0,10
		KTMS40S32SD12H	120	960	0,10
		KTMS50S32SD12H	120	760	0,10
K	cast iron	KTMS21S25SD06H	150	2270	0,12
		KTMS25S25SD06H	150	1910	0,12
		KTMS32S32SD08H	150	1490	0,12
		KTMS40S32SD12H	150	1190	0,15
		KTMS50S32SD12H	150	960	0,15

KSRM™

Multipurpose Milling Cutters

Specially developed for machining titanium and stainless steel. KSRM platform enables you to pocket, profile, ramp, and plunge with up to 1mm (.039") fz with consistent performance, providing outstanding metal removal rates with the lowest cutting forces in roughing applications.

- Anti-rotation feature with eight indexes.
- High positive topography with strong cutting edges.
- High clearance on the cutters and inserts.
- Wide cutter offering with internal coolant.
- Ground and PSTS inserts.
- Provides more stability and reliability.
- Lower cutting forces generated.
- Cutters can run with higher feed rates and better ramping capacities.
- Cover extensive workpiece materials.
- Superior productivity and better insert utilisation/cost per edge.
- Able to convert all milling applications.
- Improve tool life and chip evacuation.
- Superior overall performance.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

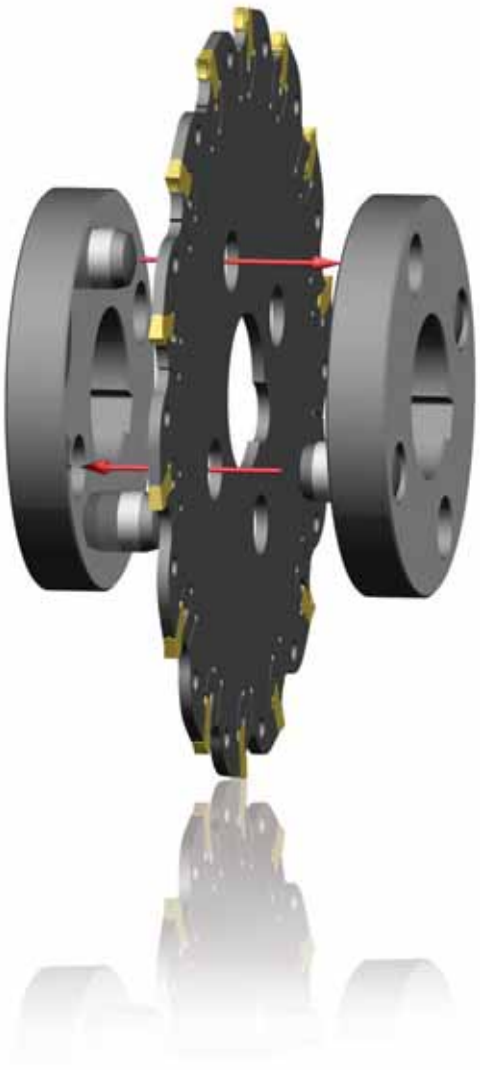
KVNS™ Slotting Cutter

Primary Application

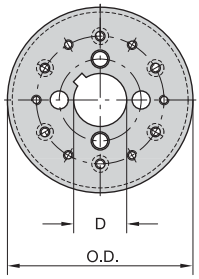
The KVNS slotting cutter enables diameters from 63–250mm and insert widths from 1,6–4mm. It is a perfect solution for small groove widths, grades, and geometries and suits most materials. Drive rings and support rings are available; use these items to get the maximum support for the cutter body.

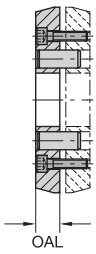
Features and Benefits

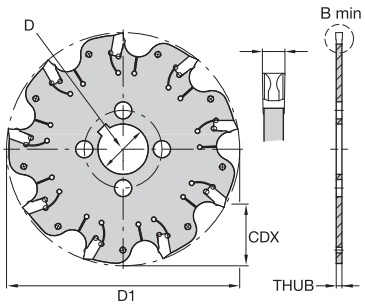
- Slot widths from 1,6–4mm.
- Grades and geometries to suit most workpiece materials.
- Drive rings and support rings available, must be ordered separately (in pairs).
- Self clamping inserts.
- 1,6–4mm slot width range.
- Positive chipforming inserts are standard.
- Self-clamping insert seat with fixed stop.
- Excellent for all flat-bottom slotting and cut-off operations.
- Two drive hubs required for each cutter body, except when using two drive supports (must be ordered separately, in pairs).



- Positive chipforming inserts are standard.
- Self-clamping insert seat with fixed stop.
- Excellent for all flat-bottom slotting and cut-off operations.
- Two drive rings required for each cutter body (must be ordered separately, in pairs).







A2 • Cutting Width 1,6mm

order number	catalogue number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	kg
1246114	**4.97060116**	63	16	1,6	15	1,3	5	5100	3.90016___	0,03
1246122	**4.97080116**	80	16	1,6	21	1,3	7	4000	3.90016___	0,04
1246131	**4.97101116**	100	22	1,6	27	1,3	9	3200	3.90016___	0,07
1246138	**4.97123116**	125	32	1,6	35	1,3	11	2600	3.90016___	0,10

A2 • Cutting Width 2,2mm

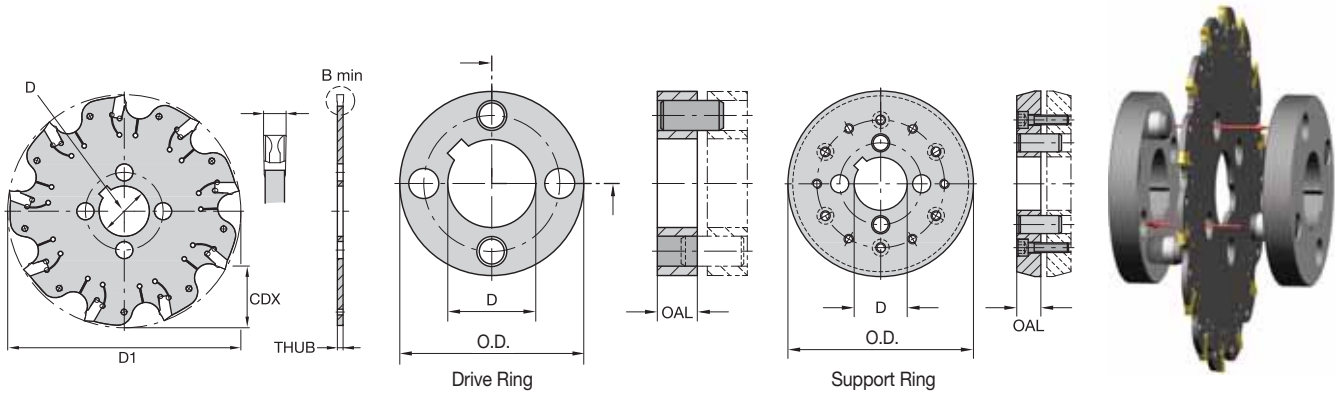
order number	catalogue number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	kg
1246124	**4.97080122**	80	16	2,2	21	1,8	7	4000	3.90022___	0,05
1246132	**4.97101122**	100	22	2,2	27	1,8	9	3200	3.90022___	0,08
1246140	**4.97123122**	125	32	2,2	35	1,8	11	2600	3.90022___	0,12
1246147	**4.97164122**	160	40	2,2	40	1,8	14	2000	3.90022___	0,30

A2 • Cutting Width 3mm

order number	catalogue number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	kg
1246118	**4.97060130**	63	16	3,0	15	2,4	4	5100	3.90030___	0,05
1246126	**4.97080130**	80	16	3,0	21	2,4	6	4000	3.90030___	0,08
1246134	**4.97101130**	100	22	3,0	27	2,4	9	3200	3.90030___	0,13
1246142	**4.97123130**	125	32	3,0	35	2,4	11	2600	3.90030___	0,20
1246149	**4.97164130**	160	40	3,0	40	2,4	14	2000	3.90030___	0,35
1246153	**4.97204130**	200	40	3,0	60	2,4	19	1600	3.90030___	0,50
1246157	**4.97254130**	250	40	3,0	85	2,4	24	1300	3.90030___	0,80

A2 • Cutting Width 4mm

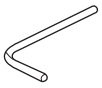
order number	catalogue number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	kg
1246120	**4.97060140**	63	16	4,0	15,000	3,4	4	5100	3.90040___	0,06
1246129	**4.97080140**	80	16	4,0	21,000	3,4	6	4000	3.90040___	0,10
1246136	**4.97101140**	100	22	4,0	27,000	3,4	9	3200	3.90040___	0,15
1246145	**4.97123140**	125	32	4,0	35,000	3,4	11	2600	3.90040___	0,25
1246150	**4.97164140**	160	40	4,0	40,000	3,4	14	2000	3.90040___	0,40
1246154	**4.97204140**	200	40	4,0	60,000	3,4	19	1600	3.90040___	0,65



Drive Rings

order number	D1	O.D.	OAL	bore size	drive ring	kg
1247091	80	38	8	16	**460.899**	0,06
1177888	63	32	8	16	**460.889**	0,03
1247088	63	32	8	16	**460.898**	0,04
1247085	100	46	10	22	**460.890**	0,10
1247087	125	55	10	32	**460.897**	0,12
1247080	200	140	12	40	**460.887**	1,15
1247082	200	80	12	40	**460.888**	0,34

Support Rings

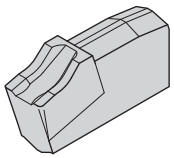


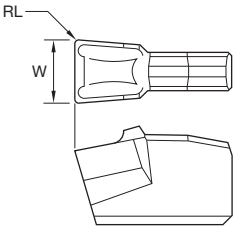
D1	cutter number	support ring	bore size	CDX	O.D.	OAL	clamp screw	Allen key	Allen key size	kg
200	**1247080**	**460.887**	40	30	140	12	**125.616**	**170.005**	5mm	1,15
250	**1247080**	**460.887**	40	55	140	12	**125.616**	**170.005**	5mm	1,15
250	**1247078**	**460.886**	40	30	190	12	**125.616**	**170.005**	5mm	2,35

NOTE: For CDX value, refer to drive ring and support ring tables.
Insert wrench 170.183 (order code 1124601) must be ordered separately

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
P3–P4	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
P5–P6	.S..GD	KCPK30	**.S..GB**	**KC735M**	.S..GB	KCPK30
M1–M2	.S..GD	KC735M	**.S..GD**	**KCPK30**	.S..GB	KC735M
M3	.S..GD	KCPK30	**.S..GB**	**KC735M**	.S..GB	KCPK30
K1–K2	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
K3	.S..GD	KCPK30	**.S..GB**	**KCPK30**	.S..GB	KCPK30
N1–N2	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
N3	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S1–S2	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S3	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S4	.E..GD	KMF	**.E..GD**	**KMF**	–	–
H1	–	–	**–**	**–**	–	–





● first choice
○ alternate choice

P	○	●	
M	●	○	
K		○	
N			●
S	●		●
H			

1,6mm

catalogue number	W	RL	hm	KC735M	KCPK30	KMF
3.90016ECGD	1,60	0,15	0,08			●
3.90016SNGB	1,60	0,15	0,08	●	●	
3.90016SNGD	1,60	0,15	0,08	●	●	

2,2mm

catalogue number	W	RL	hm	KC735M	KCPK30	KMF
3.90022ECGD	2,20	0,20	0,08			●
3.90022SNGB	2,20	0,20	0,08	●	●	
3.90022SNGD	2,25	0,20	0,08	●	●	

3mm

catalogue number	W	RL	hm	KC735M	KCPK30	KMF
3.90030ECGD	3,05	0,20	0,08			●
3.90030SNGB	3,05	0,20	0,08	●	●	
3.90030SNGD	3,05	0,20	0,08	●	●	

4mm

catalogue number	W	RL	hm	KC735M	KCPK30	KMF
3.90040ECGD	4,05	0,20	0,08			●
3.90040SNGB	4,05	0,20	0,08	●	●	
3.90040SNGD	4,05	0,20	0,08	●	●	

Recommended Starting Speeds [m/min]

Material Group		KC735M			KCPK30			KMF		
P	1	–	–	–	455	**395**	370	–	–	–
	2	–	–	–	280	**255**	230	–	–	–
	3	–	–	–	255	**230**	205	–	–	–
	4	–	–	–	190	**175**	160	–	–	–
	5	–	–	–	260	**230**	210	–	–	–
	6	–	–	–	160	**135**	–	–	–	–
M	1	105	**90**	80	205	**185**	155	–	–	–
	2	95	**85**	75	185	**160**	140	–	–	–
	3	70	**60**	–	145	**130**	115	–	–	–
K	1	–	–	–	295	**265**	240	–	–	–
	2	–	–	–	235	**210**	190	–	–	–
	3	–	–	–	195	**175**	160	–	–	–
N	1–2	–	–	–	–	–	–	335	**300**	270
	3	–	–	–	–	–	–	220	**200**	170
S	1	–	–	–	–	–	–	30	**25**	20
	2	–	–	–	–	–	–	30	**25**	20
	3	–	–	–	–	–	–	30	**25**	20
	4	–	–	–	–	–	–	25	**25**	25
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

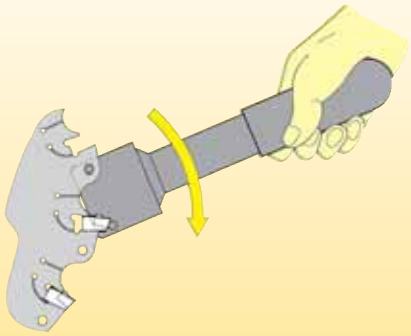
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

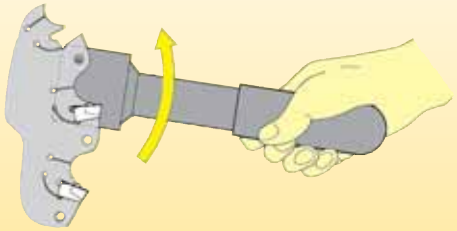
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GD	0,17	**0,27**	0,37	0,13	**0,20**	0,28	0,11	**0,17**	0,24	0,10	**0,16**	0,23	0,10	**0,16**	0,22	.E..GD
.S..GD	0,17	**0,33**	0,46	0,13	**0,25**	0,34	0,11	**0,22**	0,30	0,10	**0,20**	0,28	0,10	**0,20**	0,27	.S..GD
.S..GB	0,17	**0,43**	0,54	0,13	**0,32**	0,40	0,11	**0,28**	0,35	0,10	**0,26**	0,33	0,10	**0,25**	0,32	.S..GB

NOTE: Use “Light Machining” values as starting feed rate.

Secure Clamping • Self-Clamping Insert Seat for Maximum Machining Safety



Using the assembly wrench:
Fitting the insert



Removing the insert

- Exact position of the insert guaranteed by the positive stop.
- Maximum possible insert repeatability with dual positive prism clamping.
- Powerful, secure clamping guarantees high peripheral speeds.

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SN Slotting Cutter

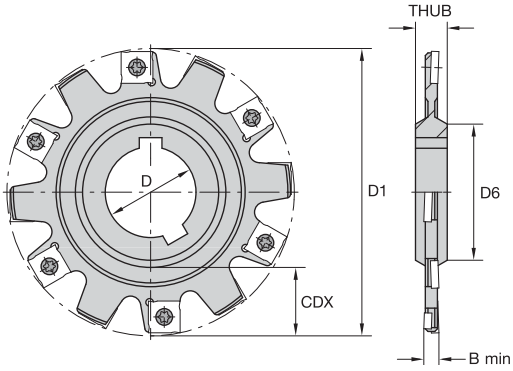
Primary Application

SN slotting cutters are perfect for deeper applications that require the cutting load to be shared from one insert to the other.
Provides groove widths from 4–14mm and cutter diameters from 80–250mm as well as an economical way to achieve balanced cutting.

Features and Benefits

- Cutters available in arbor mount.
- Inserts with four indexes.
- Staggered key ways in mounting bore, used for multiple ganged cutters.
- Slot width 4–14mm.
- Three insert geometries available: -GP, -GE, and -T.
- Requires only one spare part.
- Economical to use.

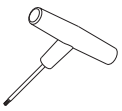
- 4–14mm slot widths range.
- Four indexes per insert.
- Three chipformers available.
- Two keyways for staggered mounting.
- Requires only one spare part.
- Economical to use.



SN • Arbor Mount • Full-Side Cutting

order number	catalogue number	D1	D	D6	B min	CDX	THUB	Z	Z S	insert 1	kg
1244389	**4.96082-204**	80	27	45	4,0	15	12,0	10	5	SNHX1102___	0,30
1191306	**4.96102-204**	100	27	45	4,0	25	12,0	12	6	SNHX1102___	0,40
1244398	**4.96102-205**	100	27	45	5,0	25	12,0	12	6	SNHX11T3___	0,40
1244368	**4.96102-206**	100	27	45	6,0	25	12,0	10	5	SNHX1203___	0,40
1244370	**4.96124-204**	125	40	58	4,0	30	12,0	14	7	SNHX1102___	0,50
1244371	**4.96124-205**	125	40	58	5,0	30	12,0	14	7	SNHX11T3___	0,60
1244374	**4.96124-210**	125	40	58	10,0	30	12,0	12	6	SNHX12L5___	0,80
1244375	**4.96124-212**	125	40	58	12,0	30	12,0	12	4	SNHX12L5___	0,90
1244394	**4.96164-204**	160	40	68	4,0	44	12,0	18	9	SNHX1102___	0,90
1244376	**4.96164-205**	160	40	68	5,0	44	12,0	18	9	SNHX11T3___	0,90
1244379	**4.96164-210**	160	40	68	10,0	44	12,0	16	8	SNHX12L5___	1,40
1244395	**4.96205-208**	200	50	72	8,0	62	12,0	18	6	SNHX1203___	1,80
1244385	**4.96255-206**	250	50	72	6,0	86	12,0	24	12	SNHX1203___	4,20
1244386	**4.96255-208**	250	50	72	8,0	86	12,0	24	8	SNHX1203___	4,50
1244388	**4.96255-214**	250	50	72	14,0	86	14,0	24	8	SNHX12L5___	5,20

Spare Parts

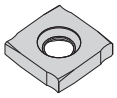


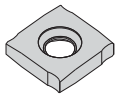
order number	D1	B min	insert screw	Nm	Torx wrench
1244389	80	4	**192.529**	1	**170.023**
1191306	100	4	**192.529**	1	**170.023**
1244398	100	5	**192.530**	1	**170.023**
1244368	100	6	**192.531**	3	**170.025**
1244370	125	4	**192.529**	1	**170.023**
1244371	125	5	**192.530**	1	**170.023**
1244374	125	10	**192.532**	3	**170.025**
1244375	125	12	**192.532**	3	**170.025**
1244394	160	4	**192.529**	1	**170.023**
1244376	160	5	**192.530**	1	**170.023**
1244379	160	10	**192.532**	3	**170.025**
1244395	200	8	**192.531**	3	**170.025**
1244385	250	6	**192.531**	3	**170.025**
1244386	250	8	**192.531**	3	**170.025**
1244388	250	14	**192.532**	3	**170.025**

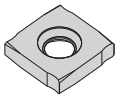
Insert Selection Guide

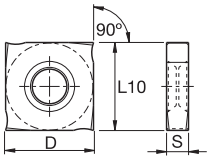
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
P3–P4	.T..GP	KC725M	**.T..GP**	**KCPK30**	.T..	KCPK30
P5–P6	.T..GP	KCPK30	**.T..**	**KC735M**	.T..	KCPK30
M1–M2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
M3	.T..GP	KC725M	**.T..GP**	**KCPK30**	.T..	KCPK30
K1–K2	.F..GE	K110M	**.T..GP**	**KCPK30**	.T..	KCPK30
K3	.T..GP	KCPK30	**.T..**	**KCPK30**	.T..	KCPK30
N1–N2	.F..GE	K110M	**.F..GE**	**K110M**	.F..GE	KC510M
N3	.F..GE	K110M	**.F..GE**	**KC510M**	.T..GP	K110M
S1–S2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
S3	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
S4	.T..GP	KC725M	**.T..**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • SNHX-T • SNHX-NGE • SNHX-NGP

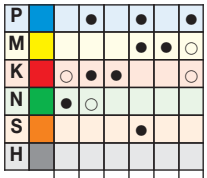

SNHX-T


SNHX-NGE


SNHX-NGP



● first choice
○ alternate choice



SNHX-T

catalogue number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102T	11,00	2,38	11,00	0,16	4				●	●	
SNHX1103T	11,00	2,70	11,00	0,16	4			●	●	●	●
SNHX1203T	12,70	3,20	12,70	0,16	4				●	●	
SNHX1204T	12,70	4,00	12,70	0,11	4				●		
SNHX12045T	12,70	4,50	12,70	0,11	4				●		
SNHX1205T	12,70	5,40	12,70	0,11	4				●	●	

SNHX-NGE

catalogue number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102PZFNGE	11,00	2,30	11,00	0,02	4	●					
SNHX11T3PZFNGE	11,00	2,70	11,00	0,05	4		●				
SNHX1203PZFNGE	12,70	3,20	12,70	0,04	4		●				
SNHX12L5PZFNGE	12,70	5,40	12,70	0,04	4	●	●				

SNHX-NGP

catalogue number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102PZTNGP	11,00	2,30	11,00	0,14	4	●			●	●	●
SNHX11T3PZTNGP	11,00	2,70	11,00	0,14	4				●		
SNHX1203PZTNGP	12,70	3,20	12,70	0,14	4	●			●	●	●
SNHX12L4PZTNGP	12,70	4,00	12,70	0,14	4						●
SNHX12L5PZTNGP	12,70	5,40	12,70	0,14	4	●			●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC110M			KC510M			KC520M		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	130	**120**	115	295	**265**	240	270	**245**	215
	2	115	**105**	100	230	**205**	190	210	**190**	175
	3	100	**90**	80	195	**175**	160	175	**160**	145
N	1–2	505	**475**	450	640	**570**	525	–	–	–
	3	410	**365**	320	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KC735M			KCPK30		
P	1	260	**230**	215	–	–	–	455	**395**	370
	2	220	**190**	160	–	–	–	280	**255**	230
	3	200	**170**	140	–	–	–	255	**230**	205
	4	180	**150**	120	–	–	–	190	**175**	160
	5	150	**135**	120	–	–	–	260	**230**	210
	6	130	**100**	80	–	–	–	160	**135**	–
M	1	170	**150**	135	105	**90**	80	205	**185**	155
	2	155	**130**	110	95	**85**	75	185	**160**	140
	3	115	**100**	80	70	**60**	–	145	**130**	115
K	1	–	–	–	–	–	–	295	**265**	240
	2	–	–	–	–	–	–	235	**210**	190
	3	–	–	–	–	–	–	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..GE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..GE
.T..GP	0,17	**0,35**	0,49	0,13	**0,26**	0,37	0,11	**0,23**	0,32	0,10	**0,21**	0,30	0,10	**0,21**	0,29	.T..GP
.T..	0,17	**0,43**	0,59	0,13	**0,32**	0,44	0,11	**0,28**	0,38	0,10	**0,26**	0,36	0,10	**0,25**	0,35	.T..

NOTE: Use “Light Machining” values as starting feed rate.

LN Slotting Cutter

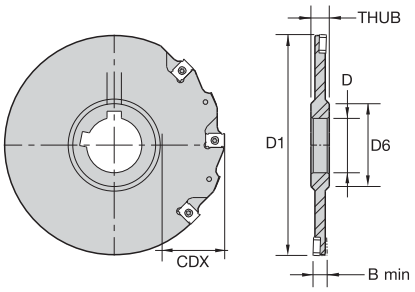
Primary Application

LN slotting cutters offer arbor and shell mill cutter options, groove widths from 6–13mm, and cutter diameters from 80–200mm. Easy to adjust radially in 0,50mm increments.

Features and Benefits

- Cutter available in arbor and shell mounts.
- Groove width 6–13mm.
- Groove width can be changed by consulting additional chart; this involves changing insert and insert screw.
- Staggered internal keys.
- Positive chip grooves.
- Easy width adjustment through insert thickness.
- Full side and face cutting.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Requires only one spare part.

- 6–13mm slot width range.
- Easy width adjustment through insert thickness.
- Right-hand and full-side cutting versions.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Two keyways for staggered mounting.
- Requires only one spare part.



Side Two Insert

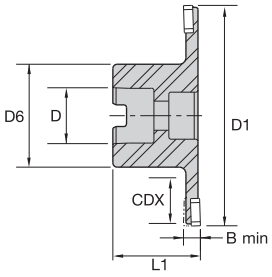
LN • Arbor Mount • Full-Side Cutting

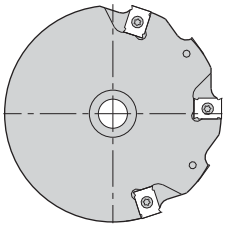
order number	catalogue number	D1	D	D6	B min	CDX	THUB	Z	Z S	insert 1	kg
1131438	**80F08NS90LN12N06**	80	27	44	6,0	16	12,0	8	4	LNE_1235___	0,30
1131447	**80F08NS90LN12N08**	80	27	44	8,0	16	12,0	8	4	LNE_1245___	0,35
1150508	**100G10NS90LN12N06**	100	32	52	6,0	22	12,0	10	5	LNE_1235___	0,40
1130249	**100G10NS90LN12N08**	100	32	52	8,0	22	12,0	10	5	LNE_1245___	0,50
1130477	**125H12NS90LN12N06**	125	40	63	6,0	30	12,0	12	6	LN__1235	0,70
1130615	**160H16NS90LN12N06**	160	40	63	6,0	46	12,0	16	8	LNE_1235___	1,10
1130595	**160H15NS90LN12N10**	160	40	63	10,0	46	12,0	15	5	LNE_1245	1,60
1130608	**160H15NS90LN12N12**	160	40	63	12,0	46	12,0	15	5	LNE_1255___	1,60
1150527	**200J18NS90LN12N08**	200	50	75	8,0	60	12,0	18	9	LNE_1245___	2,00

Spare Parts

order number	D1	B min	insert screw	Nm	Torx driver
1131438	80	6	**MS1280**	3,0	**DT15**
1131447	80	8	**MS1282**	3,0	**DT15**
1150508	100	6	**MS1280**	3,0	**DT15**
1130249	100	8	**MS1282**	3,0	**DT15**
1130477	125	6	**MS1280**	3,0	**DT15**
1130615	160	6	**MS1280**	3,0	**DT15**
1130595	160	10	**MS1282**	3,0	**DT15**
1130608	160	12	**MS1284**	3,0	**DT15**
1150527	200	8	**MS1282**	3,0	**DT15**

- 6–11mm slot width range.
- Easy width adjustment through insert thickness.
- Right-hand and full-side cutting versions.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Requires only one spare part.





LN • Shell Mount • Full-Side Cutting

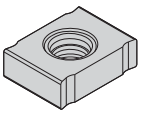
order number	catalogue number	D1	D	D6	B min	CDX	L1	Z	Z U	insert 1	kg
1131463	**80Y08RS90LN12N06**	80	22	40	6,0	16	50,0	8	4	LNE_1235___	0,65
1131472	**80Y08RS90LN12N08**	80	22	40	8,0	16	50,0	8	4	LNE_1245___	0,75
1130277	**100Y10RS90LN12N06**	100	27	50	6,0	22	50,0	10	5	LNE_1235___	1,00
1130283	**100Y10RS90LN12N08**	100	27	50	8,0	22	50,0	10	5	LNE_1245___	1,20
1130506	**125Y12RS90LN12N10**	125	40	70	10,0	26	50,0	12	4	LNE_1245___	1,50
1150511	**160Y16RS90LN12N06**	160	40	70	6,0	43	50,0	16	8	LNE_1235___	1,85
1150513	**160Y16RS90LN12N08**	160	40	70	8,0	43	50,0	16	8	LNE_1245___	2,15
1150524	**160Y15RS90LN12N10**	160	40	70	10,0	43	50,0	15	5	LNE_1245___	2,45

Spare Parts

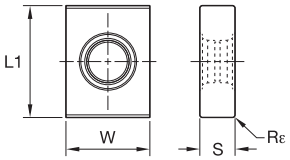
order number	D1	B min	insert screw	Nm	Torx driver
1131463	80	6	**MS1280**	3	**DT15**
1131472	80	8	**MS1282**	3	**DT15**
1130277	100	6	**MS1280**	3	**DT15**
1130283	100	8	**MS1282**	3	**DT15**
1130506	125	10	**MS1282**	3	**DT15**
1150511	160	6	**MS1280**	3	**DT15**
1150513	160	8	**MS1282**	3	**DT15**
1150524	160	10	**MS1282**	3	**DT15**

Insert Selection Guide

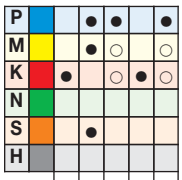
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	KC725M	–	**KC725M**	.S..GP	KC725M
P3–P4	–	KC725M	–	**KCPK30**	.S..GP	KC725M
P5–P6	–	KC735M	–	**KCPK30**	.S..GP	KC735M
M1–M2	–	KC725M	–	**KC725M**	.S..GP	KC725M
M3	–	KC735M	–	**KCPK30**	.S..GP	KC725M
K1–K2	–	KC520M	–	**KCK15**	–	KCPK30
K3	–	KCK15	–	**KCPK30**	–	KCPK30
N1–N2	–	–	–	**–**	–	–
N3	–	–	–	**–**	–	–
S1–S2	–	KC725M	–	**KC725M**	.S..GP	KC725M
S3	–	KC735M	**.S..GP**	**KC735M**	.S..GP	KC725M
S4	–	KC725M	**.S..GP**	**KC725M**	–	–
H1	–	–	–	**–**	–	–



LNEU-R



● first choice
○ alternate choice



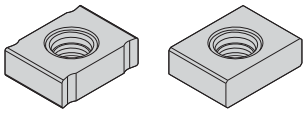
LNEU-R

catalogue number	L1	W	S	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEU1235R03 4	12,70	9,60	3,50	0,3	0,04	4	●	●	●		
LNEU1240R03 4	12,70	9,60	4,00	0,3	0,04	4	●	●	●		
LNEU1240R08 4	12,70	9,60	4,00	0,8	0,04	4	●	●			
LNEU1240R16 4	12,70	9,60	4,00	1,6	0,04	4		●			
LNEU1245R04	12,70	9,60	4,50	0,4	0,04	4	●	●	●		●
LNEU1245R08	12,70	9,60	4,50	0,8	0,04	4	●	●			
LNEU1245R16	12,70	9,60	4,50	1,6	0,04	4	●	●			
LNEU1245R32	12,70	9,60	4,50	3,2	0,04	4	●	●			
LNEU1250R04	12,70	9,60	5,00	0,4	0,04	4		●			
LNEU1250R08	12,70	9,60	5,00	0,8	0,04	4		●			
LNEU1255R04	12,70	9,60	5,50	0,4	0,04	4		●			
LNEU1255R08	12,70	9,60	5,50	0,8	0,04	4	●	●			
LNEU1255R16	12,70	9,60	5,50	1,6	0,04	4		●			
LNEU1255R32	12,70	9,60	5,50	3,2	0,04	4		●			
LNEU1260R04	12,70	9,60	6,00	0,4	0,04	4		●			

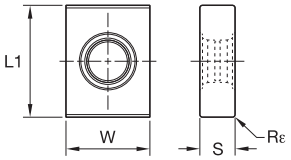
Insert Selection Guide

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	KC725M	–	**KC725M**	.S..GP	KC725M
P3–P4	–	KC725M	–	**KCPK30**	.S..GP	KC725M
P5–P6	–	KC735M	–	**KCPK30**	.S..GP	KC735M
M1–M2	–	KC725M	–	**KC725M**	.S..GP	KC725M
M3	–	KC735M	–	**KCPK30**	.S..GP	KC725M
K1–K2	–	KC520M	–	**KCK15**	–	KCPK30
K3	–	KCK15	–	**KCPK30**	–	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	KC725M	–	**KC725M**	.S..GP	KC725M
S3	–	KC735M	**.S..GP**	**KC735M**	.S..GP	KC725M
S4	–	KC725M	**.S..GP**	**KC725M**	–	–
H1	–	–	–	–	–	–

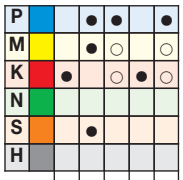
Indexable Inserts • 90° • LNEU-R • LNEU-SGP • LNEQ


LNEU-SGP

LNEQ



● first choice
○ alternate choice



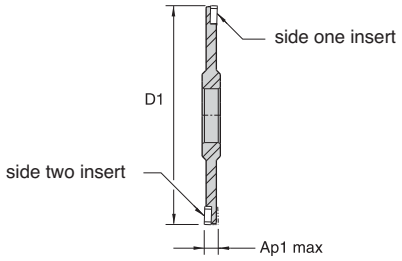
LNEU-SGP

catalogue number	L1	W	S	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEU1235R03SGP 4	12,70	9,60	3,50	0,3	0,09	4		●			
LNEU1240R03SGP 4	12,70	9,60	4,00	0,3	0,08	4		●	●		
LNEU1245R04SGP	12,70	9,60	4,50	0,4	0,08	4		●	●		
LNEU1245R08SGP	12,70	9,60	4,50	0,8	0,09	4		●			
LNEU1245R16SGP	12,70	9,60	4,50	1,6	0,09	4		●			
LNEU1250R04SGP	12,70	9,60	5,00	0,4	0,09	4		●			
LNEU1250R08SGP	12,70	9,60	5,00	0,8	0,09	4		●			

LNEQ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEQ1235R03 4	12,70	9,53	3,50	–	0,3	0,04	4		●		●	
LNEQ1240 4	12,70	9,53	4,00	0,30	–	0,05	4			●		
LNEQ1240R03 4	12,70	9,53	4,00	–	0,3	0,05	4		●		●	●
LNEQ1245R04	12,70	9,53	4,50	–	0,4	0,04	4	●	●		●	●
LNEQ1250R04	12,70	9,53	5,00	–	0,4	0,05	4			●	●	
LNEQ1255	12,70	9,53	5,50	0,40	–	0,05	4			●		
LNEQ1255R04	12,70	9,53	5,50	–	0,4	0,04	4		●		●	
LNEQ1260R04	12,70	9,53	6,00	–	0,4	0,05	4		●		●	

- LNEx narrow slotting 6–13mm slot width.
- Utilises wider inserts in standard cutters.
- Cutting width of this unique LNEx insert style for narrow slotting cutters can be adjusted.
- The width can be increased by 0–1mm increments.
- Refer to the insert combinations in the table below for insert selection.



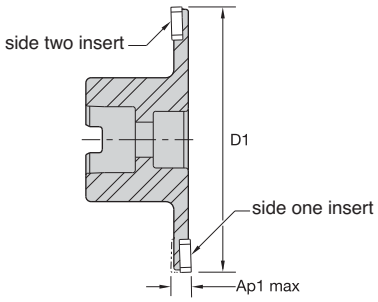
LN Slotting Cutter Widths (Additional Widths Available)

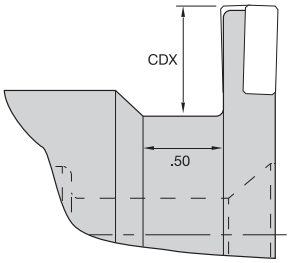
catalogue number	D1	Ap1 max	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
80F08NS90LN12NO6	80	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
80F08NS90LN12NO6	80	6	7	LNE1240	MS-1281	LNE1240	MS-1281
80F08NS90LN12NO8	80	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
80F08NS90LN12NO8	80	8	9	LNE1250	MS-1283	LNE1250	MS-1283
100G10NS90LN12N06	100	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
100G10NS90LN12N06	100	6	7	LNE1240	MS-1281	LNE1240	MS-1281
100G10NS90LN12N08	100	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
100G10NS90LN12N08	100	8	9	LNE1250	MS-1283	LNE1250	MS-1283
125H12NS90LN12N06	125	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
125H12NS90LN12N06	125	6	7	LNE1240	MS-1281	LNE1240	MS-1281
125H12NS90LN12N10	125	10	10.5	LNE1245	MS-1282	LNE1250	MS-1283
125H12NS90LN12N10	125	10	11	LNE1250	MS-1283	LNE1250	MS-1283
160H16NS90LN12N06	160	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
160H16NS90LN12N06	160	6	7	LNE1240	MS-1281	LNE1240	MS-1281
160H16NS90LN12N08	160	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
160H16NS90LN12N08	160	8	9	LNE1250	MS-1283	LNE1250	MS-1283
160H15NS90LN12N10	160	10	10.5	LNE1245	MS-1282	LNE1250	MS-1283
160H15NS90LN12N10	160	10	11	LNE1250	MS-1283	LNE1250	MS-1283
160H15NS90LN12N12	160	12	12.5	LNE1255	MS-1284	LNE1260	MS-1285
160H15NS90LN12N12	160	12	13	LNE1260	MS-1285	LNE1260	MS-1285
200J18NS90LN12N06	200	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
200J18NS90LN12N06	200	6	7	LNE1240	MS-1281	LNE1240	MS-1281
200J18NS90LN12N08	200	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
200J18NS90LN12N08	200	8	9	LNE1250	MS-1283	LNE1250	MS-1283
200J18NS90LN12N10	200	10	10.5	LNE1245	MS-1282	LNE1250	MS-1283
200J18NS90LN12N10	200	10	11	LNE1250	MS-1283	LNE1250	MS-1283
200J18NS90LN12N12	200	12	12.5	LNE1255	MS-1284	LNE1260	MS-1285
200J18NS90LN12N12	200	12	13	LNE1260	MS-1285	LNE1260	MS-1285

* Caution: Variation in cutting width range limited to one size (thickness) greater than the standard insert thickness.
** When changing to a wider insert thickness, use the necessary longer screw; see chart for detail.

NOTE: When cutters have 3 rows of inserts, the above table only refers to the outer insert on both sides of the cutter.
When using inserts with a radii of 2,40mm or greater there is a need to modify the insert pocket; modify to 2.50 x 45° chamfer.

- LNEx narrow slotting 6–11mm slot width.
- Utilises wider inserts in standard cutters.
- Cutting width of this unique LNEx insert style for narrow slotting cutters can be adjusted.
- The width can be increased by 0–1mm increments.
- Refer to the insert combinations in the table below for insert selection.





LN Slotting Cutter Widths (Additional Widths Available)

catalogue number	D1	Ap1 max	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
80Y08RS90LN12N06	80	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
80Y08RS90LN12N06	80	6	7	LNE1240	MS-1281	LNE1240	MS-1281
80Y08RS90LN12N08	80	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
80Y08RS90LN12N08	80	8	9	LNE1250	MS-1283	LNE1250	MS-1283
100Y10RS90LN12N06	100	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
100Y10RS90LN12N06	100	6	7	LNE1240	MS-1281	LNE1240	MS-1281
100Y10RS90LN12N08	100	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
100Y10RS90LN12N08	100	8	9	LNE1250	MS-1283	LNE1250	MS-1283
125Y12RS90LN12N10	125	10	10.5	LNE1245	MS-1282	LNE1250	MS-1283
125Y12RS90LN12N10	125	10	11	LNE1250	MS-1283	LNE1250	MS-1283
160Y16RS90LN12N06	160	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281
160Y16RS90LN12N06	160	6	7	LNE1240	MS-1281	LNE1240	MS-1281
160Y16RS90LN12N08	160	8	8.5	LNE1245	MS-1282	LNE1250	MS-1283
160Y16RS90LN12N08	160	8	9	LNE1250	MS-1283	LNE1250	MS-1283
160Y16RS90LN12N10	160	10	10.5	LNE1245	MS-1282	LNE1250	MS-1283
160Y16RS90LN12N10	160	10	11	LNE1250	MS-1283	LNE1250	MS-1283

Example: Cutting Width of 6,50mm

catalogue number	D1	Ap1 max	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
80Y08RS90LN12N06	80	6	6.5	LNE1235	MS-1280	LNE1240	MS-1281

* Caution: Variation in cutting width range limited to one size (thickness) greater than the standard insert thickness.
** When changing to a wider insert thickness, use the necessary longer screw; see chart for detail.

NOTE: When cutters have 3 rows of inserts, the above table only refers to the outer insert on both sides of the cutter.
When using inserts with a radii of 2,40mm or greater there is a need to modify the insert pocket; modify to 2.50 x 45° chamfer.

Recommended Starting Speeds [m/min]

Material Group		KC520M			KC725M			KC735M			KCK15			KCPK30		
P	1	–	**–**	–	260	**230**	215	–	**–**	–	–	**–**	–	455	**395**	370
	2	–	**–**	–	220	**190**	160	–	**–**	–	–	**–**	–	280	**255**	230
	3	–	**–**	–	200	**170**	140	–	**–**	–	–	**–**	–	255	**230**	205
	4	–	**–**	–	180	**150**	120	–	**–**	–	–	**–**	–	190	**175**	160
	5	–	**–**	–	150	**135**	120	–	**–**	–	–	**–**	–	260	**230**	210
	6	–	**–**	–	130	**100**	80	–	**–**	–	–	**–**	–	160	**135**	–
M	1	–	**–**	–	170	**150**	135	105	**90**	80	–	**–**	–	205	**185**	155
	2	–	**–**	–	155	**130**	110	95	**85**	75	–	**–**	–	185	**160**	140
	3	–	**–**	–	115	**100**	80	70	**60**		–	**–**	–	145	**130**	115
K	1	270	**245**	215	–	**–**	–	–	**–**	–	420	**385**	340	295	**265**	240
	2	210	**190**	175	–	**–**	–	–	**–**	–	335	**295**	275	235	**210**	190
	3	175	**160**	145	–	**–**	–	–	**–**	–	280	**250**	230	195	**175**	160
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	35	**30**	25	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	35	**30**	25	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	45	**35**	25	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	60	**45**	30	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
–	0,12	**0,34**	0,51	0,09	**0,26**	0,38	0,08	**0,22**	0,33	0,07	**0,21**	0,31	0,07	**0,20**	0,31	–
.S..GP	0,17	**0,39**	0,58	0,13	**0,29**	0,44	0,11	**0,25**	0,38	0,10	**0,24**	0,36	0,10	**0,23**	0,35	.S..GP

NOTE: Use “Light Machining” values as starting feed rate.

KSSM™ Slotting Cutter

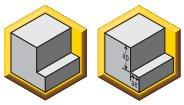
Primary Application

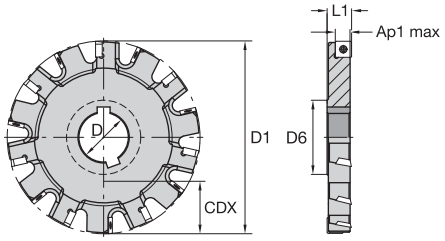
With insert grades and geometries for most materials, the KSSM fixed-width slotting cutters are a cost effective solution for the general engineering market. Very precise adjustments to achieve consistent widths are possible with the variable width and enables customers to change the tool from right hand to left hand with a change of cartridge.

Features and Benefits

- Cutters available in arbor and shell mounts.
- Cutters right and left hand and full slotting have fixed widths.
- Groove widths: Fixed 15,80mm; Adjustable 14–23,30mm.
- Rapid adjustment mechanism.
- Large insert selection — grades and geometries.
- Wiper inserts.
- Insert radii from 0,15–6,35mm.
- Right-hand and left-hand cutters with .359" depth of cut.
- Diameter range is 100–200mm.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Five insert radii available.
- Faceted inserts for superior surface finishes.

- Right-hand and left-hand cutters with 9,1mm width of cut.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Various radii available.
- Faceted inserts for superior surface finishes.





Arbor Mount • 10mm IC • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	kg
3330528	**100G10RP90SP10**	100	32	46,8	26,3	16,0	9,1	10	10	17200	0,54
3330531	**125H11RP90SP10**	125	40	54,8	34,8	16,0	9,1	11	11	15400	0,85
3330974	**160H11RP90SP10**	160	40	54,8	52,6	16,0	9,1	11	11	13660	1,57
3330977	**200J13RP90SP10**	200	50	68,8	65,3	16,0	9,1	13	13	12200	2,56

Spare Parts

D1	insert screw	Nm	Torx Plus driver
100	**MS2148**	2	**DT9IP**
125	**MS2148**	2	**DT9IP**
160	**MS2148**	2	**DT9IP**
200	**MS2148**	2	**DT9IP**

Arbor Mount • 10mm IC • Left Hand

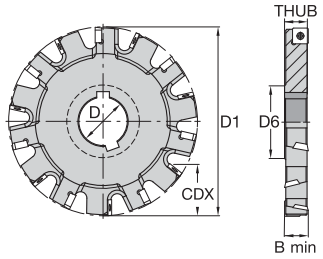
order number	catalogue number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	kg
3330529	**100G10LP90SP10**	100	32	46,8	26,3	16,0	9,1	10	10	17200	0,54
3330532	**125H11LP90SP10**	125	40	54,8	34,8	16,0	9,1	11	11	15400	0,85
3330975	**160H11LP90SP10**	160	40	54,8	52,6	16,0	9,1	11	11	13660	1,57
3330978	**200J13LP90SP10**	200	50	68,8	65,3	16,0	9,1	13	13	12200	2,56

Spare Parts

D1	insert screw	Nm	Torx Plus driver
100	**MS2148**	2	**DT9IP**
125	**MS2148**	2	**DT9IP**
160	**MS2148**	2	**DT9IP**
200	**MS2148**	2	**DT9IP**

NOTE: For superior surface finish, use right- and left-hand inserts.
Insert radii ≥1,6mm (.062") has no facet.

- Neutral (full slotting) cutters.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Faceted inserts for superior surface finishes.



Arbor Mount • 10mm IC • Neutral (Full Slotting)

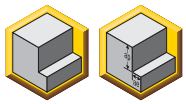
order number	catalogue number	D1	D	D6	CDX	THUB	B min	Z	Z S	kg	max RPM
3330527	**100G10NP90SP10N16K**	100	32	46,8	26,4	13,9	15,8	10	5	0,46	17200
3330530	**125H12NP90SP10N16K**	125	40	54,8	34,9	13,9	15,8	12	6	0,76	15400
3330973	**160H12NP90SP10N16K**	160	40	54,8	52,2	13,9	15,8	12	6	1,40	13660
3330976	**200J14NP90SP10N16K**	200	50	68,8	46,1	13,9	15,8	14	7	2,27	12200

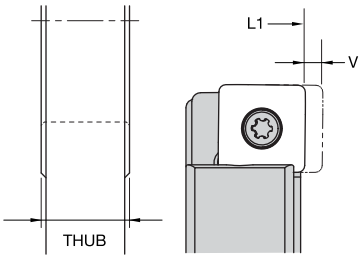
Spare Parts

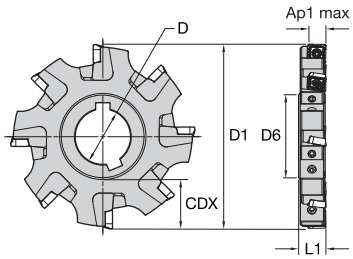
D1	insert screw	Nm	Torx Plus driver
100	**MS2148**	2	**DT9IP**
125	**MS2148**	2	**DT9IP**
160	**MS2148**	2	**DT9IP**
200	**MS2148**	2	**DT9IP**

NOTE: For superior surface finish, use right- and left-hand inserts.
Insert radii ≥1,6mm (.062") has no facet.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



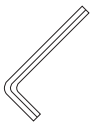




Arbor Mount • Half-Side Cutting • Right Hand

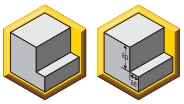
order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2442596	**100G06RK90SP10N14K**	100	32	46,8	25,9	13,9	13,9	1,0	9,1	6	6	17250	0,50
2442602	**125H08RK90SP10N14K**	125	40	54,8	34,4	13,9	13,9	1,0	9,1	8	8	15450	0,80
2443456	**160H10RK90SP10N14K**	160	40	54,8	51,9	13,9	13,9	1,0	9,1	10	10	13650	1,50
2443480	**200J14RK90SP10N14K**	200	50	68,8	64,9	13,9	13,9	1,0	9,1	14	14	12200	2,40

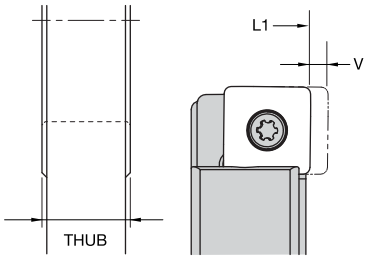
Spare Parts

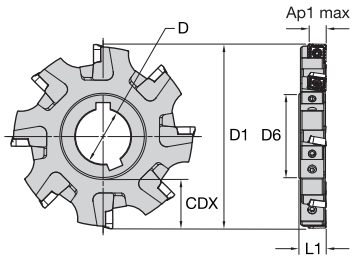


D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
100	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM32**
125	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



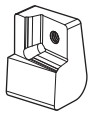


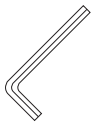


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443435	**125H08RK90SP10N16K**	125	40	54,8	34,4	15,93	15,9	1,0	9,1	8	8	15450	1,00
2443459	**160H10RK90SP10N16K**	160	40	54,8	51,9	15,93	15,9	1,0	9,1	10	10	13650	1,80
2443483	**200J14RK90SP10N16K**	200	50	68,8	64,9	15,93	15,9	1,0	9,1	14	14	12200	2,80
2443504	**250J18RK90SP10N16K**	250	50	68,8	89,9	15,93	15,9	1,0	9,1	18	18	10900	4,70
2443522	**315K20RK90SP10N16K**	315	60	83,8	114,9	15,93	15,9	1,0	9,1	20	20	9700	7,70

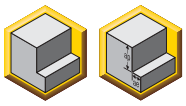
Spare Parts

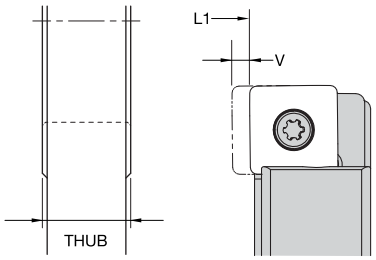


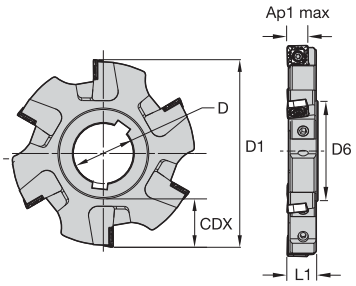


D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
250	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
315	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



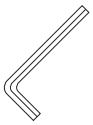




Arbor Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2442597	**100G06LK90SP10N14K**	100	32	46,8	25,9	13,9	13,9	1,0	9,1	6	6	17250	0,50
2443433	**125H08LK90SP10N14K**	125	40	54,8	34,4	13,9	13,9	1,0	9,1	8	8	15450	0,80
2443457	**160H10LK90SP10N14K**	160	40	54,8	51,9	13,9	13,9	1,0	9,1	10	10	13650	1,50
2443481	**200J14LK90SP10N14K**	200	50	68,8	65,2	13,9	13,9	1,0	9,1	14	14	12200	2,40

Spare Parts



D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
100	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM32**
125	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

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- Large selection of insert geometries and grades to cut most workpiece materials.
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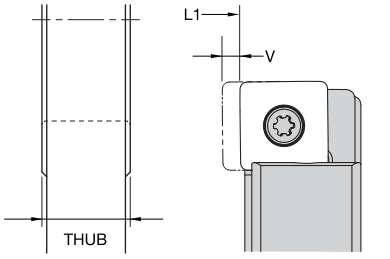
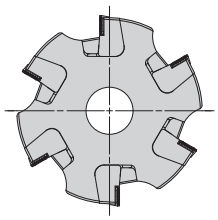
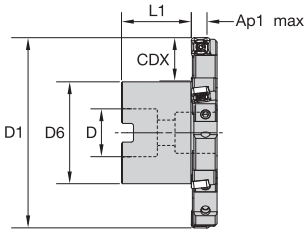
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



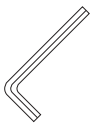




Arbor Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443436	**125H08LK90SP10N16K**	125	40	54,8	34,4	15,93	15,9	1,0	9,1	8	8	15450	1,00
2443460	**160H10LK90SP10N16K**	160	40	54,8	51,9	15,93	15,9	1,0	9,1	10	10	13650	1,80
2443484	**200J14LK90SP10N16K**	200	50	68,8	64,9	15,93	15,9	1,0	9,1	14	14	12200	2,80
2443505	**250J18LK90SP10N16K**	250	50	68,8	89,9	15,93	15,9	1,0	9,1	18	18	10900	4,70
2443523	**315K20LK90SP10N16K**	315	60	83,8	114,9	15,93	15,9	1,0	9,1	20	20	9700	7,70

Spare Parts



D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
250	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
315	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

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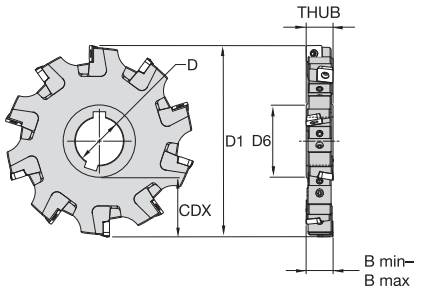
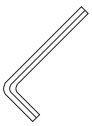


Arbor Mount Slotting Cutter • 14–16mm Adjustment Range

order number	catalogue number	D1	D	D6	CDX	THUB	B min	B max	Z	Z S	max RPM	kg
2442595	**100G06NK90SP10N14K**	100	32	46,8	25,9	13,9	14	16	6	3	17250	0,50
2442601	**125H08NK90SP10N14K**	125	40	54,8	34,4	13,9	14	16	8	4	15450	0,80
2443455	**160H10NK90SP10N14K**	160	40	54,8	51,9	13,9	14	16	10	5	13650	1,50
2443479	**200J14NK90SP10N14K**	200	50	68,8	64,9	13,9	14	16	14	7	12200	2,40

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
100	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM32**
125	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

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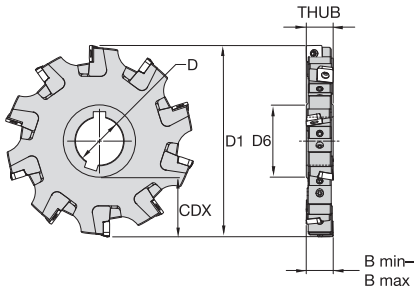
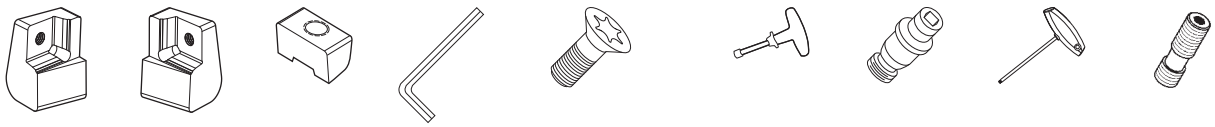


Arbor Mount Slotting Cutter • 16–18mm Adjustment Range

order number	catalogue number	D1	D	D6	CDX	THUB	B min	B max	Z	Z S	max RPM	kg
2443434	**125H08NK90SP10N16K**	125	40	54,8	34,4	15,9	16	18	8	4	15450	1,00
2443458	**160H10NK90SP10N16K**	160	40	54,8	51,9	15,9	16	18	10	5	13650	1,80
2443482	**200J14NK90SP10N16K**	200	50	68,8	64,9	15,9	16	18	14	7	12200	2,80
2443503	**250J18NK90SP10N16K**	250	50	68,8	89,9	15,9	16	18	18	9	10900	4,70
2443521	**315K20NK90SP10N16K**	315	60	83,8	114,9	15,9	16	18	20	10	9700	7,70

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
160	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
200	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
250	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**
315	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**

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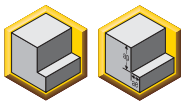
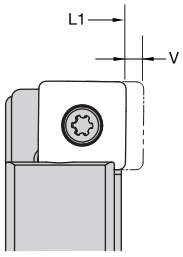
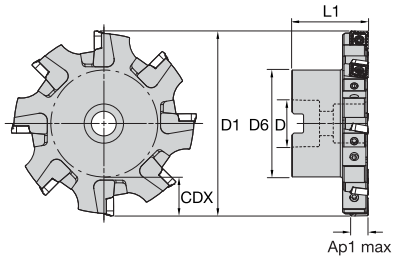


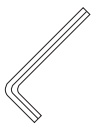




Shell Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2442599	**100Y06RK90SP10N14K**	100	27	48,0	24,4	50,8	1,0	9,1	6	6	17250	0,90
2443444	**125Y08RK90SP10N14K**	125	32	58,0	31,9	50,8	1,0	9,1	8	8	15450	1,40
2443468	**160Y10RK90SP10N14K**	160	40	70,0	43,4	50,8	1,0	9,1	10	10	13650	2,00
2443492	**200Y14RK90SP10N14K**	200	40	90,0	53,4	50,8	1,0	9,1	14	14	12200	3,70

Spare Parts



D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
100	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1556**
125	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–
200	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–

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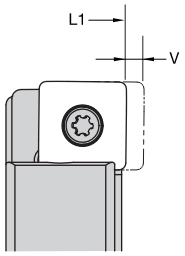
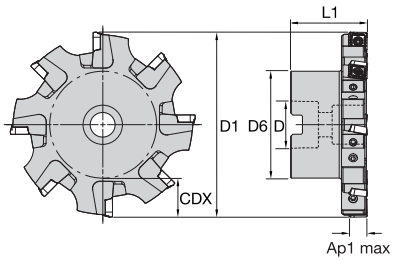
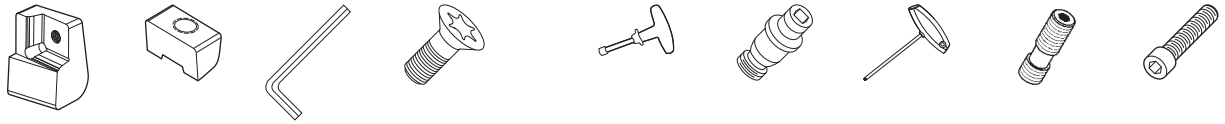




Shell Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443447	**125Y08RK90SP10N16K**	125	32	58,0	31,9	50,8	1,0	9,1	8	8	15450	1,60
2443471	**160Y10RK90SP10N16K**	160	40	70,0	43,4	50,8	1,0	9,1	10	10	13650	2,20
2443495	**200Y14RK90SP10N16K**	200	40	90,0	53,4	50,8	1,0	9,1	14	14	12200	4,10
2443513	**250Y18RK90SP10N16K**	250	60	130,0	58,4	50,8	1,0	9,1	18	18	10900	6,40
2443531	**315Y20RK90SP10N16K**	315	60	130,0	90,9	50,8	1,0	9,1	20	20	9700	9,50

Spare Parts



D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
200	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
250	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
315	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**

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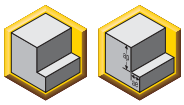
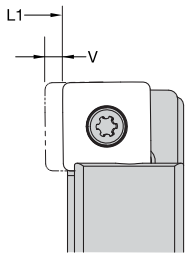
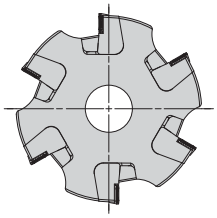
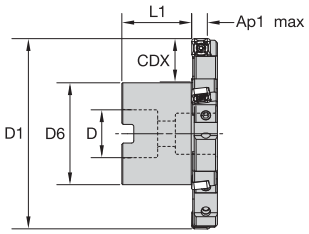




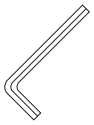




Shell Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2442600	**100Y06LK90SP10N14K**	100	27	48,0	24,4	36,8	1,0	9,1	6	6	17250	0,90
2443445	**125Y08LK90SP10N14K**	125	32	58,0	31,9	36,8	1,0	9,1	8	8	15450	1,40
2443469	**160Y10LK90SP10N14K**	160	40	70,0	43,4	36,8	1,0	9,1	10	10	13650	2,00
2443493	**200Y14LK90SP10N14K**	200	40	90,0	53,4	36,8	1,0	9,1	14	14	12200	3,70

Spare Parts



D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
100	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1556**
125	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–
200	**LK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–

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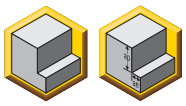
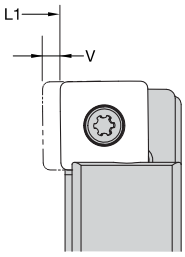
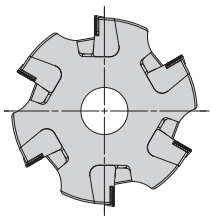
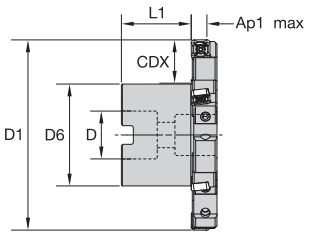
- Wiper insert facets for superior surface finishes.





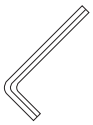




Shell Mount • Half-Side Cutting • Left Hand

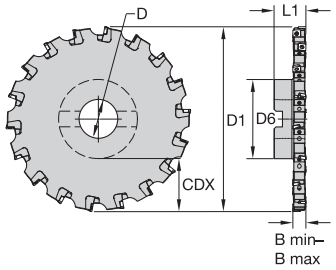
order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443448	**125Y08LK90SP10N16K**	125	32	58,0	31,9	34,8	1,0	9,1	8	8	15450	1,60
2443472	**160Y10LK90SP10N16K**	160	40	70,0	43,4	34,8	1,0	9,1	10	10	13650	2,20
2443496	**200Y14LK90SP10N16K**	200	40	90,0	53,4	34,8	1,0	9,1	14	14	12200	4,10
2443514	**250Y18LK90SP10N16K**	250	60	130,0	58,4	34,8	1,0	9,1	18	18	10900	6,40
2443532	**315Y20LK90SP10N16K**	315	60	130,0	90,9	34,8	1,0	9,1	20	20	9700	9,50

Spare Parts



D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
200	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
250	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
315	**LK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**

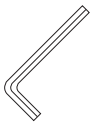
- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Wiper insert facets for superior surface finishes.



Shell Mount Slotting Cutters • 14–16mm Adjustment Range

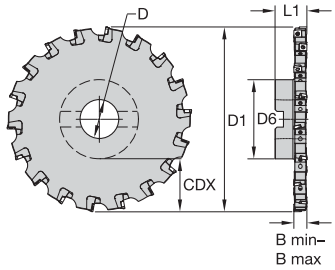
order number	catalogue number	D1	D	D6	CDX	L1	B min	B max	Z	Z S	max RPM	kg
2442598	**100Y06NK90SP10N14K**	100	27	48,0	24,4	50,8	14	16	6	3	17250	0,90
2443443	**125Y08NK90SP10N14K**	125	32	58,0	31,9	50,8	14	16	8	4	15450	1,40
2443467	**160Y10NK90SP10N14K**	160	40	70,0	43,4	50,8	14	16	10	5	13650	2,00
2443491	**200Y14NK90SP10N14K**	200	40	90,0	53,4	50,8	14	16	14	7	12200	3,70

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
100	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1556**
125	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–
200	**LK90SP1014**	**RK90SP1014**	**W14**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	–

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Wiper insert facets for superior surface finishes.



Shell Mount Slotting Cutters • 16–18mm Adjustment Range

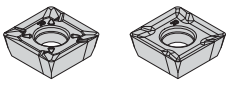
order number	catalogue number	D1	D	D6	CDX	L1	B min	B max	Z	Z S	max RPM	kg
2443446	**125Y08NK90SP10N16K**	125	32	58,0	31,9	50,8	16	18	8	4	15450	1,60
2443470	**160Y10NK90SP10N16K**	160	40	70,0	43,4	50,8	16	18	10	5	13650	2,20
2443494	**200Y14NK90SP10N16K**	200	40	90,0	53,4	50,8	16	18	14	7	12200	4,10
2443512	**250Y18NK90SP10N16K**	250	60	130,0	58,4	50,8	16	18	18	9	10900	6,40
2443530	**315Y20NK90SP10N16K**	315	60	130,0	90,9	50,8	16	18	20	10	9700	9,50

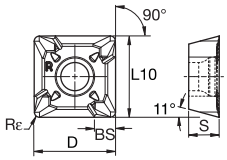
Spare Parts

D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
200	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
250	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**
315	**LK90SP1016**	**RK90SP1016**	**W16**	**MW25**	**MS2148**	2	**TTP9**	**CP1416**	**THW3M**	**STCM11**	**–**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


SPCT-LD2 SPCT-LE



● first choice
○ alternate choice

	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
P			●		●	●
M			●		○	○
K		●		●	○	○
N	●					
S			●			
H						

SPCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPELLD2	10,00	3,97	10,00	2,70	0,4	0,04	4			●			
SPCT10T304PPERLD2	10,00	3,97	10,00	2,70	0,4	0,04	4			●		●	
SPCT10T3PPERLD2	10,00	3,97	10,00	2,70	0,8	0,04	4		●	●		●	
SPCT10T3PPELLD2	10,00	3,97	10,00	2,70	0,8	0,04	4			●			
SPCT10T312PPERLD2	10,00	3,97	10,00	2,70	1,2	0,04	4			●			
SPCT10T312PPELLD2	10,00	3,97	10,00	2,70	1,2	0,04	4			●			
SPCT10T316ENLD2	10,00	3,97	10,00	–	1,6	0,04	4			●			
SPCT10T320ENLD2	10,00	3,97	10,00	–	2,0	0,04	4			●			

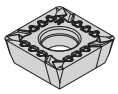
SPCT-LE

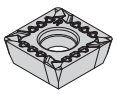
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPFLLE	10,00	3,97	10,00	2,70	0,4	0,02	4	●					
SPCT10T304PPFRLE	10,00	3,97	10,00	2,70	0,4	0,02	4	●					
SPCT10T3PPFRLE	10,00	3,97	10,00	2,70	0,8	0,02	4	●					
SPCT10T3PPFLLE	10,00	3,97	10,00	2,70	0,8	0,02	4	●					
SPCT10T312PPFRLE	10,00	3,97	10,00	2,70	1,2	0,02	4	●					
SPCT10T312PPFLLE	10,00	3,97	10,00	2,70	1,2	0,02	4	●					
SPCT10T316FNLE	10,00	3,97	10,00	–	1,6	0,02	4	●					
SPCT10T320FNLE	10,00	3,97	10,00	–	2,0	0,02	4	●					

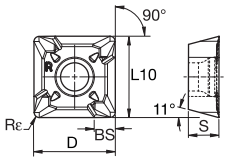
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

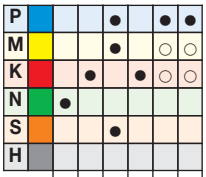
Indexable Inserts • KSSM SP.T10T3...


SPET-GB2


SPPT-GB2



● first choice
○ alternate choice



SPET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPET10T304PPERGB2	10,00	3,97	10,00	2,70	0,4	0,08	4			●	●		●
SPET10T304PPELGB2	10,00	3,97	10,00	2,70	0,4	0,08	4			●	●		●
SPET10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4		●	●	●		●
SPET10T3PPELGB2	10,00	3,97	10,00	2,70	0,8	0,08	4		●	●	●		●
SPET10T3PPSLGB2	10,00	3,97	10,00	2,70	0,8	0,13	4			●			●
SPET10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4		●	●	●		●

SPPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPPT10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4				●	●	●
SPPT10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4				●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC725M		
P	1	–	–	–	–	–	–	260	**230**	215
	2	–	–	–	–	–	–	220	**190**	160
	3	–	–	–	–	–	–	200	**170**	140
	4	–	–	–	–	–	–	180	**150**	120
	5	–	–	–	–	–	–	150	**135**	120
	6	–	–	–	–	–	–	130	**100**	80
M	1	–	–	–	–	–	–	170	**150**	135
	2	–	–	–	–	–	–	155	**130**	110
	3	–	–	–	–	–	–	115	**100**	80
K	1	–	–	–	270	**245**	215	–	–	–
	2	–	–	–	210	**190**	175	–	–	–
	3	–	–	–	175	**160**	145	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–
	3	1080	**995**	915	–	–	–	–	–	–
S	1	–	–	–	–	–	–	35	**30**	25
	2	–	–	–	–	–	–	35	**30**	25
	3	–	–	–	–	–	–	45	**35**	25
	4	–	–	–	–	–	–	60	**45**	30
H	1	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	550	**485**	450	455	**395**	370
	2	–	–	–	340	**310**	275	280	**255**	230
	3	–	–	–	310	**275**	255	255	**230**	205
	4	–	–	–	230	**215**	190	190	**175**	160
	5	–	–	–	275	**250**	230	260	**230**	210
	6	–	–	–	190	**170**	145	160	**135**	–
M	1	–	–	–	225	**200**	175	205	**185**	155
	2	–	–	–	205	**175**	160	185	**160**	140
	3	–	–	–	160	**145**	125	145	**130**	115
K	1	420	**385**	340	360	**325**	295	295	**265**	240
	2	335	**295**	275	285	**255**	235	235	**210**	190
	3	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

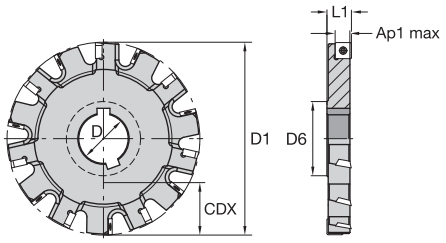
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,25**	0,49	0,07	**0,19**	0,37	0,06	**0,17**	0,32	0,05	**0,16**	0,30	0,05	**0,15**	0,29	.E..LD2
.E..GB2	0,17	**0,36**	0,61	0,13	**0,27**	0,46	0,11	**0,23**	0,40	0,10	**0,22**	0,37	0,10	**0,21**	0,36	.E..GB2
.S..GB2	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GB2

NOTE: Use “Light Machining” values as starting feed rate.

- Right- and left-hand cutters.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Faceted inserts for superior surface finishes.



Arbor Mount • 12mm IC • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	kg
3330984	**160H12RP90SD12**	160	40	54,8	52,6	20,0	11,70	12	12	9170	1,95
3330987	**200J14RP90SD12**	200	50	68,8	65,6	20,0	11,70	14	14	8210	3,18
3330990	**250J16RP90SD12**	250	50	68,8	90,6	20,0	11,70	16	16	7300	5,29

Spare Parts

D1	insert screw	Nm	Torx Plus driver
160	**MS2078**	4	**DT15IP**
200	**MS2078**	4	**DT15IP**
250	**MS2078**	4	**DT15IP**

NOTE: For superior surface finish, use right-hand inserts.

Arbor Mount • 12mm IC • Left Hand

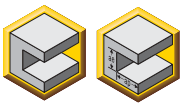
order number	catalogue number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	kg
3330985	**160H12LP90SD12**	160	40	54,8	55,6	20,0	11,7	12	12	9170	1,95
3330988	**200J14LP90SD12**	200	50	68,8	65,6	20,0	11,7	14	14	8210	3,18
3330991	**250J16LP90SD12**	250	50	68,8	90,6	20,0	11,7	16	16	7300	5,29

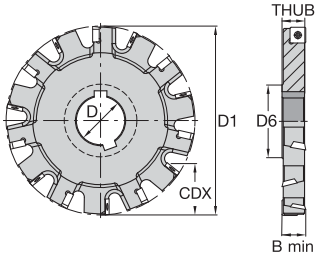
Spare Parts

D1	insert screw	Nm	Torx Plus driver
160	**MS2078**	4	**DT15IP**
200	**MS2078**	4	**DT15IP**
250	**MS2078**	4	**DT15IP**

NOTE: For superior surface finish, use left-hand inserts.
Insert radii ≥1,6mm (.062") has no facet.

- Neutral (full slotting) cutters.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Faceted inserts for superior surface finishes.





Arbor Mount • 12mm IC • Neutral (Full Slotting)

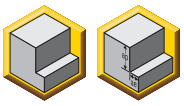
order number	catalog number	D1	D	D6	CDX	THUB	B min	Z	Z S	max RPM	kg
3330983	**160H14NP90SD12N20K**	160	40	54,8	52,2	17,9	19,8	14	7	9170	1,84
3330986	**200J18NP90SD12N20K**	200	50	68,8	65,2	17,9	19,8	18	9	8210	3,11
3330989	**250J22NP90SD12N20K**	250	50	68,8	90,4	17,9	19,8	22	11	7300	5,14

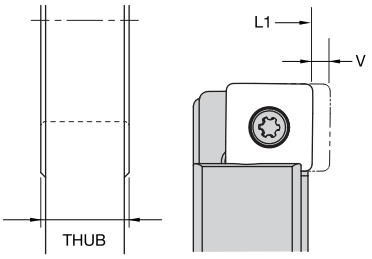
Spare Parts

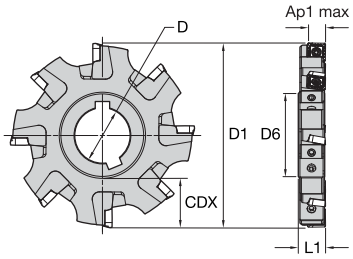
D1	insert screw	Nm	Torx Plus driver
160	**MS2078**	4	**DT15IP**
200	**MS2078**	4	**DT15IP**
250	**MS2078**	4	**DT15IP**

NOTE: For superior surface finish, use right-hand inserts.
Insert radii ≥1,6mm (.062") has no facet.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



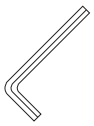


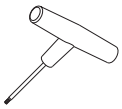


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443438	**125H08RK90SD12N18K**	125	40	54,8	34,0	18,1	18,2	1,3	11,7	8	8	10350	1,00
2443462	**160H10RK90SD12N18K**	160	40	54,8	51,5	18,1	18,2	1,3	11,7	10	10	9150	1,80
2443486	**200J14RK90SD12N18K**	200	50	68,8	64,5	18,1	18,2	1,3	11,7	14	14	8200	3,00
2443507	**250J16RK90SD12N18K**	250	50	68,8	89,5	18,1	18,2	1,3	11,7	16	16	7350	5,00
2443525	**315K18RK90SD12N18K**	315	60	83,8	114,5	18,1	18,2	1,3	11,7	18	18	6500	8,40

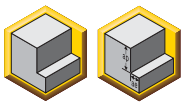
Spare Parts

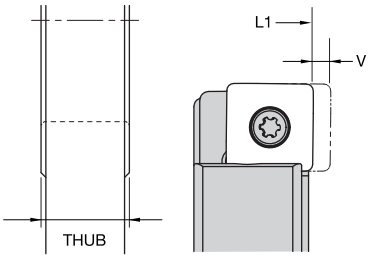


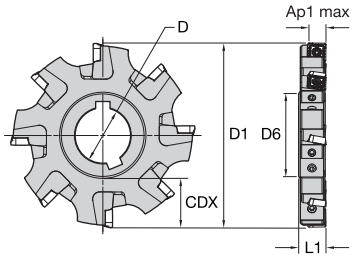


D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



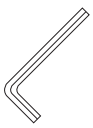


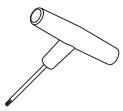


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443441	**125H08RK90SD12N20K**	125	40	54,8	34,0	20,7	20,8	1,3	11,7	8	8	10350	1,20
2443465	**160H10RK90SD12N20K**	160	40	54,8	51,5	20,7	20,8	1,3	11,7	10	10	9150	2,10
2443489	**200J14RK90SD12N20K**	200	50	68,8	64,5	20,7	20,8	1,3	11,7	14	14	8200	3,50
2443510	**250J16RK90SD12N20K**	250	50	68,8	89,5	20,7	20,8	1,3	11,7	16	16	7350	5,90
2443528	**315K18RK90SD12N20K**	315	60	83,8	114,5	20,7	20,8	1,3	11,7	18	18	6500	9,70

Spare Parts





D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

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- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide choice of insert radii.
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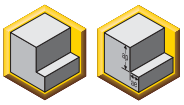
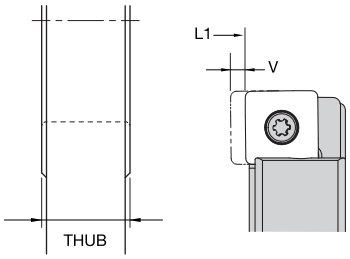
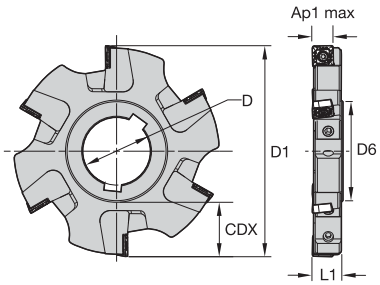
- Wiper insert facets for superior surface finishes.



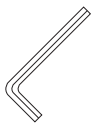


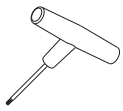


Arbor Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443439	**125H08LK90SD12N18K**	125	40	54,8	34,0	18,1	18,2	1,3	11,7	8	8	10350	1,00
2443463	**160H10LK90SD12N18K**	160	40	54,8	51,5	18,1	18,2	1,3	11,7	10	10	9150	1,80
2443487	**200J14LK90SD12N18K**	200	50	68,8	64,5	18,1	18,2	1,3	11,7	14	14	8200	3,00
2443508	**250J16LK90SD12N18K**	250	50	68,8	89,5	18,1	18,2	1,3	11,7	16	16	7350	5,00
2443526	**315K18LK90SD12N18K**	315	60	83,8	114,5	18,1	18,2	1,3	11,7	18	18	6500	8,40

Spare Parts





D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
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- Two keyways for staggered mounting.
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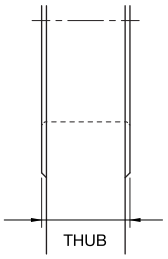
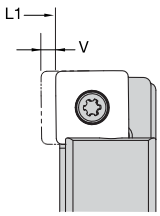
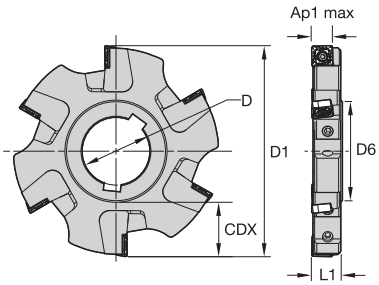


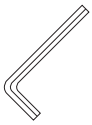


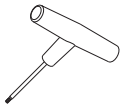


Arbor Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	kg
2443442	**125H08LK90SD12N20K**	125	40	54,8	34,0	20,7	20,8	1,3	11,7	8	8	10350	1,20
2443466	**160H10LK90SD12N20K**	160	40	54,8	51,5	20,7	20,8	1,3	11,7	10	10	9150	2,10
2443490	**200J14LK90SD12N20K**	200	50	68,8	64,5	20,7	20,8	1,3	11,7	14	14	8200	3,50
2443511	**250J16LK90SD12N20K**	250	50	68,8	89,5	20,7	20,8	1,3	11,7	16	16	7350	5,90
2443529	**315K18LK90SD12N20K**	315	60	83,8	114,5	20,7	20,8	1,3	11,7	18	18	6500	9,70

Spare Parts





D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
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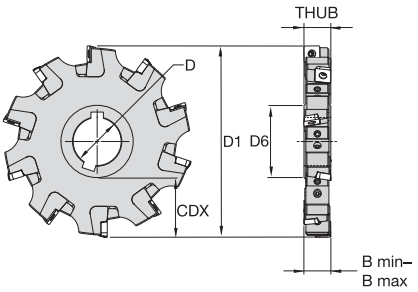
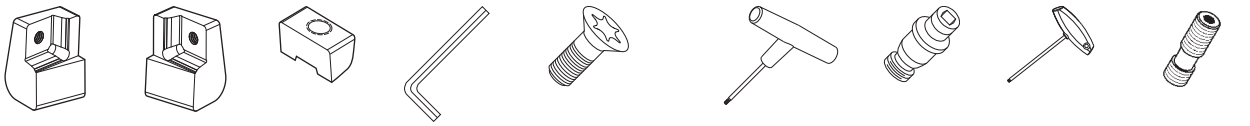
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



Arbor Mount Slotting Cutter • 18–20,7mm Adjustment Range

order number	catalogue number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	kg
2443437	**125H08NK90SD12N18K**	125	40	54,8	18	20,7	34,0	18,2	8	4	10350	1,00
2443461	**160H10NK90SD12N18K**	160	40	54,8	18	20,7	51,5	18,2	10	5	9150	1,80
2443485	**200J14NK90SD12N18K**	200	50	68,8	18	20,7	64,5	18,2	14	7	8200	3,00
2443506	**250J16NK90SD12N18K**	250	50	68,8	18	20,7	89,5	18,2	16	8	7350	5,00
2443524	**315K18NK90SD12N18K**	315	60	83,8	18	20,7	114,5	18,2	18	9	6500	8,40

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

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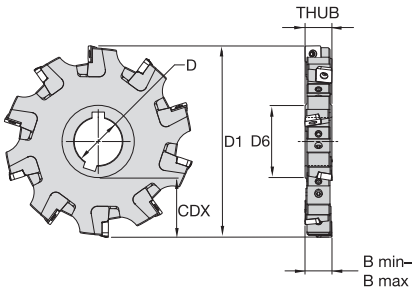
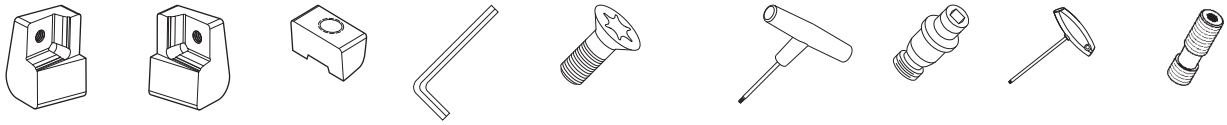


Arbor Mount Slotting Cutter • 20,7–23,3mm Adjustment Range

order number	catalogue number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	kg
2443440	**125H08NK90SD12N20K**	125	40	54,8	20,7	23,3	34,0	20,8	8	4	10350	1,20
2443464	**160H10NK90SD12N20K**	160	40	54,8	20,7	23,3	51,5	20,8	10	5	9150	2,10
2443488	**200J14NK90SD12N20K**	200	50	68,8	20,7	23,3	64,5	20,8	14	7	8200	3,50
2443509	**250J16NK90SD12N20K**	250	50	68,8	20,7	23,3	89,5	20,8	16	8	7350	5,90
2443527	**315K18NK90SD12N20K**	315	60	83,8	20,7	23,3	114,5	20,8	18	9	6500	9,70

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw
125	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
160	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
200	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
250	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**
315	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**

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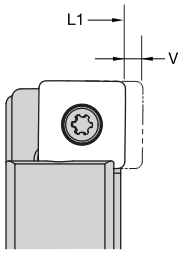
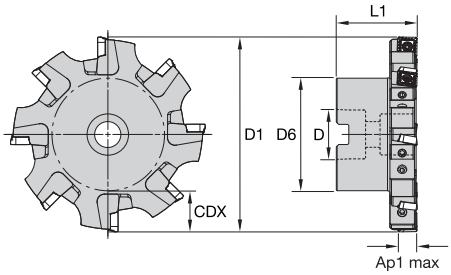
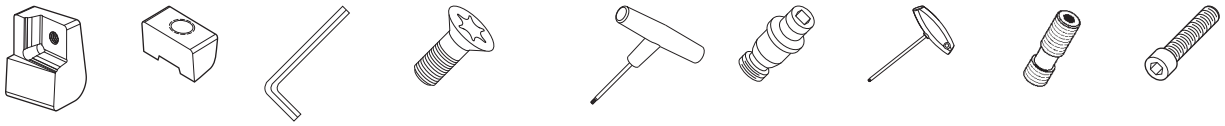




Shell Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443450	**125Y08RK90SD12N18K**	125	32	58,0	31,9	51,0	1,3	11,7	8	8	10350	1,60
2443474	**160Y10RK90SD12N18K**	160	40	70,0	43,4	51,0	1,3	11,7	10	10	9150	2,30
2443498	**200Y14RK90SD12N18K**	200	40	90,0	53,4	51,0	1,3	11,7	14	14	8200	4,20
2443516	**250Y16RK90SD12N18K**	250	60	130,0	58,4	51,0	1,3	11,7	16	16	7350	6,70
2443537	**315Y18RK90SD12N18K**	315	60	130,0	90,9	51,0	1,3	11,7	18	18	6500	10,10

Spare Parts



D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

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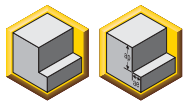
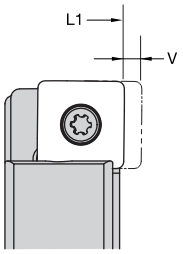
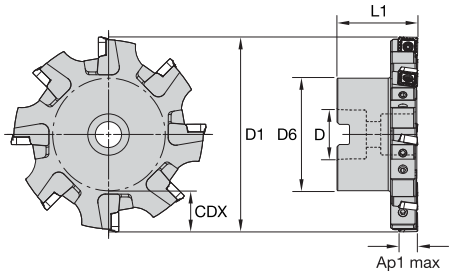


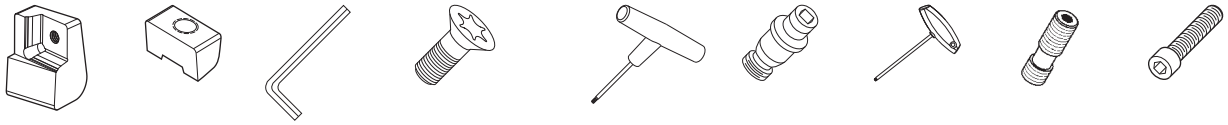




Shell Mount • Half-Side Cutting • Right Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443453	**125Y08RK90SD12N20K**	125	32	58,0	31,9	51,0	1,3	11,7	8	8	10350	1,70
2443477	**160Y10RK90SD12N20K**	160	40	70,0	43,4	51,0	1,3	11,7	10	10	9150	2,50
2443501	**200Y14RK90SD12N20K**	200	40	90,0	53,4	51,0	1,3	11,7	14	14	8200	4,60
2443519	**250Y16RK90SD12N20K**	250	60	130,0	58,4	51,0	1,3	11,7	16	16	7350	7,30
2443534	**315Y18RK90SD12N20K**	315	60	130,0	90,9	51,0	1,3	11,7	18	18	6500	11,30

Spare Parts



D1	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

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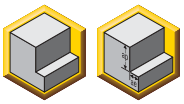
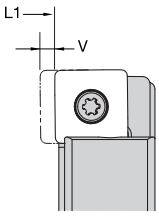
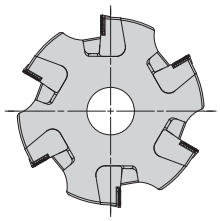
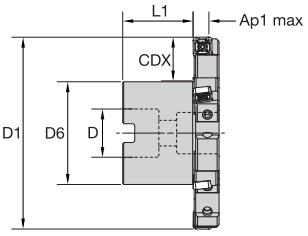




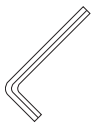


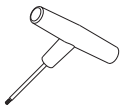


Shell Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443451	**125Y08LK90SD12N18K**	125	32	58,0	31,9	33,0	1,3	11,7	8	8	10350	1,60
2443475	**160Y10LK90SD12N18K**	160	40	70,0	43,4	33,0	1,3	11,7	10	10	9150	2,30
2443499	**200Y14LK90SD12N18K**	200	40	90,0	53,4	33,0	1,3	11,7	14	14	8200	4,20
2443517	**250Y16LK90SD12N18K**	250	60	130,0	58,4	33,0	1,3	11,7	16	16	7350	6,70
2443538	**315Y18LK90SD12N18K**	315	60	130,0	90,9	33,0	1,3	11,7	18	18	6500	10,10

Spare Parts





D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**LK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

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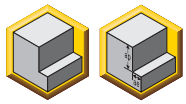
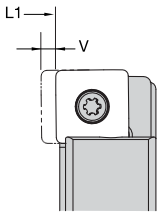
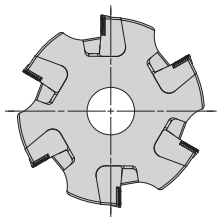
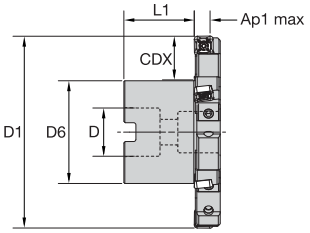




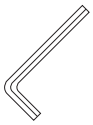


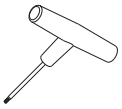


Shell Mount • Half-Side Cutting • Left Hand

order number	catalogue number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	kg
2443454	**125Y08LK90SD12N20K**	125	32	58,0	31,9	30,4	1,3	11,7	8	8	10350	1,70
2443478	**160Y10LK90SD12N20K**	160	40	70,0	43,4	30,4	1,3	11,7	10	10	9150	2,50
2443502	**200Y14LK90SD12N20K**	200	40	90,0	53,4	30,4	1,3	11,7	14	14	8200	4,60
2443520	**250Y16LK90SD12N20K**	250	60	130,0	58,4	30,4	1,3	11,7	16	16	7350	7,30
2443535	**315Y18LK90SD12N20K**	315	60	130,0	90,9	30,4	1,3	11,7	18	18	6500	11,30

Spare Parts





D1	left-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin wrench	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**LK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

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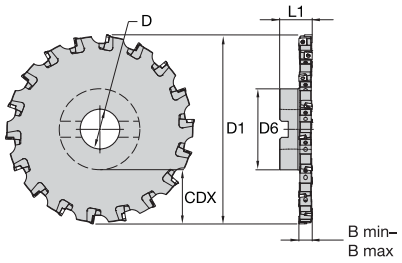
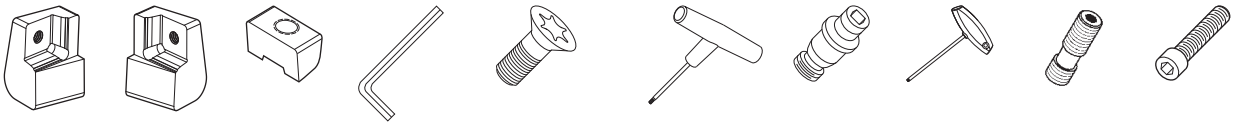


Shell Mount • Slotting Width • 18–20,7mm Adjustment Range

order number	catalogue number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	kg
2443449	**125Y08NK90SD12N18K**	125	32	58,0	18	20,7	31,9	51,0	8	4	10350	1,60
2443473	**160Y10NK90SD12N18K**	160	40	70,0	18	20,7	43,4	51,0	10	5	9150	2,30
2443497	**200Y14NK90SD12N18K**	200	40	90,0	18	20,7	53,4	51,0	14	7	8200	4,20
2443515	**250Y16NK90SD12N18K**	250	60	130,0	18	20,7	58,4	51,0	16	8	7350	6,70
2443536	**315Y18NK90SD12N18K**	315	60	130,0	18	20,7	90,9	51,0	18	9	6500	10,10

Spare Parts



D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**LK90SD1218**	**RK90SD1218**	**W18**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

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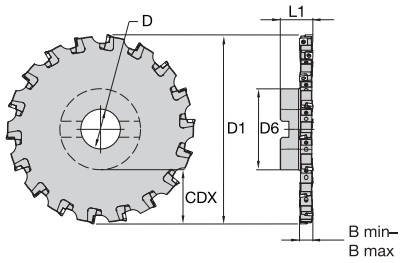
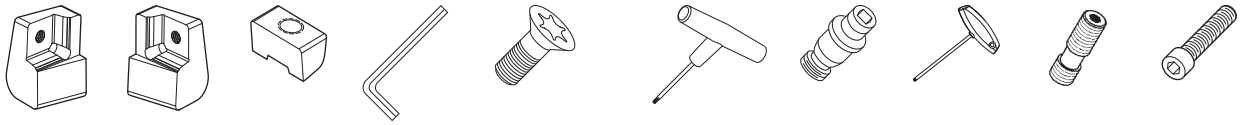


Shell Mount • Slotting Width • 20,7–23,3mm Adjustment Range

order number	catalogue number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	kg
2443452	**125Y08NK90SD12N20K**	125	32	58,0	20,7	23,3	31,9	51,0	8	4	10350	1,70
2443476	**160Y10NK90SD12N20K**	160	40	70,0	20,7	23,3	43,4	51,0	10	5	9150	2,50
2443500	**200Y14NK90SD12N20K**	200	40	90,0	20,7	23,3	53,4	51,0	14	7	8200	4,60
2443518	**250Y16NK90SD12N20K**	250	60	130,0	20,7	23,3	58,4	51,0	16	8	7350	7,30
2443533	**315Y18NK90SD12N20K**	315	60	130,0	20,7	23,3	90,9	51,0	18	9	6500	11,30

Spare Parts

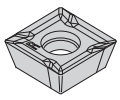


D1	left-hand cartridge	right-hand cartridge	wedge	cam pin wrench	insert screw	Nm	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
125	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**MS1559**
160	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
200	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
250	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**
315	**LK90SD1220**	**RK90SD1220**	**W20**	**MW3**	**MS2077**	4	**TTP15**	**CP1820**	**THW3M**	**STCM11**	**–**

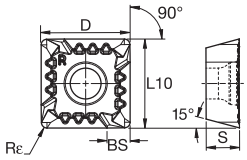
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
P5–P6	.E..GB2	KCPM20	**.S..GB2**	**KCPM20**	.S..GB	KCPK30
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
K1–K2	.E..LD	KCK15	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • KSSM SD.T1204...



SDCT-LE

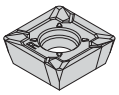


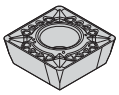
● first choice
○ alternate choice

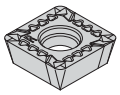
		KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N		●						
S				●	●			
H								

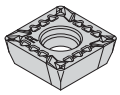
SDCT-LE

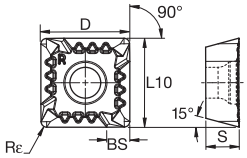
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDCT120404PDFLLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●						
SDCT120404PDFRLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●						
SDCT1204PDFLLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●						
SDCT1204PDFRLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●						
SDCT120412PDFLLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●						
SDCT120412PDFRLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●						
SDCT120416FNLE	12,70	4,76	12,70	–	1,6	0,02	4	●						
SDCT120420FNLE	12,70	4,76	12,70	–	2,0	0,02	4	●						
SDCT120424FNLE	12,70	4,76	12,70	–	2,4	0,02	4	●						
SDCT120432FNLE	12,70	4,76	12,70	–	3,2	0,02	4	●						


SDCT-LD2


SDET-GB


SDET-GB2


SDPT-GB2



P			○	●		●	●
M			●	●		○	○
K		●	○		●	○	○
N	●						
S			●	●			
H							

● first choice
○ alternate choice

SDCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDCT120404PDELLD2	12,70	4,76	12,70	2,70	0,4	0,04	4				●			
SDCT120404PDERLD2	12,70	4,76	12,70	2,93	0,4	0,04	4				●			●
SDCT1204PDERLD2	12,70	4,76	12,70	3,32	0,8	0,04	4		●		●			●
SDCT1204PDELLD2	12,70	4,76	12,70	3,32	0,8	0,04	4				●			
SDCT120412PDERLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●			
SDCT120412PDELLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●			
SDCT120416ENLD2	12,70	4,76	12,70	–	1,6	0,04	4				●			
SDCT120420ENLD2	12,70	4,76	12,70	–	2,0	0,04	4				●			
SDCT120424ENLD2	12,70	4,76	12,70	–	2,4	0,04	4				●			
SDCT120432ENLD2	12,70	4,76	12,70	–	3,2	0,04	4			●	●			
SDCT120464ENLD2	12,70	4,76	12,70	–	6,3	0,04	2				●			

SDET-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDET1204PDERGB	12,70	4,76	12,70	3,36	0,8	0,07	4		●					
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	0,16	4				●		●	
SDET120412PDERGB	12,70	4,76	12,70	3,36	1,2	0,07	4				●			
SDET120464SNGB	12,70	4,76	12,70	–	6,4	0,15	2				●			

SDET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDET1204PDELGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●	●	
SDET1204PDERGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●	●	
SDET1204PDSLGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●	●	
SDET1204PDSRGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●	●	
SDET120412PDELGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●		
SDET120412PDERGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●	●	
SDET120416SNGB2	12,70	4,76	12,70	–	1,6	0,13	4		●		●	●	●	
SDET120420SNGB2	12,70	4,76	12,70	–	2,0	0,13	4		●		●	●	●	
SDET120424SNGB2	12,70	4,76	12,70	–	2,4	0,13	4		●		●	●	●	
SDET120432SNGB2	12,70	4,76	12,70	–	3,2	0,13	4		●		●	●	●	
SDET120432XENGB2	12,70	4,76	12,70	–	3,2	0,08	2				●			
SDET120464SNGB2	12,70	4,76	12,70	–	6,4	0,13	2					●	●	

SDPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDPT1204PDERGB2	12,70	4,76	12,70	2,70	0,8	0,08	4				●	●	●	●
SDPT1204PDSRGB2	12,70	4,76	12,70	2,70	0,8	0,13	4				●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–
	3	1080	**995**	915	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	2	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	3	–	–	–	–	–	–	50	**40**	25	45	**35**	25
	4	–	–	–	–	–	–	70	**50**	35	60	**45**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM20		
P	1	–	–	–	455	**395**	370	550	**485**	450
	2	–	–	–	280	**255**	230	340	**310**	275
	3	–	–	–	255	**230**	205	310	**275**	255
	4	–	–	–	190	**175**	160	230	**215**	190
	5	–	–	–	260	**230**	210	275	**250**	230
	6	–	–	–	160	**135**	–	190	**170**	145
M	1	–	–	–	205	**185**	155	225	**200**	175
	2	–	–	–	185	**160**	140	205	**175**	160
	3	–	–	–	145	**130**	115	160	**145**	125
K	1	420	**385**	340	295	**265**	240	360	**325**	295
	2	335	**295**	275	235	**210**	190	285	**255**	235
	3	280	**250**	230	195	**175**	160	240	**215**	200
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

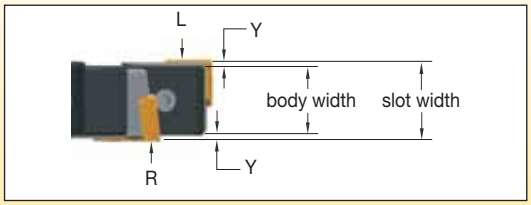
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD
.E..LD2	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD2
.E..GB	0,17	**0,35**	0,59	0,12	**0,26**	0,44	0,11	**0,23**	0,38	0,10	**0,21**	0,36	0,10	**0,21**	0,35	.E..GB
.E..GB2	0,17	**0,36**	0,60	0,13	**0,27**	0,45	0,11	**0,23**	0,39	0,10	**0,22**	0,36	0,10	**0,21**	0,36	.E..GB2
.S..GB	0,17	**0,43**	0,63	0,13	**0,32**	0,47	0,11	**0,28**	0,41	0,10	**0,26**	0,38	0,10	**0,25**	0,37	.S..GB
.S..GB2	0,17	**0,43**	0,62	0,13	**0,32**	0,47	0,11	**0,28**	0,41	0,10	**0,26**	0,38	0,10	**0,25**	0,37	.S..GB2

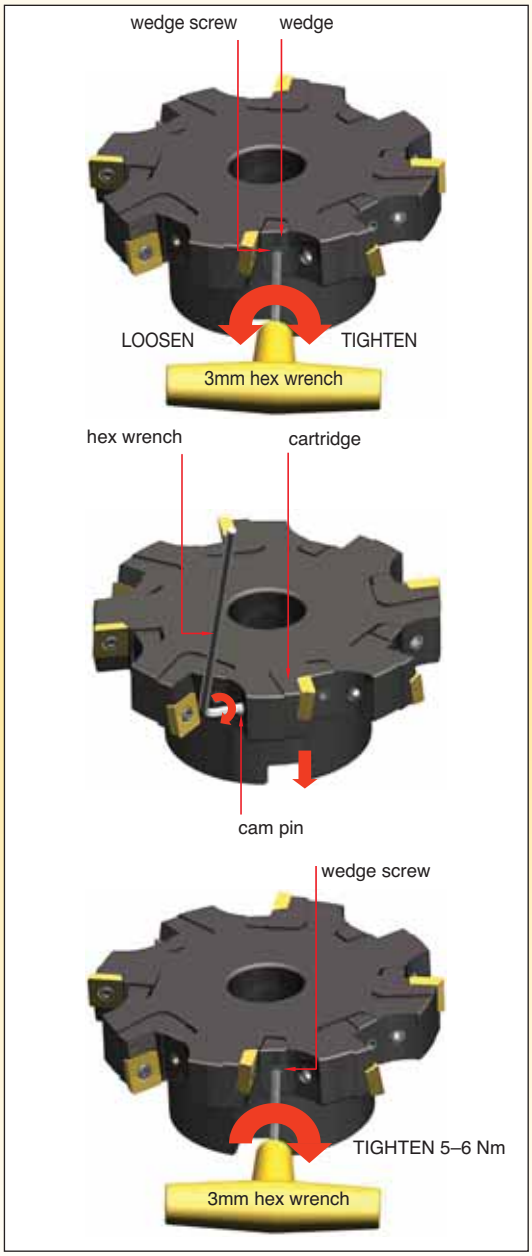
NOTE: Use “Light Machining” values as starting feed rate.

KSSM Slot Width Adjustment Instructions



1. Measure body width at pocket 1 (per stamp on tool body) behind cartridge.
2. Zero tool presetter at pocket 1 behind cartridge.
3. Move presetter over the insert and set distance Y. Y = (Desired Slot Width–Body Width)/2.
4. Zero over insert at starting pocket (pocket 1).
5. Adjust remaining cartridges on the same side.
6. Return to starting pocket and start with step 2 for opposite side of cutter.

KSSM Cartridge Adjustment Instructions



1. Insert 3mm hex wrench into STCM Screw.
2. Rotate 3mm hex wrench counter-clockwise to loosen wedge.
3. Rotate 3mm hex wrench clockwise to lightly tighten STCM screw to approximately 1 Nm, so the wedge is touching the cartridge and cutter body. This creates some slight resistance against the cartridge during the adjustment.
4. Insert hex wrench into cam pin behind cartridge.
5. Rotate wrench to adjust cartridge to desired position.
6. For best accuracy, back cam pin off, so you can feel it is not touching the sides of the slot in the back of the cartridge.
7. Remove wrench from cam pin.
8. Insert 3mm hex wrench into STCM screw
9. Tighten STCM screw to 5,1–6,2 Nm prior to using the cutter. Kennametal torque wrench KTW45 or alternate torque wrench should be used.
10. Double check cartridge position to assure no movement.

Copy Mills

KenFeed 2X • Double-Sided High-Feed Milling Cutters R2–R7

KenFeed Mini • Single-Sided Insert, Small High-Feed Milling Cutters R8–R11

Rodeka • Double-Sided Round Insert, IC12 . . . . . R12–R19

Rodeka IC12, 12 Cutting Edges R13–R17

Rodeka 8, IC12 Turbine Blade Version R18–R19

KDM Platform • Round Inserts, Particularly for the Die and Mould Industry R20–R40

RD.X05 . . . . . R21–R23

RD.X07 . . . . . R24–R26

RD.X10 . . . . . R27–R32

RD.X12 . . . . . R33–R37

RD.X16 . . . . . R38–R40

KSRM Platform • Round Inserts, Specially Developed for Titanium and Stainless Steel R42–R57

RP.T1204 . . . . . R43–R48

RP.T1605 . . . . . R49–R53

RC.T2006 . . . . . R54–R57

Beyond BLAST KSRM Platform • New Generation Round Inserts with Through Coolant R58–R63

RCGX2006 . . . . . R59–R63

KDMB and KDMT Platforms • Indexable Ball Nose and Toroidal Inserts for Complex Parts R64–R87

KDMB • Ball Nose Inserts R65–R81

KDMT • Toroidal and High-Feed Inserts R82–R87

KMM Rhombic Platform R88–R94

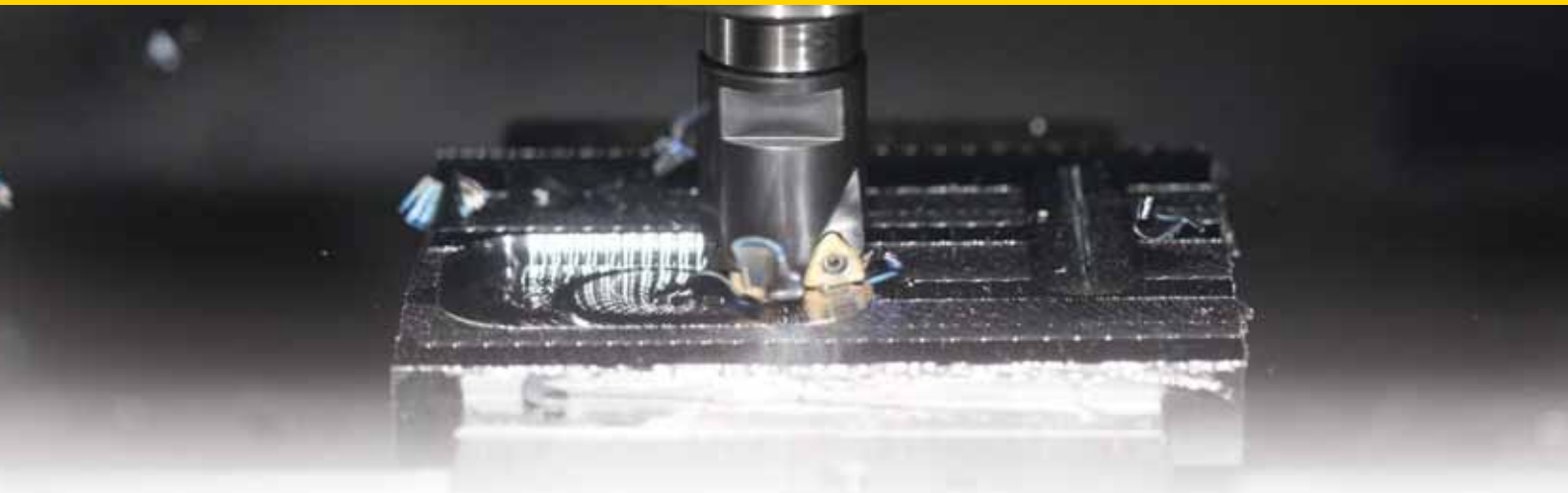
Z-Axis • Plunge Milling Cutters R96–R104

KDMR • Multifunction Cutters R106–R112

KIPR and KSSR • Round Ceramic Milling Cutters R114–R123

RP06, RP09, RP12 • Positive Insert Style R115–R120

RN12 • Negative Insert Style, Double-Sided R121–R123

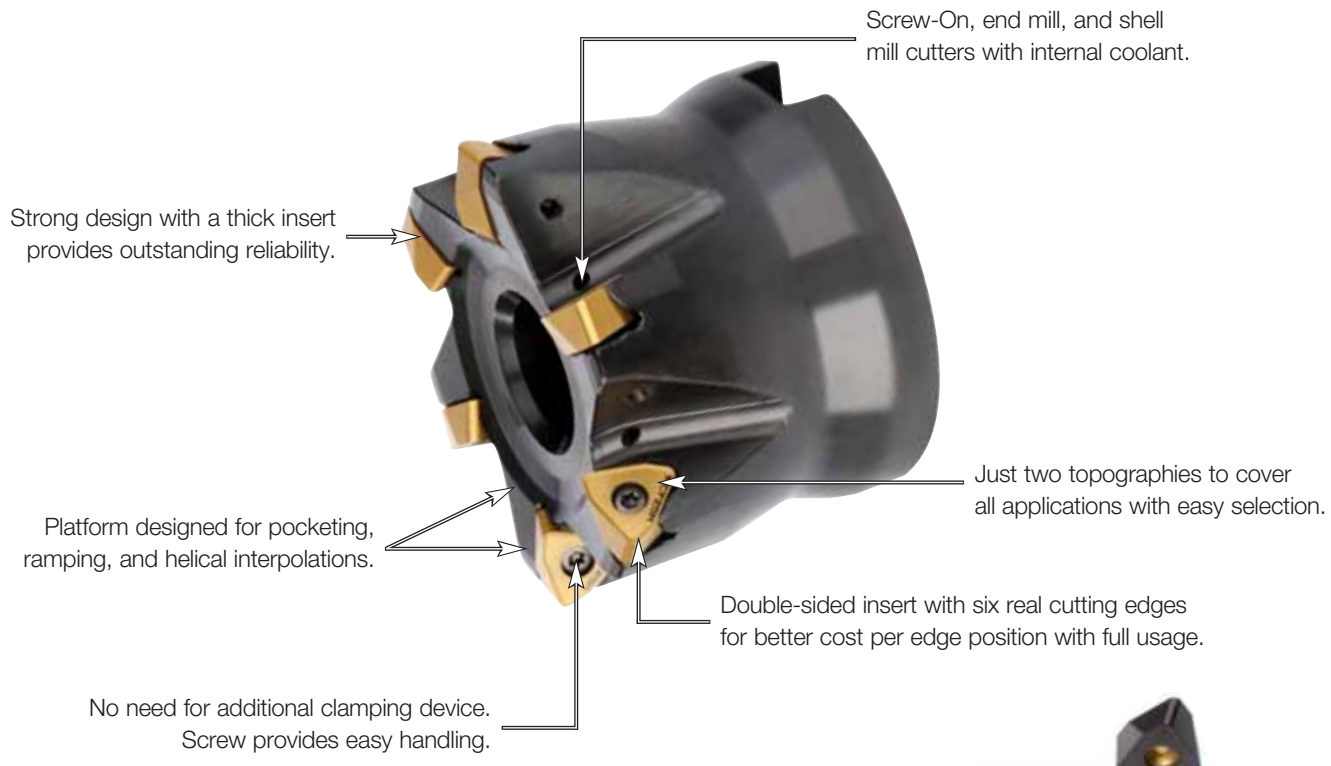


KenFeed™ 2X • The Ultimate and Innovative Concept for Applying the Latest High-Feed Milling Strategies

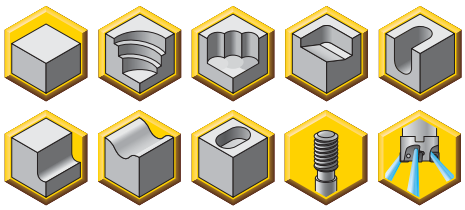
Primary Application

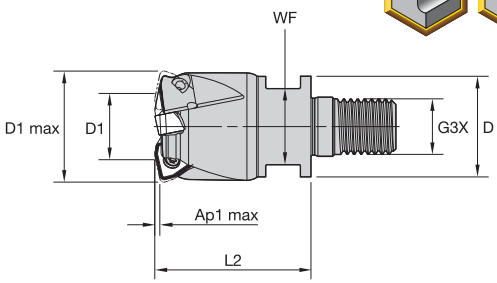
KenFeed 2X is a double-sided trigon insert with six cutting edges engineered to provide you a superior MRR and productivity through high-feed rates for roughing operations.

Features and Benefits



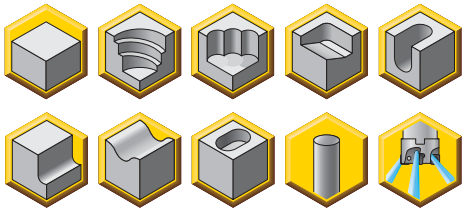
- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 2,5mm fz.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.

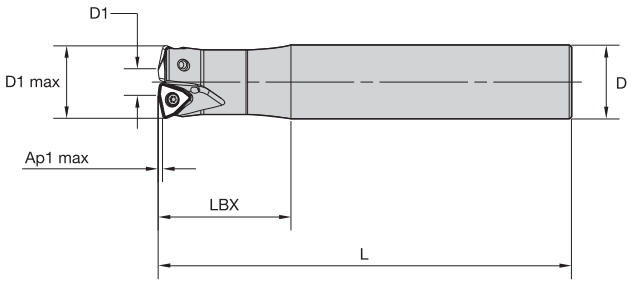


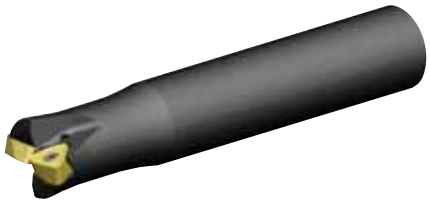


Screw-On End Mills • Metric

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
4113983	KF2X25Z02M12WO09	25	9	21	17	M12	35	1,5	2	0,09	37000	WOEJ090512__
4113984	KF2X32Z03M16WO09	32	16	29	22	M16	45	1,5	3	0,22	30900	WOEJ090512__
4113985	KF2X35Z03M16WO09	35	19	29	22	M16	45	1,5	3	0,24	29000	WOEJ090512__
4113986	KF2X42Z04M16WO09	42	26	29	22	M16	45	1,5	4	0,28	25800	WOEJ090512__







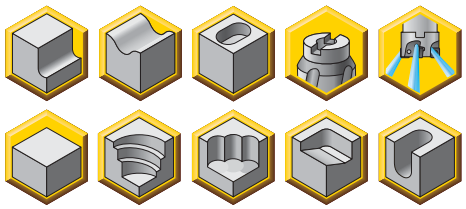
End Mills • Metric

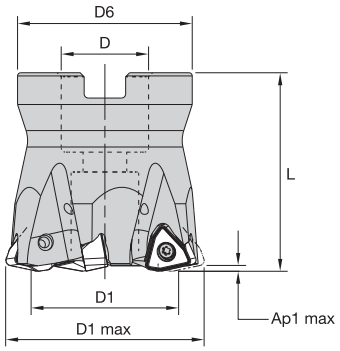
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4113987	KF2X25Z02A25WO09L140	25	9	25	140	45	1,5	2	0,46	37000	WOEJ090512__
4113988	KF2X25Z02A25WO09L200	25	9	25	200	45	1,5	2	0,68	37000	WOEJ090512__
4113989	KF2X25Z02A25WO09L300	25	9	25	300	45	1,5	2	1,05	37000	WOEJ090512__
4113990	KF2X28Z02A25WO09L200	28	11	25	200	45	1,5	2	0,70	34000	WOEJ090512__
4113991	KF2X32Z03A32WO09L150	32	16	32	150	50	1,5	3	0,82	30900	WOEJ090512__
4113992	KF2X32Z03A32WO09L200	32	16	32	200	50	1,5	3	1,13	30900	WOEJ090512__
4113993	KF2X32Z03A32WO09L300	32	16	32	300	50	1,5	3	1,75	30900	WOEJ090512__
4113994	KF2X35Z03A32WO09L200	35	19	32	200	45	1,5	3	1,16	29000	WOEJ090512__

Spare Parts

D1 max	insert screw	Nm	Torx Plus driver
25	MS2235	1,0	DT8IP
28	MS2235	1,0	DT8IP
32	MS2235	1,0	DT8IP
35	MS2235	1,0	DT8IP
42	MS2235	1,0	DT8IP

- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 2,5mm fz.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.





Face Mills • Metric

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4113995	**KF2X40Z04WO09**	40	24	22	37	40	1,5	4	0,18	26600	WOEJ090512__
4113996	**KF2X50Z05WO09**	50	34	22	44	50	1,5	5	0,39	23100	WOEJ090512__
4113997	**KF2X52Z05WO09**	52	36	22	44	50	1,5	5	0,42	22600	WOEJ090512__
4113998	**KF2X63Z05WO09**	63	47	22	60	50	1,5	5	0,76	20100	WOEJ090512__
4113999	**KF2X66Z06WO09**	66	50	27	60	50	1,5	6	0,78	19600	WOEJ090512__
4114000	**KF2X80Z07WO09**	80	64	27	60	50	1,5	7	1,07	17500	WOEJ090512__

Spare Parts

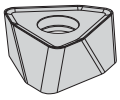
D1 max	insert screw	Nm	Torx Plus driver	socket-head cap screw	mounting screw
40	**MS2235**	1,0	**DT8IP**	**–**	**KLSSM22-39-CG**
50	**MS2235**	1,0	**DT8IP**	**125.025**	–
52	**MS2235**	1,0	**DT8IP**	**125.025**	–
63	**MS2235**	1,0	**DT8IP**	**125.025**	–
66	**MS2235**	1,0	**DT8IP**	**125.225**	–
80	**MS2235**	1,0	**DT8IP**	**125.230**	–

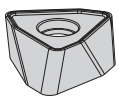
Insert Selection Guide

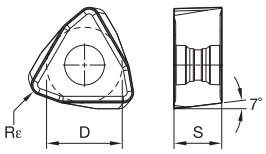
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P3–P4	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.S..GD	KC522M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KC725M	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1– K2	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.S..GD	KC522M	**.S..GD**	**KC725M**	–	–
S3	.S..GD	KC725M	**.S..GD**	**KC725M**	–	–
S4	.S..GD	KC725M	**.S..GD**	**KC725M**	–	–
H1	.S..HD	KC522M	**–**	**–**	–	–

Indexable Inserts • WOEJ09....

- Double-sided insert with six cutting edges.
- Unique and strong insert design that enables high-feed conditions, up to 2,5mm fz.
- HD geometry is the first choice for steels, high-strength steels, and cast iron.
- GD provides lower cutting forces, first choice for soft materials.


WOEJ-GD


WOEJ-HD



● first choice
○ alternate choice

	KC522M	KC725M	KCK15	KCPK30
P	○	●		●
M	●	●		○
K	○		●	○
N				
S	●	●		
H	○			

WOEJ-GD and -HD

catalogue number	D	Rε	S	cutting edges	KC522M	KC725M	KCK15	KCPK30
WOEJ090512SRGD	8,90	1,20	5,40	6	●	●		●
WOEJ090512SRHD	8,90	1,20	5,50	6	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC522M			KC725M			KCK15			KCPK30		
P	1	395	**345**	325	315	**275**	255	–	–	–	545	**475**	440
	2	330	**290**	240	260	**230**	195	–	–	–	335	**305**	275
	3	305	**255**	215	240	**205**	170	–	–	–	305	**275**	250
	4	270	**225**	180	215	**180**	145	–	–	–	225	**210**	190
	5	225	**200**	180	180	**160**	145	–	–	–	310	**275**	255
	6	200	**150**	120	160	**120**	95	–	–	–	190	**165**	–
M	1	245	**215**	200	205	**180**	165	–	–	–	250	**220**	190
	2	225	**190**	160	185	**160**	130	–	–	–	225	**195**	170
	3	170	**145**	115	140	**120**	95	–	–	–	175	**160**	140
K	1	275	**250**	220	–	–	–	505	**460**	410	355	**320**	285
	2	215	**195**	180	–	–	–	400	**355**	330	280	**255**	230
	3	180	**160**	145	–	–	–	335	**300**	275	235	**210**	195
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
S	1	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	145	**110**	85	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

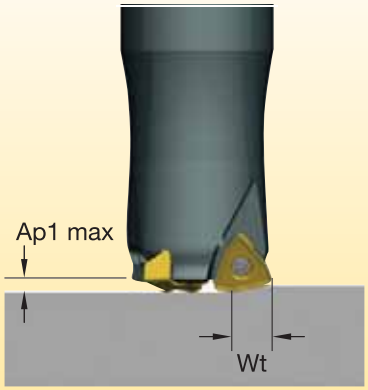
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..GD	0,82	**1,63**	3,33	0,61	**1,21**	2,43	0,53	**1,05**	2,11	0,50	**0,98**	1,97	0,49	**0,96**	1,92	.S..GD
.S..HD	0,82	**2,08**	3,39	0,61	**1,54**	2,47	0,53	**1,34**	2,14	0,50	**1,25**	2,00	0,49	**1,22**	1,95	.S..HD

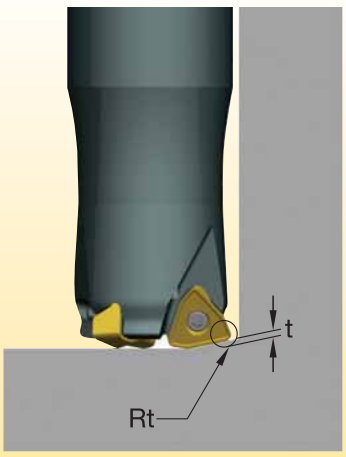
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed 2X • IC09

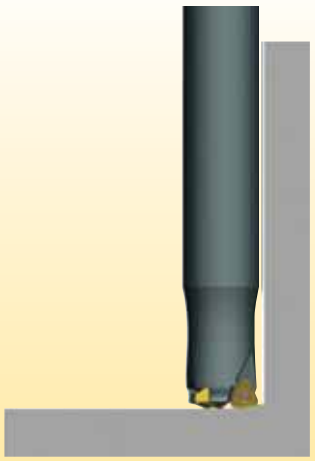
Rt	Wt	t
2.70	8.15	1.15



Small Ap1 values and higher feed rates generate lower cutting forces versus traditional milling strategies.

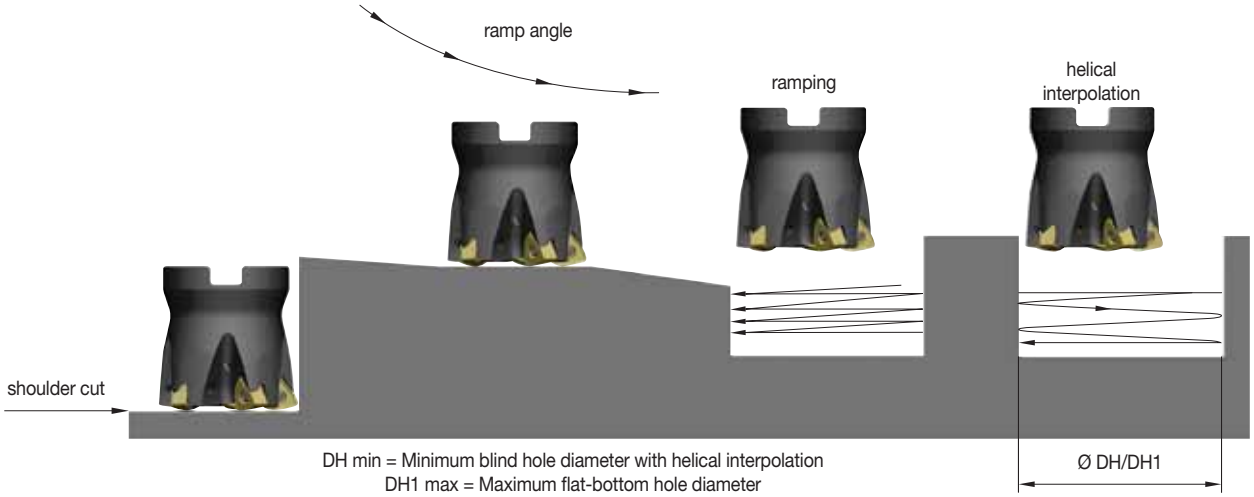


For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



Recommended when long overhang is necessary due to lower radial forces. Maximum L/D ratio of 10 x D.

Maximum Linear Ramping and Helical Interpolation from Solid



cutter type	catalogue number	recommended ramping angle (for continuous ramping process)	max ramp angle when Ap max (not for continuous ramping process)	max ramp angle for 360° helical interpolation	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Screw-On	**KF2X2X25Z02M12WO09**	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X32Z03M16WO09	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X35Z03M16WO09	1.6°	2.4°	1.4°	46,8	54,0	70
	KF2X42Z04M16WO09	1.2°	1.9°	0.8°	68,7	75,9	84
End Mills	**KF2X25Z02A25WO09L140**	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X25Z02A25WO09L200	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X25Z02A25WO09L300	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X28Z02A25WO09L200	3.1°	4.6°	2.5°	31,6	38,8	56
	KF2X32Z03A32WO09L150	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X32Z03A32WO09L200	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X32Z03A32WO09L300	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X35Z03A32WO09L200	1.6°	2.4°	1.4°	46,8	54,0	70
Face Mills	**KF2X40Z04WO09**	1.3°	2.0°	1.2°	56,4	63,6	80
	KF2X50Z05WO09	1.0°	1.5°	0.8°	76,7	83,9	100
	KF2X52Z05WO09	1.0°	1.4°	0.8°	80,7	87,9	104
	KF2X63Z05WO09	0.8°	1.2°	0.6°	102,7	109,9	126
	KF2X66Z06WO09	0.7°	1.1°	0.5°	108,7	115,9	132
	KF2X80Z07WO09	0.6°	0.9°	0.4°	136,6	143,8	160

KenFeed™ Mini • Small High-Feed Milling Cutters for Machining Small and Medium Components

Primary Application

Roughing operations through the latest milling strategies up to 55 HRC. Specially suited for small parts or machines with lower power capacity. **The KenFeed Mini delivers higher productivity with reduced tooling costs.**

Features and Benefits

Platform designed for pocketing, ramping, and helical interpolations.

Screw-On and shell mill cutters with internal coolant. Coolant holes: better chip evacuation and higher the tool life.

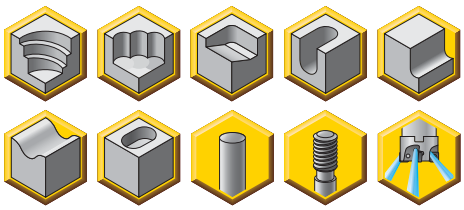
Excellent runout accuracy increases general performance and higher tool life.

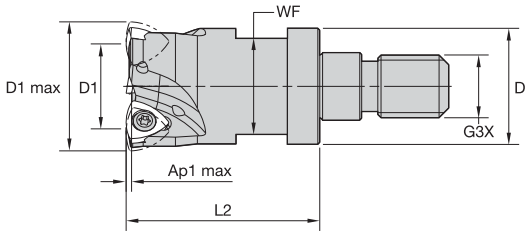
Just two topographies to cover all applications with easy selection.

Strong design capacity to support higher cutting forces and unstable situations.

Insert and body design with superior copy milling capabilities enable us to run the cutter with true ramping, profiling, and pocketing capabilities.

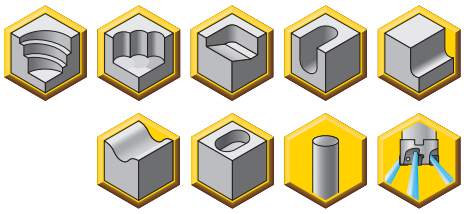
- Engineered to use with small machines and/or components using high-feed milling strategies.
- Fine-pitch cutters boost productivity; able to run up to 1,5mm fz.
- Pocketing, ramping, and helical interpolations.
- First choice above 3 x D applications.

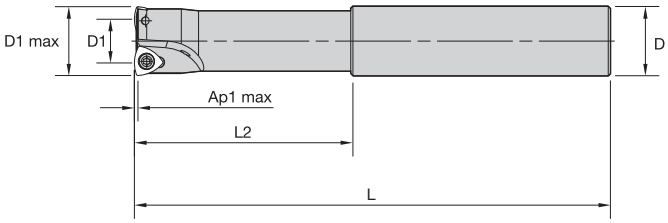




Screw-On End Mills • Metric

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3331550	16Y02R025M08SWP03	16	11	13	10	M8	25	0,8	2	7.0°	0,03	19900	WP..0302..
3651443	20Y03R030M10SWP03	20	14	18	15	M10	30	0,8	3	7.0°	0,06	15900	WP..0302..
4138429	25Y04R035M12SWP03	25	16	21	17	M12	35	1,0	4	3.3°	0,10	12700	WP..0302..
4138430	32Y05R043M16SWP03	32	22	29	24	M16	43	1,0	5	2.0°	0,23	9947	WP..0302..
4138431	35Y05R043M16SWP03	35	28	29	24	M16	43	1,0	5	1.8°	0,24	9090	WP..0302..





End Mills • Metric

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3519052	16Y02R060A16SWP03	16	10	16	110	50	0,8	2	7.0°	0,14	12750	WP..0302..
4138432	16Y02R060A16SWP03L150	16	8	16	150	57	1,0	2	7.4°	0,20	15900	WP..0302..
4138443	20Y03R060A20SWP03L110	20	13	20	110	57	1,0	3	4.7°	0,22	15900	WP..0302..
4138444	20Y03R060A25SWP03L170	20	12	25	170	55	1,0	3	4.5°	0,53	15600	WP..0302..
4138445	25Y04R060A25SWP03L120	25	18	25	120	57	1,0	4	3.3°	0,39	12700	WP..0302..
4138446	25Y04R060A25SWP03L200	25	18	25	200	57	1,0	4	3.3°	0,69	12700	WP..0302..

Spare Parts

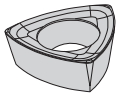
D1 max	insert screw	Nm	Torx wrench
16	192.416	1,0	FT7
20	192.416	1,0	FT7
25	192.416	1,0	FT7
32	192.416	1,0	FT7
35	192.416	1,0	FT7

Insert Selection Guide

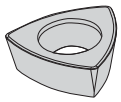
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P3–P4	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P5–P6	.LD..	KCPK30	**.LD..**	**KCPM20**	–	–
M1–M2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
M3	.LD..	KC522M	**.LD..**	**KC725M**	–	–
K1–K2	.LN..	KC510M	**.LD..**	**KCPK30**	–	–
K3	.LN..	KC510M	**.LD..**	**KCPK30**	–	–
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
S3	.LD..	KC725M	**.LD..**	**KC725M**	–	–
S4	.LD..	KC522M	**.LD..**	**KC725M**	–	–
H1	.LN..	KC510M	**.LN..**	**KC510M**	–	–

Indexable Insert • WPGX03...

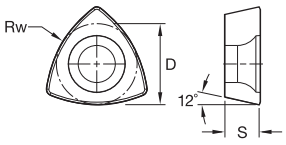
- Positive single-sided insert for lower cutting forces in high-feed milling processes.
- Engineered to run up to 1,5mm fz. Boost productivity in small machines and/or components.
- LD first choice for majority of materials, providing lower cutting forces.
- LN geometry is the first choice for high-strength steel and hard machining up to 55 HRC.



WPGX-LD



WPGX-LN



● first choice
○ alternate choice

		KC510M	KC522M	KC725M	KCPM20	KCPK30
P		○	○	●	●	●
M			●	●	○	○
K		○	○			○
N						
S			●	●		
H		●	○			

WPGX-LD and -LN

catalogue number	D	S	RW	cutting edges	KC510M	KC522M	KC725M	KCPM20	KCPK30
WPGX030204LD080	5,50	2,38	8,0	3		●	●	●	●
WPGX030204LN080	5,50	2,38	8,0	3	●				

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	**–**	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	**–**	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	**–**	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	**–**	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	**–**	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	**–**	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	**–**	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	**–**	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	350	**315**	285	275	**250**	220	–	**–**	–	435	**390**	350	355	**320**	285
	2	275	**250**	230	215	**195**	180	–	**–**	–	345	**310**	280	280	**255**	230
	3	235	**205**	190	180	**160**	145	–	**–**	–	290	**255**	240	235	**210**	195
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	50	**45**	35	45	**35**	30	–	**–**	–	–	**–**	–
	2	–	**–**	–	50	**45**	35	45	**35**	30	–	**–**	–	–	**–**	–
	3	–	**–**	–	60	**50**	35	55	**45**	30	–	**–**	–	–	**–**	–
	4	–	**–**	–	85	**60**	45	75	**55**	35	–	**–**	–	–	**–**	–
H	1	190	**155**	110	145	**110**	85	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

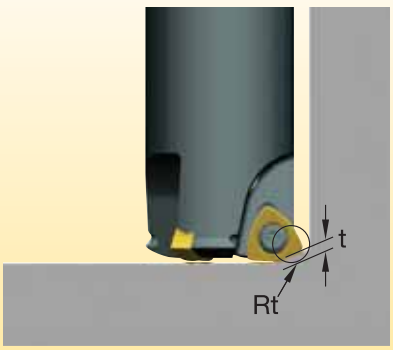
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD..	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,40	**1,00**	1,60	0,39	**0,98**	1,57	.LD..
.LN..	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,40	**1,00**	1,60	0,39	**0,98**	1,57	.LN..

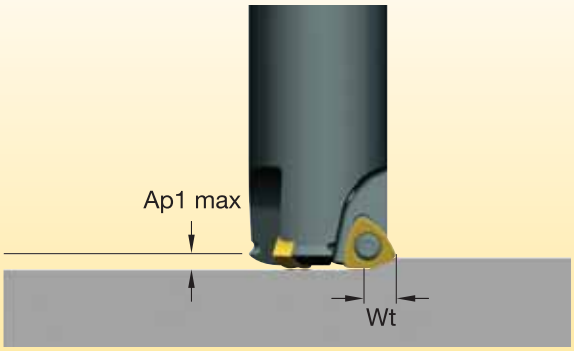
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed Mini

Rt	Wt	t
1.00	2.40	0.40



For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



Small Ap1 values and higher feed rates generate lower cutting forces versus traditional milling strategies.

Rodeka™ • The New Round Insert Generation

Primary Application

Kennametal introduces a new and revolutionary double-sided round milling insert capable to run in multiple types of milling operations and workpiece materials, providing the latest double-sided insert technology to boost your productivity with the most efficient cost per edge.

Features and Benefits

Double-sided insert with up to 12 cutting edges for a more productive cutting process.

Screw-On, end mill, and shell mill cutters with internal coolant.

Higher clearance in bodies to permit pocketing, profiling, and 5-axis machining.

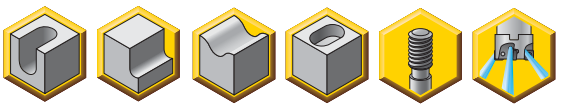
Unique anti-rotation feature for excellent stability with higher feed rates and cutting forces. User-friendly insert rotation.

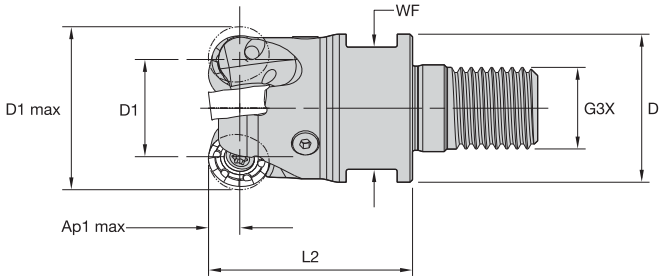
Three insert and topography styles to cover any type of component and application.

*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

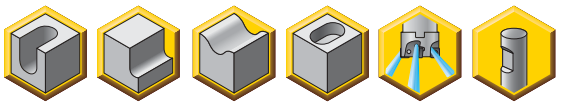
- Double-sided round inserts with 12 indexable positions.
- Anti-rotation features enable higher cutting data and extra stability.
- Pocketing and profiling capabilities.

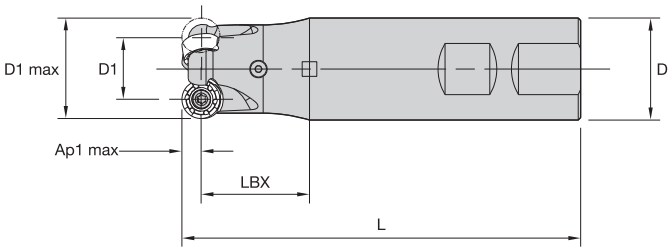




Screw-On End Mills

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
4147001	**KDR32Z03M16RN12**	32	20	29	24	M16	40	3,0	3	0,18	39160	RN_J1204M0__
4147002	**KDR35Z03M16RN12**	35	23	29	24	M16	40	3,0	3	0,20	37440	RN_J1204M0__
4147033	**KDR42Z04M16RN12**	42	30	29	24	M16	40	3,0	4	0,23	34180	RN_J1204M0__





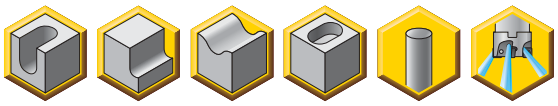
Weldon End Mills

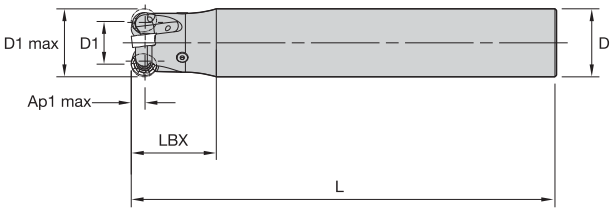
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4147035	**KDR32Z03B32RN12**	32	20	32	125	40	3,0	3	0,64	39160	RN_J1204M0__

Spare Parts

D1 max	insert screw	Nm	wrench
32	**193.492**	4,0	**170.025**
35	**193.492**	4,0	**170.025**
42	**193.492**	4,0	**170.025**

- Double-sided round insert with 12 indexable positions.
- Anti-rotation feature enable higher cutting forces and extra stability.
- Pocketing and profiling capabilities.





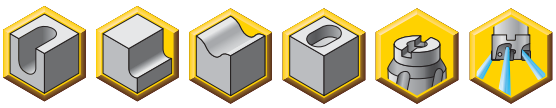
Cylindrical End Mills

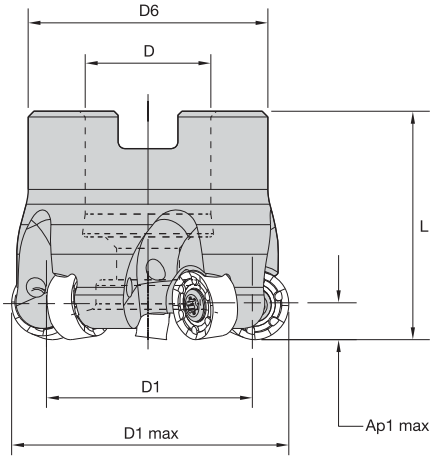
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4147038	**KDR32Z02A32RN12L250**	32	20	32	250	40	3,0	2	1,41	39160	RN_J1204M0__
4147037	**KDR32Z03A32RN12L200**	32	20	32	200	40	3,0	3	1,10	39160	RN_J1204M0__

Spare Parts

D1 max	insert screw	Nm	wrench
32	**193.492**	4,0	**170.025**
35	**193.492**	4,0	**170.025**
42	**193.492**	4,0	**170.025**

- Double-sided round inserts with 12 indexable positions.
- Anti-rotation features enable higher cutting data and extra stability.
- Pocketing and profiling capabilities.





Shell Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4147039	**KDR40Z04S16RN12**	40	28	16	38	40	3,0	4	0,21	35020	RN_J1204M0__
4147040	**KDR50Z04S22RN12**	50	38	22	42	40	3,0	4	0,81	31330	RN_J1204M0__
4147041	**KDR50Z05S22RN12**	50	38	22	42	40	3,0	5	0,81	31330	RN_J1204M0__
4147042	**KDR52Z05S22RN12**	52	40	22	49	50	3,0	5	0,81	30720	RN_J1204M0__
4147043	**KDR63Z05S22RN12**	63	51	22	49	50	3,0	5	0,81	27910	RN_J1204M0__
4147044	**KDR63Z07S22RN12**	63	51	22	49	50	3,0	7	0,81	27910	RN_J1204M0__
4147045	**KDR66Z07S27RN12**	66	54	27	60	50	3,0	7	0,81	27260	RN_J1204M0__
4147046	**KDR80Z06S27RN12**	80	68	27	60	50	3,0	6	1,07	24760	RN_J1204M0__
4147047	**KDR80Z08S27RN12**	80	68	27	60	50	3,0	8	0,81	24760	RN_J1204M0__
4147048	**KDR100Z07S32RN12**	100	88	32	78	50	3,0	7	1,57	22150	RN_J1204M0__
4147049	**KDR100Z09S32RN12**	100	88	32	78	50	3,0	9	1,56	22150	RN_J1204M0__

Spare Parts

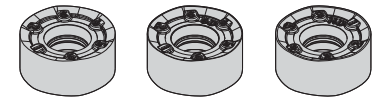
D1 max	insert screw	Nm	low-head cap screw	socket-head cap screw	coolant lock screw assembly	wrench
40	**193.492**	4,0	–	**MS1294**	–	**170.025**
50	**193.492**	4,0	**MS1336**	–	–	**170.025**
52	**193.492**	4,0	–	**MS1242**	–	**170.025**
63	**193.492**	4,0	–	**MS1242**	–	**170.025**
66	**193.492**	4,0	–	**MS2038**	–	**170.025**
80	**193.492**	4,0	–	**MS2038**	–	**170.025**
100	**193.492**	4,0	–	–	**MS2195C**	**170.025**

Insert Selection Guide

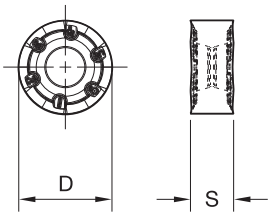
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P3–P4	.S..GD	KC522M	**.S..HD**	**KCPM20**	.S..HD	KCPK30
P5–P6	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPM20
M1–M2	.E..LD	KC522M	**.E..LD**	**KC522M**	.S..GD	KC725M
M3	.E..LD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC422M	**.F..LDJ**	**KC422M**	–	–
N3	.F..LDJ	KC422M	**.F..LDJ**	**KC422M**	–	–
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.E..LD	KC725M	**.E..LD**	**KC725M**	.S..GD	KC725M
H1	.S..GD	KC522M	**.S..HD**	**KCPM20**	–	–

Indexable Inserts • RNGJ12....

- -FLDJ geometry is for non-ferrous metals.
- -LD geometry is the first choice for stainless steel and titanium machining at lower cutting forces.
- -GD geometry is for general use in steel and for stainless steel.
- -HD geometry is the first choice for heavy machining, high-strength steel and cast iron.



RNGJ-LD/-LDJ RNGJ-GD RNGJ-HD



● first choice
○ alternate choice

		KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P			○	●		●	●
M			●	●		○	○
K			○		●		○
N		●					
S			●	●			
H			○			○	

RNGJ-LD/-LDJ

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0ELD	12,00	4,75	0,04	12		●	●			●
RNGJ1204M0FLDJ	12,00	4,75	0,04	12	●					

RNGJ-GD

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SGD	12,00	4,75	0,09	12		●	●			●

RNGJ-HD

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SHD	12,00	4,75	0,19	12			●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	–	–	–	310	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	–	–	–	275	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	–	–	–	240	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	–	–	–	175	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	–	–	–	170	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	–	–	–	105	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	–	–	–	190	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	–	–	–	170	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	–	–	–	105	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	505	**460**	410	220	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	400	**355**	330	175	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	335	**300**	275	155	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–	–	–	–
H	1	–	–	–	145	**110**	85	–	–	–	–	–	–	170	**140**	115	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,10	**0,18**	0,31	0,08	**0,13**	0,23	0,07	**0,11**	0,20	0,06	**0,11**	0,19	0,06	**0,11**	0,18	.F..LDJ
.E..LD	0,10	**0,18**	0,31	0,08	**0,13**	0,23	0,07	**0,11**	0,20	0,06	**0,11**	0,19	0,06	**0,11**	0,18	.E..LD
.S..GD	0,24	**0,40**	0,71	0,18	**0,30**	0,53	0,16	**0,26**	0,46	0,15	**0,25**	0,43	0,14	**0,24**	0,42	.S..GD
.S..HD	0,39	**0,58**	0,87	0,29	**0,43**	0,65	0,25	**0,38**	0,57	0,24	**0,35**	0,53	0,23	**0,35**	0,52	.S..HD

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,14	**0,23**	0,40	0,10	**0,17**	0,30	0,09	**0,15**	0,26	0,08	**0,14**	0,25	0,08	**0,14**	0,24	.F..LDJ
.E..LD	0,14	**0,23**	0,40	0,10	**0,17**	0,30	0,09	**0,15**	0,26	0,08	**0,14**	0,25	0,08	**0,14**	0,24	.E..LD
.S..GD	0,31	**0,53**	0,93	0,23	**0,40**	0,69	0,20	**0,34**	0,60	0,19	**0,32**	0,56	0,19	**0,32**	0,55	.S..GD
.S..HD	0,51	**0,76**	1,15	0,38	**0,57**	0,85	0,33	**0,50**	0,74	0,31	**0,46**	0,69	0,30	**0,45**	0,68	.S..HD

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,19	**0,32**	0,55	0,14	**0,24**	0,41	0,12	**0,21**	0,36	0,11	**0,19**	0,34	0,11	**0,19**	0,33	.F..LDJ
.E..LD	0,19	**0,32**	0,55	0,14	**0,24**	0,41	0,12	**0,21**	0,36	0,11	**0,19**	0,34	0,11	**0,19**	0,33	.E..LD
.S..GD	0,43	**0,72**	1,28	0,32	**0,54**	0,95	0,28	**0,47**	0,82	0,26	**0,44**	0,77	0,25	**0,43**	0,75	.S..GD
.S..HD	0,69	**1,04**	1,58	0,52	**0,78**	1,17	0,45	**0,68**	1,02	0,42	**0,63**	0,95	0,41	**0,62**	0,93	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

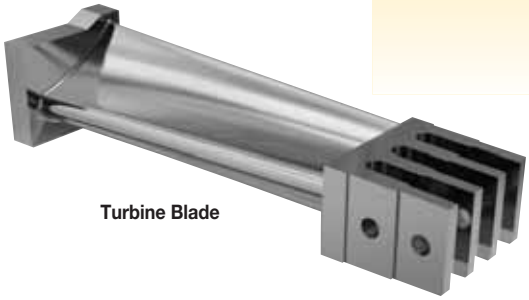
Rodeka 8 Turbine Blade Version

Revolutionary double-sided round insert engineered for turbine blade machining. Special geometries, insert styles, and dedicated cutter bodies have been developed to serve this demanding application.

Power Plant

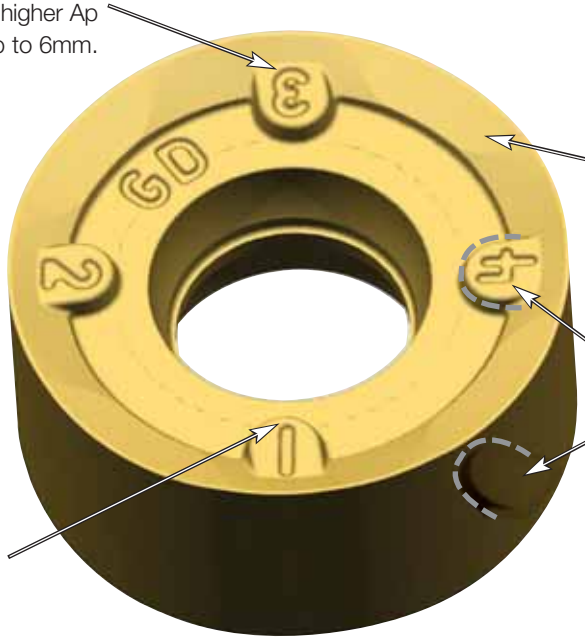
Steam Turbine

Rodeka 8



Turbine Blade

Four indexes per side, in total eight cutting edges. With higher Ap capabilities, up to 6mm.

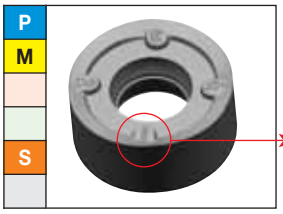


Specific high positive geometries with improved chip forming and higher tool life.

Insert location twisted by 45° between top and bottom side for equal performance over all eight cutting edges.

Unique anti-rotation feature with higher contact area for excellent stability, allowing higher feed rates.

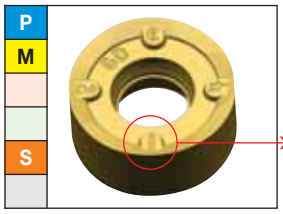
-LD



Light/Medium Machining

First choice for stainless steel and titanium machining.

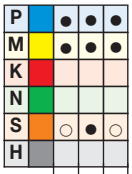
-GD



Medium/Heavy Machining

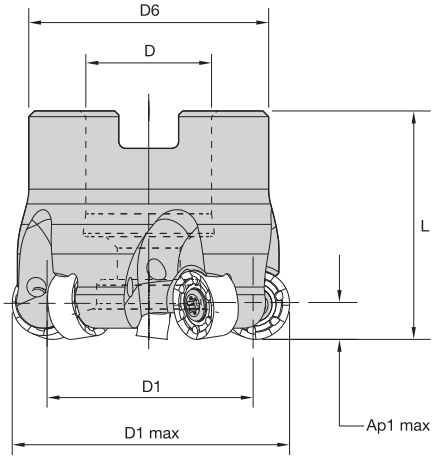
First choice for medium/heavy operations. Forged blades or "bad skin".

● first choice
○ alternate choice



Indexable Inserts

catalogue number	KC522M	KC725M	KCMP30
RNGJ1204M0ENLDJX	●	●	
RNGJ1204M0ENLDX			●
RNGJ1204M0SNGDJX	●	●	
RNGJ1204M0SNGDX			●



Shell Mills

MM#	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5104420	KDR40Z04S16RN12X	40	28	16	38	40	6	4
5104421	KDR50Z05S22RN12X	50	38	22	42	40	6	5
5104422	KDR50Z05S22RN12XL	50	38	22	49	40	6	5
5104423	KDR52Z05S22RN12X	52	40	22	42	40	6	5
5104424	KDR63Z06S22RN12X	63	51	22	49	40	6	6
5104425	KDR66Z06S27RN12X	66	54	27	60	40	6	6
5104426	KDR80Z07S27RN12X	80	68	27	60	50	6	7

KDM • Strong, Flexible, and Highly Accurate

Primary Application

Roughing and finishing milling operations on complex parts. First choice for die and mould industry up to 55 HRC.

Features and Benefits

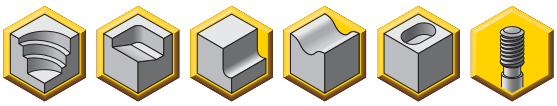
Platform Features

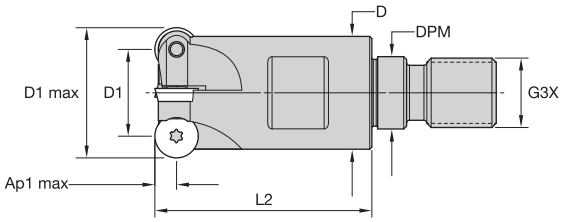
- Big draft clearance angle to improve the pocketing operations performance.
- Big clearance area in the bottom, superior ramping, and helical values.
- High accuracy and tight runout.

Value Proposition

- Real HSM capabilities: more teeth and close accuracy.
- Strongest and most rigid design for roughing operations.
- Addressed to the die and mould and general engineering markets, mainly.
- PSTS and ground inserts are offered through different inserts sizes.
- Shell mill, Weldon® and straight shank, and Screw-On body cutters.
- Multiple grades available; wide range of workpieces and applications.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Screw-On End Mills

order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888399	**12E03R020M06SRD05**	12	7	10	6,5	M6	20	2,5	3	9.5°	0,02	RD__0501____
1888402	**15E04R025M08SRD05**	15	10	13	8,5	M8	25	2,5	4	5.5°	0,03	RD__0501____
1888403	**20E05R030M10SRD05**	20	15	18	10,5	M10	30	2,5	5	3.5°	0,03	RD__0501____
1888404	**25E06R035M12SRD05**	25	20	21	12,5	M12	35	2,5	6	2.0°	0,03	RD__0501____

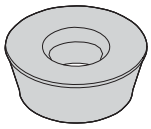
Spare Parts

D1 max	insert screw	Nm	Torx wrench
12	**193.340**	0,9	**FT6**
15	**193.340**	0,9	**FT6**
20	**193.340**	0,9	**FT6**
25	**193.340**	0,9	**FT6**

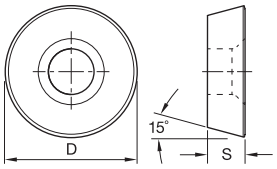
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
P3–P4	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
P5–P6	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
M1–M2	.E..LN	KC522M	**.E..LN**	**KC725M**	.E..LN	KC725M
M3	.E..LN	KC522M	**.E..LN**	**KC725M**	.E..LN	KC725M
K1–K2	.E..LN	KC510M	**.E..LN**	**KC510M**	.E..LN	KC510M
K3	.E..LN	KC510M	**.E..LN**	**KC510M**	.E..LN	KC510M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	.E..LN	KC510M	**.E..LN**	**KC510M**	–	–

Indexable Round Inserts • RD.X05...



RDHX-LN



● first choice
○ alternate choice

	KC510M	KC522M	KC725M
P	○	○	●
M		●	●
K	●	○	
N			
S			
H	●	○	

RDHX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M
RDHX0501M0ELN	5,00	1,50	0,04	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M		
P	1	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	305	**255**	215	240	**205**	170
	4	295	**240**	200	270	**225**	180	215	**180**	145
	5	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	225	**190**	160	185	**160**	130
	3	–	–	–	170	**145**	115	140	**120**	95
K	1	350	**315**	–	275	**250**	220	–	–	–
	2	275	**250**	230	215	**195**	180	–	–	–
	3	235	**205**	190	180	**160**	145	–	–	–
N	1–2	770	**685**	630	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,09	**0,27**	0,67	0,07	**0,20**	0,50	0,06	**0,17**	0,44	0,06	**0,16**	0,41	0,06	**0,16**	0,40	.E..LN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,12	**0,33**	0,84	0,09	**0,25**	0,63	0,08	**0,22**	0,55	0,07	**0,20**	0,51	0,07	**0,20**	0,50	.E..LN

At 0,50 Axial Depth of Cut (ap)

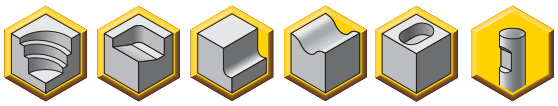
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,16	**0,45**	1,12	0,12	**0,33**	0,84	0,10	**0,29**	0,73	0,10	**0,27**	0,68	0,09	**0,27**	0,67	.E..LN

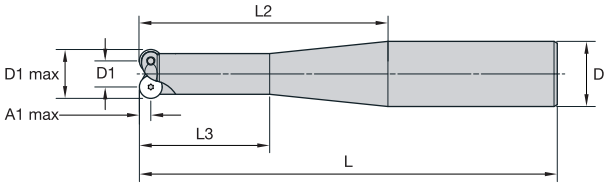
At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,22	**0,62**	1,56	0,16	**0,46**	1,15	0,14	**0,40**	1,00	0,13	**0,37**	0,94	0,13	**0,37**	0,92	.E..LN

NOTE: Use “Light Machining” values as starting feed rate.

• Suitable for die and mould manufacturing.

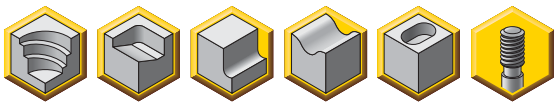


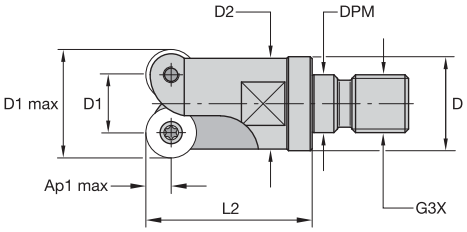


End Mills with Weldon® Shank • RD.X07 Inserts

order number	catalogue number	D1 max	D1	D	L	L2	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888453	**15E02R040B16SRD07**	15	8	16	90	40	40	3,5	2	4.5°	0,13	RD_X0702__
1888469	**15E02R060B16SRD07**	15	8	16	110	40	25	3,5	2	4.5°	0,15	RD_X0702__
1888465	**15E02R100B20SRD07**	15	8	20	152	100	40	3,5	2	4.5°	0,28	RD_X0702__
1888463	**15E02R120B25SRD07**	15	8	25	178	120	40	3,5	2	4.5°	0,45	RD_X0702__

• Engineered for high performance.
• High runout accuracy.
• Suitable for die and mould manufacturing.





Screw-On End Mills • RD.X07 Inserts

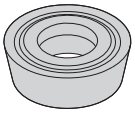
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888407	**12E02R018M06SRD07**	12	5	10	11	6,5	M6	18	3,5	2	9.5°	0,02	RD__07T1__
1888406	**12E02R028M08SRD07**	12	5	13	11	8,5	M8	28	3,5	2	9.5°	0,03	RD__0701__
1888409	**15E02R023M08SRD07**	15	8	13	13	8,5	M8	23	3,5	2	4.5°	0,03	RD__0702__
1888410	**15E03R023M08SRD07**	15	8	13	13	8,5	M8	23	3,5	3	4.5°	0,03	RD__0702__
1888411	**20E04R030M10SRD07**	20	13	18	18	10,5	M10	30	3,5	4	2.5°	0,07	RD__0702__
1888412	**25E05R035M12SRD07**	25	18	21	21	12,5	M12	35	3,5	5	3.5°	0,11	RD__0702__
1888413	**30E05R043M16SRD07**	30	23	29	26	17,0	M16	43	3,5	5	5.5°	0,22	RD__0702__
1888414	**35E06R043M16SRD07**	35	28	29	32	17,0	M16	43	3,5	6	4.5°	0,25	RD__0702__

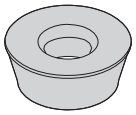
Spare Parts

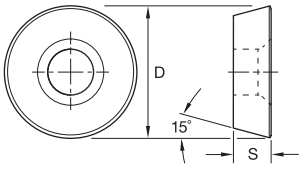
D1 max	insert screw	Nm	Torx wrench
12	**193.364**	1,0	**FT7**
15	**193.341**	1,0	**FT7**
20	**193.341**	1,0	**FT7**
25	**193.341**	1,0	**FT7**
30	**193.341**	1,0	**FT7**
35	**193.341**	1,0	**FT7**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC522M	**.F..LP**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KCPM20	**.S..LN**	**KC522M**	.S..LN	KC725M
P5–P6	.S..LN	KC522M	**.S..LN**	**KCPM20**	.S..LN	KCPM20
M1–M2	.F..LP	KC522M	**.F..LP**	**KC725M**	–	–
M3	.F..LP	KC725M	–	–	–	–
K1–K2	.F..LP	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
K3	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
N1–N2	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	.F..LP	KC522M	**.F..LP**	**KC725M**	–	–
S3	.F..LP	KC725M	–	–	–	–
S4	.F..LP	KC725M	–	–	–	–
H1	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KCPM20


RDHX-LP


RDHX-LN
RDPX-LN



● first choice
○ alternate choice

P	○	○	●	●	●	
M		●	●	○		
K	●	○		○	○	
N	○	○				
S		●	●			
H	●	○				

RDHX-LP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX0702M0FLP	7,00	2,38	0,02	●	●	●		

RDHX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX07T1M0SLN	7,00	1,98	0,06	●		●		
RDHX0702M0SLN	7,00	2,38	0,06	●	●	●	●	
RDHX0702M0TLN	7,00	2,38	0,08					●

RDPX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDPX0702M0SLN	7,00	2,38	0,06				●	

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KTPK20		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	440	**360**	310
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	270	**225**	190
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	245	**205**	170
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	185	**160**	130
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	255	**205**	175
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	150	**125**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	285	**235**	200
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	260	**220**	185
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	195	**160**	–
K	1	350	**315**	285	275	**250**	220	–	–	–	435	**390**	350	275	**235**	195
	2	275	**250**	230	215	**195**	180	–	–	–	345	**310**	280	220	**180**	160
	3	235	**205**	190	180	**160**	145	–	–	–	290	**255**	240	185	**150**	130
N	1–2	770	**685**	630	–	–	–	–	–	–	–	–	–	–	–	–
	3	695	**640**	585	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–	170	**140**	115	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 3,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,13**	0,33	0,06	**0,10**	0,25	0,06	**0,09**	0,22	0,05	**0,08**	0,20	0,05	**0,08**	0,20	.F..LP
.S..LN	0,14	**0,41**	0,68	0,11	**0,31**	0,51	0,09	**0,27**	0,44	0,09	**0,25**	0,41	0,09	**0,24**	0,41	.S..LN
.T..LN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..LN

At 1,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,15**	0,39	0,07	**0,12**	0,29	0,06	**0,10**	0,25	0,06	**0,09**	0,24	0,06	**0,09**	0,23	.F..LP
.S..LN	0,17	**0,47**	0,79	0,12	**0,35**	0,59	0,11	**0,31**	0,51	0,10	**0,29**	0,48	0,10	**0,28**	0,47	.S..LN
.T..LN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.T..LN

At 1,00 Axial Depth of Cut (ap)

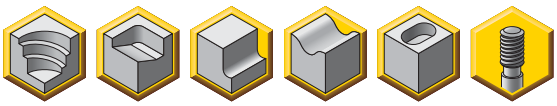
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,12	**0,19**	0,48	0,09	**0,14**	0,36	0,08	**0,12**	0,31	0,07	**0,12**	0,29	0,07	**0,11**	0,29	.F..LP
.S..LN	0,21	**0,58**	0,98	0,15	**0,44**	0,73	0,13	**0,38**	0,63	0,13	**0,36**	0,59	0,12	**0,35**	0,58	.S..LN
.T..LN	0,24	**0,61**	0,98	0,18	**0,45**	0,73	0,16	**0,40**	0,63	0,15	**0,37**	0,59	0,15	**0,36**	0,58	.T..LN

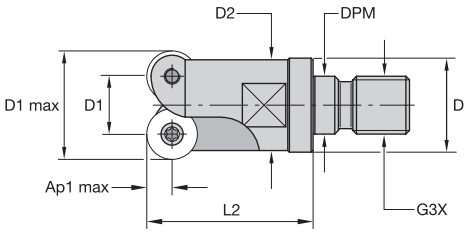
At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,16	**0,26**	0,65	0,12	**0,19**	0,49	0,11	**0,17**	0,42	0,10	**0,16**	0,40	0,10	**0,16**	0,39	.F..LP
.S..LN	0,28	**0,80**	1,33	0,21	**0,59**	0,99	0,18	**0,52**	0,86	0,17	**0,48**	0,81	0,17	**0,47**	0,79	.S..LN
.T..LN	0,33	**0,83**	1,33	0,25	**0,62**	0,99	0,22	**0,54**	0,86	0,20	**0,50**	0,81	0,20	**0,49**	0,79	.T..LN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.

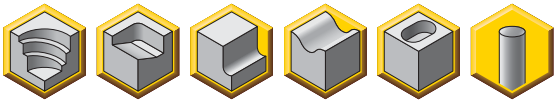


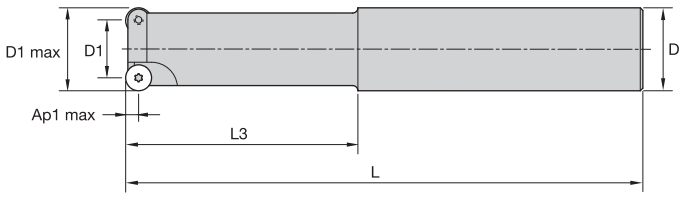


Screw-On End Mills • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888415	**20E02R030M10SRD10**	20	10	18	18	10,5	M10	30	5,0	2	15.0°	0,07	RD_X1003__
1888416	**25E02R035M12SRD10**	25	15	21	21	12,5	M12	35	5,0	2	13.5°	0,03	RD_X1003__
1888417	**25E03R035M12SRD10**	25	15	21	21	12,5	M12	35	5,0	3	13.5°	0,11	RD_X1003__
1888418	**30E04R043M16SRD10**	30	20	29	25	17,0	M16	43	5,0	4	9.0°	0,20	RD_X1003__
1888419	**35E04R045M16SRD10**	35	25	29	33	17,0	M16	45	5,0	4	7.0°	0,03	RD_X1003__
1888420	**42E05R045M16SRD10**	42	32	29	38	17,0	M16	45	5,0	5	5.0°	0,29	RD_X1003__

- Suitable for die and mould manufacturing.

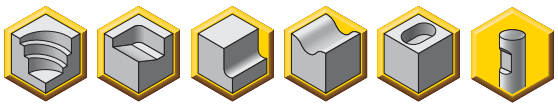


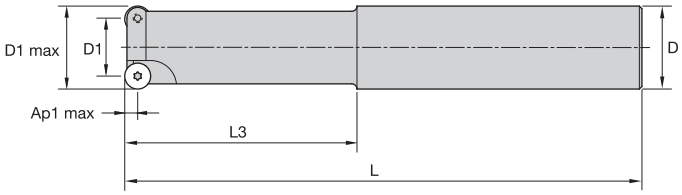


End Mills with Cylindrical Shank • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888457	**25E02R070A25SRD10**	25	15	25	180	70	5,0	2	15.0°	0,62	RD_X1003__
1888454	**32E03R090A32SRD10**	32	22	32	200	90	5,0	3	15.0°	0,20	RD_X1003__

• Suitable for die and mould manufacturing.





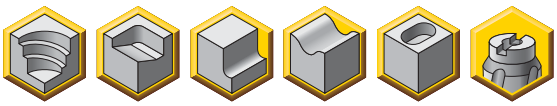
End Mills with Weldon® Shank • RD.X10 Inserts

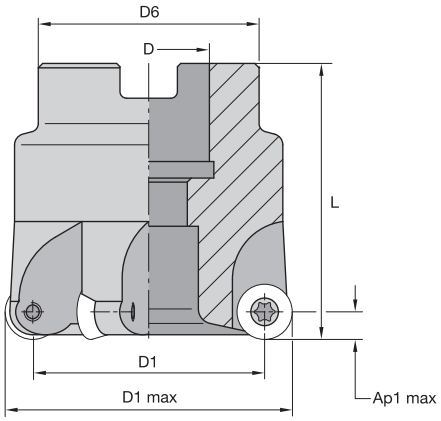
order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888468	**20E02R040B20SRD10**	20	10	20	112	40	5,0	2	15.0°	0,25	RD_X1003__
1888466	**20E02R060B20SRD10**	20	10	20	138	60	5,0	2	15.0°	0,31	RD_X1003__
1888464	**20E02R080B25SRD10**	20	10	25	158	60	5,0	2	15.0°	0,47	RD_X1003__
1888461	**20E02R100B25SRD10**	20	10	25	180	60	5,0	2	15.0°	0,53	RD_X1003__
1888460	**20E02R120B25SRD10**	20	10	25	180	60	5,0	2	15.0°	0,52	RD_X1003__

Spare Parts

D1 max	insert screw	Nm	Torx wrench
20	**193.342**	3,5	**FT15**
25	**193.342**	3,5	**FT15**
30	**193.342**	3,5	**FT15**
32	**193.342**	3,5	**FT15**
35	**193.342**	3,5	**FT15**
42	**193.342**	3,5	**FT15**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3680970	**40A05RSMORD10**	40	30	16	32	40	5,0	5	5.3°	0,33	RD..1003MO..
3680972	**50A06RSMORD10**	50	40	22	42	50	5,0	6	5.0°	0,42	RD..1003MO..
1888180	**52A06RSMORD10**	52	42	22	42	50	5,0	6	3.0°	0,93	RD..1003MO..

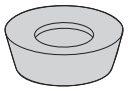
Spare Parts

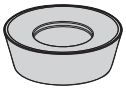
D1 max	insert screw	Nm	Torx wrench	low-head cap screw	socket-head cap screw
40	**193.342**	3,5	**FT15**	**–**	**MS1294**
50	**193.342**	3,5	**FT15**	**129.025**	**–**
52	**193.342**	3,5	**FT15**	**129.025**	**–**

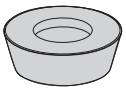
Insert Selection Guide

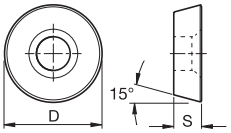
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..HP**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	.F..LP	KC725M	**.S..HP**	**KC725M**	–	–
M3	.S..HP	KC522M	**.S..HP**	**KC725M**	–	–
K1–K2	.S..GN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..GN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	K110M	**.F..LP**	**K110M**	.F..LP	KC510M
N3	.F..LP	K110M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..HN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20

Indexable Round Inserts • RD.X10...


RDHX-FLP


RDPX-HP


RDHX-GN
RDPX-HN



● first choice
○ alternate choice

		K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
P			○	○	●	●	●	●
M				●	●	○	○	
K			●	○		○	○	○
N		●	○					
S				●	●			
H			●					

RDHX-FLP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0FLP	10,00	3,18	0,02	●	●	●	●			

RDHX-GN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0SGN	10,00	3,18	0,08		●	●	●			
RDHX1003M0TGN	10,00	3,18	0,10							●

RDPX-HP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHP	10,00	3,18	0,10			●	●	●	●	

RDPX-HN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHN	10,00	3,18	0,12		●	●	●	●		

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC725M		
P	1	–	–	–	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	–	–	–	305	**255**	215	240	**205**	170
	4	–	–	–	295	**240**	200	270	**225**	180	215	**180**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	–	–	–	225	**190**	160	185	**160**	130
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	155	**145**	135	350	**315**	285	275	**250**	220	–	–	–
	2	135	**130**	120	275	**250**	230	215	**195**	180	–	–	–
	3	120	**105**	95	235	**205**	190	180	**160**	145	–	–	–
N	1–2	605	**565**	540	770	**685**	630	–	–	–	–	–	–
	3	495	**440**	385	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	2	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	3	–	–	–	–	–	–	60	**50**	35	55	**45**	30
	4	–	–	–	–	–	–	85	**60**	45	75	**55**	35
H	1	–	–	–	190	**155**	110	145	**110**	85	–	–	–

Material Group		KCPM20			KCPK30			KTPK20		
P	1	660	**580**	535	545	**475**	440	440	**360**	310
	2	410	**370**	330	335	**305**	275	270	**225**	190
	3	370	**330**	305	305	**275**	250	245	**205**	170
	4	275	**255**	230	225	**210**	190	185	**160**	130
	5	330	**300**	275	310	**275**	255	255	**205**	175
	6	230	**200**	175	190	**165**	–	150	**125**	–
M	1	270	**240**	205	250	**220**	190	285	**235**	200
	2	245	**215**	190	225	**195**	170	260	**220**	185
	3	195	**175**	150	175	**160**	140	195	**160**	–
K	1	435	**390**	350	355	**320**	285	275	**235**	195
	2	345	**310**	280	280	**255**	230	220	**180**	160
	3	290	**255**	240	235	**210**	195	185	**150**	130
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	170	**140**	115	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 5,00 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.S..GN	0,17	**0,40**	0,68	0,13	**0,30**	0,51	0,11	**0,26**	0,44	0,10	**0,24**	0,41	0,10	**0,24**	0,41	.S..GN
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 2,00 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,11	**0,21**	0,42	0,08	**0,16**	0,31	0,07	**0,14**	0,27	0,06	**0,13**	0,26	0,06	**0,13**	0,25	.F..LP
.S..GN	0,21	**0,50**	0,85	0,16	**0,38**	0,64	0,14	**0,33**	0,55	0,13	**0,31**	0,52	0,13	**0,30**	0,51	.S..GN
.T..GN	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.T..GN
.S..HP	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.S..HP
.S..HN	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.S..HN

At 1,00 Axial Depth of Cut

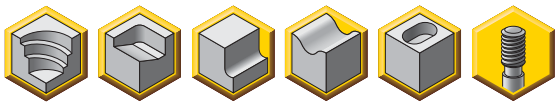
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,14	**0,28**	0,56	0,11	**0,21**	0,42	0,09	**0,18**	0,36	0,09	**0,17**	0,34	0,08	**0,17**	0,33	.F..LP
.S..GN	0,28	**0,67**	1,14	0,21	**0,50**	0,85	0,18	**0,44**	0,74	0,17	**0,41**	0,69	0,17	**0,40**	0,68	.S..GN
.T..GN	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.T..GN
.S..HP	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.S..HP
.S..HN	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.S..HN

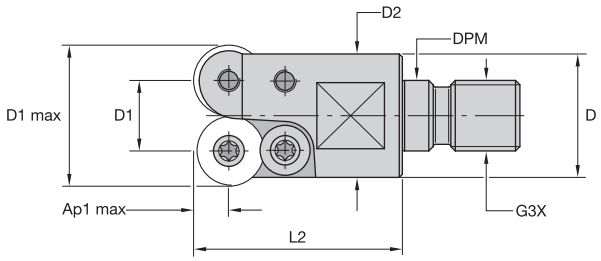
At 0,50 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,19	**0,38**	0,77	0,15	**0,29**	0,58	0,13	**0,25**	0,50	0,12	**0,23**	0,47	0,12	**0,23**	0,46	.F..LP
.S..GN	0,39	**0,93**	1,58	0,29	**0,69**	1,17	0,25	**0,60**	1,02	0,24	**0,56**	0,95	0,23	**0,55**	0,93	.S..GN
.T..GN	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.T..GN
.S..HP	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.S..HP
.S..HN	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





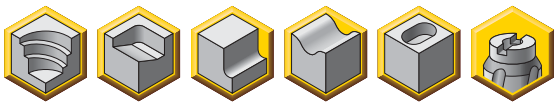
Screw-On End Mills • RD.X12 Inserts

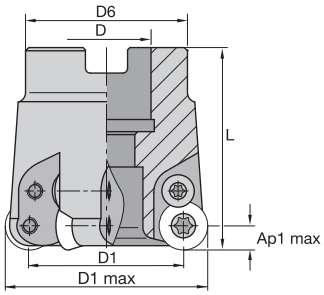
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888421	**24E02R035M12SRD12**	24	12	21	21	12,5	M12	35	6,0	2	15.0°	0,08	RD__12T3____
1888422	**35E03R043M16SRD12**	35	23	29	33	17,0	M16	43	6,0	3	11.0°	0,21	RD__12T3____
1888423	**42E04R043M16SRD12**	42	30	29	38	17,0	M16	43	6,0	4	11.0°	0,25	RD__12T3____

Spare Parts

D1 max	insert screw	Nm	Torx wrench	clamp screw
24	**193.342**	3,5	**FT15**	**193.338**
35	**193.342**	3,5	**FT15**	**193.338**
42	**193.342**	3,5	**FT15**	**193.338**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X12 Inserts

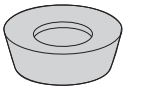
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3680971	**40A04RSMORD12**	40	28	16	32	45	6,0	4	8.8°	0,34	RD.X12T3MO..
3649673	**50A05RSMORD12**	50	38	22	42	50	6,0	5	6.1°	0,40	RD.X12T3MO..
1888182	**52A05RSMORD12**	52	40	22	42	50	6,0	5	4.5°	0,45	RD.X12T3MO..
3681014	**63A06RSMORD12**	63	51	27	48	50	6,0	6	2.8°	0,71	RD.X12T3MO..
1888205	**66A06RSMORD12**	66	54	27	50	50	6,0	6	3.5°	0,75	RD.X12T3MO..
1888200	**80A07RSMORD12**	80	68	27	50	50	6,0	7	2.5°	1,00	RD.X12T3MO..

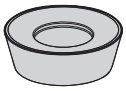
Spare Parts

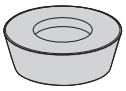
D1 max	insert screw	Nm	Torx wrench	clamp screw	low-head cap screw	socket-head cap screw
40	**193.342**	3,5	**FT15**	**193.338**	**–**	**MS1294**
50	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
52	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
63	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
66	**193.342**	3,5	**FT15**	**193.338**	**–**	**MS2038**
80	**193.342**	3,5	**FT15**	**193.338**	**–**	**–**

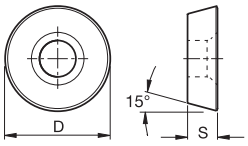
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..HP**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**	**KC725M**	–	–
M3	–	–	**.S..HP**	**KC725M**	–	–
K1–K2	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	K110M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..GN	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..HN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20


RDHX-FLP


RDPX-HP


RDHX-GN
RDPX-HN



● first choice
○ alternate choice

P			○	○	●	●	●	●	●
M					●	○	●	○	○
K			●	○			○	○	○
N		●	○						
S					●	○	●		
H			●						

RDHX-FLP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0FLP	12,00	3,97	0,02	●	●	●		●			

RDHX-GN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0SGN	12,00	3,97	0,11		●	●	●	●			
RDHX12T3M0TGN	12,00	3,97	0,13								●

RDPX-HP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHP	12,00	3,97	0,13			●		●	●	●	

RDPX-HN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHN	12,00	3,97	0,17		●	●		●	●		

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC525M		
P	1	–	**–**	–	–	**–**	–	395	**345**	325	260	**240**	215
	2	–	**–**	–	–	**–**	–	330	**290**	240	215	**190**	180
	3	–	**–**	–	–	**–**	–	305	**255**	215	190	**180**	170
	4	–	**–**	–	295	**240**	200	270	**225**	180	170	**160**	145
	5	–	**–**	–	–	**–**	–	225	**200**	180	180	**170**	160
	6	–	**–**	–	–	**–**	–	200	**150**	120	160	**145**	130
M	1	–	**–**	–	–	**–**	–	245	**215**	200	180	**170**	160
	2	–	**–**	–	–	**–**	–	225	**190**	160	160	**145**	130
	3	–	**–**	–	–	**–**	–	170	**145**	115	110	**95**	85
K	1	155	**145**	135	350	**315**	285	275	**250**	220	–	**–**	–
	2	135	**130**	120	275	**250**	230	215	**195**	180	–	**–**	–
	3	120	**105**	95	235	**205**	190	180	**160**	145	–	**–**	–
N	1–2	605	**565**	540	770	**685**	630	–	**–**	–	–	**–**	–
	3	495	**440**	385	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	50	**45**	35	75	**65**	60
	2	–	**–**	–	–	**–**	–	50	**45**	35	75	**65**	60
	3	–	**–**	–	–	**–**	–	60	**50**	35	60	**55**	50
	4	–	**–**	–	–	**–**	–	85	**60**	45	75	**60**	50
H	1	–	**–**	–	190	**155**	110	145	**110**	85	–	**–**	–

Material Group		KC725M			KCPM20			KCPK30			KTPK20		
P	1	315	**275**	255	660	**580**	535	545	**475**	440	440	**360**	310
	2	260	**230**	195	410	**370**	330	335	**305**	275	270	**225**	190
	3	240	**205**	170	370	**330**	305	305	**275**	250	245	**205**	170
	4	215	**180**	145	275	**255**	230	225	**210**	190	185	**160**	130
	5	180	**160**	145	330	**300**	275	310	**275**	255	255	**205**	175
	6	160	**120**	95	230	**200**	175	190	**165**	–	150	**125**	–
M	1	205	**180**	165	270	**240**	205	250	**220**	190	285	**235**	200
	2	185	**160**	130	245	**215**	190	225	**195**	170	260	**220**	185
	3	140	**120**	95	195	**175**	150	175	**160**	140	195	**160**	–
K	1	–	**–**	–	435	**390**	350	355	**320**	285	275	**235**	195
	2	–	**–**	–	345	**310**	280	280	**255**	230	220	**180**	160
	3	–	**–**	–	290	**255**	240	235	**210**	195	185	**150**	130
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	45	**35**	30	–	**–**	–	–	**–**	–	–	**–**	–
	2	45	**35**	30	–	**–**	–	–	**–**	–	–	**–**	–
	3	55	**45**	30	–	**–**	–	–	**–**	–	–	**–**	–
	4	75	**55**	35	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	170	**140**	115	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.F..GN	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..GN
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..GN
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..LP
.F..GN	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..GN
.T..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.T..GN
.S..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GN
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP
.S..HN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HN

At 1,50 Axial Depth of Cut (ap)

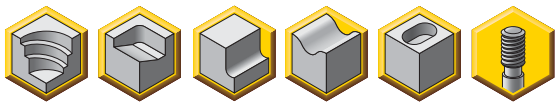
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..LP
.F..GN	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..GN
.T..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.T..GN
.S..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GN
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP
.S..HN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HN

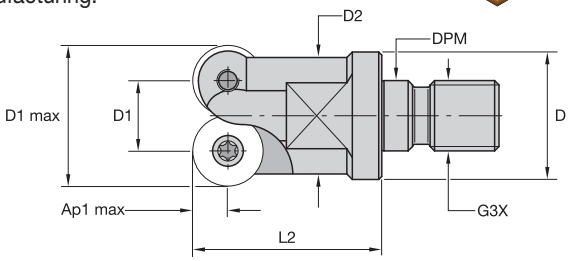
At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..LP
.F..GN	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..GN
.T..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.T..GN
.S..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GN
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP
.S..HN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





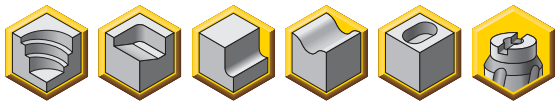
Screw-On End Mills • RD.X16 Inserts

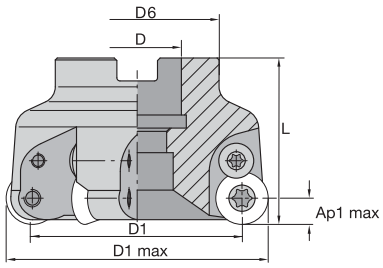
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888424	**32E02R043M16SRD16**	32	16	29	27	17,0	M16	43	8,0	2	15.0°	0,20	RD__1604____

Spare Parts

D1 max	insert screw	Nm	Torx wrench
32	**193.343**	6,0	**FT20**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X16 Inserts

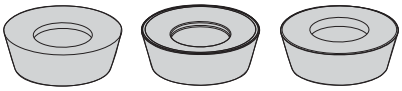
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3681013	**50A04RSMORD16**	50	34	22	42	50	8,0	4	8.5°	0,32	RD_X1604M0__
1888196	**52A04RSMORD16**	52	36	22	42	50	8,0	4	8.2°	0,32	RD_X1604M0__
3681015	**63A05RSMORD16**	63	47	22	48	50	8,0	5	5.5°	0,55	RD_X1604M0__
1888209	**66A05RSMORD16**	66	50	27	50	50	8,0	5	4.0°	0,55	RD_X1604M0__
1888204	**80A06RSMORD16**	80	64	27	50	50	8,0	6	3.0°	0,87	RD_X1604M0__
1888197	**100B07RSMORD16**	100	84	32	60	55	8,0	7	2.0°	1,37	RD_X1604MO__

Spare Parts

D1 max	insert screw	Nm	Torx wrench	clamp screw
50	**193.343**	6,0	**FT20**	**193.383**
52	**193.343**	6,0	**FT20**	**193.383**
63	**193.343**	6,0	**FT20**	**193.383**
66	**193.343**	6,0	**FT20**	**193.383**
80	**193.343**	6,0	**FT20**	**193.383**
100	**193.343**	6,0	**FT20**	**193.383**

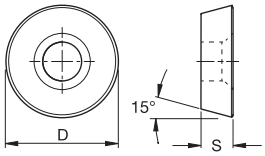
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..GN**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HN	KC725M
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**	**KC725M**	–	–
M3	–	–	**.S..HP**	**KC725M**	–	–
K1–K2	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..GN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20


RDHX-FLP

RDPX-HP

RDHX-GN
RDPX-HN



● first choice
○ alternate choice

		KC510M	KC522M	KC725M	KCPM20	KCPK30
P		○	○	●	●	●
M			●	●	○	○
K		●	○		○	○
N		○				
S			●	●		
H		●				

RDHX-FLP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0FLP	16,00	4,76	0,02	●	●	●		

RDHX-GN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0SGN	16,00	4,76	0,21	●	●	●		

RDPX-HP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHP	16,00	4,76	0,14		●	●	●	●

RDPX-HN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHN	16,00	4,76	0,21	●	●	●	●	

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	350	**315**	285	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	275	**250**	230	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	235	**205**	190	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	770	**685**	630	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–	170	**140**	115	–	–	–

NOTE: FIRST choice starting speeds are in bold type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..LP
.S..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GN
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP
.S..HN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HN

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..LP
.S..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GN
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP
.S..HN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..LP
.S..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GN
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP
.S..HN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

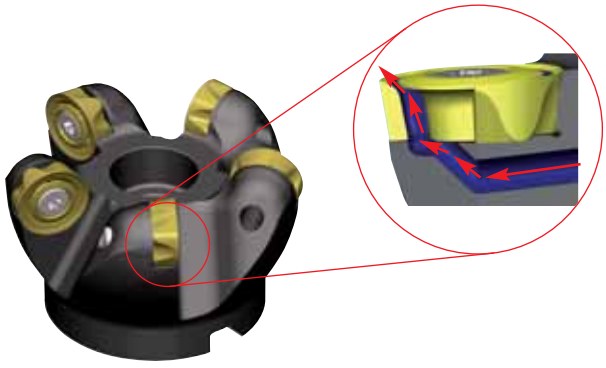
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

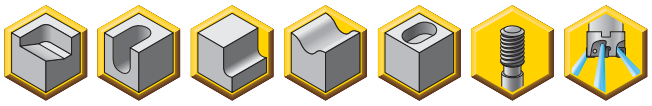
KSRM™ • Multipurpose Milling Cutters

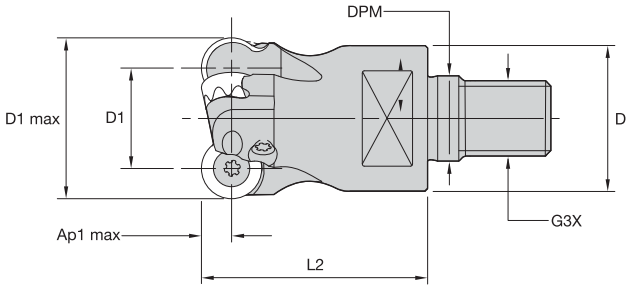
Primary Application

Specially developed for machining titanium and stainless steel. KSRM platform enables you to pocket, profile, ramp, and plunge with up to 1mm (.039") fz with consistent performance, providing outstanding metal removal rates with the lowest cutting forces in roughing applications.

Features and Benefits

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



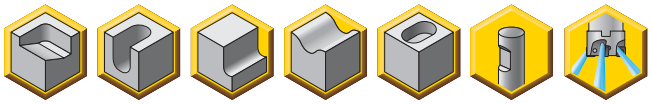


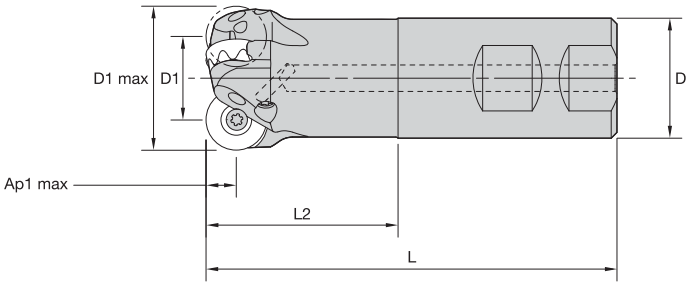
Screw-On End Mills

order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	max RPM	kg	insert 1
4043046	32E03R045M16RP12	32	20	29	17,0	M16	45	6,0	3	6°	43400	0,18	RP.T1204M0…
4043047	40E04R045M16RP12	40	28	29	17,0	M16	45	6,0	4	9°	38800	0,21	RP.T1204M0…

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	MS2077	2,3	MS-2225	DT15IP
40	MS2077	2,3	MS-2225	DT15IP





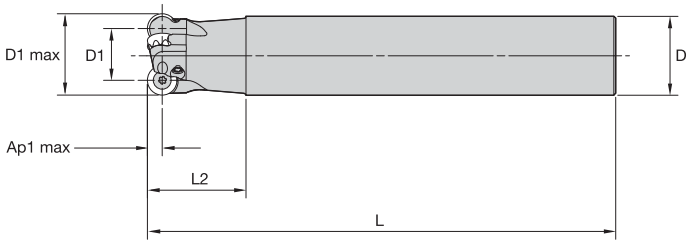
Weldon End Mills

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043048	32A03R040B32RP12	32	20	32	101	40	6,0	3	6.0°	0,51	43400	RP.T1204M0…

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	MS2077	2,3	MS-2225	DT15IP

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



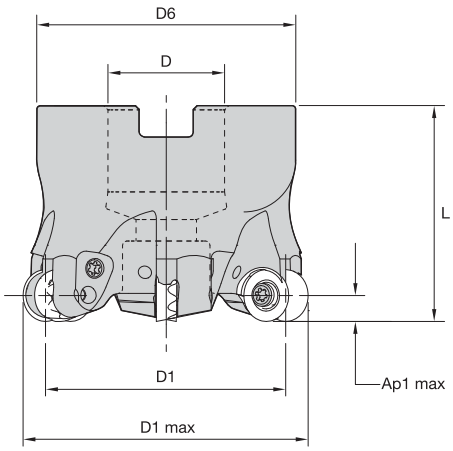
Cylindrical End Mills

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043049	**32A03R040A32RP12L190**	32	20	32	190	40	6,0	3	6.0°	1,05	43400	RP_T1204M0__
4177164	**35E03R050A32RP12L200**	35	23	32	200	50	6,0	3	5.5°	1,11	41400	RP_T1204M0__
4177052	**35E04R050A32RP12L200**	35	23	32	200	50	6,0	4	7.0°	1,11	41400	RP_T1204M0__

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	**MS2077**	2,3	**MS-2225**	**DT15IP**
35	**MS2077**	2,3	**MS-2225**	**DT15IP**

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



Face Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043050	**40A04RS90RP12**	40	28	16	38	40	6,0	4	9.0°	0,21	38800	RP.T1204M0…
4177163	**42A04RS90RP12**	42	30	16	38	40	6,0	4	10.0°	0,22	37800	RP.T1204M0..
4043051	**50A04RS90RP12**	50	38	22	42	40	6,0	4	10.8°	0,26	34700	RP.T1204M0...
4043052	**50A05RS90RP12**	50	38	22	42	40	6,0	5	7.9°	0,26	34700	RP.T1204M0...
3891914	**52A05RS90RP12**	52	40	22	49	50	6,0	5	10.2°	0,50	34000	RP.T1204M0…
4043063	**63A05RS90RP12**	63	51	22	49	50	6,0	5	7.7°	0,56	30900	RP.T1204M0…
4025498	**63A07RS90RP12**	63	51	22	49	50	6,0	7	2.6°	0,56	30900	RP.T1204M0…
4005063	**66A06RS90RP12**	66	54	27	60	50	6,0	6	6.6°	0,74	30200	RP.T1204M0…
4043064	**80A06RS90RP12**	80	68	27	60	50	6,0	6	5.1°	0,95	27300	RP.T1204M0…
4024763	**80A08RS90RP12**	80	68	27	60	50	6,0	8	4.1°	0,96	27300	RP.T1204M0…
4043065	**100B07RS90RP12**	100	88	32	78	50	6,0	7	4.0°	1,39	24000	RP.T1204M0…
4027389	**100B09RS90RP12**	100	88	32	78	50	6,0	9	3.1°	1,39	24000	RP.T1204M0…

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	low-head cap screw	socket-head cap screw	socket-head cap screw with coolant groove *	coolant lock screw assembly	T-handle hex wrench	Torx Plus driver
40	**MS2077**	2,3	**MS-2225**	**–**	**MS1294**	**MS1294CG**	**–**	**–**	**DT15IP**
42	**MS2077**	2,3	**MS-2225**	**–**	**MS1294**	**MS1294CG**	**–**	**–**	**DT15IP**
50	**MS2077**	2,3	**MS-2225**	**MS1336**	**–**	**MS2072CG**	**–**	**–**	**DT15IP**
52	**MS2077**	2,3	**MS-2225**	**–**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
63	**MS2077**	2,3	**MS-2225**	**–**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
66	**MS2077**	2,3	**MS-2225**	**–**	**MS2038**	**MS2038CG**	**–**	**–**	**DT15IP**
80	**MS2077**	2,3	**MS-2225**	**–**	**MS2038**	**MS2038CG**	**–**	**–**	**DT15IP**
100	**MS2077**	2,3	**MS-2225**	**–**	**–**	**–**	**MS2195C**	**THW2M**	**DT15IP**

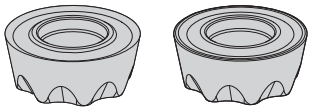
* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
P3–P4	.E..LE	KCPK30	**.S..GE**	**KCPK30**	.S..GP	KCPK30
P5–P6	.S..GE	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPM20
M1–M2	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
M3	.E..LE	KCPK30	**.E..LE**	**KCPK30**	.S..GE	KCPK30
K1–K2	–	–	**.S..GP**	**KCPK30**	–	–
K3	–	–	**.S..GP**	**KCPK30**	–	–
N1–N2	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
N3	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
S1–S2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
S3	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
S4	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
H1	–	–	**–**	**–**	–	–

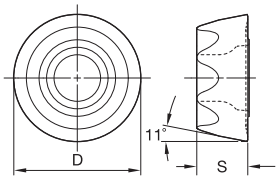
Indexable Round Inserts • KSRM

- SGE and ELE are the first choice for titanium machining.
- SGE geometry is the first choice for medium and heavy applications.
- ELE is the first choice for lower cutting forces to avoid built-up edge.



RPET-LE
RPET-GE

RPPT-GP



● first choice
○ alternate choice

	KC422M	KC522M	KC725M	KCPM20	KCPK30
P		○	●	●	●
M			●	●	○	○
K			○		○	○
N	●					
S			●	●		
H						

RPET-LE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0ELEJ	12,00	4,76	0,03	8	●	●	●		
RPET1204M0ELE	12,00	4,76	0,05	8		●	●		●

RPET-GE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0SGE	12,00	4,76	0,10	8		●	●		●
RPET1204M0SGEJ	12,00	4,76	0,11	8		●	●		

RPPT-GP

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1204M0SGP	12,00	4,76	0,13	8			●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,08	**0,13**	0,20	0,06	**0,09**	0,15	0,06	**0,08**	0,13	0,05	**0,08**	0,12	0,05	**0,08**	0,12	.E..LEJ
.E..LE	0,12	**0,21**	0,34	0,09	**0,16**	0,26	0,08	**0,14**	0,22	0,07	**0,13**	0,21	0,07	**0,13**	0,20	.E..LE
.S..GE	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GE
.S..GP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GP

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,10	**0,14**	0,23	0,07	**0,11**	0,17	0,06	**0,09**	0,15	0,06	**0,09**	0,14	0,06	**0,09**	0,14	.E..LEJ
.E..LE	0,14	**0,25**	0,39	0,10	**0,18**	0,29	0,09	**0,16**	0,26	0,09	**0,15**	0,24	0,08	**0,15**	0,24	.E..LE
.S..GE	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GE
.S..GP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GP

At 1,50 Axial Depth of Cut (ap)

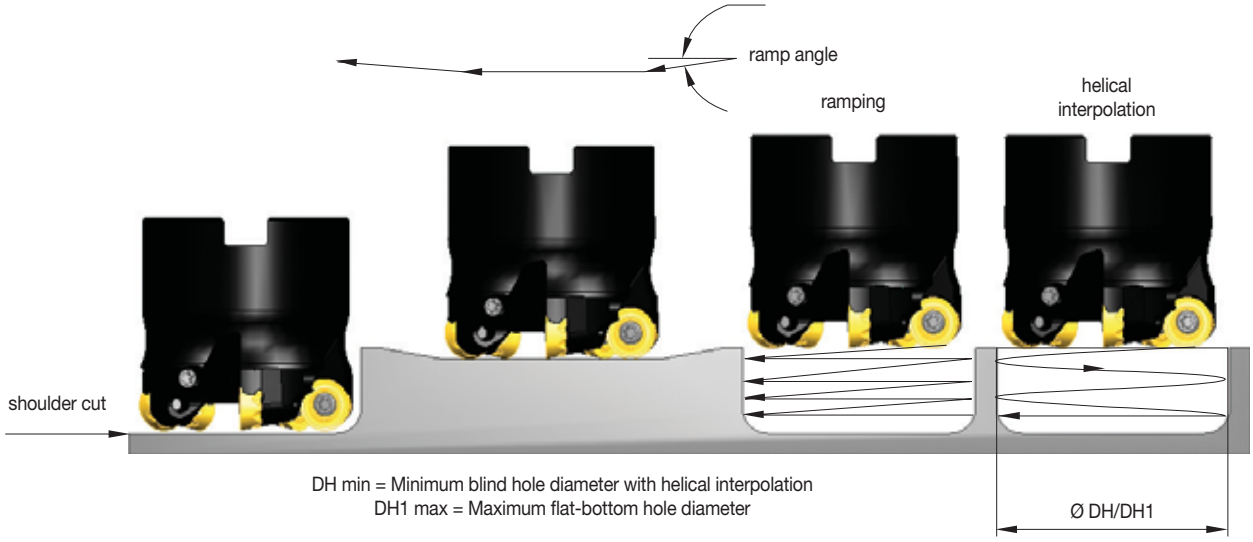
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,13	**0,19**	0,30	0,10	**0,14**	0,23	0,08	**0,12**	0,20	0,08	**0,12**	0,19	0,08	**0,11**	0,18	.E..LEJ
.E..LE	0,18	**0,32**	0,52	0,14	**0,24**	0,39	0,12	**0,21**	0,34	0,11	**0,20**	0,31	0,11	**0,19**	0,31	.E..LE
.S..GE	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GE
.S..GP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GP

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,18	**0,26**	0,41	0,13	**0,19**	0,31	0,11	**0,17**	0,27	0,11	**0,16**	0,25	0,10	**0,15**	0,25	.E..LEJ
.E..LE	0,25	**0,44**	0,71	0,19	**0,33**	0,53	0,16	**0,29**	0,46	0,15	**0,27**	0,43	0,15	**0,26**	0,42	.E..LE
.S..GE	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GE
.S..GP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GP

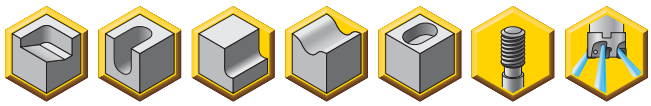
NOTE: Use “Light Machining” values as starting feed rate.

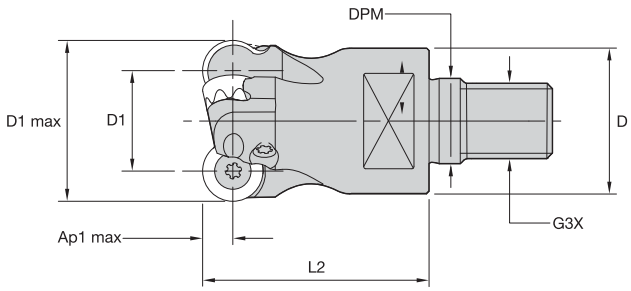
Maximum Linear Ramping and Helical Interpolation from Solid



catalogue number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max hole diameter (flat bottom)
32E03R045M16RP12	6.0°	1,65	43,95	52	64
40E04R045M16RP12	9.0°	3,50	57,24	68	80
32A03R040B32RP12	6.0°	1,65	43,95	52	64
32A03R040A32RP12L190	6.0°	1,65	43,95	52	64
40A04RS90RP12	9.0°	3,50	57,24	68	80
50A04RS90RP12	10.8°	6,00	76,04	88	100
50A05RS90RP12	7.9°	4,40	76,50	88	100
52A05RS90RP12	10.2°	6,00	80,05	92	104
63A05RS90RP12	7.7°	6,00	102,02	114	126
63A07RS90RP12	2.6°	2,10	105,08	114	126
66A06RS90RP12	6.6°	5,50	108,14	120	132
80A06RS90RP12	5.1°	5,50	136,04	148	160
80A08RS90RP12	4.1°	4,40	136,58	148	160
100B07RS90RP12	4.0°	5,70	176,04	188	200
100B09RS90RP12	3.1°	4,40	176,55	188	200

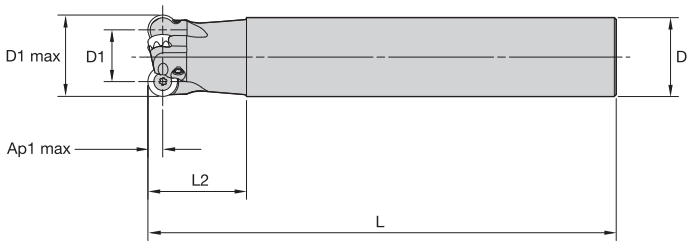
- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





Screw-On End Mills

order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042581	**40E03R045M16RP16**	40	24	29	17,0	M16	45	8,0	3	8.4°	0,19	27300	RP..T1605M0…



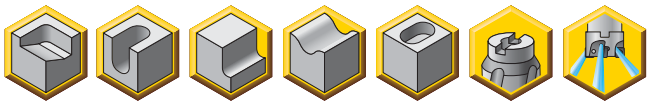
Cylindrical End Mills

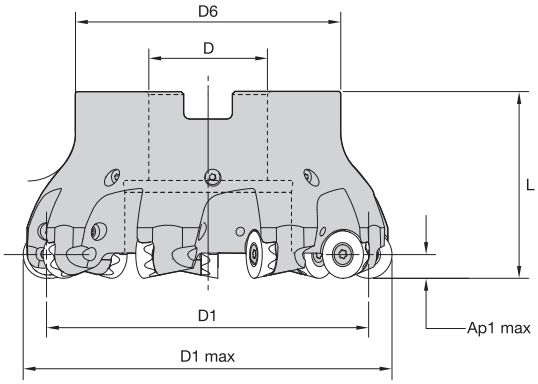
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042582	**40E02R040A32RP16L200**	40	24	32	200	40	8,0	2	11.1°	1,13	27300	RP..T1605M0…

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
40	**MS-2071**	4,0	**MS-2225**	**DT15IP**

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





Face Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042693	**52A04RS90RP16**	52	36	22	49	50	8,0	4	11°	0,42	23900	RP..T1605M0…
4042694	**63A04RS90RP16**	63	47	22	49	50	8,0	4	12°	0,50	21700	RP..T1605M0…
4042695	**63A06RS90RP16**	63	47	22	49	50	8,0	6	4°	0,51	21700	RP..T1605M0…
4042696	**80A05RS90RP16**	80	64	27	60	50	8,0	5	8°	0,87	19200	RP..T1605M0…
4042697	**80A07RS90RP16**	80	64	27	60	50	8,0	7	5°	0,90	19200	RP..T1605M0…
4042698	**100B06RS90RP16**	100	84	32	78	50	8,0	6	6°	1,29	16700	RP..T1605M0…
4042699	**100B08RS90RP16**	100	84	32	78	50	8,0	8	5°	1,29	16700	RP..T1605M0…
4042700	**125B09RS90RP16**	125	109	40	90	63	8,0	9	4°	2,48	14700	RP..T1605M0…

Spare Parts

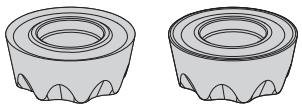
D1 max	insert screw	Nm	anti-rotation screw	socket-head cap screw	socket-head cap screw with coolant groove *	coolant lock screw assembly	T-handle hex wrench	Torx Plus driver
52	**MS-2071**	4,0	**MS-2225**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
63	**MS-2071**	4,0	**MS-2225**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
80	**MS-2071**	4,0	**MS-2225**	**MS2038**	**MS2038CG**	**–**	**–**	**DT15IP**
100	**MS-2071**	4,0	**MS-2225**	**–**	**–**	**MS2195C**	**THW2M**	**DT15IP**
125	**MS-2071**	4,0	**MS-2225**	**–**	**–**	**MS2187C**	**THW2M**	**DT15IP**

* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

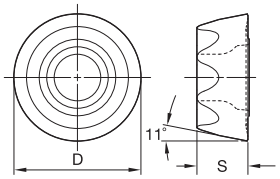
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
P3–P4	.E..LE	KCPK30	**.S..GE**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..GE	KCPK30	**.S..HP**	**KCPK30**	.S..HP	KCPM20
M1–M2	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
M3	.E..LE	KCPK30	**.E..LE**	**KCPK30**	.S..GE	KCPK30
K1–K2	–	–	**.S..HP**	**KCPK30**	–	–
K3	–	–	**.S..HP**	**KCPK30**	–	–
N1–N2	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
N3	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
S1–S2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
S3	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
S4	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GE	KC725M
H1	–	–	**–**	**–**	–	–

- SGE and ELE are the first choice for titanium machining.
- SGE geometry is the first choice for medium and heavy applications.
- ELE is the first choice for lower cutting forces to avoid built-up edge.

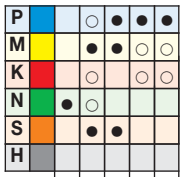


RPET-LE
RPET-GE

RPPT-GP



● first choice
○ alternate choice



RPET-LE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0ELEJ	16,00	5,56	0,03	8	●	●	●		
RPET1605M0ELE	16,00	5,56	0,05	8		●	●		●

RPET-GE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0SGE	16,00	5,56	0,10	8		●	●		●
RPET1605M0SGEJ	16,00	5,56	0,11	8		●	●		

RPPT-HP

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1605M0SHP	16,00	5,56	0,18	8			●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,08	**0,15**	0,23	0,06	**0,11**	0,17	0,06	**0,10**	0,15	0,05	**0,09**	0,14	0,05	**0,09**	0,14	.E..LEJ
.E..LE	0,12	**0,26**	0,38	0,09	**0,19**	0,29	0,08	**0,17**	0,25	0,07	**0,16**	0,23	0,07	**0,15**	0,23	.E..LE
.S..GE	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GE
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,10	**0,17**	0,26	0,07	**0,13**	0,20	0,06	**0,11**	0,17	0,06	**0,11**	0,16	0,06	**0,10**	0,16	.E..LEJ
.E..LE	0,14	**0,30**	0,44	0,10	**0,22**	0,33	0,09	**0,19**	0,29	0,09	**0,18**	0,27	0,08	**0,18**	0,27	.E..LE
.S..GE	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GE
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP

At 2,00 Axial Depth of Cut (ap)

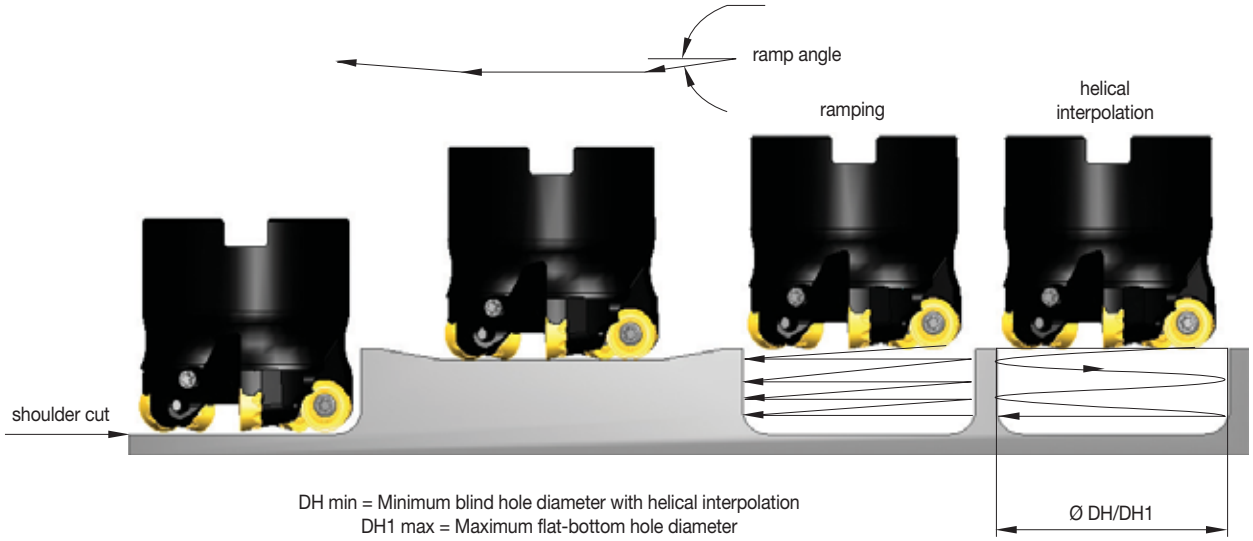
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,13	**0,23**	0,34	0,10	**0,17**	0,26	0,08	**0,15**	0,22	0,08	**0,14**	0,21	0,08	**0,14**	0,20	.E..LEJ
.E..LE	0,18	**0,39**	0,58	0,14	**0,29**	0,43	0,12	**0,25**	0,38	0,11	**0,24**	0,35	0,11	**0,23**	0,35	.E..LE
.S..GE	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GE
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,18	**0,31**	0,47	0,13	**0,23**	0,35	0,11	**0,20**	0,30	0,11	**0,19**	0,28	0,10	**0,19**	0,28	.E..LEJ
.E..LE	0,25	**0,53**	0,80	0,19	**0,40**	0,59	0,16	**0,35**	0,52	0,15	**0,32**	0,48	0,15	**0,32**	0,47	.E..LE
.S..GE	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GE
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP

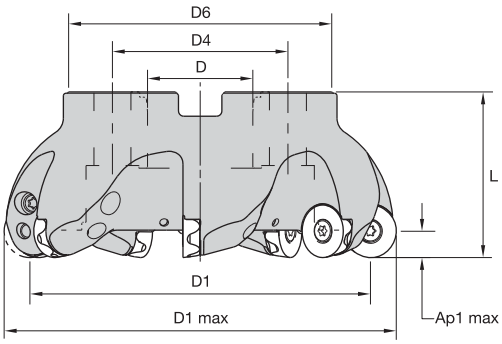
NOTE: Use “Light Machining” values as starting feed rate.

Maximum Linear Ramping and Helical Interpolation from Solid



catalogue number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
40E03R045M16RP16	8.3°	2,6	52.4	64	80
40E02R040A32RP16L200	11.1°	3,3	51,2	64	80
52A04RS90RP16	10.7°	5,25	73,14	88	104
63A04RS90RP16	11.8°	8,0	94,05	110	126
63A06RS90RP16	4.3°	3,07	97,71	110	126
80A05RS90RP16	8.2°	8,0	128,02	144	160
80A07RS90RP16	4.5°	4,5	129,89	144	160
100B06RS90RP16	6.1°	8,0	168,01	184	200
100B08RS90RP16	4.7°	6,22	168,58	184	200
125B09RS90RP16	4,3°	7,5	218,08	234	250

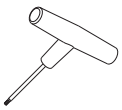
- Diameter range from 63–200mm.
- Engineered for roughing titanium with large depths of cut through positive geometry inserts.
- Anti-rotation feature allows up to six indexable rotations.

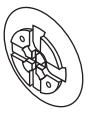


Face Mills

order number	catalogue number	D1 max	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3095646	**63A04RS90RC20C**	63	43	22	–	50	50	10,0	4	0.80°	0,62	26000	RCGT2006M0___
3095647	**80A05RS90RC20C**	80	60	27	–	60	50	10,0	5	0.80°	0,89	22000	RCGT2006M0___
3095648	**100B05RS90RC20C**	100	80	32	–	80	63	10,0	5	0.80°	2,16	18000	RCGT2006MO___
3095649	**100B06RS90RC20C**	100	80	32	–	80	63	10,0	6	0.90°	2,11	18000	RCGT2006MO___
3095650	**125B06RS90RC20C**	125	105	40	–	90	63	10,0	6	0.60°	2,96	15000	RCGT2006M0___
3095651	**160C07RS90RC20C**	160	140	40	67	100	63	10,0	7	0.50°	3,90	14000	RCGT2006M0___
3095652	**160C08RS90RC20C**	160	140	40	67	100	63	10,0	8	0.50°	3,87	14000	RCGT2006M0___
3095653	**200C09RS90RC20C**	200	180	60	102	130	63	10,0	9	0.40°	5,77	12500	RCGT2006M0___

Spare Parts



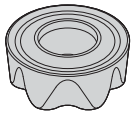


D1 max	insert screw	Nm	Torx wrench	anti-rotation screw	coolant cap assembly	SHCS with coolant groove	coolant lock screw assembly
63	**MS1162**	5,0	**TT25**	**S2160**	**–**	**MS1242CG**	**–**
80	**MS1162**	5,0	**TT25**	**S2160**	**–**	**MS2190CG**	**–**
100	**MS1162**	5,0	**TT25**	**S2160**	**–**	**–**	**MS2188C**
125	**MS1162**	5,0	**TT25**	**S2160**	**–**	**–**	**MS2187C**
160	**MS1162**	5,0	**TT25**	**S2160**	**MCCM16001**	**–**	**–**
200	**MS1162**	5,0	**TT25**	**S2160**	**MCC080001**	**–**	**–**

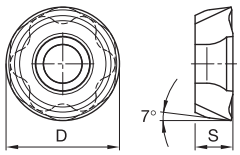
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
P3–P4	.S..GF	KC522M	**.S..GF**	**KC725M**	.S..HF	KCPK30
P5–P6	.S..GF	KC522M	**.S..HF**	**KCPK30**	.S..HF	KCPK30
M1–M2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
M3	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KCPK30
K1–K2	–	–	**.S..HF**	**KCPK30**	–	–
K3	–	–	**.S..HF**	**KCPK30**	–	–
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
S3	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
S4	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
H1	–	–	**–**	**–**	–	–

- ELF is the first choice for lower cutting forces to avoid build-up edge.
- SGF is for general purpose in roughing applications.
- SHF is the first choice for heavy duty.



RCTG-LF
RCTG-GF
RCTG-HF



● first choice
○ alternate choice

P	○	●	●
M	●	●	○
K			○
N			
S	●	●	
H			

RCTG-LF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0ELF	20,00	6,35	0,04	6		●	

RCTG-GF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0SGF	20,00	6,35	0,10	6	●	●	

RCTG-HF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0SHF	20,00	6,35	0,25	6		●	●

Recommended Starting Speeds [m/min]

Material Group		KC522M			KC725M			KCPK30		
P	1	395	**345**	325	315	**275**	255	545	**475**	440
	2	330	**290**	240	260	**230**	195	335	**305**	275
	3	305	**255**	215	240	**205**	170	305	**275**	250
	4	270	**225**	180	215	**180**	145	225	**210**	190
	5	225	**200**	180	180	**160**	145	310	**275**	255
	6	200	**150**	120	160	**120**	95	190	**165**	–
M	1	245	**215**	200	205	**180**	165	250	**220**	190
	2	225	**190**	160	185	**160**	130	225	**195**	170
	3	170	**145**	115	140	**120**	95	175	**160**	140
K	1	–	**–**	–	–	**–**	–	355	**320**	285
	2	–	**–**	–	–	**–**	–	280	**255**	230
	3	–	**–**	–	–	**–**	–	235	**210**	195
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–
S	1	50	**45**	35	45	**35**	30	–	**–**	–
	2	50	**45**	35	45	**35**	30	–	**–**	–
	3	60	**50**	35	55	**45**	30	–	**–**	–
	4	85	**60**	45	75	**55**	35	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,09	**0,17**	0,32	0,07	**0,13**	0,24	0,06	**0,11**	0,21	0,05	**0,10**	0,19	0,05	**0,10**	0,19	.E..LF
.S..GF	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GF
.S..HF	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HF

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,10	**0,20**	0,37	0,08	**0,15**	0,27	0,07	**0,13**	0,24	0,06	**0,12**	0,22	0,06	**0,12**	0,22	.E..LF
.S..GF	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GF
.S..HF	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HF

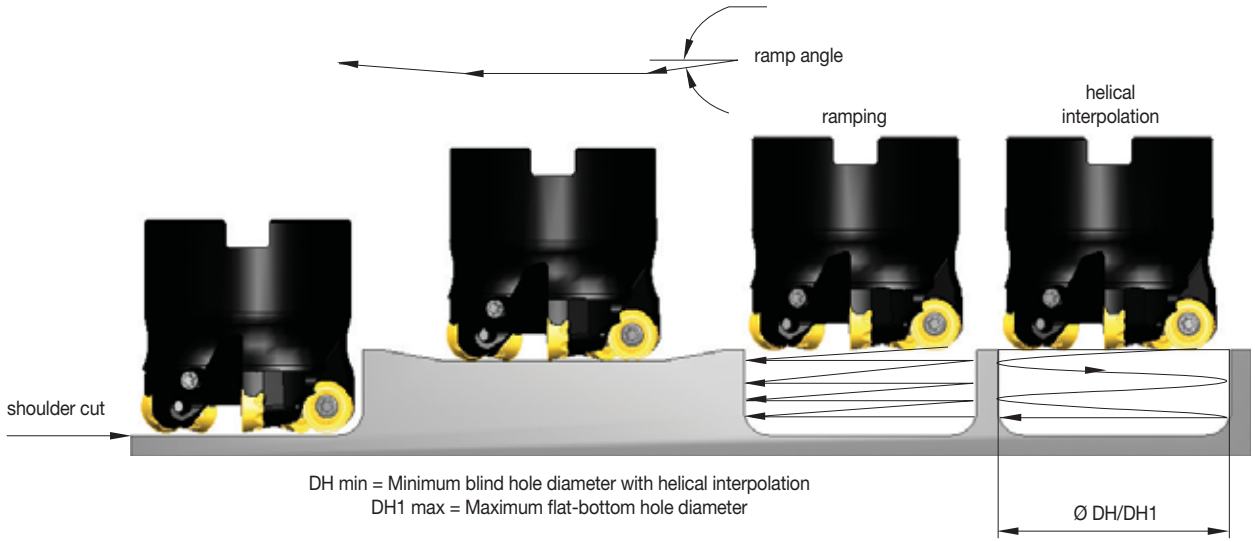
At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,14	**0,26**	0,48	0,10	**0,19**	0,36	0,09	**0,17**	0,31	0,08	**0,16**	0,29	0,08	**0,16**	0,29	.E..LF
.S..GF	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GF
.S..HF	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HF

At 1,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,19	**0,35**	0,66	0,14	**0,27**	0,49	0,12	**0,23**	0,43	0,11	**0,22**	0,40	0,11	**0,21**	0,39	.E..LF
.S..GF	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GF
.S..HF	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HF

NOTE: Use “Light Machining” values as starting feed rate.



insert IC	catalogue number	max ramp angle (ra) when hx = .127mm	max ramp angle (ra) when hx = .5mm	max plunge radial depth (ae) when hx = .5mm	min hole diameter	max flat-bottom hole diameter	max hole diameter (no flat bottom)
RCGX2006	**63A04RS90RC20C**	1.29°	0.79°	13.61	99.48	106.08	126.00
RCGX2006	**80A05RS90RC20C**	1.23°	0.80°	14.35	131.61	140.08	160.00
RCGX2006	**100B05RS90RC20C**	1.17°	0.84°	15.24	170.31	180.08	200.00
RCGX2006	**100B06RS90RC20C**	1.15°	0.89°	15.16	170.09	180.08	200.00
RCGX2006	**125B06RS90RC20C**	1.06°	0.63°	15.50	219.05	230.08	250.00
RCGX2006	**160C07RS90RC20C**	0.92°	0.50°	14.95	220.23	230.08	250.00
RCGX2006	**160C08RS90RC20C**	0.92°	0.49°	14.90	290.34	300.08	320.00
RCGX2006	**200C09RS90RC20C**	0.79°	0.41°	15.03	290.01	300.08	320.00

Beyond BLAST™ KSRM™ • Next Generation Round Inserts with Through Coolant

Primary Application

Specially developed for machining titanium. Beyond BLAST KSRM platform boosts your productivity with its new and revolutionary technology, PCT (Precision Coolant Technology), enabling consistent performance and providing outstanding metal removal rates and longer tool life.

Features and Benefits

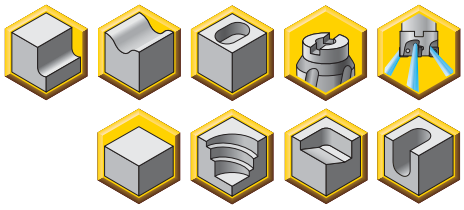
Platform Features	Functions
Channeling coolant through the insert.	Increase productivity, tool life, and chip control.
Anti-rotation feature with six indexes.	Superior productivity and better insert utilization/cost per edge.
High positive topography with strong cutting edges.	Long tool life and better MRR.
High clearance on the cutters and inserts.	Able to convert all milling applications.

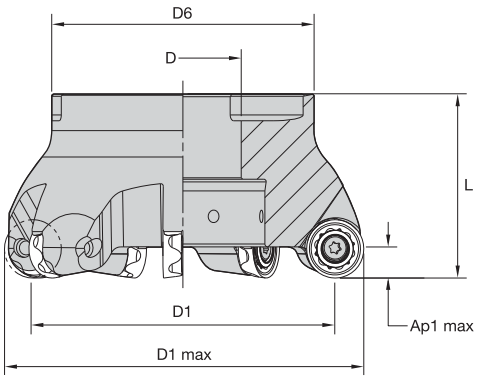
*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

beyond BLAST™

- Use PCT technology; coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- Anti-rotation feature allows up to six indexable rotations.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



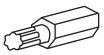


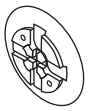
beyond BLAST™

Face Mills • Metric

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4109173	**KSRM63A04RC20BB**	63	43	22	50	50	10,0	4	0,54	21900	RCGX2006M0__
4109174	**KSRM80A05RC20BB**	80	60	27	60	50	10,0	5	0,83	18500	RCGX2006M0__
4109175	**KSRM100B05RC20BB**	100	80	32	80	50	10,0	5	1,45	16000	RCGX2006M0__
4109176	**KSRM100B06RC20BB**	100	80	32	80	50	10,0	6	1,43	16000	RCGX2006M0__
4109177	**KSRM125B06RC20BB**	125	105	40	90	63	10,0	6	2,90	14000	RCGX2006M0__
4109178	**KSRM125B07RC20BB**	125	105	40	90	63	10,0	7	2,90	14000	RCGX2006M0__
4109179	**KSRM160C07RC20BB**	160	140	40	90	63	10,0	7	3,34	12100	RCGX2006M0__
4109180	**KSRM160C08RC20BB**	160	140	40	90	63	10,0	8	3,30	12100	RCGX2006M0__
4109181	**KSRM200C09RC20BB**	200	180	60	130	63	10,0	9	5,49	10700	RCGX2006M0__

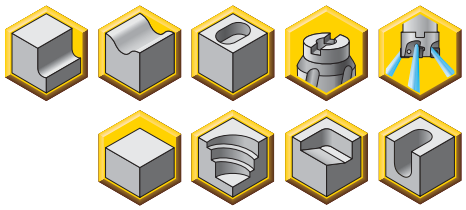
Spare Parts

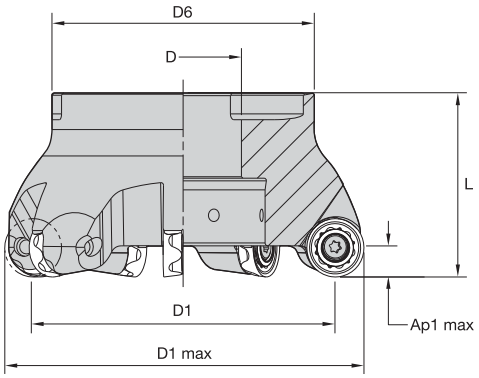




D1 max	insert screw	Nm	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
63	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS1234CG**
80	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS2190CG**
100	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2195C**	–	–
125	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2187C**	–	–
160	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCCM16001**	–
200	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCC080001**	–

- Use PCT technology; coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- Anti-rotation feature allows up to six indexable rotations.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



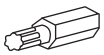


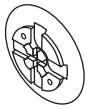
beyond BLAST™

Face Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4137791	**KSRM80A05RC20BB-J**	80	60	25	56	50	10,0	5	0,84	18500	RCGX2006M0__
4137792	**KSRM100B06RC20BB-J**	100	80	32	73	50	10,0	6	1,26	16000	RCGX2006M0__
4137793	**KSRM125B07RC20BB-J**	125	105	38	97	63	10,0	7	3,03	14000	RCGX2006M0__
4137794	**KSRM160B08RC20BB-J**	160	140	51	127	63	10,0	8	5,22	12100	RCGX2006M0__
4137795	**KSRM200C09RC20BB-J**	200	180	48	130	63	10,0	9	6,06	10700	RCGX2006M0__

Spare Parts

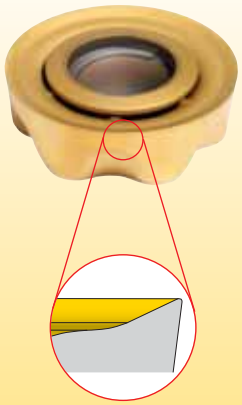


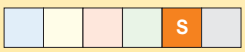


D1 max	insert screw	Nm	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
80	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS2190CG**
100	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2220C**	–	–
125	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	–
160	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	–
200	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCC080001**	–

Best-in-Class Performance Booster in Machining Titanium

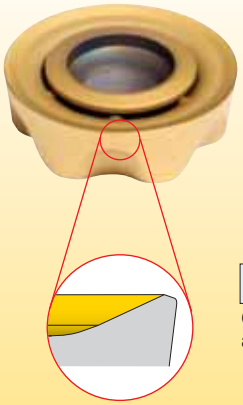
-ELF

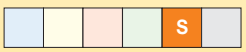




Geometry for light and medium machining

-SGF





Geometry for medium and heavy machining

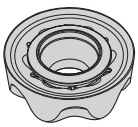
Copy Mills

Insert Selection Guide

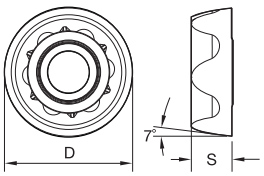
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..GF	KC725M
H1	–	–	–	–	–	–

Indexable Insert • BB KSRM

- Revolutionary concept of channeling coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- ELF geometry for lower cutting forces to avoid built-up edge.
- SGF in the first choice for higher chip load and heavy applications.



RCGX-LF
RCGX-GF



beyond BLAST™

● first choice
○ alternate choice

P	M	K	N	S	H
				●	

Copy Mills

RCGX-LF and -GF

catalogue number	D	S	hm	cutting edges	KC725M
RCGX2006M0ELF	20,00	6,35	0,08	6	●
RCGX2006M0SGF	20,00	6,35	0,10	6	●

Recommended Starting Speeds [m/min]

Material Group		KC725M		
P	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
	5	–	–	–
	6	–	–	–
M	1	–	–	–
	2	–	–	–
	3	–	–	–
K	1	–	–	–
	2	–	–	–
	3	–	–	–
N	1	–	–	–
	2	–	–	–
S	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	75	**55**	35
H	1	–	–	–
	2	–	–	–
	3	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,17	**0,36**	0,54	0,13	**0,27**	0,40	0,11	**0,24**	0,35	0,10	**0,22**	0,33	0,10	**0,22**	0,32	.E..LF
.S..GF	0,17	**0,43**	0,67	0,13	**0,32**	0,50	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,40	.S..GF

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,20	**0,42**	0,62	0,15	**0,31**	0,46	0,13	**0,27**	0,40	0,12	**0,25**	0,38	0,12	**0,25**	0,37	.E..LF
.S..GF	0,20	**0,49**	0,78	0,15	**0,37**	0,58	0,13	**0,32**	0,50	0,12	**0,30**	0,47	0,12	**0,29**	0,46	.S..GF

At 2,50 Axial Depth of Cut (ap)

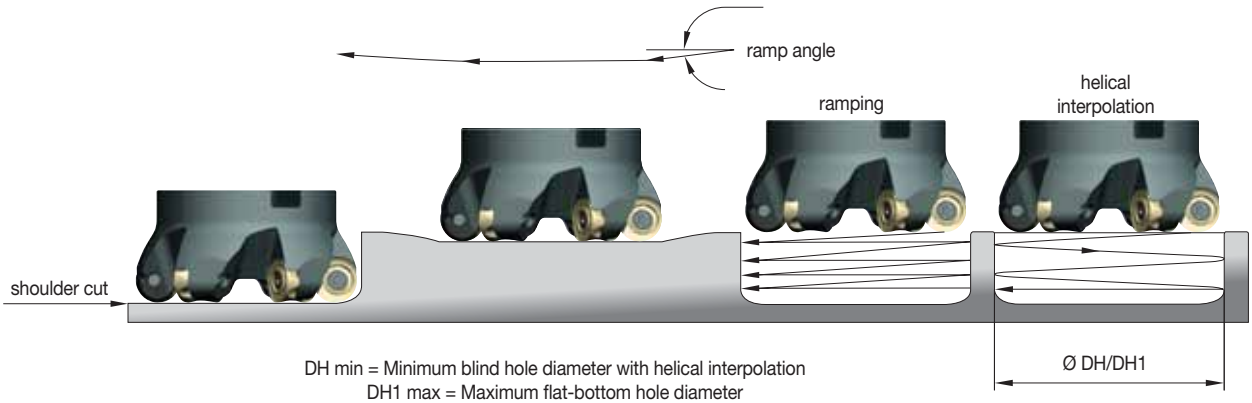
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,26	**0,55**	0,81	0,19	**0,41**	0,61	0,17	**0,36**	0,53	0,16	**0,33**	0,49	0,15	**0,33**	0,48	.E..LF
.S..GF	0,26	**0,64**	1,02	0,19	**0,48**	0,76	0,17	**0,42**	0,66	0,16	**0,39**	0,62	0,15	**0,38**	0,60	.S..GF

At 1,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,35	**0,75**	1,12	0,26	**0,56**	0,83	0,23	**0,49**	0,72	0,21	**0,46**	0,67	0,21	**0,45**	0,66	.E..LF
.S..GF	0,35	**0,88**	1,40	0,26	**0,66**	1,04	0,23	**0,57**	0,90	0,21	**0,54**	0,84	0,21	**0,52**	0,83	.S..GF

NOTE: Use “Light Machining” values as starting feed rate.

Ramping and Helical Interpolation Values from Solid



DH min = Minimum blind hole diameter with helical interpolation
DH1 max = Maximum flat-bottom hole diameter

insert IC	catalogue number	max ramp angle	max ramp depth	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
RCGX2006	**KSRM63A04RC20BB**	1,29°	0,88	1,45	97,99	106,08	126,00
RCGX2006	**KSRM80A05RC20BB**	1,23°	1,19	1,82	130,70	140,08	160,00
RCGX2006	**KSRM100B05RC20BB**	1,17°	1,53	2,16	169,53	180,08	200,00
RCGX2006	**KSRM100B06RC20BB**	1,15°	1,51	2,13	169,61	180,08	200,00
RCGX2006	**KSRM125B06RC20BB**	1,06°	1,84	2,44	218,61	230,08	250,00
RCGX2006	**KSRM125B07RC20BB**	1,05°	1,81	2,41	218,68	230,08	250,00
RCGX2006	**KSRM160C07RC20BB**	0,92°	2,15	2,71	287,75	300,08	320,00
RCGX2006	**KSRM160C08RC20BB**	0,92°	2,14	2,69	287,78	300,08	320,00
RCGX2006	**KSRM200C09RC20BB**	0,79°	2,40	2,90	367,16	380,08	400,00
RCGX2006	**KSRM80A05RC20BB-J**	1,23°	1,19	1,82	130,70	140,08	160,00
RCGX2006	**KSRM100B06RC20BB-J**	1,15°	1,51	2,13	169,61	180,08	200,00
RCGX2006	**KSRM125B07RC20BB-J**	1,05°	1,81	2,41	218,68	230,08	250,00
RCGX2006	**KSRM160C08RC20BB-J**	0,92°	2,14	2,69	287,78	300,08	320,00
RCGX2006	**KSRM200C09RC20BB-J**	0,79°	2,40	2,90	367,16	380,08	400,00

KDMB™ and KDMT™ • Indexable Copy Insert Platforms

Primary Application

Ball nose and toroidal styles for roughing and finishing operations. Engineered with the ultimate technologies and supported with a wide range of diameters and insert styles, this platform provides exceptional performance and productivity. The new High-Feed insert style provides the highest metal removal rates for roughing applications.

Features and Benefits

Longer Tool Life and Improved Geometries

- Longer tool life for finishing operations, up to 63 HRC.
- High-accuracy inserts and holders: overall runout ± 0,01mm.
- Improved geometries for roughing and finishing operations.
- Smaller diameters from 6mm to replace SCEM, setting a more productive machining process.

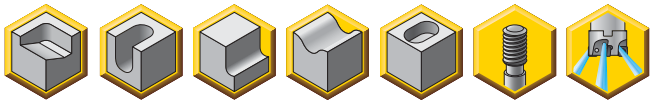
Superior Productivity

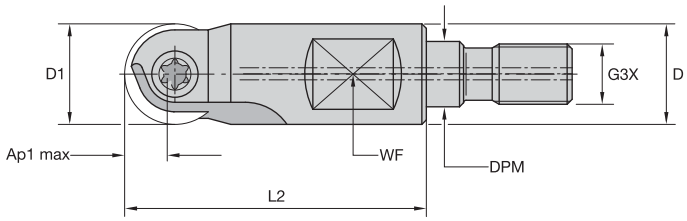
- Due to the new helical geometry, we obtain better surface quality.
- New ultra-grain grade for outstanding tool life.
- Diameters 6mm and 8mm natural replacement for SEM tools.
- Better cost per edge.

Usability and Flexibility

- Wide diameter range, from 6–32mm, enables it to be applied across a wide range of machining conditions.
- Many workpiece materials are possible — from hardened steel to aluminium.
- Large holder style offering: screw-on, cylindrical, and tapered steel and carbide holders.

- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.

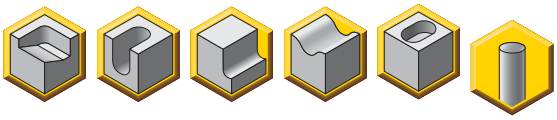


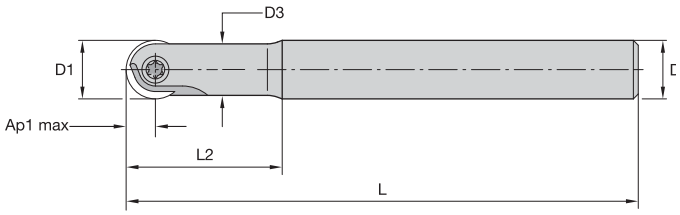


Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918651	**KDMB12R026M08SN**	12	13	8,5	M8	26	6,0	1	2	3.0°	40000	KDMB12..
1918652	**KDMB16R026M08SN**	16	13	8,5	M8	26	8,0	1	2	3.0°	40000	KDMB16..
1918663	**KDMB20R030M10SN**	20	18	10,5	M10	30	10,0	1	2	3.0°	40000	KDMB20..
1918664	**KDMB25R040M12SN**	25	21	12,5	M12	40	12,5	1	2	3.0°	30000	KDMB25..

- Available diameters: 12–32mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.





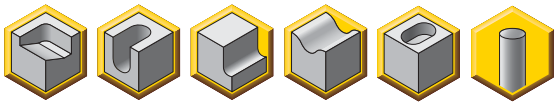
Necked End Mills • Cylindrical Shank • Steel

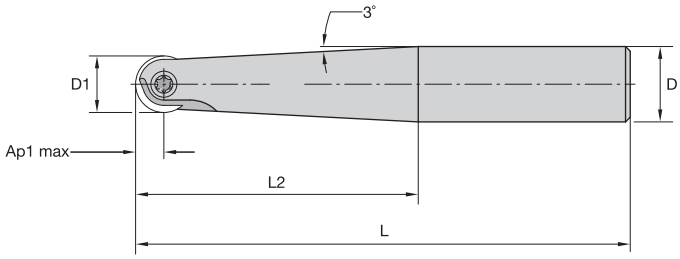
order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
1918676	**KDMB12R130A12SN**	12	12	11	130	32	6,0	1	2	No	3.0°	40000	KDMB12..
1918677	**KDMB12R150A12SN**	12	12	11	150	46	6,0	1	2	No	3.0°	40000	KDMB12..
1918678	**KDMB16R140A16SN**	16	16	14	140	35	8,0	1	2	No	3.0°	40000	KDMB16..
1918679	**KDMB16R160A16SN**	16	16	14	160	53	8,0	1	2	No	3.0°	40000	KDMB16..
1918680	**KDMB20R160A20SN**	20	20	18	160	45	10,0	1	2	No	3.0°	40000	KDMB20..
1918681	**KDMB20R175A20SN**	20	20	18	175	61	10,0	1	2	No	3.0°	40000	KDMB20..
1918682	**KDMB25R160A25SN**	25	25	22	160	45	12,5	1	2	No	3.0°	40000	KDMB25..
1918683	**KDMB25R190A25SN**	25	25	22	190	70	12,5	1	2	No	3.0°	40000	KDMB25..
1918684	**KDMB32R175A32SN**	32	32	29	175	56	16,0	1	2	No	3.0°	40000	KDMB32..
1918685	**KDMB32R210A32SN**	32	32	29	210	80	16,0	1	2	No	3.0°	40000	KDMB32..

Spare Parts

D1	insert screw	Nm	Torx wrench
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

- Available diameters: 8–25mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Tapered version ideal for 5-axis applications.





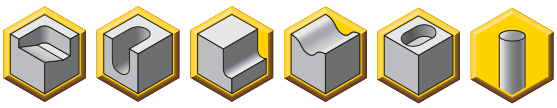
Tapered End Mills • Cylindrical Shank • Steel

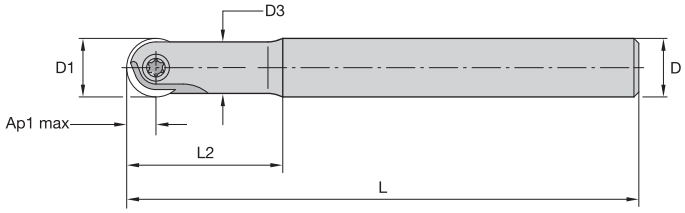
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
1918669	**KDMB08R140A08ST**	8	12	140	50	4,0	1	2	No	3.0°	40000	KDMB08..
1918670	**KDMB10R150A10ST**	10	12	150	34	5,0	1	2	No	3.0°	40000	KDMB10..
1918671	**KDMB12R160A12ST**	12	16	160	60	6,0	1	2	No	3.0°	40000	KDMB12..
1918672	**KDMB16R175A16ST**	16	20	175	67	8,0	1	2	No	3.0°	40000	KDMB16..
1918673	**KDMB20R190A20ST**	20	25	190	80	10,0	1	2	No	3.0°	40000	KDMB20..
1918674	**KDMB25R210A25ST**	25	32	210	100	12,5	1	2	No	3.0°	40000	KDMB25..

Spare Parts

D1	insert screw	Nm	Torx wrench
8	**193.395**	2,0	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**

- Available diameters: 6–32mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.





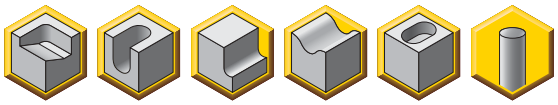
Necked End Mills • Cylindrical Shank • Carbide

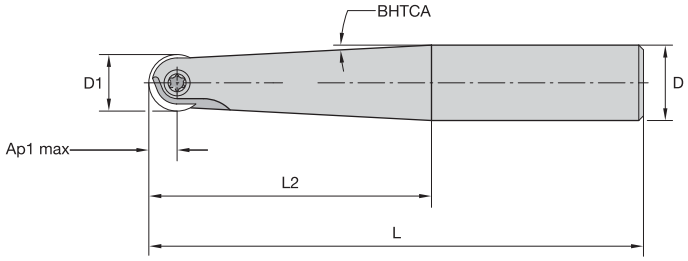
order number	catalogue number	D1	D	D3	L2	L	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
3700622	**KDMB06R100A06HN**	6	6	5,8	20	100	3,0	1	2	No	3.0°	40000	KDM.06..
3964191	**KDMB06R150A06HN**	6	6	5,8	70	150	3,0	1	2	No	3.0°	40000	KDM.06..
3964192	**KDMB06R200A06HN**	6	6	5,8	100	200	3,0	1	2	No	3.0°	40000	KDM.06..
1918704	**KDMB08R100A08HN**	8	8	7,0	25	100	4,0	1	2	No	3.0°	40000	KDM.08..
1918705	**KDMB08R150A08HN**	8	8	7,0	40	150	4,0	1	2	No	3.0°	40000	KDM.08..
2877242	**KDMB10R120A10HNC**	10	10	8,8	34	120	5,0	1	2	Yes	3.0°	40000	KDMB10..
2877373	**KDMB10R150A10HNC**	10	10	8,8	49	150	5,0	1	2	Yes	3.0°	40000	KDMB10..
2877374	**KDMB12R120A12HNC**	12	12	10,5	35	120	6,0	1	2	Yes	3.0°	40000	KDMB12..
2877375	**KDMB12R160A12HNC**	12	12	10,5	50	160	6,0	1	2	Yes	3.0°	40000	KDMB12..
2877376	**KDMB16R140A16HNC**	16	16	14,0	40	140	8,0	1	2	Yes	3.0°	40000	KDMB16..
2877377	**KDMB16R175A16HNC**	16	16	14,0	55	175	8,0	1	2	Yes	3.0°	40000	KDMB16..
2877378	**KDMB20R140A20HNC**	20	20	18,0	50	140	10,0	1	2	Yes	3.0°	40000	KDMB20..
2877379	**KDMB20R190A20HNC**	20	20	18,0	75	190	10,0	1	2	Yes	3.0°	40000	KDMB20..
2877380	**KDMB25R160A25HNC**	25	25	22,4	60	160	12,5	1	2	Yes	3.0°	30000	KDMB25..
2877381	**KDMB25R210A25HNC**	25	25	22,4	90	210	12,5	1	2	Yes	3.0°	30000	KDMB25..
2877382	**KDMB32R190A32HNC**	32	32	28,6	65	190	16,0	1	2	Yes	3.0°	30000	KDMB32..
2877383	**KDMB32R240A32HNC**	32	32	28,6	105	240	16,0	1	2	Yes	3.0°	30000	KDMB32..

Spare Parts

D1	insert screw	Nm	Torx wrench
6	**MS2236**	1,7	**KT6**
8	**193.395**	2,0	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

- Available diameters: 6–16mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Tapered version ideal for 5-axis applications.





Tapered End Mills • Cylindrical Shank • Carbide

order number	catalogue number	D1	D	BHTCA	L2	L	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
3964257	**KDMB06R90A08HN**	6	8	1.8°	40	90	3,0	1	2	No	3.0°	40000	KDM.06..
3964258	**KDMB08R100A10HN**	8	10	1.3°	60	100	4,0	1	2	No	3.0°	40000	KDM.08..
3964259	**KDMB08R150A10HN**	8	10	1.0°	90	150	4,0	1	2	No	3.0°	40000	KDM.08..
3964260	**KDMB10R100A12HNC**	10	12	1.3°	60	100	5,0	1	2	Yes	3.0°	40000	KDMB10..
3964261	**KDMB10R150A12HNC**	10	12	1.0°	90	150	5,0	1	2	Yes	3.0°	40000	KDMB10..
3964262	**KDMB12R120A16HNC**	12	16	2.0°	70	120	6,0	1	2	Yes	3.0°	40000	KDMB12..
3964263	**KDMB12R150A16HNC**	12	16	1.5°	90	150	6,0	1	2	Yes	3.0°	40000	KDMB12..
3964264	**KDMB16R140A20HNC**	16	20	2.0°	70	140	8,0	1	2	Yes	3.0°	40000	KDMB16..
3964265	**KDMB16R175A20HNC**	16	20	1.5°	90	175	8,0	1	2	Yes	3.0°	40000	KDMB16..

Spare Parts

D1	insert screw	Nm	Torx wrench
6	**MS2236**	1,0	**KT6**
8	**193.395**	1,7	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**

Insert Selection Guide

KDMB Ball Nose Platform • 6mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	–	–
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	–	–
M1–M2	.E..GP	KC515M	–	–	–	–
M3	.E..GP	KC515M	–	–	–	–
K1–K2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
K3	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 8mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GN	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC530M
M1–M2	.E..GP	KC515M	**.E..GN**	**KC530M**	–	–
M3	.E..GP	KC515M	**.E..GN**	**KC530M**	–	–
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 10mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GN	KC515M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC530M
M1–M2	.E..GP	KC515M	**.E..GN**	**KC530M**	.E..GN	KC530M
M3	.E..GP	KC515M	**.E..GN**	**KC530M**	.E..GN	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 12mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 16mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 20mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

Insert Selection Guide

KDMB Ball Nose Platform • 25mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 32mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

Insert Style

HC Geometry:

PSTS geometry with chipbreaker for roughing. Semi-finishing and rest material of steel, cast steel, and high-temperature alloys.

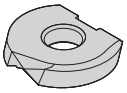
GP Geometry:

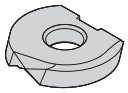
High-precision insert with helical geometry for semi-finishing and finishing of steel up to 63 HRC, cast steel, and high-temperature alloys.

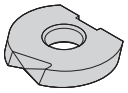
GN Geometry:

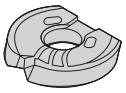
Geometry with extremely solid cutting edge for roughing cast steel, high-temperature alloys, and hardened steel up to 60 HRC.

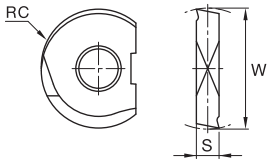
roughing, rest material **semi-finishing, finishing** **finishing**


KDMB-LD


KDMB-GP


KDMB-GN


KDMB-HC



● first choice
○ alternate choice

P			●	●	●
M			○	○	●
K			○	●	○
N		●			
S		○			
H			●	○	○

KDMB-LD • High-Precision Positive Geometry • Non-Ferrous and Titanium

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERLD	6,00	1,60	3,0	0,08	●			
KDMB08M0ERLD	8,00	2,00	4,0	0,05	●			
KDMB10M0ERLD	10,00	2,50	5,0	0,08	●			
KDMB12M0ERLD	12,00	2,50	6,0	0,08	●			
KDMB16M0ERLD	16,00	3,00	8,0	0,05	●			
KDMB20M0ERLD	20,00	3,00	10,0	0,08	●			
KDMB25M0ERLD	25,00	4,00	12,5	0,05	●			
KDMB32M0ERLD	32,00	5,00	16,0	0,05	●			

KDMB-GP • High-Precision Helical Geometry and Lower Cutting Forces

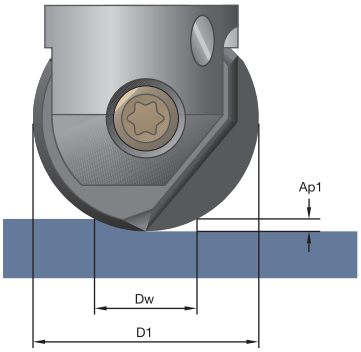
catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERGP	6,00	1,60	3,0	0,06		●	●	
KDMB08M0ERGP	8,00	2,00	4,0	0,08		●	●	
KDMB10M0ERGP	10,00	2,50	5,0	0,08		●	●	
KDMB12M0ERGP	12,00	2,50	6,0	0,06		●	●	
KDMB16M0ERGP	16,00	3,00	8,0	0,06		●	●	
KDMB20M0ERGP	20,00	3,00	10,0	0,06		●	●	
KDMB25M0ERGP	25,00	4,00	12,5	0,08		●	●	
KDMB32M0ERGP	32,00	5,00	16,0	0,08		●	●	

KDMB-GN • High Precision • Extremely Solid Cutting Edge

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERGN	6,00	1,60	3,0	0,08		●		
KDMB08M0ERGN	8,00	2,00	4,0	0,08		●	●	●
KDMB10M0ERGN	10,00	2,50	5,0	0,08		●	●	●
KDMB12M0ERGN	12,00	2,50	6,0	0,08		●	●	●
KDMB16M0ERGN	16,00	3,00	8,0	0,08		●	●	●
KDMB20M0ERGN	20,00	3,00	10,0	0,08		●	●	●
KDMB25M0ERGN	25,00	4,00	12,5	0,08		●	●	●
KDMB32M0ERGN	32,00	5,00	16,0	0,08		●	●	●

KDMB-HC • PSTS Insert Developed • Roughing and Rest Material Operations

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB12M0ERHC	12,00	2,50	6,0	0,10				●
KDMB16M0ERHC	16,00	3,00	8,0	0,10				●
KDMB20M0ERHC	20,00	3,00	10,0	0,10				●
KDMB25M0ERHC	25,00	4,00	12,5	0,10				●
KDMB32M0ERHC	32,00	5,00	16,0	0,10				●



KDMB Ball Nose • 6mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**3,00**	**1,50**	**0,50**	**0,25**
6,00	6,00	5,20	3,32	2,40

KDMB Ball Nose • 8mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**4,00**	**1,50**	**0,50**	**0,25**
8,00	8,00	6,24	3,87	2,78

KDMB Ball Nose • 10mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**5,00**	**2,00**	**1,00**	**0,50**
10,00	10,00	8,00	6,00	4,36

KDMB Ball Nose • 12mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**6,00**	**2,00**	**1,00**	**0,50**
12,00	12,00	8,94	6,63	4,80

KDMB Ball Nose • 16mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**8,00**	**3,00**	**1,50**	**0,75**
16,00	16,00	12,49	9,33	6,76

KDMB Ball Nose • 20mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**10,00**	**3,00**	**1,50**	**0,75**
20,00	20,00	14,28	10,54	7,60

KDMB Ball Nose • 25mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**12,50**	**5,00**	**2,00**	**1,00**
25,00	25,00	20,00	13,56	9,80

KDMB Ball Nose • 32mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**16,00**	**5,00**	**2,00**	**1,00**
32,00	32,00	23,24	15,49	11,14

NOTE: Working diameter (Dw) or effective diameter has to be considered when calculating appropriate RPM.

Recommended Starting Speeds [m/min]

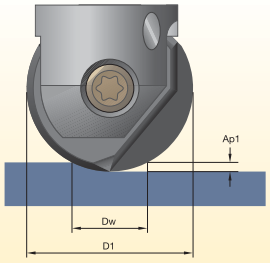
Material Group		K115M			KC505M			KC515M			KC530M		
P	1	–	–	–	–	–	–	330	**295**	255	275	**240**	200
	2	–	–	–	–	–	–	310	**275**	240	240	**200**	165
	3	–	–	–	–	–	–	275	**240**	200	200	**185**	165
	4	–	–	–	360	**260**	215	240	**200**	165	185	**165**	145
	5	–	–	–	360	**260**	215	200	**165**	130	165	**145**	130
	6	–	–	–	350	**240**	190	165	**130**	110	130	**110**	90
M	1	–	–	–	–	–	–	330	**275**	240	275	**220**	185
	2	–	–	–	–	–	–	275	**220**	165	185	**145**	130
	3	–	–	–	–	–	–	220	**185**	145	145	**130**	110
K	1	220	**185**	145	–	–	–	440	**330**	220	–	–	–
	2	185	**145**	110	–	–	–	330	**255**	185	–	–	–
	3	110	**90**	75	–	–	–	145	**110**	75	–	–	–
N	1–2	440	**330**	220	–	–	–	–	–	–	–	–	–
	3	295	**220**	185	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	90	**70**	50	–	–	–	90	**70**	50	80	**60**	50
H	1	–	–	–	260	**205**	170	170	**120**	95	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness value increases, the speed should be decreased.

Calculating Working Diameter and Resulting Surface Speed

Case 1:

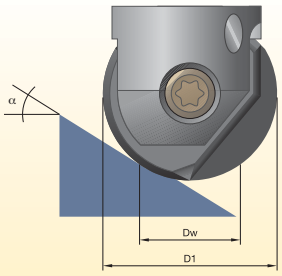
It is important to consider the effective diameter (Dw) when using light depths of cut in order to properly calculate RPM values. Use the following formula when machining flat surfaces or inclinations of 10° or less to find the Dw value. Then, use this for RPM calculations, as opposed to using the overall insert diameter (D1).



$$Dw = \sqrt{D1^2-(D1-2Ap1)^2}$$

Case 2:

When machining inclinations between 11° and 55°, further modification of vc is required. Apply factor "k" from the given formula to calculate the correct vc (vceff). This corrected value is then used to calculate the proper RPM for the tool.



$$k = \frac{1}{\sin\left[\alpha + \arccos\left(1-(2\,(Ap1/D1))\right)\right]}$$

$$vceff = vc \times k$$

Recommended Starting Feeds [mm] • Ball Nose Insert Size 6mm

Light Machining	General Purpose	Heavy Machining

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,34	0,11	**0,15**	0,25	0,09	**0,13**	0,22	0,09	**0,12**	0,21	0,08	**0,12**	0,20	.E..GP
.E..GN	0,17	**0,25**	0,34	0,13	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..GN

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,14	**0,19**	0,34	0,10	**0,14**	0,25	0,09	**0,13**	0,22	0,08	**0,12**	0,21	0,08	**0,12**	0,20	.E..LD
.E..GP	0,16	**0,23**	0,39	0,12	**0,17**	0,29	0,11	**0,15**	0,26	0,10	**0,14**	0,24	0,10	**0,14**	0,23	.E..GP
.E..GN	0,20	**0,29**	0,39	0,15	**0,22**	0,29	0,13	**0,19**	0,26	0,12	**0,18**	0,24	0,12	**0,18**	0,23	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,21	**0,30**	0,53	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,18**	0,32	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,36**	0,62	0,19	**0,27**	0,46	0,17	**0,24**	0,40	0,16	**0,22**	0,38	0,15	**0,22**	0,37	.E..GP
.E..GN	0,31	**0,46**	0,62	0,23	**0,35**	0,46	0,20	**0,30**	0,40	0,19	**0,28**	0,38	0,18	**0,28**	0,37	.E..GN

At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,42**	0,74	0,22	**0,31**	0,55	0,19	**0,27**	0,48	0,18	**0,26**	0,45	0,18	**0,25**	0,44	.E..LD
.E..GP	0,36	**0,50**	0,86	0,27	**0,38**	0,64	0,23	**0,33**	0,56	0,22	**0,31**	0,52	0,21	**0,30**	0,51	.E..GP
.E..GN	0,43	**0,64**	0,86	0,32	**0,48**	0,64	0,28	**0,42**	0,56	0,26	**0,39**	0,52	0,25	**0,38**	0,51	.E..GN

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 8mm

Light Machining	General Purpose	Heavy Machining

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,25**	0,43	0,13	**0,19**	0,32	0,11	**0,17**	0,28	0,10	**0,16**	0,26	0,10	**0,15**	0,25	.E..GN

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,38	0,11	**0,16**	0,28	0,10	**0,14**	0,24	0,09	**0,13**	0,23	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,26**	0,45	0,14	**0,19**	0,34	0,12	**0,17**	0,29	0,11	**0,16**	0,27	0,11	**0,15**	0,27	.E..GP
.E..GN	0,22	**0,33**	0,55	0,16	**0,24**	0,41	0,14	**0,21**	0,36	0,13	**0,20**	0,33	0,13	**0,20**	0,33	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,24	**0,35**	0,61	0,18	**0,26**	0,45	0,16	**0,23**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..LD
.E..GP	0,29	**0,41**	0,73	0,22	**0,31**	0,54	0,19	**0,27**	0,47	0,18	**0,25**	0,44	0,18	**0,25**	0,43	.E..GP
.E..GN	0,35	**0,53**	0,88	0,26	**0,39**	0,66	0,23	**0,34**	0,57	0,21	**0,32**	0,54	0,21	**0,31**	0,52	.E..GN

At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,34	**0,48**	0,85	0,25	**0,36**	0,63	0,22	**0,31**	0,55	0,21	**0,29**	0,51	0,20	**0,29**	0,50	.E..LD
.E..GP	0,41	**0,58**	1,02	0,31	**0,43**	0,76	0,27	**0,38**	0,66	0,25	**0,35**	0,62	0,24	**0,34**	0,60	.E..GP
.E..GN	0,49	**0,74**	1,23	0,37	**0,55**	0,92	0,32	**0,48**	0,80	0,30	**0,45**	0,75	0,29	**0,44**	0,73	.E..GN

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 10mm

Light Machining	General Purpose	Heavy Machining

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,37	0,11	**0,16**	0,27	0,10	**0,14**	0,24	0,09	**0,13**	0,22	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,25**	0,44	0,13	**0,19**	0,33	0,12	**0,16**	0,29	0,11	**0,15**	0,27	0,11	**0,15**	0,26	.E..GP
.E..GN	0,21	**0,33**	0,59	0,16	**0,25**	0,44	0,14	**0,22**	0,38	0,13	**0,20**	0,36	0,13	**0,20**	0,35	.E..GN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,20	**0,28**	0,49	0,15	**0,21**	0,37	0,13	**0,18**	0,32	0,12	**0,17**	0,30	0,12	**0,17**	0,29	.E..LD
.E..GP	0,24	**0,33**	0,59	0,18	**0,25**	0,44	0,15	**0,22**	0,38	0,14	**0,20**	0,36	0,14	**0,20**	0,35	.E..GP
.E..GN	0,28	**0,45**	0,78	0,21	**0,33**	0,58	0,18	**0,29**	0,51	0,17	**0,27**	0,48	0,17	**0,27**	0,47	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,27	**0,38**	0,67	0,20	**0,29**	0,50	0,18	**0,25**	0,44	0,17	**0,23**	0,41	0,16	**0,23**	0,40	.E..LD
.E..GP	0,33	**0,46**	0,81	0,24	**0,34**	0,60	0,21	**0,30**	0,53	0,20	**0,28**	0,49	0,19	**0,28**	0,48	.E..GP
.E..GN	0,39	**0,62**	1,08	0,29	**0,46**	0,81	0,25	**0,40**	0,70	0,24	**0,37**	0,66	0,23	**0,37**	0,64	.E..GN

NOTE: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 12mm

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,16	**0,22**	0,39	0,12	**0,17**	0,29	0,10	**0,15**	0,26	0,10	**0,14**	0,24	0,09	**0,13**	0,23	.E..LD
.E..GP	0,19	**0,27**	0,47	0,14	**0,20**	0,35	0,12	**0,18**	0,31	0,12	**0,16**	0,29	0,11	**0,16**	0,28	.E..GP
.E..GN	0,23	**0,36**	0,63	0,17	**0,27**	0,47	0,15	**0,23**	0,41	0,14	**0,22**	0,38	0,14	**0,21**	0,38	.E..GN
.E..HC	0,23	**0,45**	0,79	0,17	**0,34**	0,59	0,15	**0,29**	0,51	0,14	**0,27**	0,48	0,14	**0,27**	0,47	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,21	**0,30**	0,53	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,18**	0,32	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,36**	0,64	0,19	**0,27**	0,48	0,17	**0,24**	0,41	0,16	**0,22**	0,39	0,15	**0,22**	0,38	.E..GP
.E..GN	0,31	**0,48**	0,85	0,23	**0,36**	0,64	0,20	**0,32**	0,55	0,19	**0,30**	0,52	0,18	**0,29**	0,51	.E..GN
.E..HC	0,31	**0,61**	1,07	0,23	**0,45**	0,79	0,20	**0,40**	0,69	0,19	**0,37**	0,65	0,18	**0,36**	0,63	.E..HC

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,42**	0,74	0,22	**0,31**	0,55	0,19	**0,27**	0,48	0,18	**0,26**	0,45	0,18	**0,25**	0,44	.E..LD
.E..GP	0,36	**0,50**	0,88	0,27	**0,38**	0,66	0,23	**0,33**	0,57	0,22	**0,31**	0,54	0,21	**0,30**	0,53	.E..GP
.E..GN	0,43	**0,67**	1,18	0,32	**0,50**	0,88	0,28	**0,44**	0,77	0,26	**0,41**	0,72	0,25	**0,40**	0,70	.E..GN
.E..HC	0,43	**0,84**	1,48	0,32	**0,63**	1,10	0,28	**0,55**	0,96	0,26	**0,51**	0,89	0,25	**0,50**	0,88	.E..HC

NOTES: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 16mm

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,38	0,11	**0,16**	0,28	0,10	**0,14**	0,24	0,09	**0,13**	0,23	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,26**	0,45	0,14	**0,19**	0,34	0,12	**0,17**	0,29	0,11	**0,16**	0,27	0,11	**0,15**	0,27	.E..GP
.E..GN	0,22	**0,34**	0,60	0,16	**0,26**	0,45	0,14	**0,22**	0,39	0,13	**0,21**	0,37	0,13	**0,2**	0,36	.E..GN
.E..HC	0,22	**0,43**	0,75	0,16	**0,32**	0,56	0,14	**0,28**	0,49	0,13	**0,26**	0,46	0,13	**0,26**	0,45	.E..HC

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,20	**0,29**	0,50	0,15	**0,21**	0,38	0,13	**0,19**	0,33	0,12	**0,18**	0,31	0,12	**0,17**	0,30	.E..LD
.E..GP	0,24	**0,34**	0,60	0,18	**0,26**	0,45	0,16	**0,22**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..GP
.E..GN	0,29	**0,46**	0,81	0,22	**0,34**	0,60	0,19	**0,30**	0,52	0,18	**0,28**	0,49	0,17	**0,27**	0,48	.E..GN
.E..HC	0,29	**0,58**	1,01	0,22	**0,43**	0,75	0,19	**0,37**	0,66	0,18	**0,35**	0,61	0,17	**0,34**	0,60	.E..HC

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,28	**0,40**	0,7	0,21	**0,30**	0,52	0,18	**0,26**	0,45	0,17	**0,24**	0,42	0,17	**0,24**	0,41	.E..LD
.E..GP	0,34	**0,48**	0,84	0,25	**0,36**	0,62	0,22	**0,31**	0,54	0,20	**0,29**	0,51	0,20	**0,28**	0,50	.E..GP
.E..GN	0,40	**0,64**	1,12	0,30	**0,47**	0,83	0,26	**0,41**	0,72	0,25	**0,39**	0,68	0,24	**0,38**	0,66	.E..GN
.E..HC	0,40	**0,80**	1,40	0,30	**0,59**	1,04	0,26	**0,52**	0,90	0,25	**0,48**	0,85	0,24	**0,47**	0,83	.E..HC

NOTE: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 20mm

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,33	0,09	**0,13**	0,25	0,08	**0,11**	0,22	0,07	**0,10**	0,20	0,07	**0,10**	0,20	.E..LD
.E..GP	0,14	**0,20**	0,40	0,11	**0,15**	0,30	0,09	**0,13**	0,26	0,09	**0,12**	0,24	0,08	**0,12**	0,24	.E..GP
.E..GN	0,17	**0,27**	0,54	0,13	**0,20**	0,40	0,11	**0,17**	0,35	0,10	**0,16**	0,33	0,10	**0,16**	0,32	.E..GN
.E..HC	0,17	**0,33**	0,67	0,13	**0,25**	0,50	0,11	**0,22**	0,44	0,10	**0,20**	0,41	0,10	**0,20**	0,40	.E..HC

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,17	**0,23**	0,47	0,12	**0,18**	0,35	0,11	**0,15**	0,31	0,10	**0,14**	0,29	0,10	**0,14**	0,28	.E..LD
.E..GP	0,20	**0,28**	0,56	0,15	**0,21**	0,42	0,13	**0,18**	0,37	0,12	**0,17**	0,34	0,12	**0,17**	0,34	.E..GP
.E..GN	0,24	**0,37**	0,75	0,18	**0,28**	0,56	0,16	**0,24**	0,49	0,15	**0,23**	0,46	0,14	**0,22**	0,45	.E..GN
.E..HC	0,24	**0,47**	0,94	0,18	**0,35**	0,70	0,16	**0,31**	0,61	0,15	**0,29**	0,57	0,14	**0,28**	0,56	.E..HC

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,22	**0,32**	0,64	0,17	**0,24**	0,48	0,15	**0,21**	0,41	0,14	**0,19**	0,39	0,13	**0,19**	0,38	.E..LD
.E..GP	0,27	**0,38**	0,77	0,20	**0,29**	0,57	0,18	**0,25**	0,50	0,16	**0,23**	0,47	0,16	**0,23**	0,46	.E..GP
.E..GN	0,32	**0,51**	1,02	0,24	**0,38**	0,76	0,21	**0,33**	0,66	0,20	**0,31**	0,62	0,19	**0,30**	0,61	.E..GN
.E..HC	0,32	**0,64**	1,28	0,24	**0,48**	0,95	0,21	**0,41**	0,83	0,20	**0,39**	0,78	0,19	**0,38**	0,76	.E..HC

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,31	**0,44**	0,89	0,23	**0,33**	0,66	0,20	**0,29**	0,57	0,19	**0,27**	0,54	0,19	**0,26**	0,53	.E..LD
.E..GP	0,37	**0,53**	1,06	0,28	**0,40**	0,79	0,24	**0,34**	0,69	0,23	**0,32**	0,64	0,22	**0,32**	0,63	.E..GP
.E..GN	0,45	**0,71**	1,43	0,33	**0,53**	1,06	0,29	**0,46**	0,92	0,27	**0,43**	0,86	0,27	**0,42**	0,84	.E..GN
.E..HC	0,45	**0,89**	1,79	0,33	**0,66**	1,32	0,29	**0,57**	1,15	0,27	**0,54**	1,07	0,27	**0,53**	1,05	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 25mm

Light Machining	General Purpose	Heavy Machining

At 12,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,37	0,11	**0,16**	0,27	0,10	**0,14**	0,24	0,09	**0,13**	0,22	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,25**	0,44	0,13	**0,19**	0,33	0,12	**0,16**	0,29	0,11	**0,15**	0,27	0,11	**0,15**	0,26	.E..GP
.E..GN	0,21	**0,33**	0,59	0,16	**0,25**	0,44	0,14	**0,22**	0,38	0,13	**0,20**	0,36	0,13	**0,20**	0,35	.E..GN
.E..HC	0,21	**0,42**	0,73	0,16	**0,31**	0,55	0,14	**0,27**	0,48	0,13	**0,26**	0,45	0,13	**0,25**	0,44	.E..HC

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,22	**0,31**	0,54	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,19**	0,33	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,37**	0,65	0,20	**0,28**	0,48	0,17	**0,24**	0,42	0,16	**0,23**	0,40	0,16	**0,22**	0,39	.E..GP
.E..GN	0,31	**0,49**	0,87	0,23	**0,37**	0,65	0,20	**0,32**	0,56	0,19	**0,30**	0,53	0,19	**0,29**	0,52	.E..GN
.E..HC	0,31	**0,62**	1,09	0,23	**0,46**	0,81	0,20	**0,40**	0,70	0,19	**0,38**	0,66	0,19	**0,37**	0,65	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,43**	0,75	0,23	**0,32**	0,56	0,20	**0,28**	0,49	0,18	**0,26**	0,46	0,18	**0,26**	0,45	.E..LD
.E..GP	0,36	**0,51**	0,90	0,27	**0,38**	0,67	0,24	**0,33**	0,59	0,22	**0,31**	0,55	0,22	**0,31**	0,54	.E..GP
.E..GN	0,43	**0,69**	1,21	0,32	**0,51**	0,90	0,28	**0,45**	0,78	0,26	**0,42**	0,73	0,26	**0,41**	0,71	.E..GN
.E..HC	0,43	**0,86**	1,51	0,32	**0,64**	1,12	0,28	**0,56**	0,98	0,26	**0,52**	0,91	0,26	**0,51**	0,89	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 32mm

Light Machining	General Purpose	Heavy Machining

At 16,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,16	**0,23**	0,40	0,12	**0,17**	0,30	0,11	**0,15**	0,26	0,10	**0,14**	0,25	0,10	**0,14**	0,24	.E..LD
.E..GP	0,20	**0,28**	0,48	0,15	**0,21**	0,36	0,13	**0,18**	0,32	0,12	**0,17**	0,30	0,12	**0,17**	0,29	.E..GP
.E..GN	0,23	**0,37**	0,65	0,18	**0,28**	0,48	0,15	**0,24**	0,42	0,14	**0,22**	0,39	0,14	**0,22**	0,39	.E..GN
.E..HC	0,23	**0,46**	0,81	0,18	**0,34**	0,60	0,15	**0,30**	0,53	0,14	**0,28**	0,49	0,14	**0,28**	0,48	.E..HC

At 2,00 Axial Depth of Cut (ap)

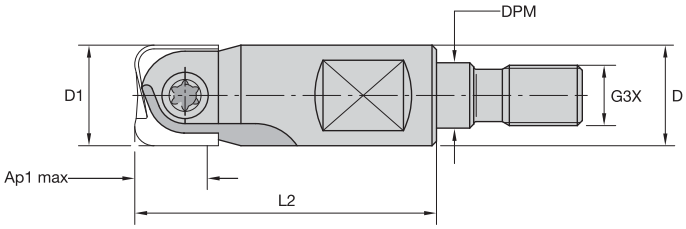
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,24	**0,35**	0,61	0,18	**0,26**	0,45	0,16	**0,23**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..LD
.E..GP	0,29	**0,41**	0,73	0,22	**0,31**	0,54	0,19	**0,27**	0,47	0,18	**0,25**	0,44	0,18	**0,25**	0,43	.E..GP
.E..GN	0,35	**0,55**	0,97	0,26	**0,41**	0,73	0,23	**0,36**	0,63	0,21	**0,34**	0,59	0,21	**0,33**	0,58	.E..GN
.E..HC	0,35	**0,69**	1,22	0,26	**0,52**	0,91	0,23	**0,45**	0,79	0,21	**0,42**	0,74	0,21	**0,41**	0,72	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,34	**0,48**	0,85	0,25	**0,36**	0,63	0,22	**0,31**	0,55	0,21	**0,29**	0,51	0,20	**0,29**	0,50	.E..LD
.E..GP	0,41	**0,58**	1,02	0,31	**0,43**	0,76	0,27	**0,38**	0,66	0,25	**0,35**	0,62	0,24	**0,34**	0,60	.E..GP
.E..GN	0,49	**0,77**	1,36	0,37	**0,58**	1,01	0,32	**0,50**	0,88	0,30	**0,47**	0,82	0,29	**0,46**	0,80	.E..GN
.E..HC	0,49	**0,97**	1,71	0,37	**0,72**	1,26	0,32	**0,63**	1,10	0,30	**0,59**	1,03	0,29	**0,57**	1,01	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

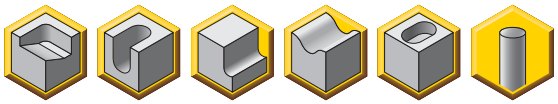
- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.

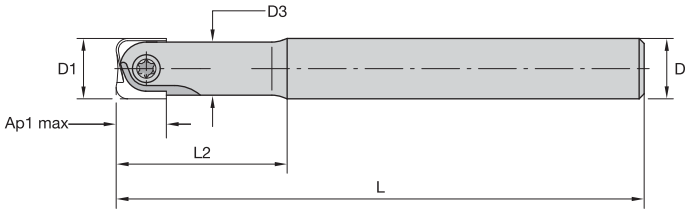


Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918665	**KDMT12R028M08SN**	12	13	8,5	M8	28	3,0	1	2	3.0°	40000	KDM.12..
1918666	**KDMT16R028M08SN**	16	13	8,5	M8	28	4,0	1	2	3.0°	40000	KDM.16..
1918667	**KDMT20R032M10SN**	20	18	10,5	M10	32	5,0	1	2	3.0°	40000	KDM.20..
1918668	**KDMT25R042M12SN**	25	21	12,5	M12	42	6,0	1	2	3.0°	30000	KDM.25..

- Available diameters: 12–32mm.
- High precision and runout accuracy.
- Can be used with the heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.

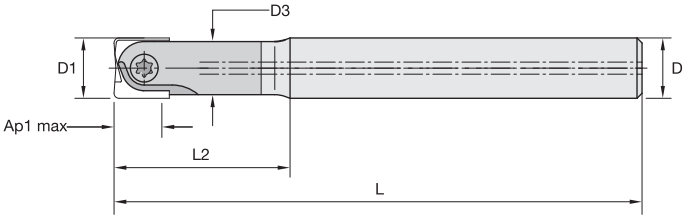




Necked End Mills • Cylindrical Shank • Steel

order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918690	**KDMT12R130A12SN**	12	12	10,5	132	34	3,0	1	2	3.0°	40000	KDM.12..
1918691	**KDMT12R150A12SN**	12	12	10,5	152	48	3,0	1	2	3.0°	40000	KDM.12..
1918692	**KDMT16R140A16SN**	16	16	14,0	142	40	4,0	1	2	3.0°	40000	KDM.16..
1918693	**KDMT16R160A16SN**	16	16	14,0	162	57	4,0	1	2	3.0°	40000	KDM.16..
1918694	**KDMT20R160A20SN**	20	20	18,0	162	47	5,0	1	2	3.0°	40000	KDM.20..
1918695	**KDMT20R175A20SN**	20	20	18,0	177	63	5,0	1	2	3.0°	40000	KDM.20..
1918696	**KDMT25R160A25SN**	25	25	22,4	162	47	6,0	1	2	3.0°	40000	KDM.25..
1918697	**KDMT25R190A25SN**	25	25	22,4	192	72	6,0	1	2	3.0°	40000	KDM.25..
1918698	**KDMT32R175A32SN**	32	32	28,6	177	58	8,0	1	2	3.0°	40000	KDM.32..
1918699	**KDMT32R210A32SN**	32	32	28,6	212	82	8,0	1	2	3.0°	40000	KDM.32..

- Available diameters: 10–32mm.
- High precision and runout accuracy.
- Can be used with the heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.



Necked End Mills • Carbide Shank with Through Coolant

order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
3964255	**KDMT10R120A10HNC**	10	10	9	122	37	2,5	1	2	3.0°	40000	KDM.10..
3964256	**KDMT10R150A10HNC**	10	10	9	152	52	2,5	1	2	3.0°	40000	KDM.10..
2877384	**KDMT12R120A12HNC**	12	12	11	122	37	3,0	1	2	3.0°	40000	KDM.12..
2877385	**KDMT12R160A12HNC**	12	12	11	162	52	3,0	1	2	3.0°	40000	KDM.12..
2877386	**KDMT16R140A16HNC**	16	16	14	142	42	4,0	1	2	3.0°	40000	KDM.16..
2877387	**KDMT16R175A16HNC**	16	16	14	177	57	4,0	1	2	3.0°	40000	KDM.16..
2877388	**KDMT20R140A20HNC**	20	20	18	142	52	5,0	1	2	3.0°	40000	KDM.20..
2877389	**KDMT20R190A20HNC**	20	20	18	192	77	5,0	1	2	3.0°	40000	KDM.20..
2877390	**KDMT25R160A25HNC**	25	25	22	162	62	6,0	1	2	3.0°	30000	KDM.25..
2877391	**KDMT25R210A25HNC**	25	25	22	212	92	6,0	1	2	3.0°	30000	KDM.25..
2877392	**KDMT32R190A32HNC**	32	32	29	192	67	8,0	1	2	3.0°	30000	KDM.32..
2877453	**KDMT32R240A32HNC**	32	32	29	242	107	8,0	1	2	3.0°	30000	KDM.32..

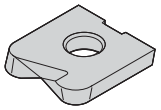
Spare Parts

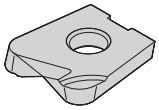
D1	insert screw	Nm	Torx wrench
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

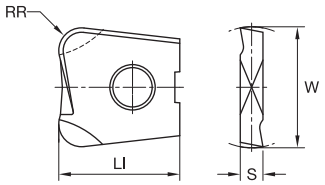
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GC	KC515M	**.E..GC**	**KC515M**	.E..GN	KC515M
P3–P4	.E..HC	KC505M	**.E..GN**	**KC515M**	.E..GN	KC515M
P5–P6	.E..HC	KC505M	**.E..GN**	**KC515M**	.E..GN	KC515M
M1–M2	–	–	**.E..GC**	**KC515M**	–	–
M3	–	–	**.E..GC**	**KC515M**	–	–
K1–K2	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	**.E..GC**	**KC515M**	–	–
H1	.E..HC	KC505M	**.E..HC**	**KC505M**	.E..GN	KC515M

Indexable Inserts • KDMS... • KDMT...


KDMS-GN


KDMT-GC



● first choice
○ alternate choice

P	●
M	○
K	○
N	
S	
H	●

KDMS-GN • Precision Insert • 90° Capabilities

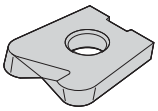
catalogue number	LI	W	S	RR	hm	KC515M
KDMS0806ERGN	9,50	8,00	2,00	0,6	0,08	●
KDMS1008ERGN	11,50	10,00	2,50	0,8	0,08	●
KDMS1210ERGN	14,00	12,00	2,50	1,0	0,08	●
KDMS1613ERGN	16,00	16,00	3,00	1,3	0,08	●
KDMS2016ERGN	18,00	20,00	3,00	1,6	0,08	●
KDMS2520ERGN	23,50	25,00	4,00	2,0	0,08	●
KDMS3220ERGN	28,00	32,00	5,00	2,0	0,08	●

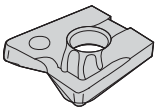
NOTE: Ap1 max is equal to LI.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

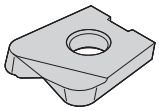
KDMT-GC • High-Tolerance Helical Geometry • Finishing Lower Cutting Forces

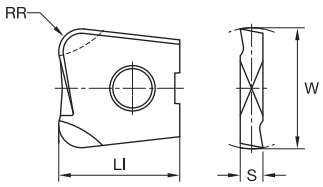
catalogue number	LI	W	S	RR	hm	KC515M
KDMT0605ERGC	8,00	6,00	1,60	0,5	0,05	●
KDMT0810ERGC	9,50	8,00	2,00	1,0	0,05	●
KDMT1010ERGC	11,50	10,00	2,50	1,0	0,05	●
KDMT1210ERGC	14,00	12,00	2,50	1,0	0,08	●
KDMT1610ERGC	16,00	16,00	3,00	1,0	0,08	●
KDMT2010ERGC	18,00	20,00	3,00	1,0	0,08	●
KDMT2510ERGC	23,50	25,00	4,00	1,0	0,08	●

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.


KDMT-GN


KDMT-HC


KDMT-HF



● first choice
○ alternate choice

P			●	●
M			○	○
K			○	○
N				
S		○		
H			●	●

KDMT-GN • High-Precision Insert • Semi-Finishing and Finishing

catalogue number	LI	W	S	RR	hm	K115M	KC505M	KC515M
KDMT0806ERGN	9,50	8,00	2,00	0,6	0,07			●
KDMT1008ERGN	11,50	10,00	2,50	0,8	0,07			●
KDMT1210ERGN	14,00	12,00	2,50	1,0	0,08			●
KDMT1220ERGN	14,00	12,00	2,50	2,0	0,08			●
KDMT1610ERGN	16,00	16,00	3,00	1,0	0,08			●
KDMT1630ERGN	16,00	16,00	3,00	3,0	0,08			●
KDMT2010ERGN	18,00	20,00	3,00	1,0	0,08			●
KDMT2040ERGN	18,00	20,00	3,00	4,0	0,08			●
KDMT2510ERGN	23,50	25,00	4,00	1,0	0,08			●

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

KDMT-HC • New Geometry for Semi-Finishing and Finishing with Coolant and Air Flow Grooves

catalogue number	LI	W	S	RR	hm	K115M	KC505M	KC515M
KDMT1010ERHC	11,50	10,00	2,50	1,0	0,10		●	
KDMT1210ERHC	14,00	12,00	2,50	1,0	0,10		●	
KDMT1610ERHC	16,00	16,00	3,00	1,0	0,10		●	
KDMT2010ERHC	18,00	20,00	3,00	1,0	0,10		●	

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

KDMT-HF • Geometry Developed • High-Feed Machining up to 55 HRC

catalogue number	LI	W	S	RT	hm	K115M	KC505M	KC515M
KDMT0604SRHF	8,00	6,00	1,60	0,8	0,08			●
KDMT0806SRHF	9,50	8,00	2,00	1,0	0,08			●
KDMT1008SRHF	11,50	10,00	2,50	1,0	0,08	●		●
KDMT1210SRHF	14,00	12,00	2,50	1,0	0,08	●		●
KDMT1615SRHF	16,00	16,00	3,00	1,5	0,08	●		●
KDMT2020SRHF	18,00	20,00	3,00	2,0	0,08	●		●

NOTE: RT= Programming Radius
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

Recommended Starting Speeds [m/min]

Material Group		K115M			KC505M			KC515M		
P	1	–	–	–	–	–	–	330	**295**	255
	2	–	–	–	–	–	–	310	**275**	240
	3	–	–	–	–	–	–	275	**240**	200
	4	–	–	–	360	**260**	215	240	**200**	165
	5	–	–	–	360	**260**	215	200	**165**	130
	6	–	–	–	350	**240**	190	165	**130**	110
M	1	–	–	–	–	–	–	330	**275**	240
	2	–	–	–	–	–	–	275	**220**	165
	3	–	–	–	–	–	–	220	**185**	145
K	1	220	**185**	145	–	–	–	440	**330**	220
	2	185	**145**	110	–	–	–	330	**255**	185
	3	110	**90**	75	–	–	–	145	**110**	75
N	1–2	440	**330**	220	–	–	–	–	–	–
	3	295	**220**	185	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	90	**70**	50	–	–	–	–	–	–
H	1	–	–	–	260	**205**	170	170	**120**	95

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

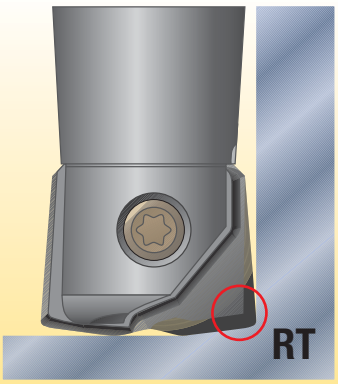
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,12	**0,25**	0,34	0,09	**0,19**	0,25	0,08	**0,17**	0,22	0,07	**0,16**	0,21	0,07	**0,15**	0,20	.E..GC
.E..GN	0,17	**0,25**	0,34	0,12	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..GN
.E..HC	0,17	**0,25**	0,34	0,13	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Application Advice for KDMT-HF Insert Style

For CAM programming, the tools can be programmed as a toroidal tool type requiring the diameter and the RT values only.

insert type	metric			
	Ap max	diameter	RT	max fz
KDMT0604SRHF	0,4	6	0,8	1
KDMT0806SRHF	0,5	8	1	1,3
KDMT1008SRHF	0,5	10	1	1,3
KDMT1210SRHF	0,6	12	1	1,3
KDMT1615SRHF	0,8	16	1,5	1,5
KDMT2020SRHF	1	20	2	1,5



Data for Face Milling, Pocketing, and Profiling Operations

Starting Values

tool diameter	Ø6	Ø8	Ø10	Ø12	Ø16	Ø20
Ap max (mm)	0,4	0,5	0,5	0,6	0,8	1
fz recommended for 45 HRC (approximately)	0,4	0,45	0,45	0,5	0,55	0,65
fz recommended for 55 HRC (approximately)	0,3	0,35	0,35	0,4	0,5	0,55
fz recommended for general purpose	0,5	0,55	0,55	0,65	0,7	0,8

NOTE: Use two effective teeth for feed calculations.
For materials above 45 HRC, we recommend to adjust the Ae max to 55% of cutting diameter.
Steel shanks for roughing operations are recommended.

Proven Solutions:

KDMB™ Indexable Milling Cutter vs. Solid Carbide End Mills

1.

Workpiece:
Forging die

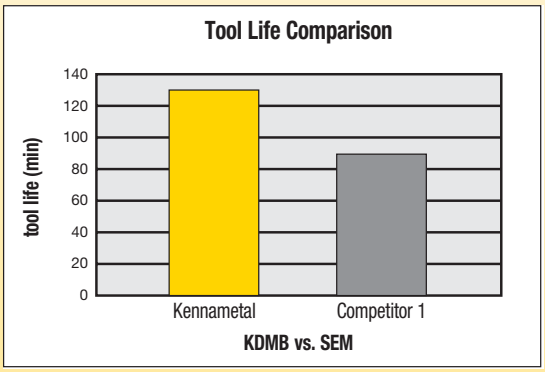
Material:
X38 CrMoV 5 3 (1.2367)

Size:
154mm x 115mm x 80mm

Machine:
Vertical milling machine center

Kennametal
Tool: KDMB06R100A06HN
Insert: KDMB06M0ERGN KC505M

Competitor 1
Solid Carbide End Mill
Ø 6 R3



Cutting data:
vc = 250 m/min (825 SFM)
Ap = 0,28mm (.099")
ae = 1,32mm (.052")
fz = 0,131mm (.0052")

Superior Productivity:
Higher tool life and cost per piece

2.

Workpiece:
Pressing die component

Material:
1.2479 (D2)

Size:
410mm x 320mm x 210mm

Machine:
Vertical milling machine

Kennametal
Tool: KDMB06R100A06HN
Insert: KDMB06M0ERGP KC515M

Competitor 1
Solid Carbide End Mill
Ø 6 R3

Cost Performance Ratio:
Costs for diameter 6mm

MMC:
solid carbide end mill +
2 x regrinding

Reference: 100%

KMT:
3 x inserts +
3 x toolholder share:

Cost savings: 31.15%

KMM™ Rhombic Platform

Primary Application

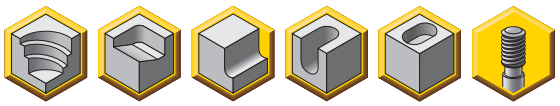
First choice for finishing operations in deep applications for complex parts. Specially suitable for the die and mould market.

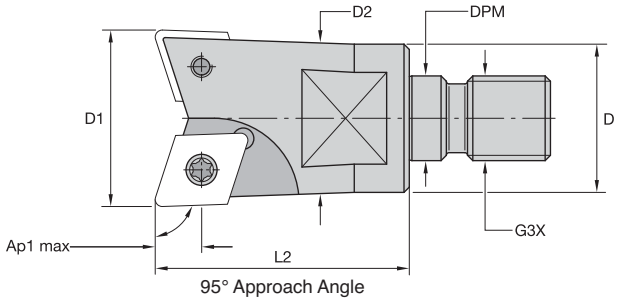
Features and Benefits

Platform Features

- Better surface finish and accuracy.
- Ideal for semi-finishing and finishing operations with small diameters.
- Capable of machining up to 55 HRC.
- PSTS and ground inserts are offered through different insert sizes.
- For small part machining with long overhangs.
- Big draft clearance angle, to improve the pocketing operations performance.
- High accuracy and tight runout.
- Ideal for HSM speed machine.

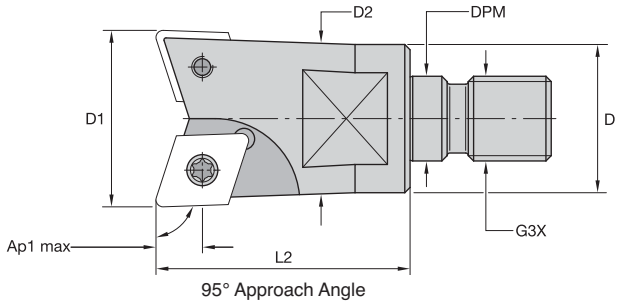
- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Better surface quality.





Screw-On End Mills • XDHX04

order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1888436	10Y02R020M06SXD04	10	10	9	6,5	M6	20	1,0	2	0,01	XD_X0401
1888439	10Y02R035M08SXD04	10	13	9	8,5	M8	35	1,0	2	0,03	XD_X0401
1888440	12Y02R020M06SXD04	12	10	11	6,5	M6	20	1,0	2	0,02	XD_X0401
1888441	12Y02R025M08SXD04	12	13	11	8,5	M8	25	1,0	2	0,03	XD_X0401
1888443	12Y02R035M08SXD04	12	13	11	8,5	M8	35	1,0	2	0,04	XD_X0401
1888444	15Y03R025M08SXD04	15	13	14	8,5	M8	25	1,0	3	0,03	XD_X0401



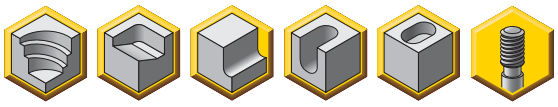
Screw-On End Mills • XDHX06

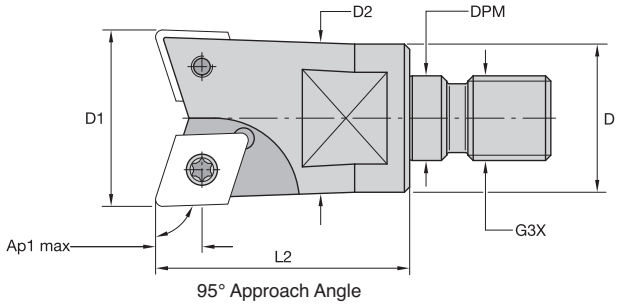
order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1888446	13Y01R020M08SXD06	13	13	11	8,5	M8	20	1,0	1	0,03	XD_X06021
1888447	16Y02R025M08SXD06	16	13	14	8,5	M8	25	1,0	2	0,03	XD_X06021
1888448	20Y03R030M10SXD06	20	18	18	10,5	M10	30	1,0	3	0,06	XD_X06021
1888449	25Y03R035M12SXD06	25	21	23	12,5	M12	35	1,0	3	0,10	XD_X06021

Spare Parts

D1	insert screw	Nm	Torx wrench
10	193.340	0,5	FT6
12	193.340	0,5	FT6
13	193.341	1,0	FT7
15	193.340	0,5	FT6
16	193.341	1,0	FT7
20	193.341	1,0	FT7
25	193.341	1,0	FT7

- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Improved surface quality.



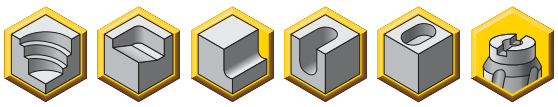


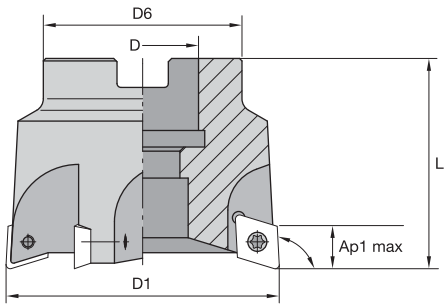
95° Approach Angle

Screw-On End Mills • XDHX10

order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1880650	**25Y02R036M12SXD10**	25	21	22	12,5	M12	36	1,0	2	0,90	XD_X10T310
1880651	**35Y03R043M16SXD10**	35	29	32	17,0	M16	43	1,0	3	0,23	XD_X10T310
1880652	**42Y04R043M16SXD10**	42	29	39	17,0	M16	43	1,0	4	0,02	XD_X10T310

- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Improved surface quality.
- First choice for long overhangs.





95° Approach Angle

Shell Mills • XDHX10

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	insert 1
1888194	**52A05RS95XD10**	52	22	42	50	1,0	5	1,40	XD_X10T3

Spare Parts

D1	insert screw	Nm	Torx wrench
25	**193.342**	2,0	**FT15**
35	**193.342**	2,0	**FT15**
42	**193.342**	2,0	**FT15**
52	**193.342**	2	**FT15**

Insert Selection Guide

XD_X04, IC04mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LN	KC525M	**.E..LN**	**KC525M**	–	–
P3–P4	.E..LN	KTPK20	**.E..LN**	**KC510M**	–	–
P5–P6	.E..LN	KTPK20	**.E..LN**	**KC510M**	–	–
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.E..LN	KTPK20	**.E..LN**	**KC510M**	.E..LN	KC510M
K3	.E..LN	KTPK20	**.E..LN**	**KC510M**	.E..LN	KC510M
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	.E..LN	KC510M	**.E..LN**	**KC510M**	–	–

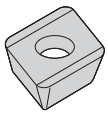
XD_X06, IC06mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..LN	KC522M	**.S..LN**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KC510M	**.S..LN**	**KC522M**	.S..LN	KC522M
P5–P6	.S..LN	KC510M	**.S..LN**	**KC522M**	.S..LN	KC522M
M1–M2	.E..GC	KC510M	**.S..LN**	**KC725M**	–	–
M3	.E..GC	KC510M	**.S..LN**	**KC725M**	–	–
K1–K2	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
K3	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
N1–N2	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
N3	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC522M

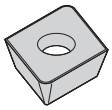
XD_X10, IC10mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GN	KC522M	**.S..GN**	**KC522M**	.S..GN	KC525M
P3–P4	.S..GN	KC510M	**.S..GN**	**KC522M**	.S..GN	KC522M
P5–P6	.S..GN	KC510M	**.S..GN**	**KC522M**	.S..GN	KC522M
M1–M2	.E..GC	KC522M	**–**	**–**	–	–
M3	.E..GC	KC522M	**–**	**–**	–	–
K1–K2	.T..GN	KTPK20	**.S..GN**	**KC510M**	.S..GN	KC510M
K3	.T..GN	KTPK20	**.S..GN**	**KC510M**	.S..GN	KC510M
N1–N2	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
N3	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..GC	KC522M	**–**	**–**	–	–
H1	.S..GN	KC510M	**.S..GN**	**KC510M**	.S..GN	KC522M

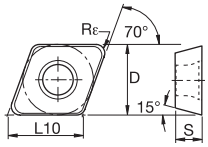
- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Better surface quality.



XDHX-GC



XDHX-LN
XDHX-GN
XDPX-LN



● first choice
○ alternate choice

P			○	○		●	●	●	●
M				●	●	●	○	○	○
K		●	●	○			○	○	○
N		●							
S				●	●	●			
H			●						

XDHX-GC

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX060210EGC	6,50	2,38	6,89	1,0	0,04	2	●	●						
XDHX10T310EGC	10,00	3,88	10,64	1,0	0,04	2	●	●	●					

XDHX-LN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX040105ELN	4,00	1,59	4,26	0,5	0,03	2								●
XDHX040110ELN	4,00	1,59	4,26	1,0	0,03	2		●		●				
XDHX060210SLN	6,50	2,38	6,92	1,0	0,06	2		●	●		●			

XDHX-GN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX10T310SGN	10,00	3,97	10,64	1,0	0,09	2		●	●	●				
XDHX10T310TGN	10,00	3,97	10,64	1,0	0,10	2								●

XDPX-LN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDPX10T310SLN	10,00	3,97	10,65	1,0	0,06	2		●				●	●	
XDPX060210SLN	6,51	2,38	6,92	1,0	0,06	2		●				●	●	

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC525M		
P	1	–	–	–	–	–	–	395	**345**	325	260	**240**	215
	2	–	–	–	–	–	–	330	**290**	240	215	**190**	180
	3	–	–	–	–	–	–	305	**255**	215	190	**180**	170
	4	–	–	–	295	**240**	200	270	**225**	180	170	**160**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**170**	160
	6	–	–	–	–	–	–	200	**150**	120	160	**145**	130
M	1	–	–	–	–	–	–	245	**215**	200	180	**170**	160
	2	–	–	–	–	–	–	225	**190**	160	160	**145**	130
	3	–	–	–	–	–	–	170	**145**	115	110	**95**	85
K	1	130	**120**	115	350	**315**	285	275	**250**	220	–	–	–
	2	115	**105**	100	275	**250**	230	215	**195**	180	–	–	–
	3	100	**90**	80	235	**205**	190	180	**160**	145	–	–	–
N	1–2	505	**475**	450	770	**685**	630	–	–	–	–	–	–
	3	410	**365**	320	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	2	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	3	–	–	–	–	–	–	60	**50**	35	60	**55**	50
	4	–	–	–	–	–	–	85	**60**	45	75	**60**	50
H	1	–	–	–	190	**155**	110	145	**110**	85	–	–	–

Material Group		KCPM20			KCPK30			KTPK20			KC725M		
P	1	660	**580**	535	545	**475**	440	440	**360**	310	315	**275**	255
	2	410	**370**	330	335	**305**	275	270	**225**	190	260	**230**	195
	3	370	**330**	305	305	**275**	250	245	**205**	170	240	**205**	170
	4	275	**255**	230	225	**210**	190	185	**160**	130	215	**180**	145
	5	330	**300**	275	310	**275**	255	255	**205**	175	180	**160**	145
	6	230	**200**	175	190	**165**	–	150	**125**	–	160	**120**	95
M	1	270	**240**	205	250	**220**	190	285	**235**	200	205	**180**	165
	2	245	**215**	190	225	**195**	170	260	**220**	185	185	**160**	130
	3	195	**175**	150	175	**160**	140	195	**160**	–	140	**120**	95
K	1	435	**390**	350	355	**320**	285	275	**235**	195	–	–	–
	2	345	**310**	280	280	**255**	230	220	**180**	160	–	–	–
	3	290	**255**	240	235	**210**	195	185	**150**	130	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	45	**35**	30
	2	–	–	–	–	–	–	–	–	–	45	**35**	30
	3	–	–	–	–	–	–	–	–	–	55	**45**	30
	4	–	–	–	–	–	–	–	–	–	75	**55**	35
H	1	170	**140**	115	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

XDHX04

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,09	**0,25**	0,50	0,06	**0,19**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,15**	0,30	.E..LN

XDHX06

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,09	**0,29**	0,59	0,06	**0,22**	0,44	0,06	**0,19**	0,38	0,05	**0,18**	0,36	0,05	**0,18**	0,35	.E..GC
.S..LN	0,14	**0,43**	0,68	0,11	**0,32**	0,51	0,09	**0,28**	0,45	0,09	**0,26**	0,42	0,09	**0,25**	0,41	.S..LN

XDHX10

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,09	**0,29**	0,59	0,06	**0,22**	0,44	0,06	**0,19**	0,38	0,05	**0,18**	0,36	0,05	**0,18**	0,35	.E..GC
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,45	0,10	**0,26**	0,42	0,10	**0,25**	0,41	.T..GN
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,45	0,10	**0,26**	0,42	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

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KENNAMETAL

Z-Axis Plunge Mill

Primary Application

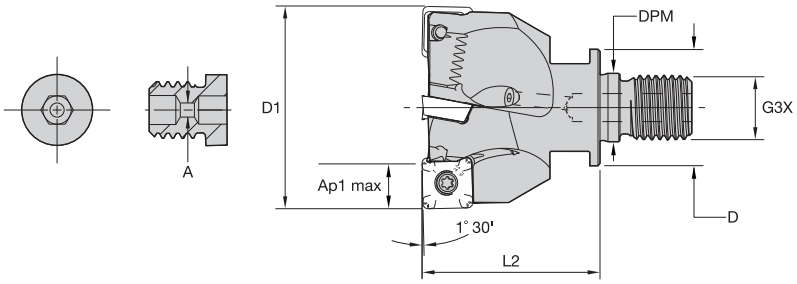
Specifically engineered to eliminate vibration and improve metal removal rates in roughing applications.
Ideally suited for rough slotting applications in aerospace, general engineering, die and mould, and power generation.

Features and Benefits

Platform Features

- Nine coolant nozzle sizes enable customised flow by machine tool.
- Unique design is unmatched for chip evacuation.
- Improved performance at a reduced cost per cutting edge.
- Positive geometry lowers cutting force and reduces power requirements, enabling higher feed rates.
- Chip control when slotting.
- Fast and easy insert indexing.

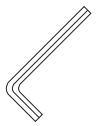
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
3111542	**32M2R050M16SSD12PL**	32	29	17,0	M16	50	11,0	2	0,17	25690	SD_T12_PD_N__Z
3450644	**40M2R050M16SSD12PL**	40	29	17,0	M16	50	11,0	2	0,27	22980	SD_T12_PD_N__Z
3064110	**40M3R050M16SSD12PL**	40	29	17,0	M16	50	11,0	3	0,23	22980	SD_T12_PD_N__Z
3450643	**50M4R050M16SSD12PL**	50	29	17,0	M16	50	11,0	4	0,31	20610	SD_T12_PD_N__Z

Spare Parts



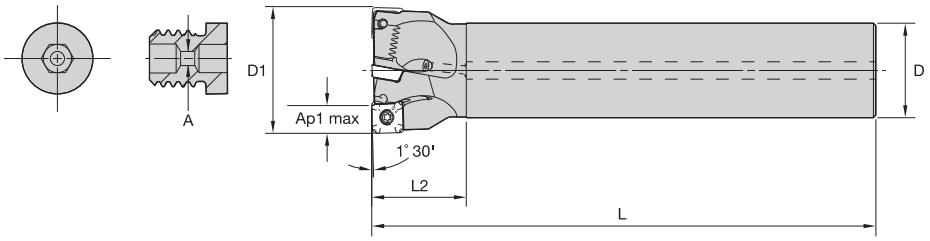
D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	T-handle hex wrench
32	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**
40	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**
50	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**

Coolant Screw Detail

order number	catalogue number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	0,600
3400613	**MS2191C08**	0,800
3400614	**MS2191C10**	1,000
3400616	**MS2191C12**	1,200
3400617	**MS2191C14**	1,400
3400618	**MS2191C16**	1,600
3400619	**MS2191C18**	1,800
3400620	**MS2191C20**	2,000

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter, which gives flexibility with coolant flow.

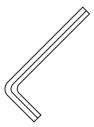
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM	insert 1
3402143	**32M2R040A25SSD12PL**	32	25	200	40	11,0	2	0,69	25690	SD_T1204_PD_N_Z
3402144	**40M3R040A32SSD12PL**	40	32	200	40	11,0	3	1,14	22980	SD_T1204_PD_N_Z
3402145	**50M4R040A40SSD12PL**	50	40	200	40	11,0	4	1,80	20610	SD_T1204_PD_N_Z

Spare Parts



D1	insert screw	Nm	Torx Plus driver	T-handle hex wrench	coolant nozzle screw
32	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**
40	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**
50	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**

Coolant Screw Detail

order number	catalogue number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	0,6
3400613	**MS2191C08**	0,8
3400614	**MS2191C10**	1,0
3400616	**MS2191C12**	1,2
3400617	**MS2191C14**	1,4
3400618	**MS2191C16**	1,6
3400619	**MS2191C18**	1,8
3400620	**MS2191C20**	2,0

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
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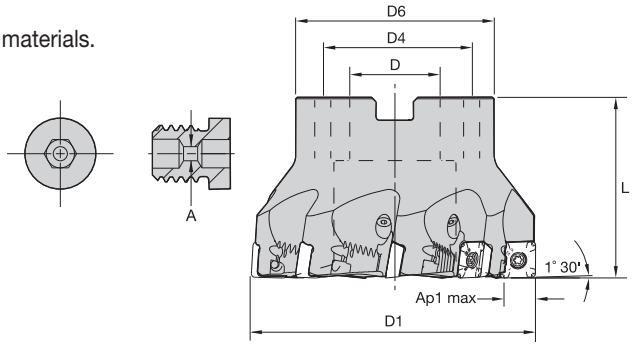
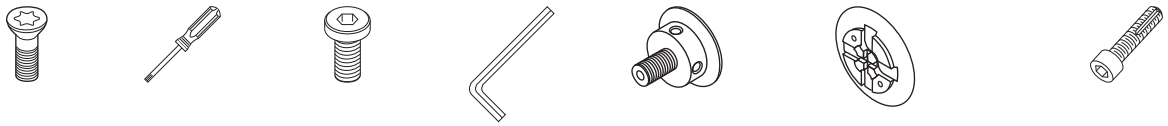
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3055230	50A04RS90SD12PL	50	22	—	42	50	11,0	4	0,3	20600	SD_T1204PD_N__Z
3063843	50A05RS90SD12PL	50	22	—	42	50	11,0	5	0,4	20600	SD_T1204PD_N__Z
3120265	63A05RS90SD12PL	63	22	—	50	50	11,0	5	0,5	18300	SD_T1204PD_N__Z
3120266	63A06RS90SD12PL	63	22	—	50	50	11,0	6	0,6	18300	SD_T1204PD_N__Z
3120267	80A05RS90SD12PL	80	27	—	60	50	11,0	5	1,0	16300	SD_T1204PD_N__Z
3120268	80A06RS90SD12PL	80	27	—	60	50	11,0	6	1,0	16300	SD_T1204PD_N__Z
3120269	80A07RS90SD12PL	80	27	—	60	50	11,0	7	1,0	16300	SD_T1204PD_N__Z
3120270	100B07RS90SD12PL	100	32	—	80	63	11,0	7	2,1	14600	SD_T1204PD_N__Z
3120271	100B08RS90SD12PL	100	32	—	80	63	11,0	8	2,1	14600	SD_T1204PD_N__Z
3120272	100B09RS90SD12PL	100	32	—	80	63	11,0	9	2,2	14600	SD_T1204PD_N__Z
3120573	125B08RS90SD12PL	125	40	—	90	63	11,0	8	3,0	13000	SD_T1204PD_N__Z
3120574	125B09RS90SD12PL	125	40	—	90	63	11,0	9	3,1	13000	SD_T1204PD_N__Z
3120575	125B10RS90SD12PL	125	40	—	90	63	11,0	10	3,1	13000	SD_T1204PD_N__Z
3120576	160C09RS90SD12PL	160	40	67	90	63	11,0	9	3,2	11500	SD_T1204PD_N__Z
3120577	160C10RS90SD12PL	160	40	67	90	63	11,0	10	3,2	11500	SD_T1204PD_N__Z
3120578	160C12RS90SD12PL	160	40	67	90	63	11,0	12	3,3	11500	SD_T1204PD_N__Z

Spare Parts



D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	T-handle hex wrench	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
50	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
63	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
80	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS2038CG
100	MS2197	4,0	DT15IP	MS2191C10	THW2M	MS2189C	—	—
125	MS2197	4,0	DT15IP	MS2191C10	THW2M	MS2187C	—	—
160	MS2197	4,0	DT15IP	MS2191C20	THW2M	—	MCCM16001	—

Coolant Screw Detail

order number	catalogue number	A
3400611	MS2191C00	—
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
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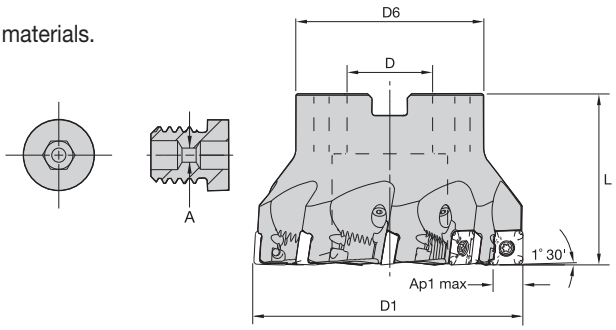
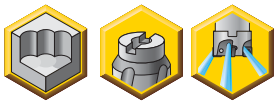
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter, which gives flexibility with coolant flow.

- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.
- Metric cutter diameters with inch bore sizes.

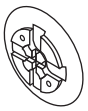
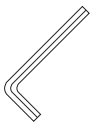




Shell Mills • Coarse Pitch • Japanese Industry Standard (JIS)

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3640178	**80A05RS90SD12PL-J**	80	25,400	1.000	60	50	11	5	1,05	16300	SD_T1204_PD_N__Z
3640179	**80A06RS90SD12PL-J**	80	25,400	1.000	60	50	11	6	1,06	16300	SD_T1204_PD_N__Z
3640180	**80A07RS90SD12PL-J**	80	25,400	1.000	60	50	11	7	1,06	16300	SD_T1204_PD_N__Z
3640181	**100B07RS90SD12PL-J**	100	31,750	1.250	80	63	11	7	2,14	14600	SD_T1204_PD_N__Z
3640182	**100B08RS90SD12PL-J**	100	31,750	1.250	80	63	11	8	2,21	14600	SD_T1204_PD_N__Z
3640293	**100B09RS90SD12PL-J**	100	31,750	1.250	80	63	11	9	2,25	14600	SD_T1204_PD_N__Z
3640294	**125B08RS90SD12PL-J**	125	38,100	1.500	90	63	11	8	2,79	13000	SD_T1204_PD_N__Z
3640295	**125B09RS90SD12PL-J**	125	38,100	1.500	90	63	11	9	2,85	13000	SD_T1204_PD_N__Z
3640296	**125B10RS90SD12PL-J**	125	38,100	1.500	90	63	11	10	2,88	13000	SD_T1204_PD_N__Z
3640297	**160B09RS90SD12PL-J**	160	50,800	2.000	90	63	11	9	3,69	11500	SD_T1204_PD_N__Z
3640298	**160B10RS90SD12PL-J**	160	50,800	2.000	90	63	11	10	3,69	11500	SD_T1204_PD_N__Z
3640299	**160B12RS90SD12PL-J**	160	50,800	2.000	90	63	11	12	3,76	11500	SD_T1204_PD_N__Z

Spare Parts

D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	coolant lock screw assembly	T-handle hex wrench	socket-head cap screw with coolant groove
80	**MS2197**	4,0	**DT15IP**	**MS2191C12**	**–**	**THW2M**	**MS2038CG**
80	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**–**	**THW2M**	**MS2038CG**
100	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**MS2220C**	**THW2M**	**–**
125	**MS2197**	4,0	**DT15IP**	**MS2191C08**	**–**	**THW2M**	**–**
125	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**–**	**THW2M**	**–**
160	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**–**	**THW2M**	**–**

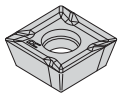
Coolant Screw Detail

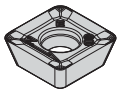
order number	catalogue number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	0,6
3400613	**MS2191C08**	0,8
3400614	**MS2191C10**	1,0
3400616	**MS2191C12**	1,2
3400617	**MS2191C14**	1,4
3400618	**MS2191C16**	1,6
3400619	**MS2191C18**	1,8
3400620	**MS2191C20**	2,0

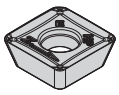
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter, which gives flexibility with coolant flow.

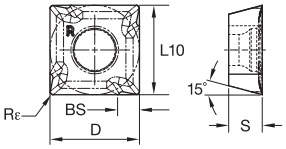
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
P3–P4	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
P5–P6	.S..GDZ	KCPK30	**.E..HPZ**	**KCPM20**	.S..HPZ	KCPM20
M1–M2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
M3	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
K1–K2	.E..GDZ	KCPK30	**.S..GDZ**	**KCPK30**	.E..HPZ	KCPK30
K3	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	–	–	**–**	**–**	–	–
S1–S2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
S3	.S..GDZ	KC725M	**.E..HPZ**	**KC725M**	.S..HPZ	KC725M
S4	.E..HPZ	KC725M	**.S..HPZ**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

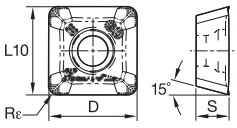

SDCT-LE


SDET-GDZ

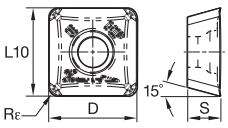

SDPT-HPZ



SDLT-LE



SDET-GDZ



SDPT-HPZ

● first choice
○ alternate choice

P			○	●	●	●
M			●	●	○	○
K			○		○	○
N	●					
S			●	●		
H						

SDCT-LE

catalogue number	L10	S	BS	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDCT120412PDFRLE	12,70	4,76	2,70	1,2	0,02	4	●				
SDCT120412PDFLLE	12,70	4,76	2,70	1,2	0,02	4	●				

SDET-GDZ

catalogue number	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDET120412PDENGDZ	12,70	4,76	1,2	0,06	4		●	●		●
SDET120412PDSNGDZ	12,70	4,76	1,2	0,13	4		●	●		●

SDPT-HPZ

catalogue number	D	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDPT120412PDENHPZ	12,70	12,70	4,76	1,2	0,08	4		●	●	●	●
SDPT120412PDSNHPZ	12,70	12,70	4,76	1,2	0,15	4		●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1460	**1300**	1195	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	–	–	–	–	–	–	–	–	–	–	–	–	0,05	**0,10**	0,20	.F..LE
.E..GDZ	–	–	–	–	–	–	–	–	–	–	–	–	0,09	**0,25**	0,41	.E..GDZ
.S..GDZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.S..GDZ
.E..HPZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.E..HPZ
.S..HPZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.S..HPZ

NOTE: Use “Light Machining” values as starting feed rate.

Z-Axis

Best Machining Practices

When finishing a workpiece, you sometimes have to use a Z-axis solution versus a conventional end mill solution to get the best results.

When the length-to-diameter ratio protrudes farther than 3:1, you will need to use a Z-axis solution. This is when the end mill starts to vibrate and the surface finish and noise are unacceptable.

When vibration occurs, the feed rates are compromised, which normally slows down the production of the workpiece.

Programming

At this point, there is very little software for this type of application on the market. We suggest that a simple macro is created for this type of application, which can be recalled and the “X” and “Y” movement changed.

The process can be repeated, so the cutter can be removed from the workpiece in the rapid (G00) movement. Tool life will be improved by not allowing the insert to rub on the retract path.

Slotting

There are several differing ways to machine a slot in a component using the Z-axis cutter solution.

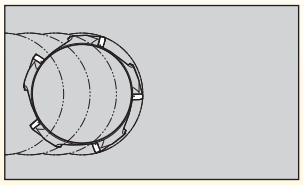


Figure 1

This shows the typical way of machining a slot. The movements are feeding down and straight back up (Z+) in the same axis and will have a negative impact on the insert radii (cutting edge) that could lead to premature failure of the nose radii. When looking at the component, it will show the rapid travel in the Z+ direction. This will highlight the spiral of the insert/cutter operating at a high feed. It looks similar to an oil groove spiralling upwards.

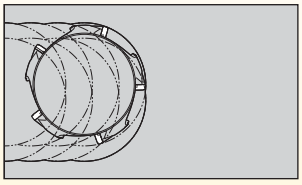


Figure 2

Using a cutter that is smaller than the slot width allows the insert/cutter to be removed from the material when (G00) rapid motion is retracting from the component. Because this type of cutter can be used across various types of machines, assume a 50mm (2.00") diameter cutter is being used to machine a slot of 63mm (2.50") wide on a vertical 3-axis machine.

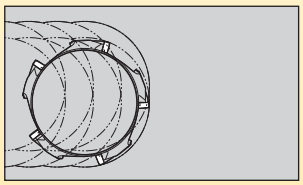


Figure 3

Align the cutter with the centre of the slot on the component and define the stepover that's required. Move the Y-axis into a position for the first cut, take the first pass to a depth in the Z-axis, and when it reaches the bottom of the slot, program a 2-axis move to retract the cutting edge for the workpiece.

The 2-axis move will move the Z-axis in a positive direction at 45° (.010") away from the component, and the Y-axis will move away from the workpiece by the same amount at the same angle. Now the cutter can be retracted from the component, and the insert will not rub on the retract move.

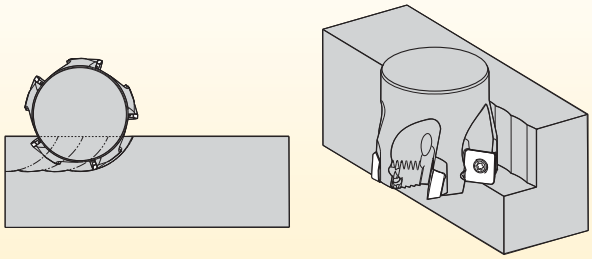
Move the cutter to the left of the slot to define the new position and make the cut. When reaching the base, a 3-axis move will need to be made. Again, the Z-axis will be in a positive direction at 45° (.010"), and the corresponding Y-axis will move away the same respective amount from the wall.

The insert/cutter has now moved away from the workpiece, and the rapid Z+ can take place. Repeat the process on the other side of the slot, remembering the X-axis move needs to be moving the other way.

NOTE: When starting the process, it's better to start at the centre of the slot. After the slot has been defined, you no longer need to put the cutter on the center path. Passes from both sides create the slot width and enable clearance for the subsequent moves, so the insert/cutter can be moved away from the side walls of the material.

(continued)

Z-Axis *(continued)*

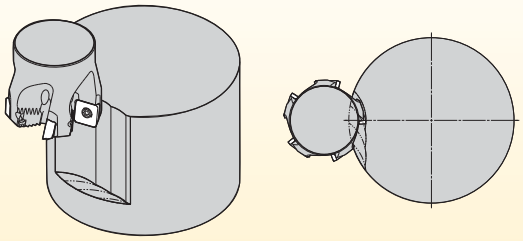


Linear Plunge Milling

Entering the cutter along a parallel axis, the radial width of cut needs to be defined because the cutter might need to move away from the workpiece material.

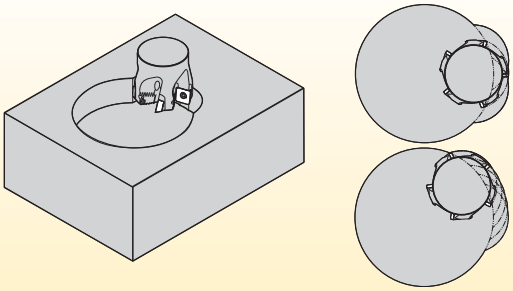
If the radial width of cut takes more than 60% of the cutter diameter, it is more difficult to remove the insert/cutter because the machine program wants to move the cutter upwards to (G00) Z+. When taking more than 60% of the cutter diameter, the material is enveloping the cutter and is difficult to remove because a cusp has been created.

It is suggested to make the radial width of cut 50% of the cutter diameter to allow the insert/cutter to be removed without any problems.



External Profiling

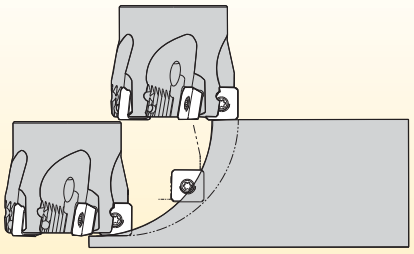
This artwork represents the typical application for this type of process. Move into the cut and follow the external profile of the workpiece. When moving the cutter back to the start position, it's always advisable to move the insert from contacting the workpiece. This should be done with a 2- or 3-axis move (use .010") at 0,25mm. All axes moving in a Z+ direction will stop the rubbing in the retract move.



Internal Profiling

When taking the first pass of a depth, there is also a need to move the insert/cutter away from the material on the retract motion. Each of the passes that follow should adopt the same method on the retract move.

Follow the cutter path until the component has been finished.



Machining Around a Radii

This artwork shows the cutter taking a larger radial width of cut. When moving down in the Z-axis, the insert could start to take a larger radial width of cut. Typical application could be the manufacture of a turbine blade from a rectangular piece of material. Always remember that it's advisable to move the insert/cutter away from the material on the retract motion.

Screw-On Milling Cutter Adaptors

The Complete Solution to Milling

Features and Benefits

- High metal removal rates.
- High runout accuracy.
- Maximum performance capability.
- Optimising productivity with long reach and short overhang to support all types of applications.
- Cutter is kept on centre for precision and maximum performance compared to Weldon® shank system.
- Ability to extend with standard offering extensions and reducers.
- Ground face contact for rigidity and accuracy.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

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KENNAMETAL®

KDMR™ • Multifunction Cutter

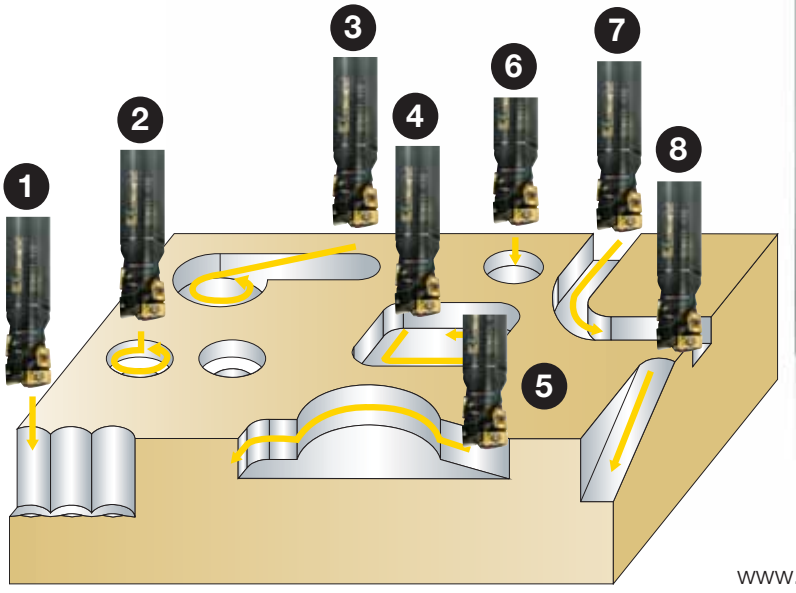
Primary Application

An extensive offering of versatile mills that can also drill.

Features and Benefits

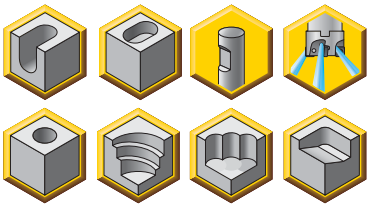
Platform Features

- Just two grades needed for a wide variety of materials.
- Reduced shank for machining down a side wall.
- Metric and inch sizes available.
- Reduced shank diameters for access down long side walls.
- Extensive product portfolio.
- Use compressed air when drilling for improved chip evacuation.
- Full two-edge line with improved stability.
- Lower cutting resistance and long shank types are available.
- New grade provides stability and longer tool life.
- Good chip evacuation, even when slant milling and drilling.



1. Vertical Milling/Plunging
2. Helical Milling
3. Ramping and Helical Milling
4. Pocketing
5. Shouldering/Profiling
6. Drilling
7. Slotting
8. Ramping

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even when machining on an angle.
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.



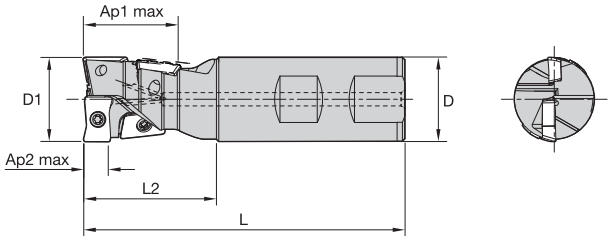


Fig. 5

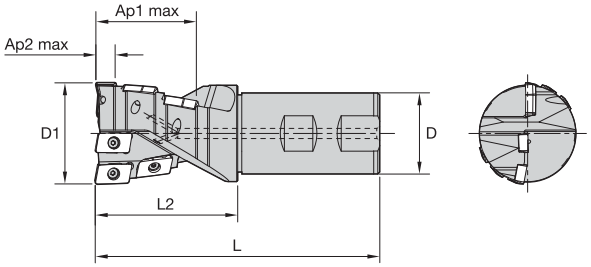


Fig. 6

Weldon® Shank • Metric

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587022	**KDMR16S1680WL**	16	16	80	31	19	4,5	4	2	FIG 5	0,11	GOMT08T208ERLD	JOMT08T208ERLF
3587055	**KDMR17S1680WL**	17	16	80	31	19	4,5	4	2	FIG 6	0,12	GOMT08T208ERLD	JOMT08T208ERLF
3587059	**KDMR20S2085WL**	20	20	85	35	22	6,0	4	2	FIG 5	0,23	GOMT100308ERLD	JOMT100308ERLF
3587062	**KDMR21S2085WL**	21	20	85	35	22	6,0	4	2	FIG 6	0,25	GOMT100308ERLD	JOMT100308ERLF
3587066	**KDMR25S2595WL**	25	25	95	40	28	7,5	4	2	FIG 5	0,33	GOMT13T308ERLD	JOMT13T308ERLF
3587069	**KDMR26S2595WL**	26	25	95	40	28	7,5	4	2	FIG 6	0,35	GOMT13T308ERLD	JOMT13T308ERLF
3587071	**KDMR32S32110WL**	32	32	110	50	36	9,5	4	2	FIG 5	0,58	GOMT160408ERLD	JOMT160408ERLF
3587075	**KDMR33S32110WL**	33	32	110	50	36	9,5	4	2	FIG 6	0,60	GOMT160408ERLD	JOMT160408ERLF
3587078	**KDMR40S32130WL**	40	32	130	55	42	7,5	7	2	FIG 6	0,88	GOMT13T308ERLD	JOMT13T308ERLF
3587082	**KDMR50S40140WL**	50	40	140	70	54	9,5	7	2	FIG 6	1,43	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

D1	insert screw	Nm	Torx driver	anti-seize lube
16	**MS2211**	3,5	**DT6**	**ASL3GT**
17	**MS2211**	0,5	**DT6**	**ASL3GT**
20	**MS2212**	0,5	**DT8**	**ASL3GT**
21	**MS2212**	1,2	**DT8**	**ASL3GT**
25	**MS2213**	1,2	**DT10**	**ASL3GT**
26	**MS2213**	2,0	**DT10**	**ASL3GT**
32	**MS2214**	2,0	**DT15**	**ASL3GT**
33	**MS2214**	3,5	**DT15**	**ASL3GT**
40	**MS2213**	3,5	**DT10**	**ASL3GT**
50	**MS2214**	2,0	**DT15**	**ASL3GT**

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even machining on an angle.
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.

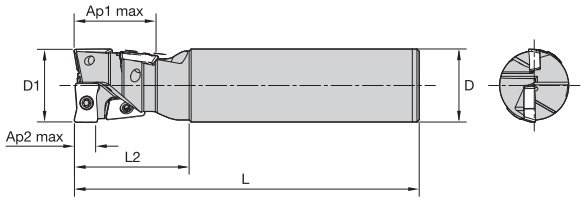


Fig. 1

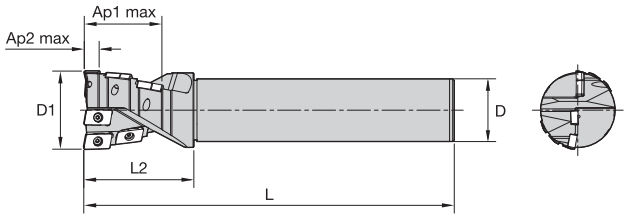


Fig. 2

Standard Length

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587019	KDMR16S16	16	16	120	31	19	4,5	4	2	FIG 1	0,22	GOMT08T208ERLD	JOMT08T208ERLF
3587053	KDMR17S16	17	16	120	31	19	4,5	4	2	FIG 1	0,20	GOMT08T208ERLD	JOMT08T208ERLF
3587056	KDMR20S20	20	20	130	35	22	6,0	4	2	FIG 1	0,37	GOMT100308ERLD	JOMT100308ERLF
3587060	KDMR21S20	21	20	130	35	22	6,0	4	2	FIG 1	0,37	GOMT100308ERLD	JOMT100308ERLF
3587063	KDMR25S25	25	25	140	40	28	7,5	4	2	FIG 1	0,57	GOMT13T308ERLD	JOMT13T308ERLF
3587067	KDMR26S25	26	25	140	40	28	7,5	4	2	FIG 1	0,55	GOMT13T308ERLD	JOMT13T308ERLF
3587070	KDMR32S32	32	32	150	50	36	9,5	4	2	FIG 1	0,93	GOMT160408ERLD	JOMT160408ERLF
3587074	KDMR33S32	33	32	150	50	36	9,5	4	2	FIG 1	0,95	GOMT160408ERLD	JOMT160408ERLF
3587077	KDMR40S32	40	32	160	55	42	7,5	7	2	FIG 2	1,08	GOMT13T308ERLD	JOMT13T308ERLF
3587080	KDMR50S40	50	40	170	70	54	9,5	7	2	FIG 2	1,64	GOMT160408ERLD	JOMT160408ERLF

Long Length Cutters

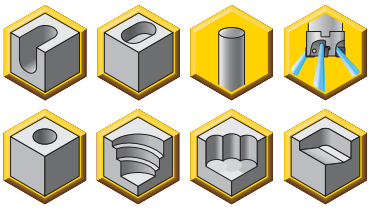
order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587020	KDMR16S16140L	16	16	140	51	19	4,5	4	2	FIG 1	0,24	GOMT08T208ERLD	JOMT08T208ERLF
3587057	KDMR20S20150L	20	20	150	53	22	6,0	4	2	FIG 1	0,43	GOMT100308ERLD	JOMT100308ERLF
3587064	KDMR25S25170L	25	25	170	70	28	7,5	4	2	FIG 1	0,67	GOMT13T308ERLD	JOMT13T308ERLF
3587072	KDMR32S32180L	32	32	180	80	36	9,5	4	2	FIG 1	1,09	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

D1	insert screw	Nm	Torx driver	anti-seize lube
16	MS2211	0,5	DT6	ASL3GT
17	MS2211	0,5	DT6	ASL3GT
20	MS2212	1,2	DT8	ASL3GT
21	MS2212	1,2	DT8	ASL3GT
25	MS2213	2,0	DT10	ASL3GT
26	MS2213	2,0	DT10	ASL3GT
32	MS2214	3,5	DT15	ASL3GT
33	MS2214	3,5	DT15	ASL3GT
40	MS2213	2,0	DT10	ASL3GT
50	MS2214	–	DT15	ASL3GT

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even machining on an angle.
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.



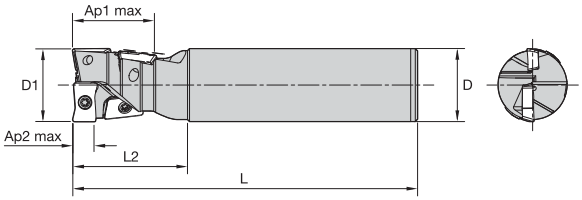


Fig. 1

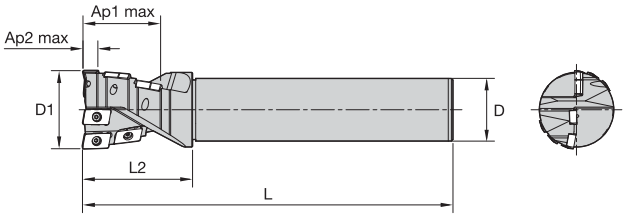


Fig.2

Long Shank

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587021	**KDMR16S16190**	16	16	190	61	19	4,5	4	2	FIG 1	0,32	GOMT08T208ERLD	JOMT08T208ERLF
3587054	**KDMR17S16190**	17	16	190	31	19	4,5	4	2	FIG 1	0,34	GOMT08T208ERLD	JOMT08T208ERLF
3587058	**KDMR20S20200**	20	20	200	63	22	6,0	4	2	FIG 1	0,54	GOMT100308ERLD	JOMT100308ERLF
3587061	**KDMR21S20200**	21	20	200	35	22	6,0	4	2	FIG 1	0,58	GOMT100308ERLD	JOMT100308ERLF
3587065	**KDMR25S25220**	25	25	220	80	28	7,5	4	2	FIG 1	0,85	GOMT13T308ERLD	JOMT13T308ERLF
3587068	**KDMR26S25220**	26	25	220	40	28	7,5	4	2	FIG 1	0,88	GOMT13T308ERLD	JOMT13T308ERLF
3587073	**KDMR32S32230**	32	32	230	90	36	9,5	4	2	FIG 1	1,40	GOMT160408ERLD	JOMT160408ERLF
3587076	**KDMR33S32230**	33	32	230	50	36	9,5	4	2	FIG 1	1,38	GOMT160408ERLD	JOMT160408ERLF
3587079	**KDMR40S32240**	40	32	240	55	42	7,5	7	2	FIG 2	1,57	GOMT13T308ERLD	JOMT13T308ERLF
3587081	**KDMR50S40250**	50	40	250	70	54	9,5	7	2	FIG 2	2,47	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

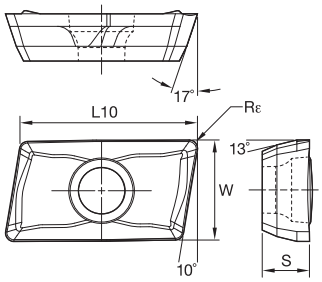
D1	insert screw	Nm	Torx driver	anti-seize lube
16	**MS2211**	3,5	**DT6**	**ASL3GT**
17	**MS2211**	0,5	**DT6**	**ASL3GT**
20	**MS2212**	0,5	**DT8**	**ASL3GT**
21	**MS2212**	1,2	**DT8**	**ASL3GT**
25	**MS2213**	1,2	**DT10**	**ASL3GT**
26	**MS2213**	2,0	**DT10**	**ASL3GT**
32	**MS2214**	2,0	**DT15**	**ASL3GT**
33	**MS2214**	3,5	**DT15**	**ASL3GT**
40	**MS2213**	3,5	**DT10**	**ASL3GT**
50	**MS2214**	2,0	**DT15**	**ASL3GT**

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

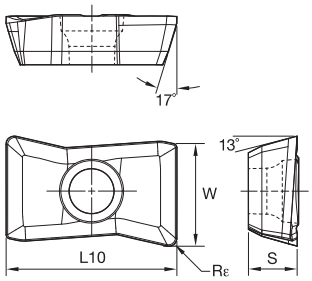
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
P3–P4	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
P5–P6	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
M1–M2	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
M3	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
K1–K2	.LD/.LF	KC505M	**.LD/.LF**	**KC505M**	.LD/.LF	KC505M
K3	.LD/.LF	KC505M	**.LD/.LF**	**KC505M**	.LD/.LF	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Insert • JOMT-LF • GOMT-LD



JOMT-LF



GOMT-LD

● first choice
○ alternate choice

JOMT • Side Insert

catalogue number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
JOMT08T208ERLF	2,78	5,14	8,50	0,8	0,06	2	●	●
JOMT100308ERLF	3,18	6,42	10,20	0,8	0,06	2	●	●
JOMT13T308ERLF	3,70	8,05	13,20	0,8	0,06	2	●	●
JOMT160408ERLF	4,76	9,67	16,70	0,8	0,06	2	●	●

GOMT • Centre Insert

catalogue number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
GOMT08T208ERLD	2,78	5,21	8,70	0,8	0,06	2	●	●
GOMT100308ERLD	3,30	6,56	10,70	0,8	0,06	2	●	●
GOMT13T308ERLD	3,85	8,36	13,20	0,8	0,06	2	●	●
GOMT160408ERLD	4,76	10,03	16,70	0,8	0,06	2	●	●

Recommended Starting Speeds [m/min]

Material Group		KC505M			KC720M		
P	1	–	–	–	260	**240**	215
	2	–	–	–	240	**215**	190
	3	–	–	–	215	**190**	170
	4	360	**260**	215	190	**180**	170
	5	360	**260**	215	170	**145**	120
	6	350	**240**	190	120	**95**	95
M	1	–	–	–	240	**215**	190
	2	–	–	–	190	**170**	145
	3	–	–	–	145	**120**	95
K	1	190	**170**	150	–	–	–
	2	175	**155**	135	–	–	–
	3	115	**95**	75	–	–	–
N	1–2	–	–	–	–	–	–
	3	–	–	–	–	–	–
S	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
H	1	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

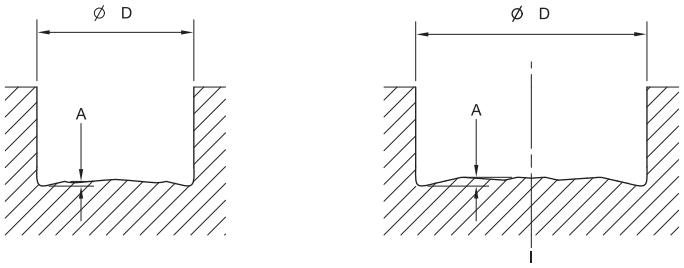
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD/.LF	0,14	**0,34**	0,51	0,11	**0,25**	0,38	0,09	**0,22**	0,33	0,09	**0,21**	0,31	0,05	**0,20**	0,30	.LD/.LF

NOTE: Use “Light Machining” values as starting feed rate.

Insert Cross Reference

end mill	applicable insert for each cutter diameter			
D1	side insert	quantity	centre insert	quantity
Ø 16	**JOMT08T208ERLF**	3	**GOMT08T208ERLD**	1
Ø 17	**JOMT08T208ERLF**	3	**GOMT08T208ERLD**	1
Ø 20	**JOMT100308ERLF**	3	**GOMT100308ERLD**	1
Ø 21	**JOMT100308ERLF**	3	**GOMT100308ERLD**	1
Ø 25	**JOMT13T308ERLF**	3	**GOMT13T308ERLD**	1
Ø 26	**JOMT13T308ERLF**	3	**GOMT13T308ERLD**	1
Ø 32	**JOMT160408ERLF**	3	**GOMT160408ERLD**	1
Ø 33	**JOMT160408ERLF**	3	**GOMT160408ERLD**	1
Ø 40	**JOMT13T308ERLF**	6	**GOMT13T308ERLD**	1
Ø 50	**JOMT160408ERLF**	6	**GOMT160408ERLD**	1

Drilled Hole Bottom Shape



Ø 16–Ø 33 Ø 40, Ø 50

drilled hole bottom shape						
cutting diameter	Ø 16, Ø 17	Ø 20, Ø 21	Ø 25, Ø 26	Ø 32, Ø 33	Ø 40	Ø 50
A (mm)	0,50	0,64	0,85	1,12	1,54	1,65

Drilling

- Calculate the drilling feeds based on (1) effective tooth.
- Use compressed air during drilling routine.
- When drilling sticky materials, use the peck drill routine.
- For stainless steel machining, use coolant.

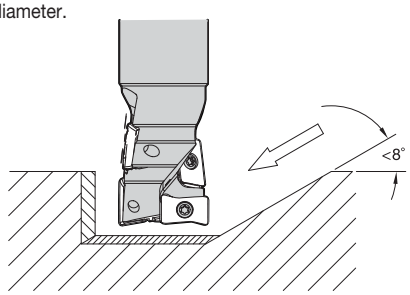
drilling	
cutting diameter	maximum depth (mm)
Ø 16	13
Ø 17	13
Ø 20	17
Ø 21	17
Ø 25	22
Ø 26	22
Ø 32	25
Ø 33	25
Ø 40	25
Ø 50	25

Recommended Cutting Data by Operation and Workpiece Material

workpiece material	feed fates (mm/tooth)		grade
	drilling	profile/slotting	
steel	0,08–0,12	0,05–0,25	KC720M
stainless steel	0,08–0,15	0,05–0,15	KC720M
cast iron	0,05–0,20	0,05–0,25	KC505M

Ramping

- Ramping angle not to exceed 8°.
- Ramping axial depth of cut not to exceed 50% of the cutter diameter.
- Use compressed air for chip evacuation when machining.



Maximum 8° ramp angle

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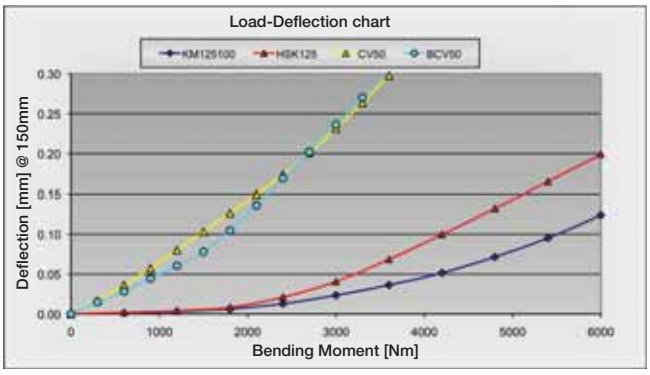
- You experience lower cost of ownership, increased throughput, and superior results.



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KIPR™ and KSSR™ • Ceramic Milling Cutters

Primary Application

The Kennametal ceramic milling platform has been specifically engineered to machine high-temperature alloys, PH series, stainless steel, and hardened materials. With excellent productivity through the massive reduction of machining time, Kennametal ceramics can run more than 10 times faster than comparable carbide grades.

Features and Benefits

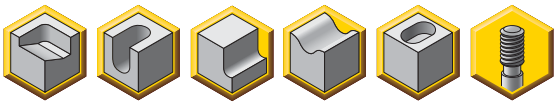
Unbeatable Productivity

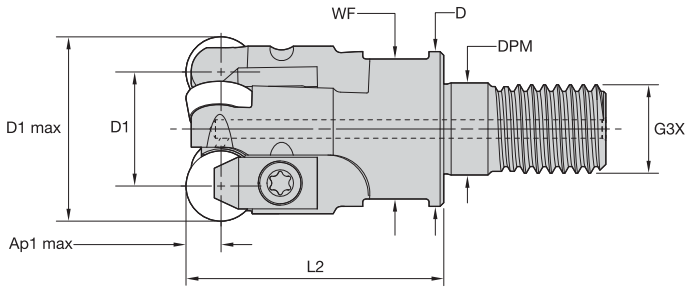
- Engineering to provide outstanding metal removal rates and productivity in nickel-based and/or cobalt-based alloys, stellites, stainless steel, and PH series through HSM.
- High axial and radial runout accuracy.
- Improved insert clearance and thickness tolerance to increase overall performance.
- New clamping system design provides higher spare part tool life and reliability and higher RPM.

Usability and Offering

- Three grades and three insert sizes available to cover a wide range of applications.
- Wide diameter range with shell mills, end mills, and Screw-On cutters from diameter 16mm.
- High clearance on the cutters for superior ramping capacities.
- Through-coolant option in all the cutters. Only for air use.

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





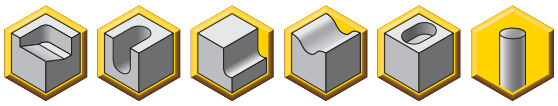
Screw-On End Mills

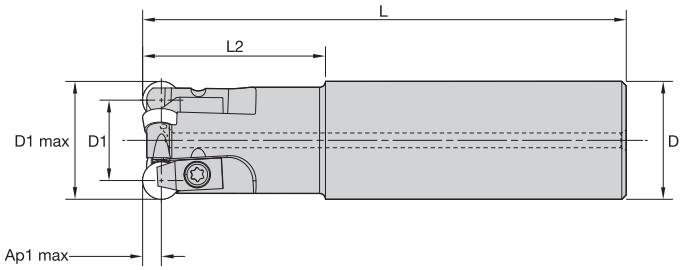
order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4052782	**KIPR020RP09MF02**	20	11	18	10,5	M10	30	14	4,8	2	13.0°	0,05	23040	RP_N0903___
4052781	**KIPR020RP06MF03**	20	14	18	10,5	M10	30	14	3,2	3	10.0°	0,05	33325	RP_N0602___
4052843	**KIPR025RP09MF03**	25	16	21	12,5	M12	35	18	4,8	3	8.0°	0,08	20610	RP_N0903___
3101753	**KIPR032RP12MF03**	32	20	29	17,0	M16	45	22	6,3	3	4.2°	0,18	20420	RP_N1204___

Spare Parts

D1 max	clamp	clamp screw	Nm	Torx driver	Torx driver
20	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI2**	**191.725**	3,5	**DT15**	**–**
25	**KCI2**	**191.725**	3,5	**DT15**	**–**
32	**KCI3M**	**193.409**	6,0	**–**	**TTP20**

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





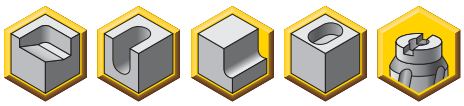
Cylindrical End Mills

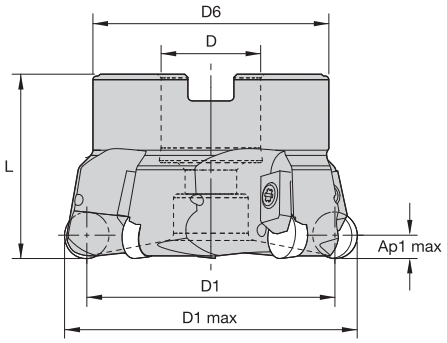
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3617418	**KIPR016RP06CF02**	16	10	16	75	26	3,2	2	14.0°	0,10	37260	RP_N0602___
4052780	**KIPR020RP09CF02**	20	11	20	82	31	4,8	2	13.0°	0,16	23040	RP_N0903___
3617416	**KIPR020RP06CF03**	20	14	20	82	31	3,2	3	10.0°	0,17	33325	RP_N0602___
3617415	**KIPR025RP09CF03**	25	16	25	96	39	4,8	3	8.0°	0,30	20610	RP_N0903___
3101754	**KIPR032RP12CF03**	32	20	32	110	50	6,3	3	4.2°	0,56	20420	RP_N1204___
3101755	**KIPR040RP12CF04**	40	28	32	110	49	6,3	4	2.8°	0,61	18260	RP_N1204___

Spare Parts

D1 max	clamp	clamp screw	Nm	Torx driver	Torx driver
16	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI2**	**191.725**	3,5	**DT15**	**–**
25	**KCI2**	**191.725**	3,5	**DT15**	**–**
32	**KCI3M**	**193.409**	6,0	**–**	**TTP20**
40	**KCI3M**	**193.409**	6,0	**–**	**TTP20**

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





Shell Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3101756	**KSSR050RP12CF04**	50	37	16	44	50	6,3	4	2.0°	0,41	16340	RP_N1204___
3101757	**KSSR063RP12CF04**	63	50	22	50	50	6,3	4	1.4°	0,69	14550	RP_N1204___
3101758	**KSSR080RP12CF05**	80	67	27	60	50	6,3	5	1.0°	1,09	12900	RP_N1204___
3101759	**KSSR100RP12CF06**	100	87	32	80	50	6,3	6	.8°	1,84	11550	RP_N1204___

Spare Parts

D1 max	clamp	clamp screw	Nm	Torx Plus wrench
50	**KCI3M**	**193.409**	6,0	**TTP20**
63	**KCI3M**	**193.409**	6,0	**TTP20**
80	**KCI3M**	**193.409**	6,0	**TTP20**
100	**KCI3M**	**193.409**	6,0	**TTP20**

Insert Selection Guide

RPGN06... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

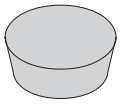
RPGN09... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

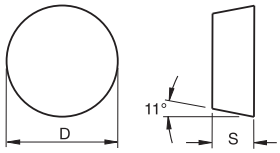
RPGN12... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

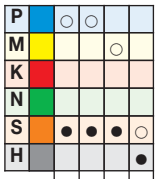
Indexable Ceramic Inserts • KIPR-RP • KSSR-RP



RPGN



● first choice
○ alternate choice



Copy Mills

RPGN

catalogue number	D	S	KYS30	KYSP30	KYSM10	KYHS10
RPGN060200E	6,35	2,38	●	●	●	●
RPGN090300E	9,53	3,18	●	●	●	●
RPGN090300T01020	9,53	3,18	●			
RPGN120400E	12,70	4,76	●	●	●	●
RPGN120400T01020	12,70	4,76	●			

NOTE: A — Use these tools with the appropriate equipment/machines. Machines have to be covered for safety reasons: Hot flowing chips and loud noises are involved, which is common during the milling process.

B — Use only air flows as coolant method.

C — Higher RPMs are involved; use balanced toolholder for higher tool life and safer operation.

D — Consider increasing the fz in hard machining when smaller ap are applied.

Recommended Starting Speeds [m/min]

Material Group		KYHS10			KYSM10			KYSP30			KYS30		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	1205	**975**	725	915	**730**	550	–	–	–
	6	–	–	–	1205	**975**	725	915	**730**	550	–	–	–
M	1	–	–	–	1205	**975**	725	–	–	–	–	–	–
	2	–	–	–	1140	**915**	–	–	–	–	–	–	–
	3	–	–	–	840	**730**	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	510	**400**	295	1065	**870**	675	805	**660**	510	805	**660**	510
	2	510	**400**	295	1065	**870**	675	805	**660**	510	805	**660**	510
	3	730	**620**	510	1550	**1260**	970	1170	**950**	730	1170	**950**	730
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	365	**310**	240	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm] • RPGN06..

Light Machining	General Purpose	Heavy Machining

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 1,59 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

At 0,40 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • RPGN09..

Light Machining	General Purpose	Heavy Machining

At 4,76 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 2,38 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 1,19 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

At 0,60 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

Recommended Starting Feeds [mm] • RPGN12..

At 6,35 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 1,59 Axial Depth of Cut (ap)

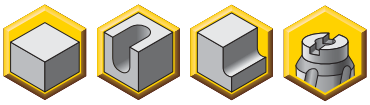
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

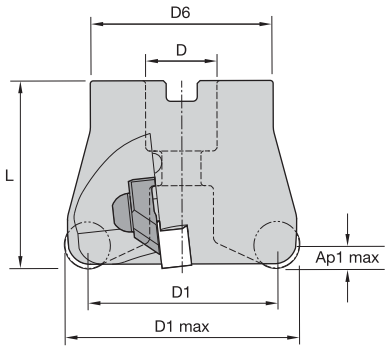
At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

NOTE: Use “Light Machining” values as starting feed rate.

- First choice for face milling high-temp alloys and hardened materials up to 60 HRC.
- Excellent productivity through massive reduction of machining time.





Shell Mills • RNGN 1207

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3101760	**KSSR050RN12CF03**	50	37	16	42	50	6,0	3	0,38	20500	RNGN120700
3101761	**KSSR063RN12CF04**	63	50	22	54	50	6,0	4	0,60	16600	RNGN120700
3101762	**KSSR080RN12CF05**	80	67	27	64	50	6,0	5	0,96	13500	RNGN120700
3101763	**KSSR100RN12CF06**	100	87	32	84	50	6,0	6	1,53	11200	RNGN120700
3101764	**KSSR125RN12CF07**	125	112	40	94	63	6,0	7	2,70	9000	RNGN120700
3101765	**KSSR160RN12CF09**	160	147	40	114	63	6,0	9	4,85	7000	RNGN120700

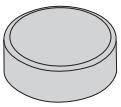
Spare Parts

D1 max	clamp	clamp screw	washer	Nm	Torx wrench
50	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
63	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
80	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
100	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
125	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
160	**555.205**	**MS1221**	**191.279**	9,0	**TT25**

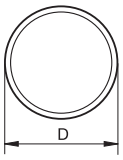
Insert Selection Guide

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	**..T..**	**KY2100 / KYSM10**	–	–
M1–M2	–	–	–	–	–	–
M3	..T..	KY2100 / KYSM10	**..T..**	**KY2100 / KYSM10**	..T..	KY2100 / KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–		–
S1–S2	..E	KY4300 / KYHS10	**..T..**	**KYS30**	..T..	KY2100 / KYSM10
S3	..T..	KYS30	**..T..**	**KYS30**	..T..	KY4300 / KYHS10
S4	–	–	–	–	–	–
H1	..E	KY4300 / KYHS10	**..T..**	**KY4300 / KYHS10**	–	–

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP • KSSR-RN



RNGN



● first choice
○ alternate choice

	KYS30	KY2100	KY4300
P		●	
M		●	
K			
N			
S	●		●
H			●

RNGN

catalogue number	D	S	KYS30	KY2100	KY4300
RNGN120700E	12,70	7,94	●	●	●
RNGN120700T01020	12,70	7,94	●	●	●

NOTE: A — Use these tools with the appropriate equipment/machines. Machines have to be covered for safety reasons: Hot flowing chips and loud noises are involved, which is common during the milling process.

B — Use only air flows as coolant method.

C — Higher RPMs are involved; use balanced toolholder for higher tool life and safer operation.

D — Consider increasing the fz in hard machining when smaller ap are applied.

Recommended Starting Speeds [m/min]

Material Group		KY4300			KY2100			KYS30		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	510	**400**	295	1065	**870**	675	805	**660**	510
	2	510	**400**	295	1065	**870**	675	805	**660**	510
	3	730	**620**	510	1550	**1260**	970	1170	**950**	730
	4	–	–	–	–	–	–	–	–	–
H	1	365	**310**	240	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,35 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,09	**0,10**	0,11	0,07	**0,08**	0,09	0,06	**0,07**	0,07	0,06	**0,06**	0,07	0,06	**0,06**	0,07	..E
..T..	0,17	**0,26**	0,28	0,13	**0,19**	0,21	0,11	**0,17**	0,19	0,10	**0,16**	0,17	0,10	**0,16**	0,17	..T..

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,11	**0,12**	0,13	0,08	**0,09**	0,10	0,07	**0,08**	0,09	0,07	**0,07**	0,08	0,07	**0,07**	0,08	..E
..T..	0,20	**0,30**	0,33	0,15	**0,22**	0,25	0,13	**0,20**	0,21	0,12	**0,18**	0,20	0,12	**0,18**	0,20	..T..

At 1,59 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,16**	0,17	0,11	**0,12**	0,13	0,09	**0,10**	0,11	0,09	**0,10**	0,10	0,09	**0,09**	0,10	..E
..T..	0,26	**0,39**	0,43	0,19	**0,29**	0,32	0,17	**0,26**	0,28	0,16	**0,24**	0,26	0,15	**0,23**	0,26	..T..

At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,20	**0,21**	0,23	0,15	**0,16**	0,18	0,13	**0,14**	0,15	0,12	**0,13**	0,14	0,12	**0,13**	0,14	..E
..T..	0,35	**0,54**	0,59	0,26	**0,40**	0,44	0,23	**0,35**	0,38	0,21	**0,33**	0,36	0,21	**0,32**	0,35	..T..

NOTE: Use “Light Machining” values as starting feed rate.

Thread Mills

Tool Selection • ISO Internal Threads **S2**

Tool Selection • UN Internal Threads **S3**

Indexable End Mills

Weldon Shank • TM25 • Double Sided S4

Conical Thread •TMT25 • Single Sided • NPT/BSPT S5

Mini Thread Mills • STN S9–S10

One and Two Cutting Edges • STN S11

Indexable Inserts **S6, S12–S13**

Application and Technical Information **S8, S14**

Internal Threads • Insert and Holder Recommendations

thread	tap hole fl (mm)	indexable insert	largest milling cutter
M11 x 0,75	10,19	STN10075ISO-I	9X1R .. STN10M
M12	10,11	STN10175ISO-I-C	9X1R015B20-STN10C
M12 x 1,00	10,92	STN10100ISO-I	9X1R .. STN10M
M14	11,84	STN11200ISO-I-C	11X1R .. STN11N
M16	13,84	STN11200ISO-I-C	11X1R .. STN11N
M20	17,29	STN16250ISO-I-C	15X1R020B16-STN16C
M20 x 1,50	18,38	STN11150ISO-I	11X1R .. STN11N
M20 x 1,00	18,92	STN11100ISO-I	11X1R .. STN11N
M24	20,75	STN22300ISO-I-C	18X1R030B25-STN22C
M24 x 2,00	21,84	STN16200ISO-I	17X1R022B16-STN16N
M24 x 1,50	22,38	STN11150ISO-I	11X1R .. STN11N
M24 x 1,50	22,38	STN16150ISO-I	17X1R022B16-STN16N
M27	23,75	STN22300ISO-I-C	18X1R030B25-STN22C
M30	26,21	STN27350ISO-I-C	25X1R040B25-STN27C
M30 x 2,00	27,84	STN16200ISO-I	22X1R025B25-STN16L
M33	29,21	STN27350ISO-I-C	25X1R040B25-STN27C
M33 x 2,00	30,84	STN16200ISO-I	22X1R025B25-STN16L
M33 x 1,50	31,38	STN16150ISO-I	22X1R025B25-STN16L
M35 x 1,50	33,38	STN16150ISO-I	22X1R025B25-STN16L
M36 x 2,00	33,84	STN16200ISO-I	22X1R025B25-STN16L
M42 x 2,00	39,84	STN27200ISO-I	30X1R052B25-STN27N
M45 x 2,00	42,84	STN27200ISO-I	37X1R .. STN27N or L
M48 x 2,00	45,84	STN27200ISO-I	37X1R058B32-STN27N or L
M55 x 2,00	52,84	STN27200ISO-I	37X1R .. STN27N or L
M56 x 2,00	53,84	STN27200ISO-I	37X1R .. STN27N or L
M72 x 2,00	69,84	STN27200ISO-I	37X1R .. STN27N or L

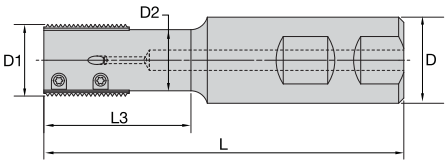
Internal Threads • Insert and Holder Recommendations

thread	tap hole fl (mm)	indexable insert	largest milling cutter
9/16 - 18UNF	12,76	STN1018UN-I	9X1R .. STN10M
5/8 - 24UNEF	14,73	STN1124UN-I	11X1R .. STN11N
5/8 - 18UNF	14,35	STN1118UN-I	11X1R .. STN11N
3/4 - 20UNEF	17,68	STN1120UN-I	11X1R .. STN11N
3/4 - 16UNF	17,33	STN1116UN-I	11X1R .. STN11N
7/8 - 14UNF	20,26	STN1114UN-I	11X1R .. STN11N
1 - 16UN	23,68	STN1616UN-I	18X1R030B25-STN22C
1 - 12UNF	23,11	STN1612UN-I	17X1R .. STN16N
1 1/8 - 12UNF	26,28	STN1612UN-I	22X1R .. STN16L
1 1/4 - 12UNF	29,46	STN1612UN-I	22X1R .. STN16L
1 3/8 - 12UNF	32,63	STN1612UN-I	22X1R .. STN16L

Whitworth Pipe Thread (Internal) to DIN 259

thread	tap hole fl (mm)	indexable insert	largest milling cutter
R 5/8	20,59	STN1614BSW	17X1R022B16-STN16N
R 3/4	24,12	STN1614BSW	20X1R043B20-STN16N
R 7/8	27,88	STN1614BSW	22X1R025B25-STN16L
R 1	30,29	STN1611BSW	22X1R025B25-STN16L

- 17–30mm cutting diameter range.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.

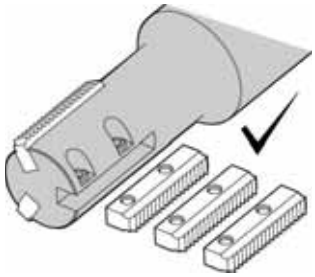


Thread Mill • Weldon Shank

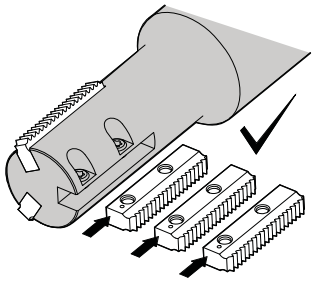
order number	catalogue number	D1	D	D2	L	L3	Z	insert screw	Torx Plus driver
3030845	**TM25D17L26Z2**	17,0	25	14,0	85	26	2	**TM25INSERTSCREW**	**DT8IP**
3030846	**TM25D17L36Z2**	17,0	25	14,0	95	36	2	**TM25INSERTSCREW**	**DT8IP**
3030849	**TM25D20L44Z3**	20,5	25	16,7	103	44	3	**TM25INSERTSCREW**	**DT8IP**
3030848	**TM25D20L37Z3**	20,5	25	16,7	96	37	3	**TM25INSERTSCREW**	**DT8IP**
3030850	**TM25D22L43Z3**	22,0	25	18,0	102	43	3	**TM25INSERTSCREW**	**DT8IP**
3030852	**TM25D22L55Z3**	22,0	25	18,0	114	55	3	**TM25INSERTSCREW**	**DT8IP**
3031705	**TMC25D30L80Z4**	30,0	25	26,0	140	80	4	**TM25INSERTSCREW**	**DT8IP**
3031703	**TM25D30L55Z5**	30,0	25	26,0	115	55	5	**TM25INSERTSCREW**	**DT8IP**

NOTE: Torque value for insert screw is 4 Nm.

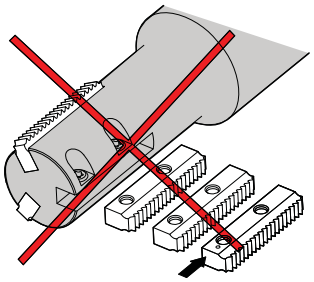
Thread Application per Toolholder min thread Ø						
toolholder	D1 mm	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF
TM25D17L26Z2 TM25D17L36Z2	17	M20 x 2.5	M19 x 1; M19 x 1.5; M20 x 2		7/8-10UNS; 13/16-12UN; 7/8-14UNF; 3/4-16UNF; 3/4-18UNS; 3/4-20UNEF;	7/8-11; 7/8-12; 7/8-14; 7/8-16
TM25D20L37Z3 TM25D20L44Z3	20,5	M24 x 3.0	M22 x 1; M23 x 1.5; M23 x 2; M23.5 x 2.5	1-8	15/16-9UN; 1.0-10UNS; 15/16-12UN 1.0-14UNS; 15/16-16UN; 7/8-18UNS; 7/8-20UNEF;	1-11; 1.-12; 1-14; 1.-16
TM25D22L43Z3 TM25D22L55Z3	22	M27 x 3.0	M24 x 1; M24 x 1.5; M25 x 2; M25 x 2.5		11/16-8UN; 1.0-9UN; 1.0-10UNS; 1.0-12UNF 1.0-14UNS; 1.0-16UN; 1.0-18UN; 15/16-20UNEF	1-11; 1-12; 1-14; 1-16
TM25D30L55Z5 TMC25D30L80Z4	30		M32 x 1; M32 x 1.5; M33 x 2; M33 x 2.5; M34 x 3		1 3/8-8UN; 1 3/8-9UN; 1 3/8-10UN; 1 5/16-12UN; 1 3/8-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	1 3/8-11; 1 3/8-12; 1 3/8-14; 1 3/8-16



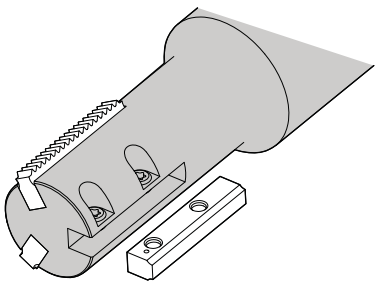
Always mount all inserts on the same side



Side with identification marks



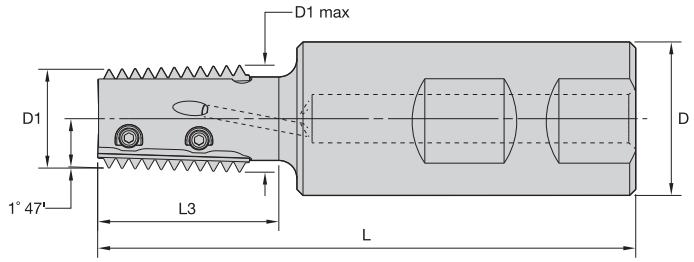
Side without identification marks



TM25 blank plug insert *

*** When not using an insert in each pocket, protect the pocket by using a TM25 blank.**

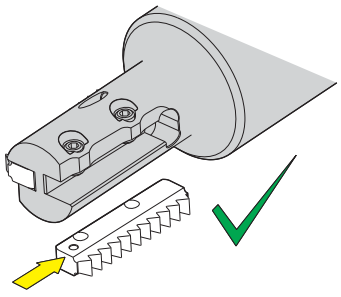
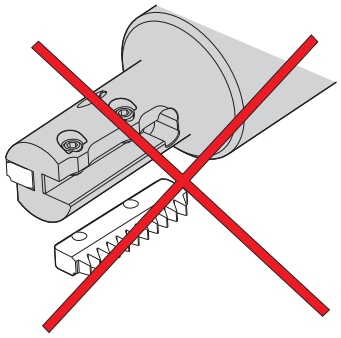
- 14–26mm cutting diameter range.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.



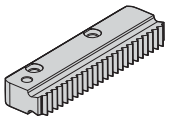
Thread Mill • Conical Thread

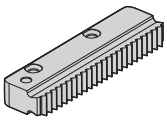
order number	catalogue number	D1	D	D1 max	L	L3	Z	insert screw	Torx Plus driver
3030847	**TMT25D17L26Z2**	14	25	17	85	26	2	**TM25INSERTSCREW**	**DT8IP**
3030851	**TMT25D22L43Z3**	18	25	22	102	43	3	**TM25INSERTSCREW**	**DT8IP**
3031704	**TMT25D28L43Z4**	26	25	28	103	43	4	**TM25INSERTSCREW**	**DT8IP**

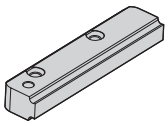
Thread Application per Toolholder min thread Ø				
toolholder	**D1 max**	**NPT**	**NPTF**	**BSPT**
TMT25D17L26Z2	17.1	1/2-14; 3/4-14; 1-11.5; 2-11.5	1/2-14; 3/4-14; 1-11.5; 2-11.5	1/2-14; 3/4-14; 1-11; 1 1/4-11; 1 1/2-11; 2-11
TMT25D22L43Z3	22	3/4-14; 1-11.5; 2-11.5	3/4-14; 1-11.5; 2-11.5	3/4-14; 1-11; 1 1/4-11;1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11
TMT25D28L43Z4	28	1-11.5; 2-11.5	1-11.5; 2-11.5	1-11; 1 1/4-11; 1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11

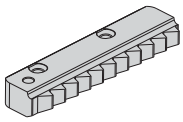



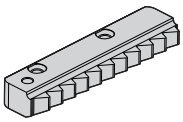
NOTE: On conical inserts the identification mark must be face up.

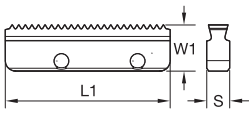

ISO Profiles

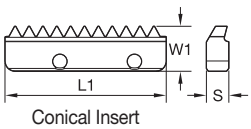

BSW Profiles


Blank


NPT Profiles


BSPT Profiles





Conical Insert

● first choice
○ alternate choice

		KC610M	KC635M
P		●	○
M		○	●
K		●	
N		●	
S			●
H		○	●

ISO Profiles • Internal

ISO catalogue number	ANSI catalogue number	thread pitch mm	L1	W1	S	KC610M	KC635M
TM25N100ISO	TM25N100ISO	1,0	25,00	7,62	3,56	●	●
TM25N150ISO	TM25N150ISO	1,5	25,00	7,62	3,56	●	●
TM25N200ISO	TM25N200ISO	2,0	25,00	7,62	3,56	●	●
TM25N250ISO	TM25N250ISO	2,5	25,00	7,62	3,56	●	●
TM25N300ISO	TM25N300ISO	3,0	25,00	7,62	3,56	●	●

UN Profiles • Internal

ISO catalogue number	ANSI catalogue number	TPI	L1	W1	S	KC610M	KC635M
TM25N8UN	TM25N8UN	8	25,00	7,62	3,56	●	●
TM25N9UN	TM25N9UN	9	25,00	7,62	3,56	●	●
TM25N10UN	TM25N10UN	10	25,00	7,62	3,56	●	●
TM25N12UN	TM25N12UN	12	25,00	7,62	3,56	●	●
TM25N14UN	TM25N14UN	14	25,00	7,62	3,56	●	●
TM25N16UN	TM25N16UN	16	25,00	7,62	3,56	●	●
TM25N18UN	TM25N18UN	18	25,00	7,62	3,56	●	
TM25N20UN	TM25N20UN	20	25,00	7,62	3,56	●	●

Whitworth Profiles • Internal/External

ISO catalogue number	ANSI catalogue number	TPI	LI	W1	S	KC610M	KC635M
TM25EN11W	TM25EN11W	11	25,00	7,62	3,56	●	●
TM25EN12W	TM25EN12W	12	25,00	7,62	3,56	●	
TM25EN14W	TM25EN14W	14	25,00	7,62	3,56	●	●

NPT Profiles • Internal/External

ISO catalogue number	ANSI catalogue number	TPI	L1	W1	S	KC610M	KC635M
TM25EN115NPT	TM25EN115NPT	11.5	25,00	7,62	3,56	●	●
TM25EN14NPT	TM25EN14NPT	14	25,00	7,62	3,56	●	●

BSPT Profiles • Internal/External

ISO catalogue number	ANSI catalogue number	internal TPI	L1	W1	S	KC610M	KC635M
TM25EN11BSPT	TM25EN11BSPT	11	25,00	7,62	3,56	●	●
TM25EN14BSPT	TM25EN14BSPT	14	25,00	7,62	3,56	●	

Blank Insert Form • Internal/External

ISO catalogue number	ANSI catalogue number	L	W1	S
TM25BLANK	TM25BLANK	25,00	5,59	3,56

Kennametal Thread Mill (TM Inserts)

materials	Brinell	surface speeds		indexable inserts
steel	HB	KC610M	KC635M	feed fz (mm/tooth)
P1	125	100–210	90–180	0,05–0,20
P2	180	100–170	90–160	0,05–0,20
P3	225	60–130	70–115	0,05–0,20
P4	250	80–150	80–160	0,05–0,20
P5	275	75–130	80–160	0,05–0,15
P6	325	70–110	60–100	0,05–0,10
stainless steel				
M1	180	100–170	120–180	0,05–0,10
M2	250	70–140	100–140	0,05–0,10
M3	330	70–120	100–120	0,05–0,10
cast iron				
K1	180	60–130	100–120	0,02–0,08
K2	220	60–125	80–100	0,05–0,15
K3	260	50–90	60–90	0,05–0,10
non-ferrous				
N1	60–100	100–250	–	0,05–0,25
high-temp alloys				
S1	200	20–45	20–40	0,05–0,10
S2	250	20–30	20–30	0,02–0,05
S3	280	15–20	15–20	0,02–0,05
S4	350	10–15	10–15	0,02–0,05
hardened steel				
H1	55 HRC	20–45	20–45	0,01–0,03

www.kennametal.com/en-US/customer_support/metalworking/software_download_reference_tools.jhtml
Kennametal thread mill software: TM — CNC Generator

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

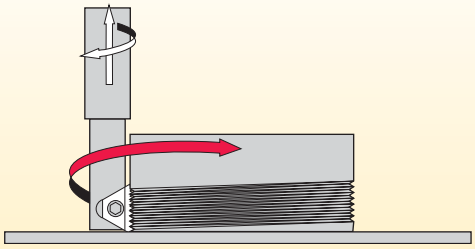
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

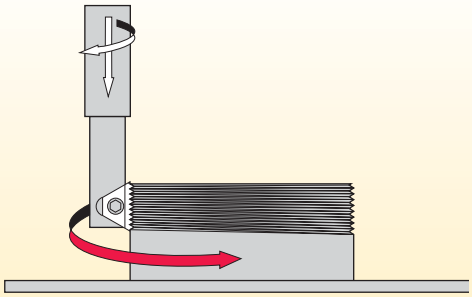
The Following Are a Few Thread Milling Methods (Work Directions)

NOTE: Climb milling results in lower cutting forces, better chip development, higher thread surface quality, and longer insert life. Therefore, it should be used whenever possible. However, in the case of some hardened materials, or when milling certain difficult-to-machine exotic materials, conventional milling may be preferred.

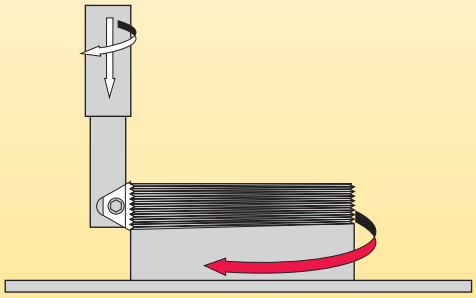
Methods of External Thread Milling



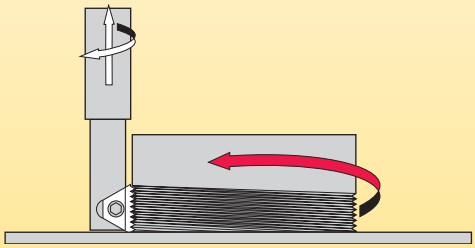
right-hand thread... conventional milling



left-hand thread... conventional milling

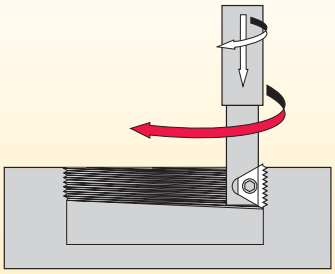


right-hand thread... climb milling

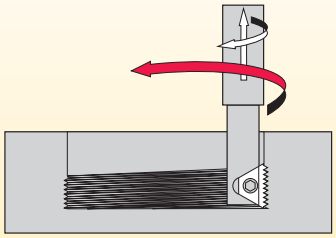


left-hand thread... climb milling

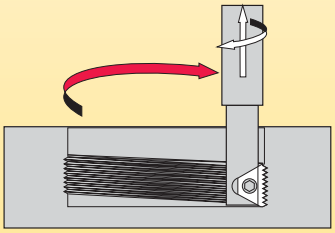
Methods of Internal Thread Milling



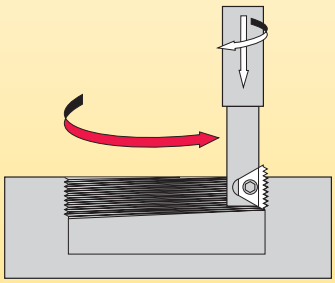
right-hand thread... conventional milling



left-hand thread... conventional milling

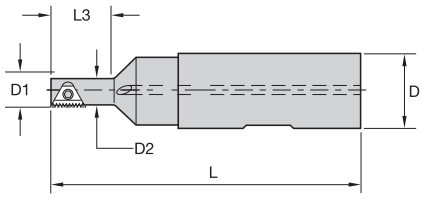


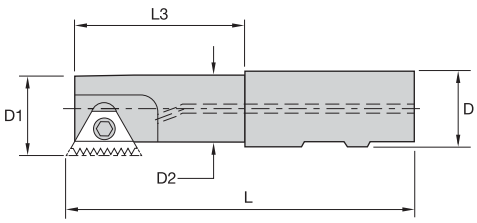
right-hand thread... climb milling



left-hand thread... climb milling

- 9mm cutting diameter.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.





Thread Mill • Mini

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx driver
1132616	9X1R012B12STN10M	9	12	6,8	69	12	1	39935	STN10	SN7T	1,7	DT7
1191395	9X1R017B20STN10M	9	20	6,8	84	17	1	39935	STN10	SN7T	1,7	DT7

Thread Mill • Normal Shank • STN11

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx driver
1130302	11X1R020B20STN11N	12	20	8,9	85	20	1	36825	STN11	SN2TPKG	1,7	DT8
1294964	11X1R012B12STN11N	12	12	8,9	70	12	1	36825	STN11	SN2TPKG	1,7	DT8

Thread Mill • Normal Shank • STN16

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx driver
1130686	17X1R022B16STN16N	17	16	13,6	90	22	1	25750	STN16	SN3TM	2,3	DT10
1130740	20X1R043B20STN16N	20	20	16,6	95	43	1	23330	STN16	SN3TPKG	2,3	DT10

Thread Mill • Normal Shank • STN27

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx wrench
1130969	30X1R052B25STN27N	30	25	24,0	110	52	1	12900	STN27	SN5TM	5,0	TT25
1131069	37X1R058B32STN27N	37	32	27,0	120	58	1	11600	STN27	SN5TM	5,0	TT25

Thread Mill • Normal Shank • STN.38

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx wrench
1178986	35X1R055B32STNB38N	35	32	31,0	115	55	1	11000	STNB38	SM7TPKG	6,5	TT30

Thread Mill • Long Shank • STN16

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx driver
1130837	**22X1R025B25STN16L**	22	25	18,6	125	25	1	22230	STN16	**SN3TPKG**	2,3	**DT10**

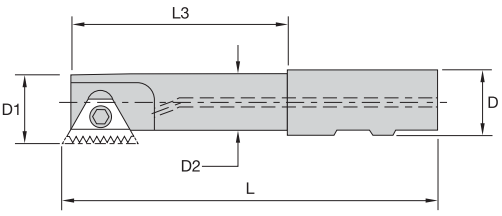
Thread Mill • Long Shank • STN27

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx wrench
1130977	**30X1R092B25STN27L**	30	25	24,0	150	92	1	12900	STN27	**SN5TM**	5,0	**TT25**
1131086	**37X1R098B32STN27L**	37	32	31,0	160	98	1	11600	STN27	**SN5TM**	5,0	**TT25**

Thread Mill • Long Shank • STN38

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Nm	Torx wrench
1566071	**46X1R100B40STNB38L**	46	40	38,0	170	100	1	10000	STNB38	**SM7TPKG**	6,5	**TT30**

- 16–25mm cutting diameter.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.



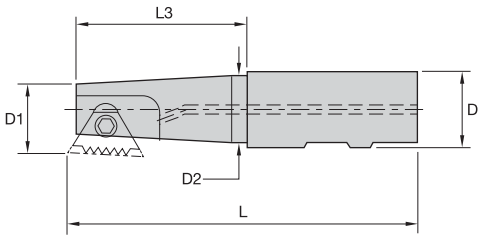
Thread Mill • Internal Coarse Pitch Thread

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1
1176964	**15X1R020B16STN16C**	16	16	12,2	91	21	1	26550	STN16___C
1176965	**18X1R030B25STN22C**	18	25	13,4	88	30	1	23350	STN22___C
1176967	**25X1R040B25STN27C**	25	25	19,0	98	40	1	22000	STN27___C

Spare Parts

D1	insert screw	Nm	Torx driver	Torx wrench
16	**SN3TPKG**	2,3	**DT10**	–
18	**SN4TMPKG**	4,0	**DT15**	–
25	**SN5TM**	5,0	–	**TT25**

- Cutting diameter ranges from 10–30mm.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.



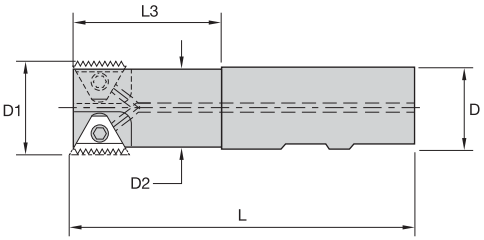
Thread Mill • Tapered Shank • Right Hand

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1
1176970	**10X1R015B20STN11T**	10	20	7,4	77	16	1	36500	STN11
1132781	**15X1R022B16STN16T**	16	16	12,5	80	22	1	26550	STN16
1135826	**19X1R023B20STN16T**	19	20	15,0	85	23	1	24350	STN16
1124003	**30X1R052B25STN27T**	30	25	24,0	110	52	1	12900	STN27

Spare Parts

D1	insert screw	Nm	Torx driver	Torx wrench
10	**SN2TPKG**	1,7	**DT8**	**–**
16	**SN3TPKG**	2,3	**DT10**	**–**
19	**SN3TM**	2,3	**DT10**	**–**
30	**SN5TM**	5,0	**–**	**TT25**

- Cutting diameter ranges from 26–42mm.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilises inserts with various profiles and pitches.

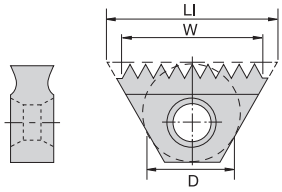


Thread Mill • Double Insert

order number	catalogue number	D1	D	D2	L	L3	Z	max RPM	insert 1
1124019	**26X2R043B25STN16D**	26	25	22,5	100	43	2	20530	STN16
1131118	**42X2R045B32STN27D**	42	32	36,0	120	45	2	10900	STN27

Spare Parts

D1	insert screw	Nm	Torx driver	Torx wrench
26	**SN3TPKG**	2,3	**DT10**	**–**
42	**SN5TM**	5,0	**–**	**TT25**



● first choice
○ alternate choice

P	●	○	○
M	○	●	●
K	●		
N	●		
S		●	●
H		●	●

Internal • UN Thread

catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1018UNI	18	6,00	10,41	8,38			●
STN1020UNI	20	6,00	10,41	8,89			●
STN1114UNI	14	6,35	10,92	9,14			●
STN1116UNI	16	6,35	10,92	9,65			●
STN1118UNI	18	6,35	10,92	9,91			●
STN1120UNI	20	6,35	10,92	10,16			●
STN1124UNI	24	6,35	10,92	9,65			●
STN1128UNI	28	6,35	10,92	9,91			●
STN1612UNI	12	9,53	16,00	14,73			●
STN1614UNI	14	9,53	16,00	14,48			●
STN1616UNI	16	9,53	16,00	14,22	●		
STN1624UNI	24	9,53	16,00	14,73			●
STN1627UNI	27	9,53	16,00	14,22			●
STN1632UNI	32	9,53	16,00	14,99			●

External • UN Thread

catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118UNE	18	6,35	10,92	9,91			●
STN1614UNE	14	9,53	16,00	14,48			●
STN1616UNE	16	9,53	16,00	14,22			●
STN1620UNE	20	9,53	16,00	13,97			●
STN1624UNE	24	9,53	16,00	14,73			●
STN2710UNE	10	15,88	26,92	22,86			●
STN2716UNE	16	15,88	26,92	25,40			●
STN278UNE	8	15,88	26,92	22,35			●

Internal • ISO Thread

catalogue number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN10075ISOI	0,75	6,00	10,41	9,65			●
STN10100ISOI	1,0	6,00	10,41	8,89		●	●
STN10125ISOI	1,25	6,00	10,41	8,64			●
STN10150ISOI	1,5	6,00	10,41	8,89			●
STN11050ISOI	0,50	6,35	10,92	10,41			●
STN11100ISOI	1,0	6,35	10,92	9,91			●
STN11125ISOI	1,25	6,35	10,92	8,64			●
STN11150ISOI	1,5	6,35	10,92	10,41			●
STN16100ISOI	1,0	9,53	16,00	14,99			●
STN16150ISOI	1,5	9,53	16,00	14,99			●
STN16175ISOI	1,75	9,53	16,00	13,97			●
STN16200ISOI	2,0	9,53	16,00	13,97			●

● first choice
○ alternate choice

		KC610M	KC620M	KC635M
P		●	○	○
M		○	●	●
K		●		
N		●		
S			●	●
H			●	●

External • ISO Thread • Coarse

catalogue number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN22300ISOIC	3,0	12,70	22,10	18,00	●		
STN27350ISOIC	3,5	15,88	26,92	24,50	●		

External • ISO Thread

catalogue number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN16150ISOE	1,0	9,53	16,00	14,99	●	●	
STN27200ISOE	2,0	15,88	26,92	23,88	●		

BSW Thread

catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1119BSW	19	6,35	10,92	9,40			●
STN1611BSW	11	9,53	16,00	13,97	●		●
STN1612BSW	12	9,53	16,00	14,73			●
STN1614BSW	14	9,53	16,00	14,48	●		●

NPS Thread

catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN16115NPS	11.5	9,53	16,00	13,21			●
STN1614NPS	14	9,53	16,00	14,48			●

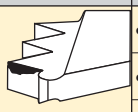
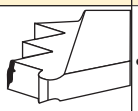
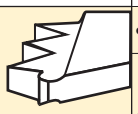
NPT Thread

catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118NPT	18	6,35	10,92	9,91			●
STN16115NPT	11.5	9,53	16,00	13,21			●
STN1614NPT	14	9,53	16,00	14,48			●

NPTF Thread

ISO catalogue number	ANSI catalogue number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118NPTF	STN1118NPTF	18	6,35	10,92	9,91			●
STN16115NPTF	STN16115NPTF	11.5	9,53	16,00	13,21			●
STN1614NPTF	STN1614NPTF	14	9,53	16,00	14,48			●

Thread Mill Troubleshooting

problem	possible cause	solution
excessive insert flank wear 	• Cutting speed too high.	• Reduce cutting speed.
	• Chip is too thin.	• Increase feed rate.
	• Insufficient coolant.	• Increase coolant quantity/pressure.
chipping of cutting edge 	• Chip is too thick.	• Reduce feed rate. • Use the tangential arc method of entrance. • Increase RPM.
	• Vibration.	• Check rigidity.
material build-up on the cutting edge 	• Cutting speed too slow.	• Increase cutting speed.
	• Chip thickness too small.	• Increase feed rate.
chatter/vibration	• Feed rate is too high.	• Reduce the feed.
	• Profile is too deep (coarse pitch threads).	• Execute two passes, each with increased cutting depth. • Execute two passes, each cutting only half the thread length.
	• Thread length is too long.	• Execute two passes, each cutting only half of the thread length.
insufficient thread accuracy	• Tool deflection.	• Reduce feed rate. • Execute a zero cut.

Insert Tolerance Classes

thread designation	standard designation	tolerance class
UN	ANSI B 1.174	2A/2B
UNJ	MIL-S-8879A	3A/3B
ISO	R262 (DIN 13)	6g/6H
NPT	USAS B2.1 : 1968	standard NPT
NPTF	ANSI B 1.20.3-1976	standard
BSW	B.S. 84 : 1956, DIN 259, ISO 228/1 : 1982	medium class A
BSPT	B.S. 21 : 1985	standard BSPT
ACME	ANSI B1/5 : 1988	3G
PG	DIN 40430	standard
TR	DIN 103	7e/7H

More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

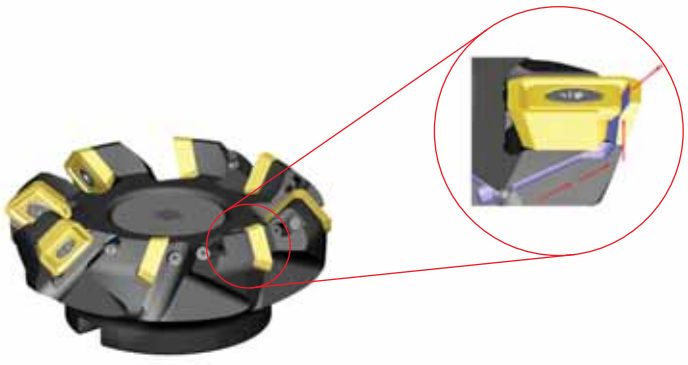
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

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1016694	IDSN533 K9	C110, D111
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1017226	IVSN322 K9	C13, C32, C79, C82, C111, D14, D33
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1017232	IDSN442 K9	C110
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1020581	CKM9	C30, C36, C81, D32, D39
1020583	CKM10	C36, C39, C83, D37, D84
1020595	CKM12	C24, C37, C80, C110, D29, D81, D111, F100
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1020601	CKM19	C28, C38, D39, C83, D84
1020603	CKM20	C31, C82, C110, C134, D32, D83
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1867010	DCGT11T304HP KC5025	B95
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Turning Icons

Shank: KM-TS ISO 26622	Coolant: Through Coolant 100 Bar (1500 psi) Maximum	Coolant: Through Coolant 100 Bar (1500 psi) Maximum		

Holemaking Icons

Counterboring	Countersinking/ Stroke Chamfering	Drilling into Solid	Drilling: Inclined Entry	Drilling: Inclined Exit
Drilling: X-Offset	Drilling: Flat Bottom	Drilling: Stacked Plates	Drilling: Convex	Drilling: Blind
Reaming: Through Hole	Reaming: Blind Hole	Reaming: Through and Cross Holes	Reaming: Blind and Cross Holes	Reaming: Interrupted Cut
Tapping: Through Hole	Tapping: Blind Hole	Tapping: Pipe Thread	HSS: High-Speed Steel	HSS-E: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness
HSS-E-PM: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness (PM = Powder Metal Steel)	HM: (Carbide)	Drilling Depth: 1x	Drilling Depth: 1,5x	Drilling Depth: 2x
Drilling Depth: 3x	Drilling Depth: 4x	Drilling Depth: 5x	Drilling Depth: 7x	Drilling Depth: 8x
Drilling Depth: 10x	Drilling Depth: 12x	Corner Style: Corner Chamfer	Corner Style: Square End	Shank: Cylindrical Plain
Shank: Cylindrical Plain ≤h6	Shank: HSK DIN 69893 Form A	Shank: HSK DIN 69893	Shank: KM-TS ISO 26622	Shank: KM-XMZ
Square Shank: L = 4"	Square Shank: L = 6"	Square Shank: L = 8"	Square Shank: L = 10"	Shank: Cylindrical Whistle Notch™
Shank: Cylindrical Whistle Notch 2°	Shank: Cylindrical with Flat	Shank: SK BT JIS B 6339	Shank: SK CAT(CV) ANSI B5.50	Shank: SK DV DIN 69871
SK Shank (Rübig)	Shank: Cylindrical Whistle Notch with Drive and Flange	Shank: Cylindrical with Flat and Flange	KM™ Shank	Helix Angle: 0°

(continued)

Holemaking Icons *(continued)*

Helix Angle: 30°	Chamfer Form A (6–8)	Chamfer Form B (3–5)	Chamfer Form: 3–4	Chamfer Form C (2–3)
Chamfer Form D (3,5–5)	Chamfer Form E (1,5–2)	Chamfer Form: 2,5–3,5	Chamfer Form: 4–6	Chamfer Form: 1–2
Tip Angle: 118°	Tip Angle: 130°	Tapping Helix Angle: 0°	Tapping Helix Angle: L8°	Tapping Helix Angle: 10°
Tapping Helix Angle: 15°	Tapping Helix Angle: L15°	Tapping Helix Angle: 25°	Tapping Helix Angle: 30°	Tapping Helix Angle: 42°
Tapping Helix Angle: 45°	Tapping Helix Angle: 49°	Balance (G 6.3/6,000)	Balance (G 6.3/25,000)	Balance (G 6.3/10,000)
DIN Number 371	DIN Number 374	DIN Number 376	DIN Number 2174	DIN Number 6535
DIN Number 6537	Drilling: No Coolant	Drilling: Through Coolant	Reaming: Through Coolant	Tapping: Through Coolant
Through Coolant: Radial: Indexable Drilling	Flood Coolant: Drilling	Flood Coolant: Tapping	Through Coolant: MQL (Minimum Quantity Lubricant): Drilling	Coolant: Through Coolant
Through Coolant: Axial: Reaming	Through Coolant: Axial: Tapping	Through Coolant: Coolant Entry AD	Through Coolant: Flange Coolant Entry B	Tool Dimensions: 2flute/2margin/coolant
Tool Dimensions: 2 Flute/2 Margin/ No Coolant	Tool Dimensions: 2 Flute/3 Margin/ Coolant	Tool Dimensions: 2 Flute/4 Margin/ Coolant	Tool Dimensions: 2 Flute/4 Margin/ No Coolant	Tool Dimensions: 2 Flute/4 Margin/ X/Coolant
Tool Dimensions: 3 Flute/3 Margin/ Coolant	2B Class of Fit: 2B	3B Class of Fit: 3B	6H Class of Fit: 6H	6HX Class of Fit: 6HX
2BX Class of Fit: 2BX	3BX Class of Fit: 3BX	NPT American Tapered Pipe Thread for Threads **with Dryseal Material**	NPTF American Tapered Pipe Thread for Threads **without Dryseal Material**	ANSI American National Standards Institute
NPS American Standard Straight Pipe Thread	NPSF American Standard Straight Pipe Thread Dryseal	BSPF British Standard Pipe Fitting Thread	BSPT British Standard Pipe Taper Thread	G Whitworth Pipe Thread
Rp Cylindrical Whitworth Pipe Thread	Rc Tapered Whitworth Pipe Thread	UNF Unified Fine Thread	UNC Unified Coarse Thread	M ISO Metric Coarse Thread
MF ISO Metric Fine Thread	Flute Configuration: 2	Flute Configuration: 3		

Solid End Milling Icons

Plunge Milling	Ramping: Blank	Slotting: Ball Nose	Slotting: Ball Nose with AP Dimension	Slotting: Square End
Slotting: Square End with AP Dimension	Side Milling/Shoulder Milling: Ball Nose	Side Milling/Shoulder Milling: Ball Nose with AE/AP dimensions	Side Milling/Shoulder Milling: Square End	Side Milling/Shoulder Milling: Square End with AE/AP Dimensions
Side Milling/Shoulder Milling: Roughing	3D Profiling	3D Profiling with AE/AP Dimensions	Corner Style: Ball Nose	Corner Style: Corner Chamfer
Corner Style: Corner Radius	Corner Style: Square End	Corner Style: Torus	Shank: Cylindrical Plain	Shank: Cylindrical Weldon®
Helix Angle: 15°	Helix Angle: 20°	Helix Angle: 25°	Helix Angle: 30°	Helix Angle: 35°
Helix Angle: 37°	Helix Angle: 38°	Helix Angle: 40°	Helix Angle: 43°	Helix Angle: 45°
Helix Angle: 50°	Helix Angle: 60°	DIN Number 6527	DIN Number 6528	Drilling: Through Coolant
Tool Dimensions: Flute Configuration: X (Variable)	Tool Dimensions: Flute Configuration: 2	Tool Dimensions: Flute Configuration: 3	Tool Dimensions: Flute Configuration: 4	Tool Dimensions: Flute Configuration: 5
Tool Dimensions: Flute Configuration: 6				

Indexable Milling Icons

Drilling	Face Milling	Helical Milling	Plunge Milling	Ramping: Blank
Slotting: Ball Nose	Slotting: Side	Slotting: Side with AE/AP Dimensions	Slotting: Square End	Slotting: T
Slotting: T with AP Dimension	Side Milling/Shoulder Milling: Ball Nose	Side Milling/Shoulder Milling: Bottom Shouldering	Side Milling/Shoulder Milling: Bottom Shouldering with AE/AP Dimensions	Side Milling/Shoulder Milling: Square End
Side Milling/Shoulder Milling: Square End with AE/AP Dimensions	Side Milling/Shoulder Milling: Eased Chamfer	3D Profiling	Pocketing	Shank: Cylindrical Plain
Shank: HSK DIN 69893	Milling: Side and Face	Shank: Cylindrical Weldon®	Shank: Cylindrical Weldon 2 Flat	Shank: Screw-On
SK Shank: R8	Shank: SK BT JIS B 6339	Shank: SK CAT(CV) ANSI B5.50	Milling: Through Coolant	

DIN — German Institute for Standardisation

ANSI — American National Standards Institute

History

Innovation, perseverance, and close attention to customer needs have characterised Kennametal since its founding in 1938. Metallurgist Philip M. McKenna pioneered the use of a tungsten-titanium carbide alloy in cutting tools, and in the process, rewrote the standards for machining steel.

Kennametal has not rested since.

Today, we are a diverse, global enterprise with nearly 11,000 employees doing business in more than 60 countries, with approximately $2 billion in annual revenues. Our reputation for innovation is kept alive by more than 700 highly trained and experienced technical personnel, a forward-focused group that averages 40 US patents each year.

With Kennametal, you'll discover a strategic partner that can be counted on to listen first — and then lead.

1848 Greenfield Tap & Die is founded

1938 McKenna Metals Co. organised

1958 Expands, forming Kennametal Overseas Corporation

1991 Kennametal spends $27 million to build its Corporate Technology Center

1997 Kennametal acquires Greenfield Industries Inc.

2004 Kennametal purchases Conforma Clad

2007 China investment — Tianjin opens
Kennametal acquires ISA

2009 Kennametal acquires Romicron™

2010
Kennametal implements transformation aligned to segments

2008 Kennametal acquires Tricon

2006 Kennametal acquires Sintec and Camco

2002 Kennametal acquires WIDIA (India) Ltd.

1993 Kennametal acquires German toolmaker, Hertel AG

1967 Kennametal completes its initial public offering of stock

1943 McKenna Metals is incorporated as Kennametal Inc.

1925 WIDIA™ is founded

P Steel
M Stainless Steel
K Cast Iron
N Non-Ferrous Materials
S High-Temp Alloys
H Hardened Materials

Material Overview • ANSI

KENNAMETAL

material group	description	content	tensile strength RM (MPa)*	hardness (HB)	hardness (HRC)	material number
P0	Low-Carbon Steels, Long Chipping	C <0,25%	<530	<125	–	A36, 1008, 1010, 1018 through 1029; 1108, 1117
P1	Low-Carbon Steels, Short Chipping, Free Machining	C <0,25%	<530	<125	–	10L18, 1200 Series, 1213, 12L14
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	1035, 1045, 10L45, 1050, 10L50, 1080, 1137, 1144, 11L44, 1525, 1545, 1572
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T
P5	Ferritic, Martensitic, and PH Stainless Steels	–	600–900	<330	<35	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	–	900–1350	350–450	35–48	15–5 PH, 13–8 PH, 17–4 PH, 400 and 500 Series
M1	Austenitic Stainless Steel	–	<600	130-200	–	200 Series, 301, 302, 304, 304L, 309
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	–	600–800	150–230	<25	310, 316, 316L, 321, 347, 384 ASTM Cast XM-1, XM-5, XM-7, XM-21
M3	Duplex Stainless Steel	–	<800	135–275	<30	323, 329, F55, 2205, S329000
K1	Grey Cast Iron	–	125–500	120–290	<32	class 20, 25, 30, 35, 40, 45, 50, 55, 60, G1800, G3000, G3500, G4000
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	–	<600	130–260	<28	60-40-18, 65-45-12, 80-55-06, SAE J434:D4018, D4512, D5506, ASTM A47: Grade 32510, 35018, SAE J158: Grade M3210, M4504, M5003, M5503, M7002, ASTM A842: Grade 250, 300, 350, 400, 450
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	–	>600	180–350	<43	ASTM A536:100-70-03, 120-90-02, SAE J434: D7003, SAE J158: Grade M8501AST A897: 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185
N1	Wrought Aluminium	–	–	–	–	2025, 5050, 7050, 1000, 2017
N2	Low-Silicon Aluminium Alloys and Magnesium Alloys	Si <12,2%	–	–	–	2024, 6061, 7075
N3	High-Silicon Aluminium Alloys and Magnesium Alloys	Si > 12,2%	–	–	–	–
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	C81500
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass	–	–	–	–	–
N6	Carbon, Graphite Composites, CFRP	–	–	–	–	Graphite, CFK, CFRP
N7	Metal Matrix Composites (MMC)	–	–	–	–	C63000
S1	Iron-Based, Heat-Resistant Alloys	–	500–1200	160–260	25–48	A-286, INCOLOY® 800 Series, A608, A567, Discaloy™, INVAR®, N-155, 16-25-6, 19-9 DL; Cast: ASTM A-297, A-351, A-567, A-608
S2	Cobalt-Based, Heat-Resistant Alloys	–	1000–1450	250–450	25–48	Haynes® 25 (L605), Haynes 188, J-1570, Stellite®, AiResist 213; Cast: AiResist 13, Haynes 21, MAR-M302, MAR-M509, NASA Co-W-Re, WI-52
S3	Nickel-Based, Heat-Resistant Alloys	–	600–1700	160–450	<48	Astroloy™, Hastelloy® B/C/ C-276 /X, INCONEL® 600 and 700 Series, IN102, INCOLOY 900 Series, Rene 41, Waspalloy® Monel® K-500, MAR-M20, NIMONIC® UDIMET®
S4	Titanium and Titanium Alloys	–	900–1600	300–400	33–48	Pure: Ti 98.8, Ti 98.9,Ti 99.9; Alloyed: Ti 5Al-2.5Sn, Ti6Al-4V, Ti6Al-2Sn-4Zr-2Mo, Ti-3Al-8V-6Cr-4Mo-4Zr, Ti-10V-2Fe-3Al, Ti-13V-11Cr-3Al
H1	Hardened Materials	–	–	–	44–48	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H2	Hardened Materials	–	–	–	48–55	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H3	Hardened Materials	–	–	–	56–60	Tool Steel H10, H11, H13, D2, D3, 4340, P20
H4	Hardened Materials	–	–	–	>60	Tool Steel H10, H11, H13, D2, D3, 4340, P20

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

Material Overview • DIN

KENNAMETAL

material group	description	content	tensile strength RM (MPa)*	hardness (HB)	hardness (HRC)	material number
P0	Low-Carbon Steels, Long Chipping	C >0,25%	<530	<125	–	–
P1	Low-Carbon Steels, Short Chipping, Free Machining	C >0,25%	<530	<125	–	C15, Ck22, ST37-2, S235JR, 9SMnPb28, GS38
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	ST52, S355JR, C35, GS60, Cf53
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	16MnCr5, Ck45, 21CrMoV5-7, 38SMn28
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P5	Ferritic, Martensitic, and PH Stainless Steels	–	600–900	<330	<35	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	–	900–1350	350–450	35–48	X102CrMo17, G-X120Cr29
M1	Austenitic Stainless Steel	–	<600	130–200	–	X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi18 9, X15CrNiSi 20 12
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	–	600–800	150–230	<25	X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20
M3	Duplex Stainless Steel	–	<800	135–275	<30	X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4
K1	Grey Cast Iron	–	125–500	120–290	<32	GG15, GG25, GG30, GG40, GTW40
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	–	<600	130–260	<28	GGG40, GTS35
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	–	>600	180–350	<43	GGG60, GTW55, GTS65
N1	Wrought Aluminium	–	–	–	–	AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, ALMgSiPb
N2	Low-Silicon Aluminium Alloys and Magnesium Alloys	Si <12,2%	–	–	–	GAlSiCu4, GDAlSi10Mg
N3	High-Silicon Aluminium Alloys	Si >12,2%	–	–	–	G-ALSi12, G-AlSi17Cu4, G-AlSi21CuNiMg
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	–	–	–	–	CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass	–	–	–	–	LEXAN®, HOSTALEN™, Polystyrol, Makralon®
N6	Carbon, Graphite Composites, CFRP	–	–	–	–	CFK, GFK
N7	Metal Matrix Composites (MMC)	–	–	–	–	–
S1	Iron-Based, Heat-Resistant Alloys	–	500–1200	160–260	25–48	X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20
S2	Cobalt-Based, Heat-Resistant Alloys	–	1000–1450	250–450	25–48	Haynes® 188, Stellite® 6,21,31
S3	Nickel-Based, Heat-Resistant Alloys	–	600–1700	160–450	<48	INCONEL® 690, INCONEL 625, Hastelloy®, NIMONIC® 75
S4	Titanium and Titanium Alloys	–	900–1600	300–400	33–48	Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2
H1	Hardened Materials	–	–	–	44–48	GX260NiCr42, GX330NiCr42, GX300CrNiSi952, GX300CrMo153, HARDOX® 400
H2	Hardened Materials	–	–	–	48–55	–
H3	Hardened Materials	–	–	–	56–60	–
H4	Hardened Materials	–	–	–	>60	–

Who We Serve

As a global solutions provider, Kennametal is everywhere our customers need us to be.

We support enterprises operating in everything from airframes to coal mining, from engines to natural gas wells, from turbochargers to construction. Just as every customer is different, so are their needs, but they recognise the extraordinary contributions Kennametal has made — and continues to make — to their value chains.

From Buenos Aires to Beijing, Moscow to Fuerth, and Houston to Tokyo, Kennametal is at the epicenter of today's most compelling operations in hundreds of geographies and rapidly expanding industries. Our global presence facilitates rapid responses to our client's most challenging needs. The application experts who make up our field sales force become immersed in customers' operations — the mine, the shop floor, the construction site — so they can quickly solve problems and increase productivity. After all, the world is our proving ground for the technologies and next-generation solutions we engineer every day.

Customers turn to Kennametal to increase productivity and profitability, regardless of the challenge they face.
They demand a partner with Different Thinking.

Kennametal

Tooling Systems

2013 Catalogue

Kennametal is proud to present the latest Kennametal Tooling Systems catalogue, featuring the new KM4X™, proven to offer the best performance from the machine tool and handle the toughest materials. Other products range from ISO standard KM™ Quick Change tooling to ERICKSON™ toolholder systems: HSK, DV, BT, CAT, Shrink Fit, hydraulic chucks, collet systems as well as commodity-type holders to fully support your individual application needs.

Look for the catalogue **Summer/Fall 2012.** Contact your local Authorised Distributor or visit **www.kennametal.com** for more information.

Our All-New Grade and Geometry Converter Mobile Application Is Available as a **Free Download** from the iTunes™ App Store and Android™ Marketplace.

Now Available

Our app is an excellent tool that enables you to input competitor grade and geometry information to find the equivalent Kennametal grades and geometries for a wide range of competitive grades and geometries in your application.

Easy to Download

Go to your device's application store and search for "Kennametal", and then follow your application store's directions on downloading. It's simple, fast, and free.

Easy to Use

Once the application is downloaded on your mobile device, launch the application, and select the "convert" tab at the bottom of the screen. Next, choose if you want to convert by competitor grade or geometry.

Once you decide, select a manufacturer from the list, and select the grade or geometry. The application will then display all of Kennametal's comparable grades or geometries in different material types.

If you already know your grade or geometry, you can use the search tab at the bottom of the screen to search by competitor grade or geometry and display the Kennametal equivalent.

KENNAMETAL®

Metalcutting Safety

IMPORTANT SAFETY INSTRUCTIONS

Read before using the tools in this catalogue!

Projectile and Fragmentation Hazards:

Modern metalcutting operations involve high spindle and cutter speeds and high temperatures and cutting forces. Hot metal chips may fly off the workpiece during metalcutting. Although cutting tools are designed and manufactured to withstand high cutting forces and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metalcutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards:

Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing this dust or mist — especially over an extended period — can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, mist, or sludge from grinding.
- Avoid skin contact with dust or mist.

For more information, read the applicable Material Safety Data Sheet provided by Kennametal and consult General Industry Safety and Health Regulations, Part 1910, Title 29 of the Code of Federal Regulations.

These safety instructions are general guidelines. Many variables affect machining operations. It is impossible to cover every specific situation. The technical information included in this catalogue and recommendations on machining practices may not apply to your particular operation. For more information, consult Kennametal's Metalcutting Safety booklet, available free from Kennametal at 724.539.5747 or fax 724.539.5439. For specific product safety and environmental questions, contact our Corporate Environmental Health and Safety Office at 724.539.5066 or fax 724.539.5372.

Kennametal, the stylized K, A2, A3 , A4, AluMill, Beyond BLAST, Beyond, Capto, CTR, DFR, DFS, DFT, Dodeka MAX, Dodeka, Drill Fix, ERICKSON, Fix-Perfect, GOdrill, GOmill, HARVI II, HARVI I, HARVI, HexaCut, K-Lock, K10, KB1340, KB1630, KB1645, KB5610, KB5625, KB5630, KC5010, KC5025, KC6005, KC6305, KC7140, KC7205, KC7210, KC7235, KC7315, KC7320, KC7325, KC7410, KC7512, KC7542, KCK10, KCM15, KCMS, KCN05, KCN05, KCP15, KCPK10, KCPK15, KCU10, KCU25, KCU25, KCU40, KD1400, KD1405, KD1415, KD1425, KDF400, KDMB, KDMR, KDMS, KDMT, Kenclamp, Kendex, KenFeed, Kenlever, Kenloc, Kenna Perfect, Kenna Universal, Kennametal Blue Box, Kennametal Extrude Hone, Kennametal ToolBOSS, Kennametal, KenTIP, KF1, KFSR, KIPR, KM40TS, KM4X, KM4X, KM50TS, KMM, KM, KN15, KN25, KSCM , KSEM PLUS, KSEM, KSOM, KSRM, KSSM, KSSR, KSSS, KT325, KT6215, KTMS, KVNS, LOIS, MaxiMet, Mazak, Mill 1-10, Mill 1-14, Mill 1-18, Mill 1-25, Mill 1, ModBORE, Quattro Cut, RHM-E, RHM, RIQ, RIR, RMB, RMS, Rodeka, Romicron, SAFE-λOCK, SEFAS, SIF, Top Notch, Wedgelock, Weldon, Whistle Notch, WIDIA, and Y-TECH are trademarks of Kennametal, Inc. and are used as such herein. The absence of a product, service name, or logo from this list does not constitute a waiver of Kennametal's trademark or other intellectual property rights concerning that name or logo.

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INNOVATIONS

MASTER CATALOGUE

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