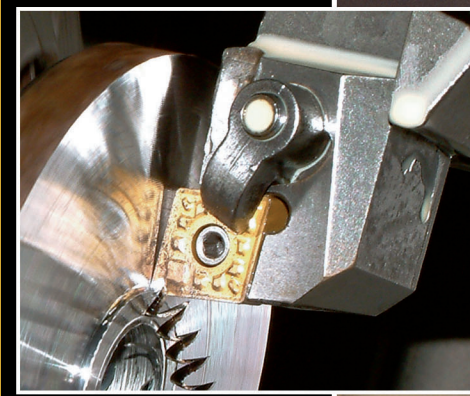
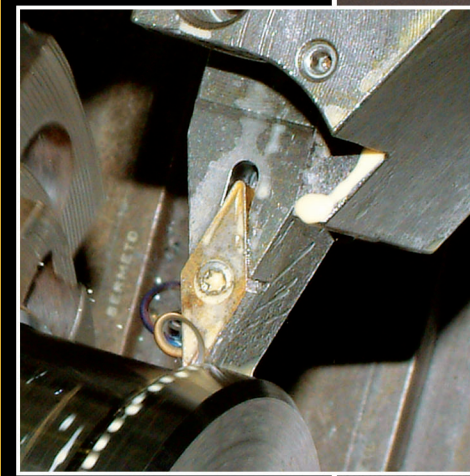


TURNING AND MILLING



CATALOG
CATALOGUE
KATALOG

KIMU

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Wendeschneidplatten **A01**

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Barres d'alésage
Bohrstangen **C01**

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Inserts

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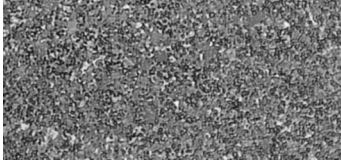
Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors



K15K

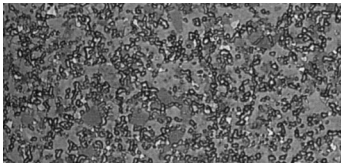
K10

Finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys.

Une nuance de finition dans la gamme K10. Cette nuance de carbure s'utilise pour la fonte, l'aluminium et les alliages résistants au chaud. Elle travaille bien dans les alliages avec base de cobalt et les matériaux synthétiques et est appropriée aussi pour la finition en alliages résistants au chaud.

Es ist eine Sorte zum Schlichten, im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständige Legierungen geeignet. Sie hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetische Materialien und ist für das Schlichten in hitzebeständigen Legierungen besonders gut geeignet.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| P05 | P10 | P15 | P20 | P25 | P30 | P35 | P40 | P45 | P50 | M05 | M10 | M15 | M20 | M25 | M30 | M35 | M40 | K05 | K10 | K15 | K20 | K25 | K30 | K35 | K40 | N05 | N10 | N15 | N20 | N25 | N30 | S05 | S10 | S15 | S20 | S25 | S30 | H05 | H10 | H15 | H20 | H25 | H30 |
| P | | | | | | | | | | M | | | | | | | K | | | | | N | | | | | | S | | | H | | | | | | | | | | | | |



P25K

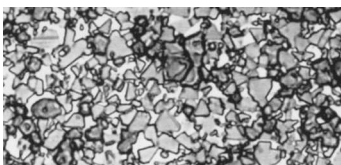
P25 - M20

General purpose uncoated grade in the P30 range. This tough, economical grade is suitable to work carbon steels, alloyed steels, tool steels and stainless steels. P25K provides toughness and resistance to deformation in roughing and semi-finishing applications.

Une nuance non revêtue d'usage général dans la gamme P30. Cette nuance dure et économique est prévue pour usiner l'acier au carbone, l'acier allié, l'acier à outils et l'acier inoxydable. P25K proportionne dureté et résistance à la déformation dans des opérations d'ébauche et semi-finition.

Eine allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet. P25K hat eine gute Zähigkeit und Verschleißfestigkeit in Schrupp- und mittlere Schlichtarbeiten.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| P05 | P10 | P15 | P20 | P25 | P30 | P35 | P40 | P45 | P50 | M05 | M10 | M15 | M20 | M25 | M30 | M35 | M40 | K05 | K10 | K15 | K20 | K25 | K30 | K35 | K40 | N05 | N10 | N15 | N20 | N25 | N30 | S05 | S10 | S15 | S20 | S25 | S30 | H05 | H10 | H15 | H20 | H25 | H30 |
| P | | | | | | | | | | M | | | | | | | K | | | | | N | | | | | | S | | | H | | | | | | | | | | | | |



P40K

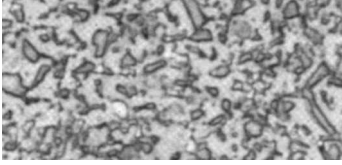
P40 - M30

Roughing grade in the P35 range. This tough grade is for structural, cast and tool steels. It is recommended when toughness is more important than wear resistance.

Une nuance pour l'ébauche dans la gamme P35. Cette nuance dure est pour l'acier de construction, l'acier coulé et l'acier à outils. Recommandé quand la dureté est plus importante que la résistance à l'usure.

Eine Sorte zum Schruppen im P35 Bereich. Diese zähe Sorte ist für Baustahl, Stahlguß und Werkzeugstahl geeignet, insbesondere wenn die Zähigkeit wichtiger als die Verschleißfestigkeit ist.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| P05 | P10 | P15 | P20 | P25 | P30 | P35 | P40 | P45 | P50 | M05 | M10 | M15 | M20 | M25 | M30 | M35 | M40 | K05 | K10 | K15 | K20 | K25 | K30 | K35 | K40 | N05 | N10 | N15 | N20 | N25 | N30 | S05 | S10 | S15 | S20 | S25 | S30 | H05 | H10 | H15 | H20 | H25 | H30 |
| P | | | | | | | | | | M | | | | | | | K | | | | | N | | | | | | S | | | H | | | | | | | | | | | | |



CK30

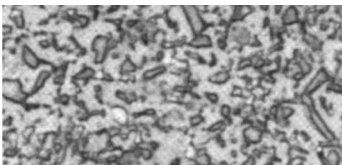
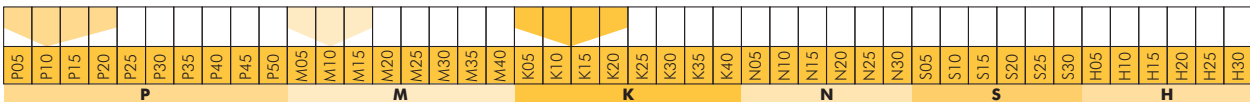
P15 - M10 - K10

CK30 is a newly developed Cermet applicable for a wide range of cutting conditions as a standard grade for general machining of steel. It can successfully be used for a range of cutting speeds from (100 to 200 m/min) with better wear resistance than conventional TiC Cermet. It gives an excellent performance from semi-finish operation of ductile cast iron at cutting speeds of 200 m/min. or less.

CK30 est un Cermet développé récemment, qui s'applique à une large gamme de conditions de coupe comme nuance standard pour l'usinage général de l'acier. Il peut être utilisé avec succès pour une gamme de vitesses de coupe de 100 m/min à 200 m/min avec une meilleure résistance que le Cermet TiC conventionnel. Il est aussi performant pour les opérations de semi-finition et finition pour fonte malléable avec une vitesse de coupe de 200 m/min ou moins.

Ce Cermet peut améliorer l'état de surface, plus spécialement en ce qui concerne l'alésage fin, parce qu'il a moins d'affinité avec les pièces à usiner, parce qu'il génère moins d'arête rapportée et il peut s'appliquer avec une large gamme de vitesses de coupe.

Das CK30 ist ein Titan-Nitrid Cermet, das für eine Vielfalt von Schnittdaten geeignet ist, als Standardsorte zum Drehen in Stahl. Es wird mit Erfolg für einen großen Schnittgeschwindigkeitbereich von 100 m/min. bis 200 m/min. verwendet und hat eine bessere Verschleißfestigkeit als konventionelles TiC Cermet. Es besitzt eine außergewöhnliche Bruchfestigkeit, ohne den Verschleißwiderstand der TiC-Cermets zu mindern. Durch seine Unempfindlichkeit gegen Aufbauschneiden und Kolkverschleiß erreicht man eine sehr gute Oberflächengüte der Werkstücke.



CK40

P15 - M10 - K10

CK40 is a newly developed Cermet applicable for a wide range of cutting conditions as a standard grade for general machining of steel. It can successfully be used for a range of cutting speeds from (100 to 200 m/min) with better wear resistance than conventional TiC Cermet. It gives an excellent performance from semi-finish to finish operation of ductile cast iron at cutting speeds of 200 m/min. or less.

CK40 est un Cermet développé récemment, qui s'applique à une large gamme de conditions de coupe comme nuance standard pour l'usinage général de l'acier. Il peut être utilisé avec succès pour une gamme de vitesses de coupe de 100 m/min à 200 m/min avec une meilleure résistance que le Cermet TiC conventionnel. Il est aussi performant pour les opérations de semi-finition et finition pour fonte malléable avec une vitesse de coupe de 200 m/min ou moins.

Das CK40 ist ein neu entwickeltes Cermet, das für eine Vielfalt von Schnittdaten geeignet ist, als Standardsorte zum Fräsen in Stahl (Vorschlichten und Feinschlichten bei Nass- und Trockenbearbeitung). Es wird mit Erfolg für einen großen Schnittgeschwindigkeitbereich von 100 m/min bis 200 m/min. verwendet und hat eine bessere Verschleißfestigkeit als konventionelles TiC Cermet und auch hervorragendes Thermoschockverhalten. Der hohe Bruchwiderstand ermöglicht den Einsatz sowohl bei geringerem Schruppen als auch bei Schlichten von Temperguß bei eine Geschwindigkeit von 200 m/min oder mehr.



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Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

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grooving

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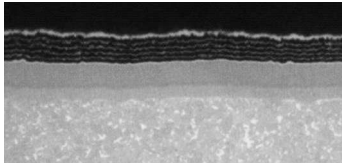
Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors



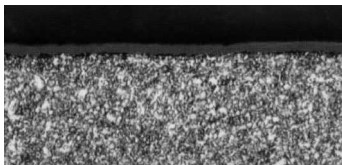
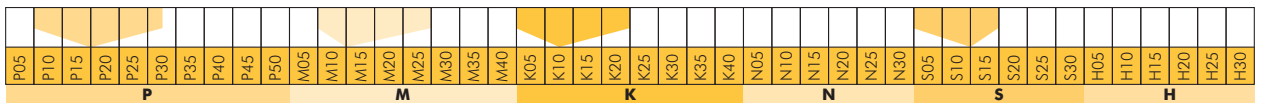
TIC15

P15 - M15 - K15

Wear resistant finishing to intermediate grade suitable for many applications on steel, cast iron, stainless steel and high temperature alloys. It is generally used at higher speeds where deformation may be a problem. The multi-layer coating includes TiCN and aluminium oxide.

C'est une nuance résistante à l'usure pour beaucoup d'opérations de semi-finition et finition en acier, fonte, acier inoxydable et alliages de haute température. Normalement s'utilise à des vitesses élevées où la déformation peut être un problème. Le revêtement multicouche contient du TiCN et de l'oxyde d'aluminium.

Es ist eine verschleißfeste Sorte zum mittleren Schruppen und Schlichten in Stahl, Guß, rostfreiem Stahl und hochlegierte Stähle. Normalerweise wird sie bei hohen Schnittgeschwindigkeiten verwendet, wo die Verformung ein Problem sein kann. Die mehrlagige Beschichtung enthält TiCN und Aluminiumoxyd.



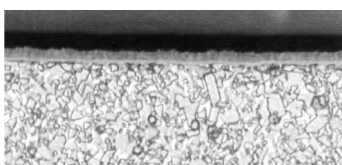
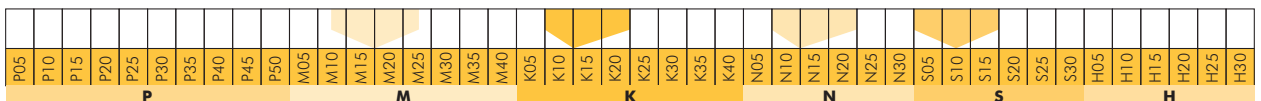
TIC17

K20 - M20

Coated TiAlN grade in the K20 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys.

Une nuance TiAlN pour finition, dans la gamme K20. Cette nuance s'utilise dans la fonte, aluminium et alliages résistants au chaud. Elle travaille bien dans les alliages avec base de cobalt et les matériaux synthétiques et est appropriée aussi pour la finition en alliages résistants au chaud.

Es ist eine TiAlN beschichtete Sorte zum Schlichten im K20 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständige Legierungen geeignet. Es hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetische Materialien und ist für Schlichten in hitzebeständigen Legierungen besonders gut geeignet.



TIC21

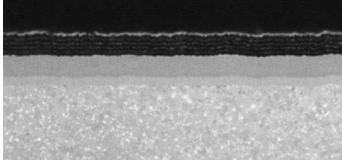
P20 - M20 - K15

Carbide coated grade with Tin-MT TiCN-Al₂O₃ by CVD. For use on steel, alloyed steel and cast iron. With its aluminium oxide coating, the grade TIC21 is recommended every time wear characteristics are more important than toughness.

Nuance en carbure Tin-MT TiCN-Al₂O₃ en CVD. Pour une utilisation sur l'acier, les aciers alliés et la fonte. Avec son revêtement d'oxyde d'aluminium, la nuance TIC21 est recommandée quand la résistance à l'usure est plus importante que la dureté.

CVD-beschichtete Sorte mit Tin-MT TiCN-Al₂O₃. Sie kann für Stahl, legiertem Stahl und Guß verwendet werden. Mit der Aluminium-Oxyd-Schicht, ist diese Sorte zu empfehlen wenn die Verschleißfestigkeit wichtiger als die Zähigkeit ist.





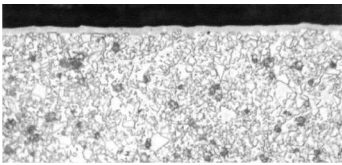
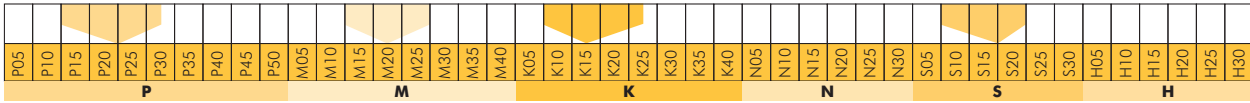
TIC20

P20 - M20 - K20

General purpose wear resistant grade. It has enriched substrate which has exceptionally good deformation as well as fracture resistance. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel and stainless steel at lower speeds than TIC15.

C'est une nuance générale résistant à l'usure. Elle a un substrat enrichi qui a une déformation exceptionnellement bonne et aussi une résistance à la fracture. Cette nuance multicouche contient de l'oxyde d'aluminium pour ajouter de la chaleur additionnelle et résistance à l'usure. Elle s'utilise pour usiner l'acier et l'acier inoxydable à des vitesses plus basses que la TIC15.

Es ist eine allgemeine verschleißfeste Sorte. Sie enthält ein angereichertes Substrat, das eine hervorragende Verformung und Bruchfestigkeit hat. Die mehrlagige Beschichtung enthält Aluminiumoxyd, um zusätzliche Wärme und Verschleißfestigkeit zu erreichen. Es wird für die Bearbeitung von Stahl und rostfreiem Stahl bei niedrigeren Geschwindigkeiten als TIC15 benutzt.



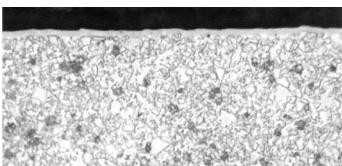
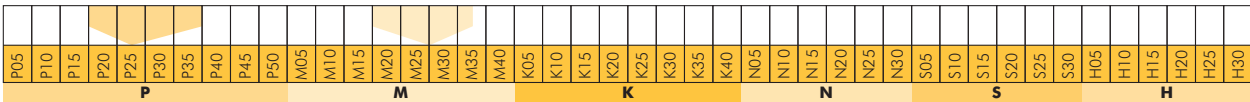
TIC25

P25 - M20

Coated with TiN-TiC-TiN. Coating thickness 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant. With coolant, TIC25 performs well when milling titanium or nickel based alloys, and ductile iron.

Nuance avec revêtement TiN-TiC-TiN. L'épaisseur de la couche est de 3-5 microns, pour une utilisation sur acier, acier allié et acier inoxydable avec ou sans arrosage. Avec arrosage, le TIC25 se comporte bien lors du fraisage de titane ou alliages de nickel et de fer ductile.

Mit TiN-TiC-TiN beschichtet. Die Dicke der Schicht ist 3-5 Mikron. Zur Bearbeitung von Stahl, legierten Stahl und rostfreien Stahl geeignet, mit oder ohne Kühlung. TIC25 hat auch gute Zerspanungsleistung bei der Bearbeitung von Titan- oder Nickel-Legierungen sowie Sphäroguß.



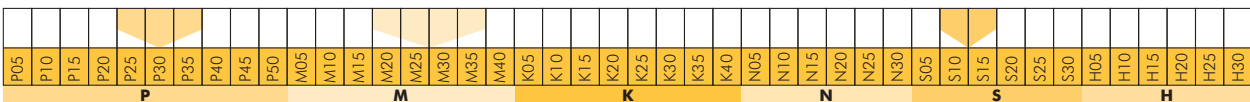
TIC28

P30 - M30

Micrograin carbide grade enhanced with multilayer PVD coating that offers a lower friction coefficient and a sharper cutting edge. TIC28 is Kimu's first choice for Stainless and alloy steels at low to medium cutting speeds and for unstable machining conditions. The sharp cutting edge achieved by the PVD coating gives the workpiece an excellent surface finish.

La nuance TIC28 est un carbure micrograin amélioré par un revêtement PVD multicouche: elle offre un faible coefficient de friction et une arête de coupe plus affûtée. Cette nuance est le premier choix de la gamme Kimu pour les aciers inoxydables, pour les aciers alliés à basse et moyenne vitesse de coupe, et pour les conditions d'usinage instables. Arête de coupe affûtée obtenue par le revêtement PVD garantit un excellent état de surface de la pièce à usiner.

Hartmetall-Mikrokorn-Sorte, mit einer PVD-Mehrlagenbeschichtung, die einen niedrigeren Reibungskoeffizient und eine scharfere Schneide bietet. Die Sorte TIC28 ist die erste Wahl von Kimu für die Bearbeitung von rostfreiem und legiertem Stahl mit niedrigen oder mittleren Schnittgeschwindigkeiten sowie für instabile Bearbeitungsbedingungen. Die scharfe Schneidkante, die mit der PVD-Beschichtung erreicht wird, erzielt am Werkstück eine ausgezeichnete Oberflächengüte.



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Grade chart

| | K15K | P25K | P40K | CK30 | CK40 | TIC15 | TIC17 | TIC21 | TIC20 | TIC25 | TIC28 | TIC30 | TIC35 | TK30 | T20L | T40L | Z10R |
|----------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| P | P05 | | | | | | | | | | | | | | | | |
| | P10 | | | | | | | | | | | | | | | | |
| | P15 | | | | | | | | | | | | | | | | |
| | P20 | | | | | | | | | | | | | | | | |
| | P25 | | | | | | | | | | | | | | | | |
| | P30 | | | | | | | | | | | | | | | | |
| | P35 | | | | | | | | | | | | | | | | |
| | P40 | | | | | | | | | | | | | | | | |
| | P45 | | | | | | | | | | | | | | | | |
| | P50 | | | | | | | | | | | | | | | | |
| M | M05 | | | | | | | | | | | | | | | | |
| | M10 | | | | | | | | | | | | | | | | |
| | M15 | | | | | | | | | | | | | | | | |
| | M20 | | | | | | | | | | | | | | | | |
| | M25 | | | | | | | | | | | | | | | | |
| | M30 | | | | | | | | | | | | | | | | |
| | M35 | | | | | | | | | | | | | | | | |
| | M40 | | | | | | | | | | | | | | | | |
| K | K05 | | | | | | | | | | | | | | | | |
| | K10 | | | | | | | | | | | | | | | | |
| | K15 | | | | | | | | | | | | | | | | |
| | K20 | | | | | | | | | | | | | | | | |
| | K25 | | | | | | | | | | | | | | | | |
| | K30 | | | | | | | | | | | | | | | | |
| | K35 | | | | | | | | | | | | | | | | |
| | K40 | | | | | | | | | | | | | | | | |
| N | N05 | | | | | | | | | | | | | | | | |
| | N10 | | | | | | | | | | | | | | | | |
| | N15 | | | | | | | | | | | | | | | | |
| | N20 | | | | | | | | | | | | | | | | |
| | N25 | | | | | | | | | | | | | | | | |
| S | S05 | | | | | | | | | | | | | | | | |
| | S10 | | | | | | | | | | | | | | | | |
| | S15 | | | | | | | | | | | | | | | | |
| | S20 | | | | | | | | | | | | | | | | |
| | S25 | | | | | | | | | | | | | | | | |
| | S30 | | | | | | | | | | | | | | | | |
| | S35 | | | | | | | | | | | | | | | | |
| H | H05 | | | | | | | | | | | | | | | | |
| | H10 | | | | | | | | | | | | | | | | |
| | H15 | | | | | | | | | | | | | | | | |
| | H20 | | | | | | | | | | | | | | | | |
| | H25 | | | | | | | | | | | | | | | | |
| | H30 | | | | | | | | | | | | | | | | |

Inserts

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Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

KX1

KX1 is ultimate silicon-nitride material that has been developed to improve the notch wear of the conventional ceramics which contain silicon nitride.

To reduce notch wear amount in machining gray cast iron, the binding intergranular phase of silicon-nitride particles is changed to the higher-melting-point compound. This contributes to high temperature and high pressure sintering, so that the high density can be created.

This material doesn't cover only the conventional silicon-nitride ceramics application range, but also appears excellent performance under even higher speed machining conditions.

Le KX1 est un nitrure de silicium qui a été développé pour améliorer la résistance à l'usure des céramiques conventionnelles qui contiennent du nitrure de silicium. Pour réduire l'usure dans l'usinage de la fonte grise, la phase liante intergranulaire des particules du nitrure de silicium est changée jusqu'au composant avec le plus haut point de fusion. Cela contribue à la syntérisation à haute température et à haute pression, afin de créer une haute densité.

Ce matériel ne couvre pas seulement la gamme d'application des céramiques conventionnelles de nitrure de silicium, mais elle donne aussi un excellent rendement sous des conditions d'usage à une vitesse encore plus haute.

KX1 ist ein Siliziumnitrid Material, das entwickelt worden ist, um den Kerbverschleiß der konventionellen Keramiken zu verbessern. Um den Kerbverschleiß bei der Bearbeitung von Grauguß zu reduzieren, wurde die Interkorn-Bindephase der Siliziumnitrid-Partikel bis zum höchsten Schmelzpunkt-Verbund geändert. Das hilft beim Sintern bei hohen Temperaturen und hohem Druck, so daß eine hohe Dichte erzeugt wird. Dieses Material deckt nicht nur die Anwendungspalette von konventionellen Siliziumnitrid-Keramiken ab, sondern gibt auch eine hervorragende Leistung selbst bei der Bearbeitung bei höheren Schnittgeschwindigkeiten.

| | Main components | Major applications | Density g/cm ³ | Hardness HRA | Bending strength MPa | Young's modulus GPa | Thermal expansion coefficient X10 ⁻⁶ /K | Heat conductivity X10 ⁻⁶ /K |
|-----|---------------------------------|--|---------------------------|--------------|----------------------|---------------------|--|--|
| KX1 | Si ₃ Na ₄ | - Highly efficient cutting of gray cast iron | 3,2 | 93,5 | 1200 | 320 | 3,0 | 29 |

KC1

KC1 is a highly wear-resistant tool that has been formed into microstructure by adding a trace amount of zirconia (ZrO₂) to highly pure alumina (Al₂O₃), the main component of this tool material.

La KC1 est une nuance extrêmement résistante à l'usure qui a été transformée en microstructure en ajoutant une petite quantité de zircone (ZrO₂) à l'oxyde d'aluminium extrêmement pur (Al₂O₃), le composant principal de ce matériel.

KC1 ist eine hoch verschleißfeste Sorte, die eine Mikrostruktur geworden ist, indem man eine Spurmengung von Zirkonium (ZrO₂) zum Aluminium-Oxyd (Al₂O₃) hinzugefügt hat.

| | Main components | Major applications | Density g/cm ³ | Hardness HRA | Bending strength MPa | Young's modulus GPa | Thermal expansion coefficient X10 ⁻⁶ /K | Heat conductivity X10 ⁻⁶ /K |
|-----|--------------------------------|--|---------------------------|--------------|----------------------|---------------------|--|--|
| KC1 | Al ₂ O ₃ | - Semi-finishing and finishing of cast iron - Tube scarfing | 4,0 | 94,0 | 700 | 400 | 7,8 | 17 |

Inserts

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Inserts

KC2

This material is well-balanced between wear resistance and fracture resistance, and it works well in wide range of cutting cast iron and the turning of hard materials.

Ce matériel a un bon équilibre entre la résistance à l'usure et à la fracture et travaille bien en l'usinage de la fonte et le tournage des matériaux durs.

Dieses Material hat ein gutes Verhalten zwischen Verschleißfestigkeit und Bruchfestigkeit, und arbeitet gut bei der Bearbeitung von Grauguß und dem Drehen von harten Materialien.

Turning

Automatic
lathes

Ceramic
tools

| | Main components | Major applications | Density g/cm ³ | Hardness HRA | Bending strength MPa | Young's modulus GPa | Thermal expansion coefficient X10 ⁻⁶ /K | Heat conductivity X10 ⁻⁶ /K |
|-----|-------------------------------------|--|---------------------------|--------------|----------------------|---------------------|--|--|
| KC2 | Al ₂ O ₃ +TiC | - Semi-finishing and finishing of cast iron - Machining of hardened materials | 4,3 | 94,5 | 800 | 420 | 7,9 | 21 |

Parting &
grooving

KC4

Since the finest grain size particle, with high melting point, is composited KC4 improves in both hardness and strength, and it shows superior performance as a special material for machining high-hardened materials.

Les particules micrograin du KC4 ont un point de fusion assez haut. Cela améliore la dureté et la résistance, et montre un excellent rendement en l'usinage des matériels très endurcis.

Die Feinstkorn-Partikel von Komposit KC4 haben einen hohen Schmelzpunkt. Das verbessert die Härte und die Standzeit und zeigt eine hervorragende Leistung bei der Bearbeitung von hoch gehärteten Materialien.

Threading

Drills

| | Main components | Major applications | Density g/cm ³ | Hardness HRA | Bending strength MPa | Young's modulus GPa | Thermal expansion coefficient X10 ⁻⁶ /K | Heat conductivity X10 ⁻⁶ /K |
|-----|-------------------------------------|-----------------------------------|---------------------------|--------------|----------------------|---------------------|--|--|
| KC4 | Al ₂ O ₃ +TiC | - Machining of hardened materials | 4,6 | 95,5 | 1000 | 420 | 7,8 | 25 |

Cartridges

Brazed
tools

CBN

This CBN are formed with special ceramic binder based on CBN (Cubic Boron Nitride) particles, and CBN sintered layer is increasing thickness by carbide base.

CBN are high-performance tool materials that have high hardness at room temperature and high temperature and are almost free from chemical reactions against the material to be cut.

Le CBN est formé avec un agent relieur céramique spécial basé en particules de CBN (Nitre de Bore Cubique), et la couche de CBN syntérisée augmente l'épaisseur de la base de carbure. Le CBN est un matériel à haut rendement, qui a une haute dureté à température ambiante et à haute température, et il est presque libre des réactions chimiques contre le matériel que l'on doit couper avec.

CBN wird mit einem speziellen Keramik-Bindemittel gebildet, das CBN-Partikel (kubisches Bornitrid) enthält. Die gesinterte CBN Schicht liegt auf der Hartmetall-Basis.

CBN sind hochleistende Materialien, die eine hohe Härte bei Raumtemperatur und auch bei hoher Temperatur haben, und fast keine chemische Reaktionen gegen das zu bearbeitende Material zeigen.

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors

PKD

PKD consists of a 0,5 mm thick diamond layer, which is inseparably connected to a carbide base. This polycrystalline diamond layer originates at a pressing operation by bonding of smallest diamond grains, supported by a metallic bonding agent. This cutting material also has a very long tool life.

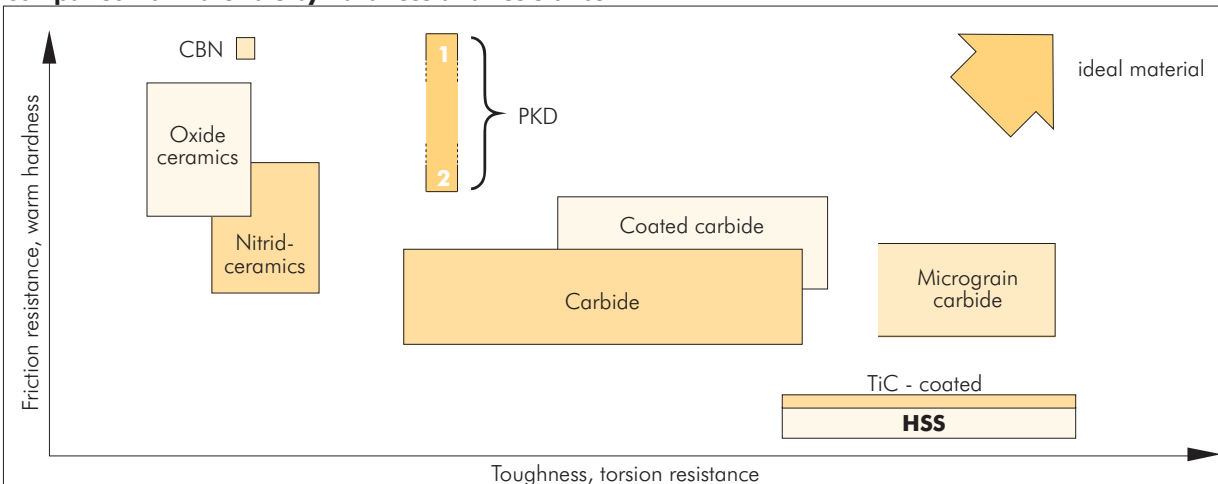
Le PKD se compose d'une couche de diamant d'épaisseur 0,5 millimètres, qui est inséparablement rattachée à une base de carbure. Cette couche de diamant polycristallin s'origine à une opération de pressage, laquelle fait attacher de très petits grains de diamant moyennant un liant métallique. Cette nuance a une très longue durabilité.

PKD besteht aus einer 0,5 mm dicken Diamant-Schicht, die mit einer Hartmetall-Basis untrennbar verbunden ist. Diese polykristalline Diamant-Schicht entsteht bei einer Pressoperation, die sehr kleine Diamant-Körner mit einem metallischen Bindemittel zusammenbindet. Diese Sorte erzielt lange Standzeiten bei der Bearbeitung von Kunststoffen und NE-Metallen.

| Polycrystalline boron nitride cutting material | | | | |
|--|--|-----------------|--------------------|---|
| Material | Vc = m/min. | Infeed f = mm/U | Depth of cut ap=mm | |
| CBN | - Hardened materials and nitriding steels | 60-120 | 0,03-0,2 | 1 |
| | - High temperature and corrosion resistant alloys with high nickel or cobalt content | 70-150 | 0,03-0,15 | 1 |
| | - Gray cast iron, especially hard and abrasion resistant types | 300-600 | 0,10-0,5 | 3 |
| | - High speed steel (HSS) | 60-120 | 0,03-0,1 | 1 |
| | - Metal powder spraying | 60-120 | 2 | 1 |

| Polycrystalline diamond cutting material | | | | |
|--|--|-----------------|--------------------|--|
| Material | Vc = m/min. | Infeed f = mm/U | Depth of cut ap=mm | |
| PKD | - Aluminium alloys under 3% SiC | 200-2000 | 0,05-0,4 | up to the whole diamond cutting edge up to 700 |
| | - Aluminium alloys up to 12% SiC | 150-1000 | 0,05-0,4 | |
| | - Aluminium alloys up to approx 21% SiC | 100-800 | 0,05-0,4 | |
| | - Brass, magnesium, zinc alloys | 200-2000 | 0,05-0,4 | |
| | - Copper, bronze, lead alloys | 200-1000 | 0,05-0,4 | |
| | - Duro and thermoplastics with and without fillers e. g. epoxy resin | 100-1000 | 0,05-0,2 | |
| | - Hard papers | 200-600 | 0,10-0,3 | |
| | - Hard and soft rubber with and without fillers | 100-500 | 0,10-0,3 | |
| | - Graphite and pre-sintered carbide | 100-500 | 0,10-0,4 | |
| | - Aluminium oxide, silicon, tungsten | 50-180 | 0,1 | |

Comparison of materials by hardness and resistance



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

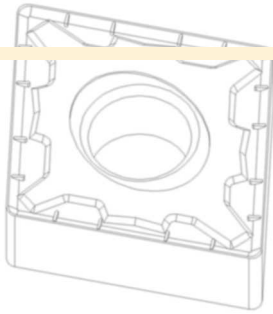
Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

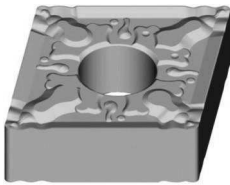


BASIC GEOMETRIES

- CF** - Finishing
- CM** - Medium
- CR** - Roughing
- CS** - Stainless steel

COMPLEMENTARY GEOMETRIES

- CFC** - Finishing Cermet
- CFM** - Finishing Medium
- CMC** - Medium Cermet
- CMF** - Medium Finishing
- CMR** - Medium Roughing



-CF Geometry

CF chipbreakers are engineered for light finishing operations at high speeds in the 0,08 mm to 0,3 mm feed range at depths of cut between (0,2 to 2,5 mm).

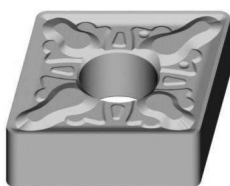
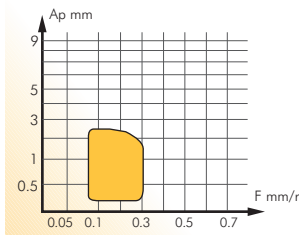
Main application area: Cutting depth (A_p): 0,2 - 2,5 mm
Feed (f): 0,08 - 0,3 mm

Les brise-copeaux CF ont été dessinés pour des opérations légères de finition à haute vitesse avec une avance de 0,08 à 0,3 mm et une profondeur de coupe de 0,2 à 2,5 mm.

Domaine d'application principal: Profondeur de coupe (A_p): 0,2 - 2,5 mm
Avance (f): 0,08 - 0,3 mm

Die CF Spanbrecher sind für leichte Schlichtoperationen zu hohen Geschwindigkeiten mit einem Vorschub von 0,08 bis 0,3 mm und eine Schnitttiefe von 0,2 bis 2,5 mm entworfen worden.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,2 - 2,5 mm
Vorschub (f): 0,08 - 0,3 mm



-CM Geometry

CM chipbreakers provide a positive rake angle with land for high edge strength in medium duty applications on a wide range of materials.

Recommended for general purpose use on all types of steel.

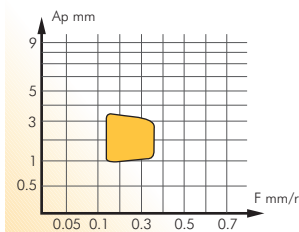
Main application area: Cutting depth (A_p): 1,0 - 3,5 mm
Feed (f): 0,15 - 0,35 mm

Les brise-copeaux CM proportionnent un angle de coupe positif, avec une haute résistance de l'arête de coupe pour des usinages moyens dans une large gamme de matériaux. Recommandé pour des applications générales sur tout type d'acier.

Domaine d'application principal: Profondeur de coupe (A_p): 1,0 - 3,5 mm
Avance (f): 0,15 - 0,35 mm

Die CM Spanbrecher gibt einen positiven Schnittwinkel, mit einer hohen Festigkeit der Schnittkante in mittleren Anwendungen bei einer breiter Palette von Materialien. Empfohlen für allgemeiner Bearbeitung in allen Stahlsorten.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 1,0 - 3,5 mm
Vorschub (f): 0,15 - 0,35 mm

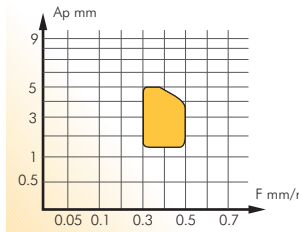




-CR Geometry

The strongest chipbreaker for double-sided inserts. The CR chipbreaker is suitable for high feed rates and depths of cut that normally require single-sided inserts. The chipbreaker has a wide negative T land, which gives high edge strength.

Main application area: Cutting depth (A_p): 1,5 - 5 mm
Feed (f): 0,3 - 0,5 mm



C'est le brise-copeaux le plus résistant pour les plaquettes réversibles. Le brise-copeaux CR est approprié pour des hauts avances et aussi pour des profondeurs de coupe demandées normalement pour des plaquettes d'une seule face. Le brise-copeaux a une large arête négative, laquelle proportionne une haute résistance à l'arête de coupe.

Domaine d'application principal: Profondeur de coupe (A_p): 1,5 - 5 mm
Avance (f): 0,3 - 0,5 mm

Der stärkste Spanbrecher für doppelseitigen Wendschneidplatten. Der Spanbrecher CR ist für hohe Vorschube geeignet und auch für Schnitttiefen, die normalerweise einseitigen Wendschneidplatten benötigen. Der Spanbrecher hat einen negativen breiten Kanten, der eine hohe Kraft zu der Schnittkante gibt.

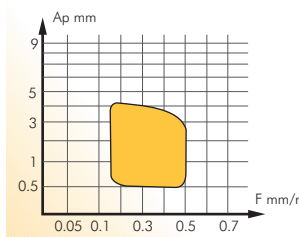
Haupt-Einsatzbereich: Schnitttiefe (A_p): 1,5 - 5 mm
Vorschub (f): 0,3 - 0,5 mm



-CS Geometry

First choice for stainless steel. CS chipbreaker provides excellent chip control with low cutting forces.

Main application area: Cutting depth (A_p): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm



C'est le premier choix pour l'acier inoxydable. Le brise-copeaux CS proportionne un contrôle excellent des copeaux avec des basses forces de coupe.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 4,0 mm
Avance (f): 0,15 - 0,5 mm

Erste Wahl für rostfreien Stahl. Der Spanbrecher CS sorgt für einen hervorragenden Spankontrolle mit niedrigen Schnittkräften.

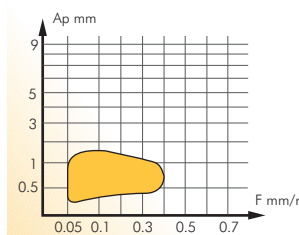
Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 4,0 mm
Vorschub (f): 0,15 - 0,5 mm



-CFC Geometry

CFC chipbreakers combined with the performance of Cermets provide for efficient chip control in finishing and light machining operations. Recommended for finishing steels and cast iron.

Main application area: Cutting depth (A_p): 0,2 - 1,5 mm
Feed (f): 0,05 - 0,4 mm



Les brise-copeaux CFC, ensemble à la performance du Cermet, proportionnent un contrôle efficient des copeaux en opérations de finition et d'usinage léger. Recommandé pour la finition en acier et fonte.

Domaine d'application principal: Profondeur de coupe (A_p): 0,2 - 1,5 mm
Avance (f): 0,05 - 0,4 mm

Die CFC Spanbrecher, zusammen mit der Leistung des Cermets, sorgen für eine wirksame Kontrolle der Späne in Schlicht- und leichte Bearbeitungsoperationen. Empfohlen zum Schlichten von Stahl und Guß.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,2 - 1,5 mm
Vorschub (f): 0,05 - 0,4 mm

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
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cuttersSolid
carbideBoring
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carbide

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heads

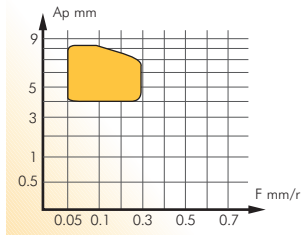
Arbors &
adaptors



-CFM Geometry

Double sided insert for semi-finishing and light roughing. 12° Positive cutting angle which reduces the cutting forces on the working piece. Chipbreaker with differential profile which reduces the contact zone and so improves thermal diffusion. Excellent performance in steel and materials which work harden.

Main application area: Cutting depth (A_p): 0,5 - 2,5 mm
Feed (f): 0,05 - 0,25 mm



Plaquette réversible pour semi-finition et ébauche légère. Angle de coupe positif de 12° , lequel réduit les forces de coupe sur la pièce à usiner. Brise-copeaux avec profil différentiel, lequel réduit la zone de contact et de cette façon améliore la diffusion thermique. Excellente performance sur les aciers et matériaux qui durcissent quand on les usine.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 2,5 mm
Avance (f): 0,05 - 0,25 mm

Doppelseitige Wendeschneidplatte zum mittleren Schlichten und leichtem Schruppen. Positive Spanwinkel 12° , der die Schnittkräfte auf dem Werkstück vermindert.

Spanbrecher mit differentielltem Profil, das die Kontaktzone vermindert, und auf diese Weise die thermische Diffusion verbessert. Ausgezeichnete Leistung in Stahl und Materialien, die bei der Bearbeitung härter werden.

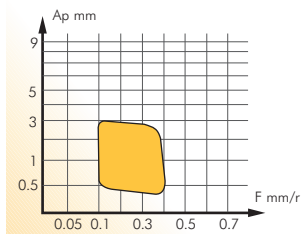
Haupt-Einsatzbereich: Schnittiefe (A_p): 0,5 - 2,5 mm
Vorschub (f): 0,05 - 0,25 mm



-CMC Geometry

Double sided insert for finishing and light roughing. Positive cutting angle and reinforced edge, which ensures a smooth chip control. Optimum resting surface, which ensures maximum stability and effective thermal dissipation. Special geometry for Cermet inserts.

Main application area: Cutting depth (A_p): 0,3 - 3,0 mm
Feed (f): 0,1 - 0,4 mm



Plaquette réversible pour finition et ébauche légère. Angle de coupe positif et arête de coupe renforcé, laquelle assure un bon contrôle des copeaux. Bonne surface d'appui, ce qui assure la maximale stabilité et une dissipation thermique effective. C'est une géométrie spéciale pour le Cermet.

Domaine d'application principal: Profondeur de coupe (A_p): 0,3 - 3,0 mm
Avance (f): 0,1 - 0,4 mm

Doppelseitige Wendeschneidplatte zum Schlichten und leichten Schruppen. Positiver Spanwinkel und verstärkte Schnittkante, die eine reibungslose Spankontrolle gewährleistet.

Optimale Schutzfase, die die maximale Stabilität und eine effektive thermische Auflösung gewährleistet. Spezielle Geometrie für Cermet-Wendeschneidplatten.

Haupt-Einsatzbereich: Schnittiefe (A_p): 0,3 - 3,0 mm
Vorschub (f): 0,1 - 0,4 mm

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

-CMF Geometry

CMF chipbreaker provide excellent chip control with low cutting forces and very free cutting action over a broad range of light duty applications.

Recommended for light duty use on carbon, alloy, and stainless steels.

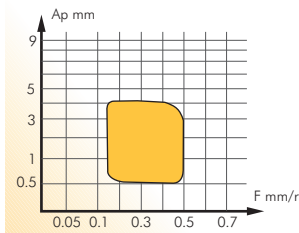
Main application area: Cutting depth (A_p): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm

Le brise-copeau CMF proportionne un excellent contrôle des copeaux avec des forces de coupe basses et une action de coupe très appropriée pour une large gamme d'applications légères. Recommandé pour des usinages légers sur le carbone, les alliages et les aciers inoxydables.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 4,0 mm
Avance (f): 0,15 - 0,5 mm

Der Spanbrecher CMF sorgt für eine ausgezeichnete Spankontrolle mit niedrigen Schnittkräften und eine sehr positive Spanleitstufe für eine breite Palette von leichten Anwendungen. Empfohlen für leichte Anwendungen in C-Stähle und rostfreiem Stahl.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 4,0 mm
Vorschub (f): 0,15 - 0,5 mm



-CMR Geometry

Double sided insert for semi-finishing and light roughing. 12° Positive cutting angle which reduces the cutting forces on the working piece. Chipbreaker with differential profile which reduces the contact zone and so improves thermal diffusion.

Excellent performance in steel and materials which work harden.

Main application area: Cutting depth (A_p): 0,5 - 5,0 mm
Feed (f): 0,4 - 0,8 mm

Plaquette réversible pour semi-finition et ébauche légère. Angle de coupe positif de 12° , lequel réduit les forces de coupe sur la pièce à usiner. Brise-copeaux avec profil différentiel, lequel réduit la zone de contact et de cette façon améliore la diffusion thermique.

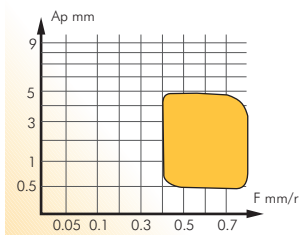
Excellente performance sur les aciers et matériaux qui durcissent quand on les usine.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 5,0 mm
Avance (f): 0,4 - 0,8 mm

Doppelseitige Wendeschneidplatte zum mittleren Schlichten und leichtem Schruppen. Positive Spanwinkel 12° , der die Schnittkräfte auf dem Werkstück vermindert.

Spanbrecher mit differentiellem Profil, das die Kontaktzone vermindert, und auf diese Weise die thermische Diffusion verbessert. Ausgezeichnete Leistung in Stahl und Materialien, die bei der Bearbeitung härter werden.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 5,0 mm
Vorschub (f): 0,4 - 0,8 mm



Inserts

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lathes

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tools

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Milling
cutters

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carbide

Boring
heads

Arbors &
adaptors



..NGP Geometry

For medium duty machining of tough work materials, above all chrome-nickel based alloys. Minimises tendency for these materials to adhere to the insert.

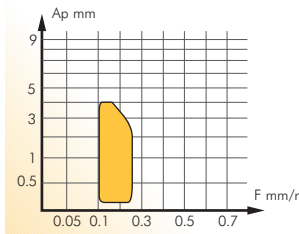
Main application area: Cutting depth (A_p): 0,1 - 4 mm
Feed (f): 0,1 - 0,25 mm

Pour l'usinage moyen de matériaux difficiles à usiner, surtout pour des alliages avec base de chrome et nickel. Elle minimise la tendance de ces matériaux à adhérer à la plaquette.

Domaine d'application principal: Profondeur de coupe (A_p): 0,1 - 4 mm
Avance (f): 0,1 - 0,25 mm

Für mittlere Bearbeitung von zu schwer bearbeitenden Materialien, vor allem für Legierungen mit Chrom- und Nickelbasis. Sie minimiert die Neigung dieser Materialien, an der Wendeschneidplatte zu haften.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,1 - 4 mm
Vorschub (f): 0,1 - 0,25 mm



..NMA Geometry

Double sided insert for short chipping materials. Strong cutting edge.

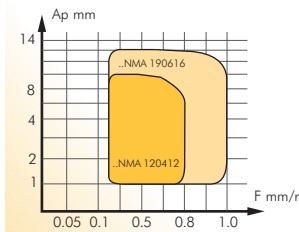
Main application area: Cutting depth (A_p): 1 - 12 mm
Feed (f): 0,2 - 1 mm

Plaquette réversible pour matériaux à copeaux courts. Arête de coupe résistante.

Domaine d'application principal: Profondeur de coupe (A_p): 1 - 12 mm
Avance (f): 0,2 - 1 mm

Doppelseitige Wendeschneidplatte für kurzspanige Materialien. Starke Schnittkante.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 1 - 12 mm
Vorschub (f): 0,2 - 1 mm



..NMM Geometry

Chipbreaker for single-sided inserts. It has a positive cutting edge which gives rise to low cutting forces.

Main application area: Cutting depth (A_p): 2,5 - 6 mm
Feed (f): 0,4 - 0,6 mm

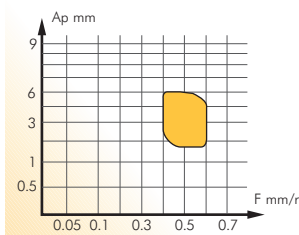
Brise-copeaux pour plaquettes simples.

Il a une arête de coupe positive qui cause des forces de coupe positives.

Domaine d'application principal: Profondeur de coupe (A_p): 2,5 - 6 mm
Avance (f): 0,4 - 0,6 mm

Spanbrecher für einseitige Wendeschneidplatten. Sie hat eine positive Schnittkante für niedrige Schnittkräfte.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 2,5 - 6 mm
Vorschub (f): 0,4 - 0,6 mm





..NMX Geometry

Light duty pos/neg inserts provide excellent chip control in light feed ranges using high positive shear angles. Recommended for machining of steels and other materials.

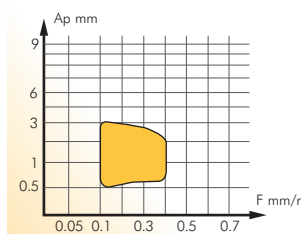
Main application area: Cutting depth (A_p): 0,5 - 3 mm
Feed (f): 0,1 - 0,4 mm

Plaquettes positives/negatives pour usinages légers. Elles proportionnent un excellent contrôle des copeaux avec des faibles avances en utilisant des angles de coupe très positifs. Recommandées pour l'usinage d'acier et d'autres matériaux.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 3 mm
Avance (f): 0,1 - 0,4 mm

Positive/negative Wendeschneidplatten für leichte und mittlere Bearbeitung. Sie gewährleisten eine hervorragende Spankontrolle bei niedrigen Vorschüben, indem man extrem positive Spanwinkel verwendet. Empfohlen für die Bearbeitung von Stahl und anderen Materialien.

Haupt-Einsatzbereich: Schnittiefe (A_p): 0,5 - 3 mm
Vorschub (f): 0,1 - 0,4 mm



Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors



-03 Geometry

Light to medium-duty machining operations. Low cutting forces and reduced power requirements thanks to positive rake angle. Good chip control over a wide range. Also used on short-chipping cast-iron materials.

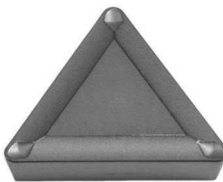
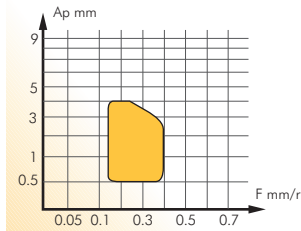
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

Pour usinages légers et moyens. Grâce à l'angle de coupe positif on a besoin de forces de coupe basses et des basses demandes de force. Très bon contrôle des copeaux dans une vaste gamme. Elle peut être utilisée aussi pour la fonte à copeaux courts.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 4 mm
Avance (f): 0,15 - 0,4 mm

Für leichte bis mittlere Bearbeitungsoperationen. Dank der positiven Schnittwinkel braucht man nur niedrige Schnittkräfte und bei niedriger Antriebsleistung. Sehr gute Spankontrolle in einer breiten Anwendungspalette. Es wird auch in kurzspanndem Guß verwendet.

Haupt-Einsatzbereich: Schnittiefe (A_p): 0,5 - 4 mm
Vorschub (f): 0,15 - 0,4 mm



-33 Geometry

Geometry providing chip control in the finishing and medium duty range. Positive rake reduces cutting forces and power consumption. Can also be used on low-strength and stainless steels.

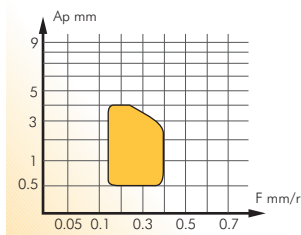
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

Cette géométrie proportionne un bon contrôle dans les opérations de finition et les usinages moyens. L'arête de coupe positive réduit les forces de coupe et la consommation de force. Elle peut être utilisée aussi sur des aciers à basse résistance.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 4 mm
Avance (f): 0,15 - 0,4 mm

Diese Geometrie erlaubt eine Spankontrolle in Schlicht-Operationen und mittleren Bearbeitungen. Die positive Schnittkante reduziert die Schnittkräfte und benötigt wenig Antriebsleistung. Es kann auch in wenig widerstandsfähige Stähle und in rostfreiem Stahl verwendet werden.

Haupt-Einsatzbereich: Schnittiefe (A_p): 0,5 - 4 mm
Vorschub (f): 0,15 - 0,4 mm



-AL Geometry

Geometry can be used for turning aluminium, light alloys, non ferrous metals, high-melting metals, plastics, glass fiber reinforced plastics, laminated board, carbon and fine ceramics.

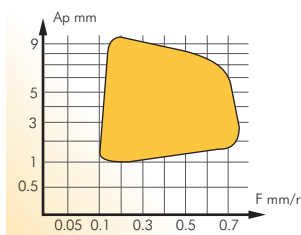
Main application area: Cutting depth (A_p): 1 - 10 mm
Feed (f): 0,1 - 0,75 mm

Cette géométrie peut être utilisée pour le tournage sur aluminium, acier inoxydable, métaux non ferriques, métaux qui fondent facilement, plastiques, fibre de verre, plastiques renforcés, planches laminées, carbone et céramique fine.

Domaine d'application principal: Profondeur de coupe (A_p): 1 - 10 mm
Avance (f): 0,1 - 0,75 mm

Diese Geometrie kann für das Drehen von Aluminium, rostfreien Stählen, Nichteisenmetallen, leicht schmelzbaren Metallen, Kunststoff, Glasfaser, verstärkte Kunststoffe, Walzplatten, Kohle und feiner Keramik verwendet werden.

Haupt-Einsatzbereich: Schnittiefe (A_p): 1 - 10 mm
Vorschub (f): 0,1 - 0,75 mm





-AP Geometry

Geometry can be used for turning aluminium, light alloys, non ferrous metals, high-melting metals, plastics, glass fiber reinforced plastics, laminated board, carbon and fine ceramics.

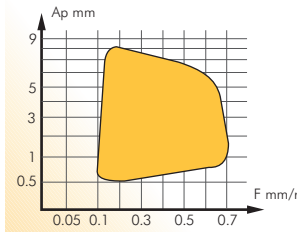
Main application area: Cutting depth (A_p): 0,5 - 8 mm
Feed (f): 0,1 - 0,7 mm

Cette géométrie peut être utilisée pour le tournage sur aluminium, acier inoxydable, métaux non ferriques, métaux qui fondent facilement, plastiques, fibre de verre, plastiques renforcés, planches laminées, carbone et céramique fine.

Domaine d'application principal: Profondeur de coupe (A_p): 0,5 - 8 mm
Avance (f): 0,1 - 0,7 mm

Diese Geometrie kann für das Drehen von Aluminium, rostfreien Stählen, Nichteisenmetallen, leicht schmelzbare Metallen, Kunststoff, Glasfaser, verstärkte Kunststoffe, Walzplatten, Kohle und feine Keramik verwendet werden.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 8 mm
Vorschub (f): 0,1 - 0,7 mm



..MW Geometry

Double sided insert for short chipping materials. Strong cutting edge.

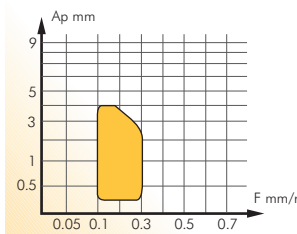
Main application area: Cutting depth (A_p): 0,2 - 4 mm
Feed (f): 0,1 - 0,3 mm

Plaquette réversible pour l'usinage de la fonte. Arête de coupe renforcée.

Domaine d'application principal: Profondeur de coupe (A_p): 0,2 - 4 mm
Avance (f): 0,1 - 0,3 mm

Doppelseitige Wendeschneidplatte für Gußbearbeitung. Verstärkte Schnittkante.

Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,2 - 4 mm
Vorschub (f): 0,1 - 0,3 mm



Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Braze
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Basic geometries (steel)

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

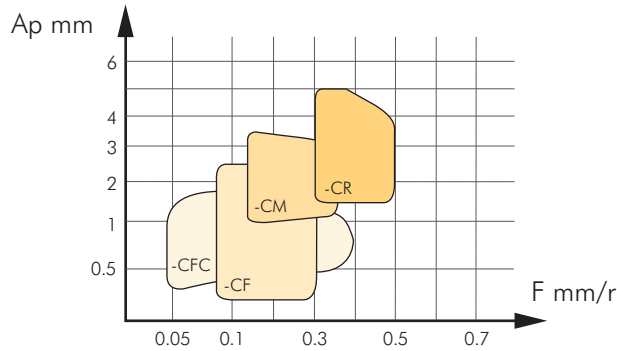
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

1 - Select geometry



2 - Select grade

Cutting condition

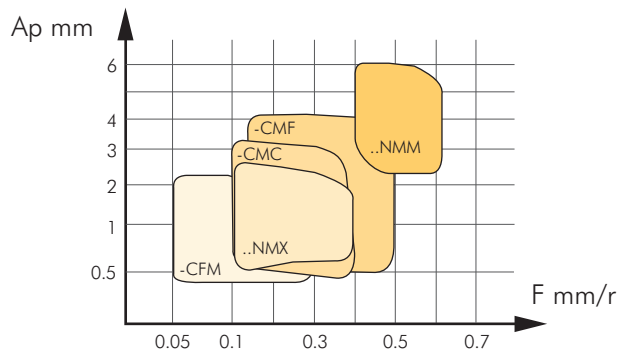
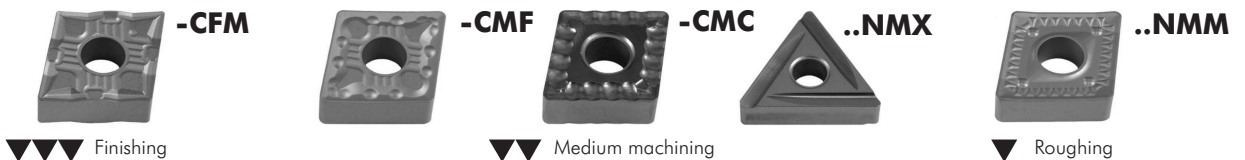
| | ▼▼▼▼ Super finishing | ▼▼▼ Finishing | ▼▼ Medium machining | ▼ Roughing |
|--------------------|----------------------|---------------|---------------------|---------------|
| ⊗ Interrupted cut | - | TIC30 | TIC30 | P25K - TIC30 |
| ○ Inconsistent cut | CK30 | TIC15 | TIC15 - TIC20 | TIC20 - TIC30 |
| ⊙ Consistent cut | CK30 | TIC15 | TIC15 | TIC20 - TIC30 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (steel)

1 - Select geometry



2 - Select grade

Cutting condition

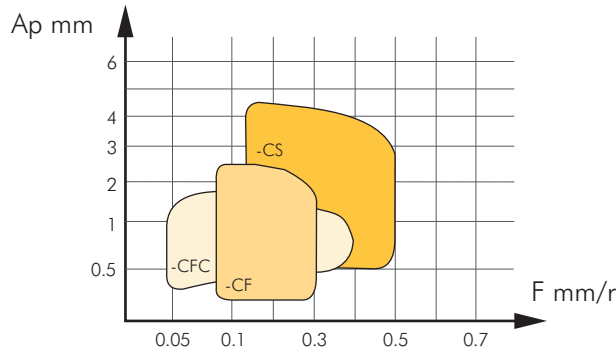
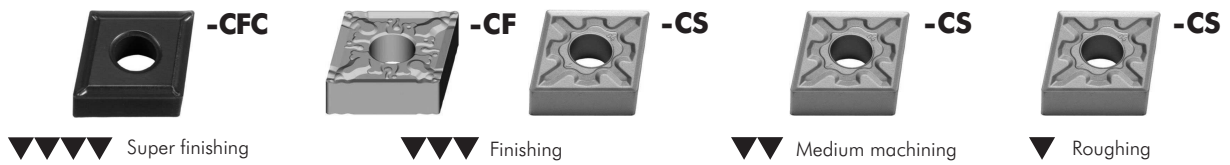
| | ▼▼▼ Finishing | ▼▼ Medium machining | ▼ Roughing |
|--------------------|---------------|----------------------|------------|
| ⊗ Interrupted cut | TIC30 | TIC30 | TIC30 |
| ○ Inconsistent cut | TIC15 - TIC30 | CK30 - TIC20 - TIC30 | TIC30 |
| ⊙ Consistent cut | TIC15 | CK30 - TIC15 - TIC30 | TIC30 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Stainless steel)

1 - Select geometry



2 - Select grade

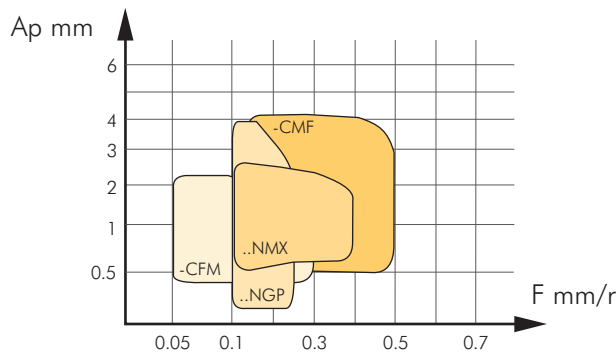
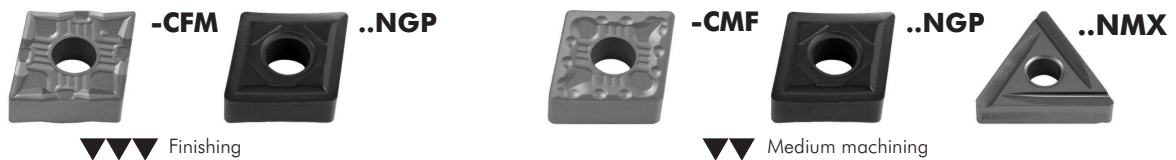
| Cutting condition | Super finishing | Finishing | Medium machining | Roughing |
|-------------------|-----------------|-----------------------|------------------|----------|
| Interrupted cut | - | TIC30 - TIC35 | TIC30 - TIC35 | TIC35 |
| Inconsistent cut | CK30 | TIC15 - TIC30 - TIC35 | TIC30 - TIC35 | TIC35 |
| Consistent cut | CK30 | TIC15 - TIC30 - TIC35 | TIC30 - TIC35 | TIC35 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (Stainless steel)

1 - Select geometry



2 - Select grade

| Cutting condition | Finishing | Medium machining |
|-------------------|---------------|----------------------|
| Interrupted cut | TIC30 | TIC30 |
| Inconsistent cut | TIC17 - TIC30 | CK30 - TIC17 - TIC30 |
| Consistent cut | TIC17 - TIC30 | CK30 - TIC17 - TIC30 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Basic geometries (Cast iron)

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

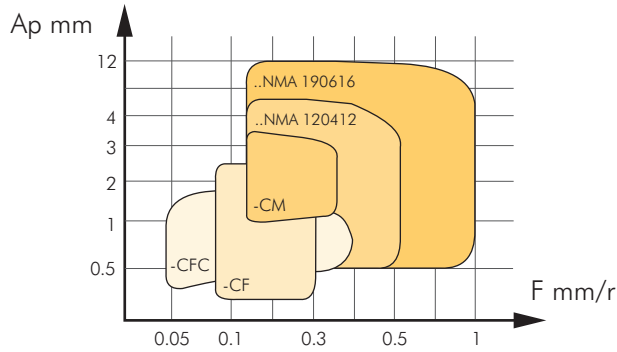
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

1 - Select geometry



2 - Select grade

Cutting condition

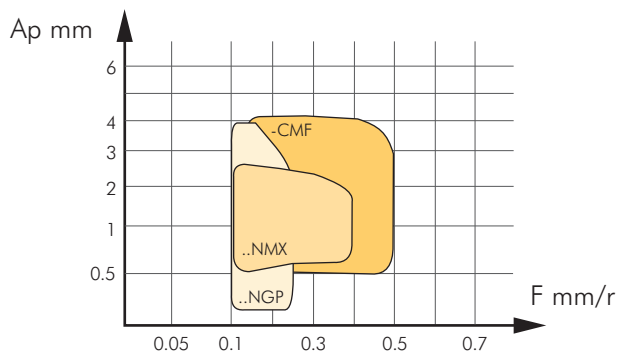
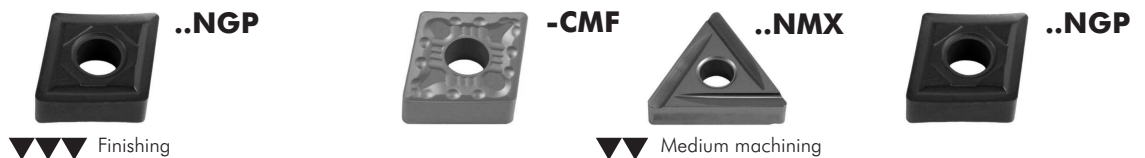
| | Super finishing ▼▼▼▼ | Finishing ▼▼▼ | Medium machining ▼▼ | Roughing ▼ |
|--------------------|-------------------------|------------------|------------------------|---------------|
| ⊗ Interrupted cut | - | TIC15 | TIC15 - TIC17 | TIC15 - TIC17 |
| ⊖ Inconsistent cut | CK30 | TIC15 | TIC15 - TIC17 | TIC15 - TIC17 |
| ⊙ Consistent cut | CK30 | TIC15 | TIC15 - TIC17 | TIC15 - TIC17 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (Cast iron)

1 - Select geometry



2 - Select grade

Cutting condition

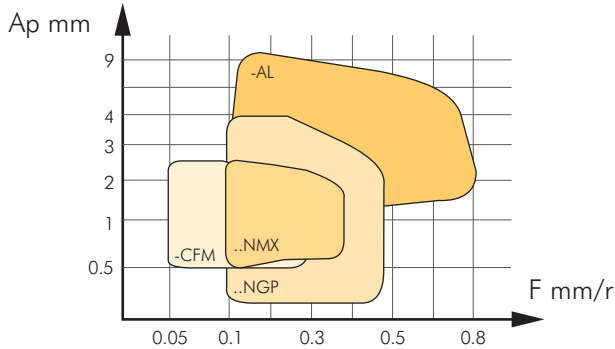
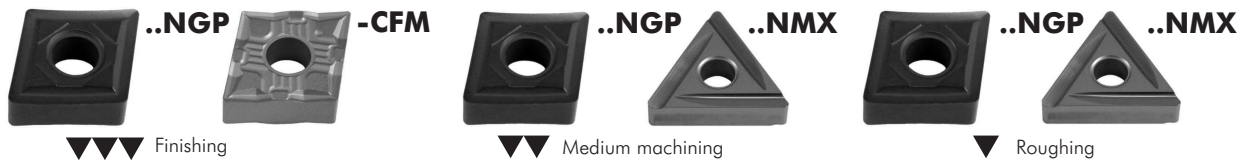
| | Finishing ▼▼▼ | Medium machining ▼▼ |
|--------------------|----------------------|------------------------|
| ⊗ Interrupted cut | TIC15 - TIC17 | CK30 - TIC15 - TIC17 |
| ⊖ Inconsistent cut | CK30 - TIC15 - TIC17 | CK30 - TIC15 - TIC17 |
| ⊙ Consistent cut | CK30 - TIC15 - TIC17 | CK30 - TIC15 - TIC17 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Non ferrous materials)

1 - Select geometry



2 - Select grade

Cutting condition

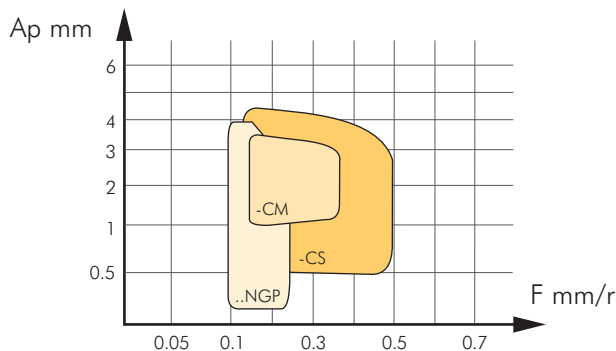
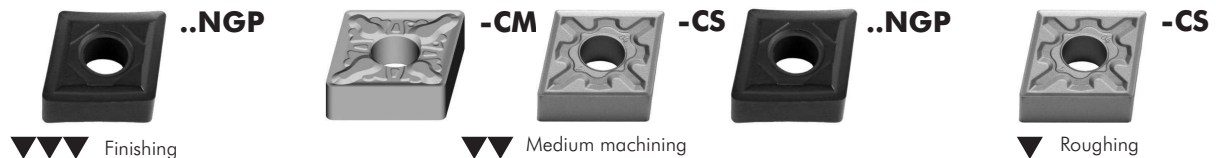
| | Finishing | Medium machining | Roughing |
|--------------------|-----------------------------|---------------------|---------------------|
| ⊗ Interrupted cut | K15K - TIC15 - TIC17 - Z10R | CK30 - TIC17 - Z10R | CK30 - TIC17 - Z10R |
| ○ Inconsistent cut | K15K - TIC15 - TIC17 - Z10R | CK30 - TIC17 - Z10R | CK30 - TIC17 - Z10R |
| ● Consistent cut | K15K - TIC15 - TIC17 - Z10R | CK30 - TIC17 - Z10R | CK30 - TIC17 - Z10R |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Heat resistant alloys)

1 - Select geometry



2 - Select grade

Cutting condition

| | Finishing | Medium machining | Roughing |
|--------------------|-----------|-----------------------|----------|
| ⊗ Interrupted cut | TIC17 | TIC17 - TIC30 - TIC35 | TIC35 |
| ○ Inconsistent cut | TIC17 | TIC17 - TIC30 - TIC35 | TIC35 |
| ● Consistent cut | TIC17 | TIC17 - TIC30 - TIC35 | TIC35 |

3 - Select cutting speed

Proceed to page B.77 for cutting data

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| Insert shape | | |
|--------------|------|----------|
| | 35° | V |
| | 55° | D |
| | 75° | E |
| | 80° | C |
| | 86° | M |
| | 55° | K |
| | 82° | B |
| | 85° | A |
| | 90° | L |
| | 108° | P |
| | 120° | H |
| | 135° | O |
| | - | R |
| | 90° | S |
| | 60° | T |
| | 80° | W |

| Clearance angle | | |
|-----------------|--|----------|
| | 3° | A |
| | 5° | B |
| | 7° | C |
| | 15° | D |
| | 20° | E |
| | 25° | F |
| | 30° | G |
| | 0° | N |
| | 11° | P |
| | Clearance angles not included within the standard for which particular information is necessary. | |

| Tolerances | | | |
|------------|-----------|----------|----------|
| 0,025 | 0,005 | 0,025 | A |
| 0,013 | 0,005 | 0,025 | F |
| 0,025 | 0,013 | 0,025 | C |
| 0,013 | 0,013 | 0,025 | H |
| 0,025 | 0,025 | 0,025 | E |
| 0,025 | 0,025 | 0,13 | G |
| 0,05-0,15 | 0,005 | 0,025 | J |
| 0,05-0,15 | 0,013 | 0,025 | K |
| 0,05-0,15 | 0,025 | 0,025 | L |
| 0,05-0,15 | 0,08-0,20 | 0,13 | M |
| 0,05-0,15 | 0,08-0,20 | 0,025 | N |
| 0,08-0,25 | 0,13-0,38 | 0,13 | U |
| d | m | s | |
| | | | |

| Form of top surface | |
|---------------------|----------|
| | N |
| | R |
| | F |
| | A |
| | M |
| | G |
| | W |
| | T |
| | Q |
| | U |
| | B |
| | H |
| | C |
| | J |
| Special version | X |

S

E

K

N

N

| | | | |
|----------|-----------------|-----------------|-------|
| A | 0,0010 | 0,0002 | 0,001 |
| F | 0,0005 | 0,0002 | 0,001 |
| C | 0,0010 | 0,0005 | 0,001 |
| H | 0,0005 | 0,0005 | 0,001 |
| E | 0,0010 | 0,0010 | 0,001 |
| G | 0,0010 | 0,0010 | 0,005 |
| J | 0,002 to 0,006* | 0,0002 | 0,001 |
| K | 0,002 to 0,006* | 0,0005 | 0,001 |
| L | 0,002 to 0,006* | 0,0010 | 0,001 |
| M | 0,002 to 0,006* | 0,003 to 0,008* | 0,005 |
| N | 0,002 to 0,006* | 0,003 to 0,008* | 0,001 |
| U | 0,003 to 0,010* | 0,005 to 0,015* | 0,005 |

| d | m | s |
|---------------------------|----------|----------|
| | | |
| * Depends on insert size | | |
| Tolerance (inches) | | |

| | |
|---|---------------------|
| N / R / F | E |
| A / M / G | D |
| X | X |
| IK > 1/4" | IK < 1/4" |
| Symbols as above Changes at inscribed circle IK < 1/4" | |
| Form of top surface | |

| Edge cutting length | | | |
|---------------------|------|------|-----------|
| 06 | 3,96 | 5/32 | 03 |
| 09 | 5,56 | 7/32 | 05 |
| 11 | 6,35 | 1/4 | 06 |
| 16 | 9,52 | 3/8 | 09 |
| 22 | 12,7 | 1/2 | 12 |
| 27 | 15,8 | 5/8 | 15 |
| 33 | 19,0 | 3/4 | 19 |
| 44 | 25,4 | 1 | 25 |
| mm | mm | inch | mm |
| | | | |
| 06 | 10 | 16 | 25 |
| 08 | 12 | 20 | 32 |
| | | | |

| Insert thickness | | |
|------------------|------|-----------|
| 1/16 | 1,59 | 01 |
| 3/32 | 2,38 | 02 |
| 1/8 | 3,18 | 03 |
| 5/32 | 3,97 | T3 |
| 3/16 | 4,76 | 04 |
| 7/32 | 5,56 | 05 |
| 1/4 | 6,35 | 06 |
| 5/16 | 7,94 | 07 |
| 3/8 | 9,52 | 09 |
| inch | mm | |
| | | |

| Corner radius | | | |
|---|-----|-----------|---------|
| 00 | 0,0 | 12 | 1,2 |
| M0 | 0,0 | 16 | 1,6 |
| 02 | 0,2 | 20 | 2,0 |
| 04 | 0,4 | 24 | 2,4 |
| 08 | 0,8 | 32 | 3,2 |
| Inserts with corner radius | | | |
| Inserts with secondary cutting edge | | | |
| A | 45° | F | 85° |
| D | 60° | P | 90° |
| E | 75° | | |
| Angle of main cutting edge to secondary cutting angle | | | |
| A | 3° | F | 25° |
| B | 5° | G | 30° |
| C | 7° | N | 0° |
| D | 15° | P | 11° |
| E | 20° | Z | Special |
| Clearance angle | | | |

| Cutting edge | |
|--------------|----------------------------|
| F | Sharp |
| E | Honed |
| T | Chamfered |
| S | Chamfered and honed |
| K | Double-chamfered |
| P | Double-chamfered and honed |

| Cutting direction | |
|-------------------|--|
| R | |
| L | |
| N | |

| Cutting edge | |
|--------------|----------|
| ≤ 1,2 | 1 |
| 1,4 | 2 |
| 2,0 | 3 |
| 2,4 | 4 |
| | |

| Cutting direction | |
|-------------------|----------|
| 0 | A |
| 0,08 x 40° | B |
| 0,15 x 15° | C |
| 0,15 x 25° | D |
| 0,20 x 10° | E |
| 0,20 x 15° | F |
| 0,20 x 22° | G |
| 0,15 x 20° | X |
| | |

12

03

AF
04

E

N

-

3

A

4

2

1

| | |
|----------------------------|----------|
| 1/4 | 2 |
| 3/8 | 3 |
| 1/2 | 4 |
| 5/8 | 5 |
| 3/4 | 6 |
| 1 | 8 |
| | |
| | |
| Cutting edge length (inch) | |

| | |
|-------------------------|----------|
| 1/16 | 1 |
| 1/8 | 2 |
| 3/16 | 3 |
| 1/4 | 4 |
| 5/16 | 5 |
| 3/8 | 6 |
| | |
| Insert thickness (inch) | |

| | |
|----------------------|----------|
| max. 0,004 | 0 |
| 1/64 | 1 |
| 1/32 | 2 |
| 3/64 | 3 |
| 1/16 | 4 |
| 5/64 | 5 |
| 3/32 | 6 |
| 7/64 | 7 |
| 1/8 | 8 |
| - | X |
| | |
| Corner radius (inch) | |

For special forms of the chip groove in the 10° position, manufacturer specific chip grooves and designations can be indicated.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

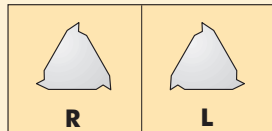
Arbors & adaptors

Inserts

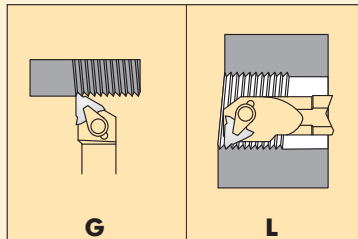
L 166 G - 3 B A 075

1 2 3 4 5 6 7

1



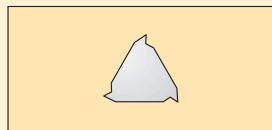
3



6

| | |
|----------|-----------|
| A | ISO mm. |
| C | SI |
| L | ISO Inch |
| K | Whitworth |

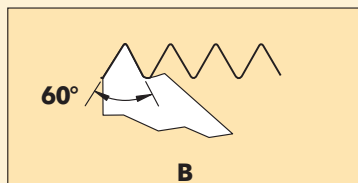
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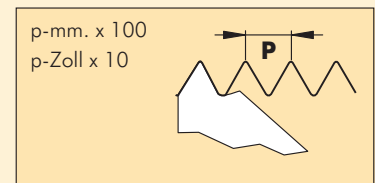
4

| | IC=Inch | D=mm. | |
|--|----------|-------|----------|
| | 2 | 1/4 | 6,35 11 |
| | 3 | 3/8 | 9,52 16 |
| | 4 | 1/2 | 12,70 22 |

5



7



Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

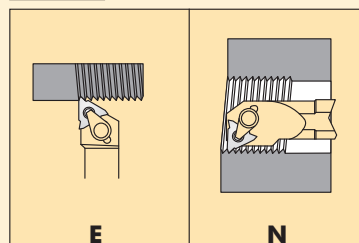
16 E L - AG 55

1 2 3 4 5

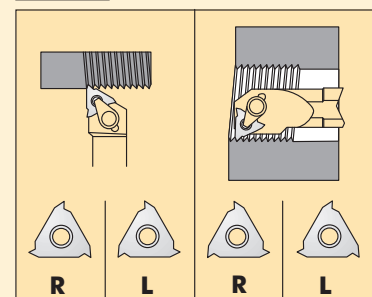
1

| | IC=Inch. | d=mm. |
|--|-----------|-----------|
| | 06 | 5/32 3,96 |
| | 08 | 3/16 4,76 |
| | 11 | 1/4 6,35 |
| | 16 | 3/8 9,52 |
| | 22 | 1/2 12,70 |
| | 27 | 5/8 15,87 |

2



3

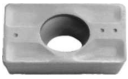







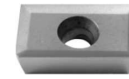



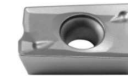













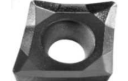





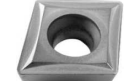

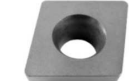

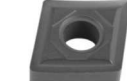





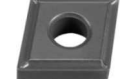

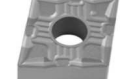

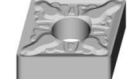









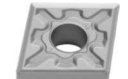

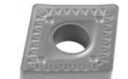







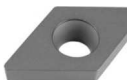





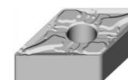



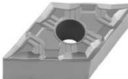

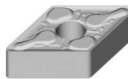









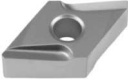

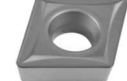



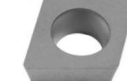

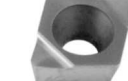






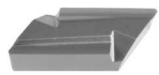



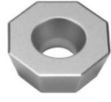



















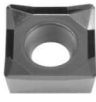







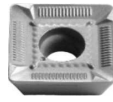



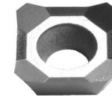











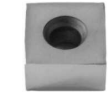





























4

| | mm. | TPI |
|--|-----------|---------------|
| | A | 0,5-1,5 48-16 |
| | AG | 0,5-3,0 48-8 |
| | G | 1,75-3,0 14-8 |
| | N | 3,5-5,0 7-5 |







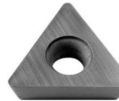

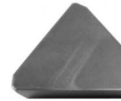

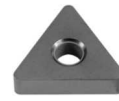

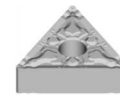



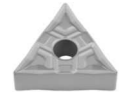





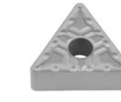

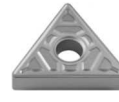

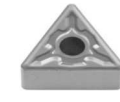



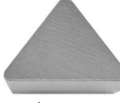

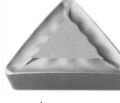







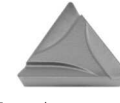















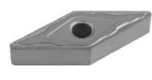



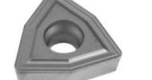

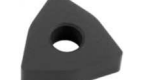

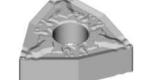







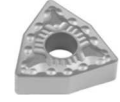

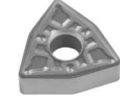







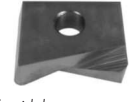







5

| | |
|------------|---------------------|
| 55 | Partial profile 55° |
| 60 | Partial profile 60° |
| ISO | ISO metric |
| UN | American, UN |
| W | Whitworth, BSW |
| LG | Groove type LG |







| | | | | | | | | |
|-------------------------------|---|---|--|---|--|---|--|--|
| Inserts | ADMT  Rectangular Positive Page A.36  | ADMW  Rectangular Positive Page A.36  | ADMW-C  Rectangular Positive Page A.36  | ADMW-R  Rectangular Positive Page A.36  | APFT  Rectangular Positive Page A.36  | APHT-AL  Rectangular Positive Page A.36  | APKT  Rectangular Positive Page A.37  | |
| Turning | | | | | | | | |
| Automatic lathes | APKT-26  Rectangular Positive Page A.37  | APLT  Rectangular Positive Page A.37  | APLX  Rectangular Positive Page A.37  | APMT  Rectangular Positive Page A.37  | APMT-26  Rectangular Positive Page A.37  | APMW  Rectangular Positive Page A.38  | | |
| Ceramic tools | | | | | | | | |
| Parting & grooving | CCGT-AL  80° Rhombic Positive Page A.38  | CCGT-AP  80° Rhombic Positive Page A.38  | CCKT  80° Rhombic Positive Page A.38  | CCMT-03  80° Rhombic Positive Page A.38  | CCMW  80° Rhombic Positive Page A.38  | CNGP  80° Rhombic Negative Page A.39  | CNMA  80° Rhombic Negative Page A.39  | |
| Threading | CNMG-CF  80° Rhombic Negative Page A.39  | CNMG-CFC  80° Rhombic Negative Page A.39  | CNMG-CFM  80° Rhombic Negative Page A.39  | CNMG-CM  80° Rhombic Negative Page A.39  | CNMG-CMC  80° Rhombic Negative Page A.40  | CNMG-CMF  80° Rhombic Negative Page A.40  | CNMG-CMR  80° Rhombic Negative Page A.40  | |
| Drills | | | | | | | | |
| Cartridges | CNMG-CR  80° Rhombic Negative Page A.40  | CNMG-CS  80° Rhombic Negative Page A.40  | CNMM  80° Rhombic Negative Page A.40  | | | | | |
| Brazed tools | DCGT-AL  55° Rhombic Positive Page A.41  | DCGT-AP  55° Rhombic Positive Page A.41  | DCMT-03  55° Rhombic Positive Page A.41  | DCMW  55° Rhombic Positive Page A.41  | DNGP  55° Rhombic Negative Page A.41  | DNMA  55° Rhombic Negative Page A.41  | DNMG-CF  55° Rhombic Negative Page A.42  | |
| Milling cutters | | | | | | | | |
| Solid carbide | DNMG-CFC  55° Rhombic Negative Page A.42  | DNMG-CFM  55° Rhombic Negative Page A.42  | DNMG-CM  55° Rhombic Negative Page A.42  | DNMG-CMC  55° Rhombic Negative Page A.42  | DNMG-CMF  55° Rhombic Negative Page A.42  | DNMG-CMR  55° Rhombic Negative Page A.43  | DNMG-CS  55° Rhombic Negative Page A.43  | |
| Boring heads | DNMX  55° Rhombic Negative Page A.43  | | | ECMT  75° Rhombic Positive Page A.43  | EPMT  75° Rhombic Positive Page A.43  | EPMW  75° Rhombic Positive Page A.43  | EPMX  75° Rhombic Positive Page A.44  | |
| Arbors & adaptors | | | | | | | | |

| | | | | | | |
|---|--|--|---|---|--|---|
| FRC  Single-ended insert Page A.44 | FRCR  Single-ended insert Page A.44 | | | GXGP-AL  Double-ended Page A.44 | | KNUX  KNUX Negative Page A.45  |
| ODMT  Octagonal Positive Page A.45  | ODMW  Octagonal Positive Page A.45  | | | | | |
| RCGT-AL  Round Positive Page A.45  | RCGT-AP  Round Positive Page A.46  | RCMT  Round Positive Page A.46  | RDHW  Round Positive Page A.46  | RDMT  Round Positive Page A.46  | RDMW  Round Positive Page A.46  | RNMG  Round Negative Page A.46  |
| RPMT  Round Positive Page A.47  | RPMW  Round Positive Page A.47  | | | | | |
| SCGT-AL  Square Positive Page A.47  | SCMT-03  Square Positive Page A.47  | SCMT-39  Square Positive Page A.47  | SCMW  Square Positive Page A.48  | SDMT  Square Positive Page A.48  | SEHT  Square Positive Page A.48  | SEHT-AL  Square Positive Page A.48  |
| SEHW  Square Positive Page A.48  | SEKN  Square Positive Page A.48  | SEKR  Square Positive Page A.49  | SEMT  Square Positive Page A.49  | SFAN  Square Positive Page A.49  | SNHX  Square Negative Page A.49  | SNKN  Square Negative Page A.49  |
| SNMA  Square Negative Page A.49  | SNMG-CFM  Square Negative Page A.49  | SNMG-CMR  Square Negative Page A.50  | SNMG-CR  Square Negative Page A.50  | SNMM  Square Negative Page A.50  | SNUN  Square Negative Page A.50  | SOMT  Square Positive Page A.50  |
| SPKN  Square Positive Page A.50  | SPKR  Square Positive Page A.51  | SPMR-33  Square Positive Page A.51  | SPMT  Square Positive Page A.51  | SPMW  Square Positive Page A.51  | SPUN  Square Positive Page A.51  | |

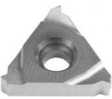
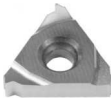


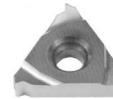
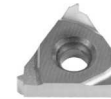

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

| | | | | | | | |
|------------------------------|--|---|--|---|--|--|---|
| Inserts | TCGT-AL  Triangular Positive Page A.51  | TCMT-03  Triangular Positive Page A.52  | TCMT-39  Triangular Positive Page A.52  | TCMW  Triangular Positive Page A.52  | TEKN  Triangular Positive Page A.52  | TNMA  Triangular Negative Page A.52  | TNMG-CF  Triangular Negative Page A.52  |
| Turning | TNMG-CFC  Triangular Negative Page A.53  | TNMG-CFM  Triangular Negative Page A.53  | TNMG-CM  Triangular Negative Page A.53  | TNMG-CMC  Triangular Negative Page A.53  | TNMG-CMF  Triangular Negative Page A.53  | TNMG-CMR  Triangular Negative Page A.53  | TNMG-CS  Triangular Negative Page A.54  |
| Automatic lathes | TNMX  Triangular Positive Page A.54  | TPKN  Triangular Positive Page A.54  | TPKR  Triangular Positive Page A.54  | TPMN  Triangular Positive Page A.54  | TPMR-33  Triangular Positive Page A.54  | TPUN  Triangular Positive Page A.55  | TPUX  Triangular Negative Page A.55  |
| Ceramic tools | VBMT  35° Rhombic Positive Page A.55  | VCGT-AL  35° Rhombic Positive Page A.55  | VCGT-AL  35° Rhombic Positive Page A.55  | VCGT-AP  35° Rhombic Positive Page A.55  | VCGT-AP  35° Rhombic Positive Page A.55  | VCMT-03  35° Rhombic Positive Page A.56  | VNGP  35° Rhombic Negative Page A.56  |
| Threading | VNMG  35° Rhombic Negative Page A.56  | VNMG-CMC  35° Rhombic Negative Page A.56  | WCMX  80° Trigon Positive Page A.56  | WNMA  80° Trigon Negative Page A.57  | WNMG-CF  80° Trigon Negative Page A.57  | WNMG-CFM  80° Trigon Negative Page A.57  | WNMG-CM  80° Trigon Negative Page A.57  |
| Drills | WNMG-CMC  80° Trigon Negative Page A.57  | WNMG-CMF  80° Trigon Negative Page A.57  | WNMG-CMR  80° Trigon Negative Page A.58  | WNMG-CS  80° Trigon Negative Page A.58  | | | |
| Cartridges | HPR  Round Positive Page A.44  | INT  Positive ball nose insert Page A.44 | INW  Positive ball nose insert Page A.45 | MTK  Toroidal insert Page A.45 | RPR  Round Positive Page A.47  | WPR  Round Positive Page A.58  | |
| Brazed tools | XDKW  High feed Page A.58  | XPMT  Positive insert Page A.58 | | | | | |
| Milling cutters | | | | | | | |
| Solid carbide | | | | | | | |
| Boring heads | | | | | | | |
| Arbors & adaptors | | | | | | | |

60° - 55° (non topping)

| | | | | | | |
|--|--|---|--|---|--|--|
| <p>ER-60°/55</p>  <p>Triangular Negative Page A.59</p> | <p>EL-60°/55</p>  <p>Triangular Negative Page A.59</p> | <p>ER-60°/55 TD</p>  <p>Triangular Negative Page A.59</p> | <p>NR-60°/55</p>  <p>Triangular Negative Page A.60</p> | <p>NL-60°/55</p>  <p>Triangular Negative Page A.60</p> | <p>NR-60°/55° TD</p>  <p>Triangular Negative Page A.60</p> | |
|--|--|---|--|---|--|--|







ISO (full form) BS36

| | | | | | | |
|---|---|--|--|--|---|--|
| <p>ER-ISO</p>  <p>Triangular Negative Page A.61</p> | <p>EL-ISO</p>  <p>Triangular Negative Page A.61</p> | <p>ER-ISO TD</p>  <p>Triangular Negative Page A.61</p> | <p>EL-ISO TD</p>  <p>Triangular Negative Page A.61</p> | <p>NR-ISO</p>  <p>Triangular Negative Page A.62</p> | <p>NL-ISO</p>  <p>Triangular Negative Page A.62</p> | <p>NR-ISO TD</p>  <p>Triangular Negative Page A.62</p> |
|---|---|--|--|--|---|--|

UNIFIED (full form) ASME / ANSI B1.1

| | | | | | | |
|---|---|--|--|--|--|--|
| <p>ER-UN</p>  <p>Triangular Negative Page A.63</p> | <p>NR-UN</p>  <p>Triangular Negative Page A.63</p> | | | | | |
|---|---|--|--|--|--|--|

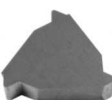
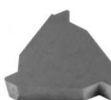
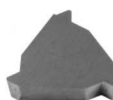
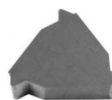

WHITWORTH (full form) BS84

| | | | | | | |
|---|---|--|---|--|--|--|
| <p>ER-W</p>  <p>Triangular Negative Page A.63</p> | <p>EL-W</p>  <p>Triangular Negative Page A.63</p> | <p>ER-W TD</p>  <p>Triangular Negative Page A.64</p> | <p>NR-W</p>  <p>Triangular Negative Page A.64</p> | <p>NL-W</p>  <p>Triangular Negative Page A.64</p> | <p>NR-W TD</p>  <p>Triangular Negative Page A.65</p> | |
|---|---|--|---|--|--|--|

Lock ring groove inserts type LG - Plaquettes pour rainures d'anneaux type LG - Wendeplatten mit Seegerringe-Nuten (LG Typ)

| | | | | | | |
|--|--|--|--|--|---|---|
| <p>ER-LG</p>  <p>Triangular Negative Page A.65</p> | <p>EL-LG</p>  <p>Triangular Negative Page A.65</p> | | | | <p>TNMC</p>  <p>Triangular Negative Page A.65</p> | <p>TPMC</p>  <p>Triangular Negative Page A.65</p> |
|--|--|--|--|--|---|---|

ISO

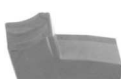


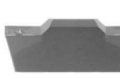



| | | | | | | |
|--|--|--|--|---|--|--|
| <p>L166G-ISO</p>  <p>Triangular Positive Page A.65</p> | <p>R166G-ISO</p>  <p>Triangular Positive Page A.66</p> | <p>R166G-B</p>  <p>Triangular Positive Page A.66</p> | <p>L166L-ISO</p>  <p>Triangular Positive Page A.66</p> | <p>R166L-ISO</p>  <p>Triangular Positive Page A.66</p> | | |
|--|--|--|--|---|--|--|

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

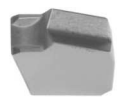
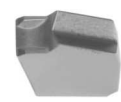
Parting & grooving inserts - Plaquettes pour tronçonner et rainurer - Wendeschneidplatten zum Stechen und Nuteneinstechen

Inserts

Turning

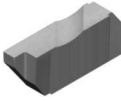
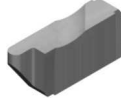
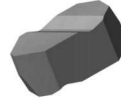
| | | | | | | |
|---|---|--|--|--|--|---|
| MRCN  Single-ended Page A.67 | MRCR/L  Single-ended Page A.67 | MTE  Single-ended Page A.67 | MTC  Double-ended Page A.67 | MTCJ  Double-ended Page A.67 | MTR  Double-ended Page A.67 | MTRJ  Double-ended Page A.68 |
|---|---|--|--|--|--|---|

Automatic lathes

| | | | | | | |
|---|---|--|--|--|--|--|
| PTNT  Single-ended Page A.68 | PTR/LT  Single-ended Page A.68 | | | | | |
|---|---|--|--|--|--|--|

Ceramic tools

Parting & grooving

| | | | | | | |
|--|---|--|--|--|--|--|
| NG  Double-ended For Parting Page A.68 | NR  Double-ended For Parting (radius) Page A.69 | NT  Double-ended For Threading Page A.69 | | | | |
|--|---|--|--|--|--|--|

Threading

Drills

| | | | | | | |
|--|--|--|--|--|--|--|
| ER/LG  Triangular Negative Page A.69 | | | | | | |
|--|--|--|--|--|--|--|

Cartridges

Brazed tools

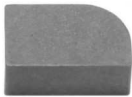


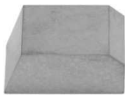



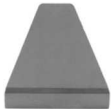
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts (Brazed tools) - Plaquettes pour outils brasés - Plättchen für gelötete Werkzeuge

| | | | | | | |
|---|--|--|--|---|--|---|
| AB  Page A.70 | ABC  Page A.70 | C  Page A.70 | D  Page A.70 | E  Page A.70 | FIL  Page A.70 | PR  Page A.71 |
| TR  Page A.71 | | | | | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts (Automatic lathes) - Plaquettes pour décolletage - Drehautomaten-Wendeschneidplatten

Inserts

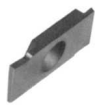
Turning

GISG



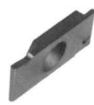
Standard
grooving inserts
Page A.72

GIGP



Grooving and
cut-off inserts
Page A.72

GIGR



Full radius
grooving inserts
Page A.72

GIGW



Threading
inserts
Page A.72

GIST



Turning
inserts
Page A.72

GISC



Copying
inserts
Page A.72

Automatic
lathes

Ceramic
tools

L



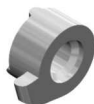
Insert for
turning
Page A.73

R



Insert for
turning
Page A.73

L



Insert for grooving
with radius
Page A.73

R



Insert for grooving
with radius
Page A.73

L



Insert for
threading
Page A.74

L



Insert for
grooving
Page A.74

R



Insert for
threading
Page A.75

Parting &
grooving

R



Insert for
grooving
Page A.75

Threading

Drills

Cartridges

Brazed
tools




Milling
cutters

Solid
carbide



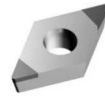
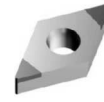
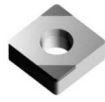
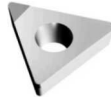

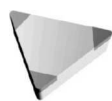
Boring
heads

Arbors &
adaptors

Ceramic inserts - Plaquettes céramiques - Keramische Wendeschneidplatten

| | | | | | | |
|--|--|--|--|--|--|--|
| <p>CNGA</p>  <p>80° Rhombic Negative Page A.76</p> | <p>CNGN</p>  <p>80° Rhombic Negative Page A.76</p> | <p>CNGX</p>  <p>80° Rhombic Negative Page A.76</p> | <p>DNGA</p>  <p>55° Rhombic Negative Page A.76</p> | <p>DNGN</p>  <p>55° Rhombic Negative Page A.76</p> | <p>DNGX</p>  <p>55° Rhombic Negative Page A.77</p> | <p>ENGN</p>  <p>75° Rhombic Negative Page A.77</p> |
| <p>GWC R/L</p>  <p>Positive Page A.77</p> | <p>GWF</p>  <p>Positive Page A.77</p> | <p>GWG</p>  <p>Positive Page A.77</p> | <p>RCGX</p>  <p>Round Positive Page A.77</p> | <p>RNGN</p>  <p>Round Negative Page A.78</p> | <p>SNGA</p>  <p>Square Negative Page A.78</p> | <p>SNGN</p>  <p>Square Negative Page A.78</p> |
| <p>SNGX</p>  <p>Square Negative Page A.78</p> | <p>TNGA</p>  <p>Triangular Negative Page A.79</p> | <p>TNGN</p>  <p>Triangular Negative Page A.79</p> | <p>VNGA</p>  <p>35° Rhombic Negative Page A.79</p> | <p>WNGA</p>  <p>80° Trigon Negative Page A.79</p> | | |

CBN/PKD inserts - CBN/PKD plaquettes - CBN/PKD Wendeschneidplatten

| | | | | | | |
|--|--|--|--|--|---|---|
| <p>CCMW</p>  <p>80° Rhombic Positive Page A.79</p> | <p>CNGA</p>  <p>80° Rhombic Negative Page A.80</p> | <p>DCMW</p>  <p>55° Rhombic Negative Page A.80</p> | <p>DNGA</p>  <p>55° Rhombic Negative Page A.80</p> | <p>SNGA</p>  <p>55° Square Negative Page A.80</p> | <p>TCMW</p>  <p>Triangular Positive Page A.80</p> | <p>TNGA</p>  <p>Triangular Negative Page A.80</p> |
| <p>TPMN</p>  <p>Triangular Positive Page A.81</p> | | | | | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

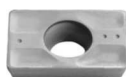
Boring heads

Arbors & adaptors

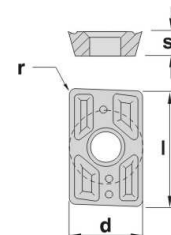
Inserts

Turning

ADMT



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| ADMT 150308 | 15,00 | 3,18 | 9,52 | 0,8 | | ● | | | | ● | ● | | | |
| ADMT 1503PDER | 15,00 | 3,18 | 9,52 | - | | ● | | | | | ● | | | |

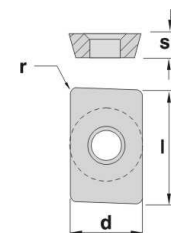


Automatic lathes

ADMW



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| ADMW 150308E | 15,00 | 3,18 | 9,52 | 0,8 | | ● | | | | ● | ● | | | ○ |
| ADMW 150308F | 15,00 | 3,18 | 9,52 | 0,8 | ● | | | | | | | | | ○ |



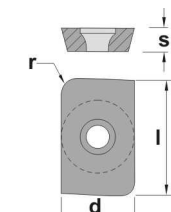
Ceramic tools

Parting & grooving

ADMW-C



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| ADMW 1503R1.0-C | 15,00 | 3,18 | 9,52 | 1,0 | | | | | | | ● | | | |
| ADMW 1503R1.5-C | 15,00 | 3,18 | 9,52 | 1,5 | | | | | | | ● | | | |
| ADMW 1503R2.0-C | 15,00 | 3,18 | 9,52 | 2,0 | | | | | | | ● | | | |
| ADMW 1503R2.5-C | 15,00 | 3,18 | 9,52 | 2,5 | | | | | | | ● | | | |
| ADMW 1503R3.0-C | 15,00 | 3,18 | 9,52 | 3,0 | | | | | | | ● | | | |
| ADMW 1503R3.5-C | 15,00 | 3,18 | 9,52 | 3,5 | | | | | | | ● | | | |
| ADMW 1503R4.0-C | 15,00 | 3,18 | 9,52 | 4,0 | | | | | | | ● | | | |
| ADMW 1503R4.5-C | 15,00 | 3,18 | 9,52 | 4,5 | | | | | | | ● | | | |
| ADMW 1503R5.0-C | 15,00 | 3,18 | 9,52 | 5,0 | | | | | | | ● | | | |
| ADMW 1503R6.0-C | 15,00 | 3,18 | 9,52 | 6,0 | | | | | | | ● | | | |



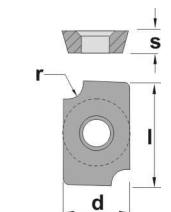
Threading

Drills

ADMW-R



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| ADMW 1503R1.0 | 15,00 | 3,18 | 9,52 | 1,0 | | | | | | | ● | | | |
| ADMW 1503R1.5 | 15,00 | 3,18 | 9,52 | 1,5 | | | | | | | ● | | | |
| ADMW 1503R2.0 | 15,00 | 3,18 | 9,52 | 2,0 | | | | | | | ● | | | |
| ADMW 1503R2.5 | 15,00 | 3,18 | 9,52 | 2,5 | | | | | | | ● | | | |
| ADMW 1503R3.0 | 15,00 | 3,18 | 9,52 | 3,0 | | | | | | | ● | | | |
| ADMW 1503R3.5 | 15,00 | 3,18 | 9,52 | 3,5 | | | | | | | ● | | | |
| ADMW 1503R4.0 | 15,00 | 3,18 | 9,52 | 4,0 | | | | | | | ● | | | |
| ADMW 1503R4.5 | 15,00 | 3,18 | 9,52 | 4,5 | | | | | | | ● | | | |
| ADMW 1503R5.0 | 15,00 | 3,18 | 9,52 | 5,0 | | | | | | | ● | | | |



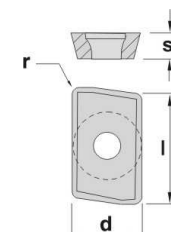
Cartridges

Brazed tools

APFT



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------------|-------|------|------|---|------|------|------|------|------|-------|-------|------|------|------|
| APFT 1604PDTR | 16,00 | 4,76 | 9,52 | - | | ● | | | | | ● | | | |



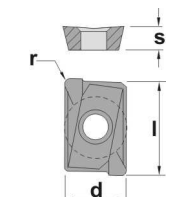
Milling cutters

Solid carbide

APHT-AL




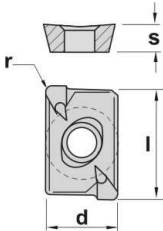
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------------------|-------|------|------|---|------|------|------|------|------|-------|-------|------|------|------|
| APHT 1003PDFR-AL | 9,52 | 3,18 | 6,35 | - | ● | | | | | | | | | ● |
| APHT 1604PDFR-AL | 17,00 | 4,76 | 9,52 | - | ● | | | | | | | | | ● |




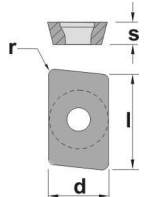
Boring heads


Arbors & adaptors

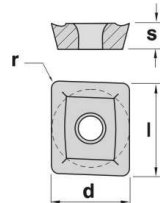
| APKT | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TIC28 | T40L | Z10R |
|---|---------------|-------|------|------|-----|------|------|------|------|------|-------|-------|-------|------|------|
|  | APKT 1003PDR | 9,52 | 3,18 | 6,35 | 0,4 | | | | | | | | • | | |
| | APKT 1003PDTR | 9,52 | 3,18 | 6,35 | 0,4 | • | | | | • | • | | | | |
| | APKT 1604PDR | 16,00 | 4,76 | 9,52 | 0,8 | • | | | | • | • | | | | |
| | APKT 160416 | 16,00 | 4,76 | 9,52 | 1,6 | | | | | | | | | • | |

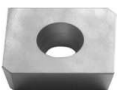


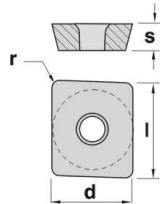
| APKT-26 | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|-----------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | APKT 160408E-26 | 16,66 | 4,76 | 9,52 | 0,8 | | | | | | • | • | | | |




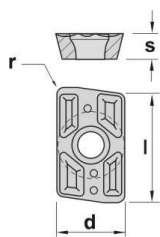
| APLT | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|--|--------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | APLT 1504ZZR | 15,87 | 4,76 | 12,70 | 0,8 | | • | | | | | • | | | |




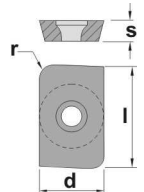
| APLX | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|--------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | APLX 1504ZZR | 15,87 | 4,76 | 12,70 | 0,8 | ◦ | • | | | | | • | | | |



| APMT | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|---------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | APMT 1604PDER | 16,00 | 4,76 | 9,52 | 0,8 | | • | | | | | • | | • | |
| | APMT 200408 | 20,00 | 4,76 | 12,70 | 0,8 | | • | | | | | • | | • | |



| APMT-26 | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|-----------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | APMT 160412E-26 | 16,66 | 4,76 | 9,52 | 1,2 | | | | | | • | | | | |
| | APMT 160416E-26 | 16,66 | 4,76 | 9,52 | 1,6 | | | | | | • | | | | |
| | APMT 160424E-26 | 16,66 | 4,76 | 9,52 | 2,4 | | | | | | • | | | | |
| | APMT 160432E-26 | 16,66 | 4,76 | 9,52 | 3,2 | | | | | | • | | | | |
| | APMT 160440E-26 | 16,66 | 4,76 | 9,52 | 4,0 | | | | | | • | | | | |
| | APMT 160448E-26 | 16,66 | 4,76 | 9,52 | 4,8 | | | | | | • | | | | |
| | APMT 160464E-26 | 16,66 | 4,76 | 9,52 | 6,4 | | | | | | • | | | | |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

• Normally available for immediate delivery ◦ Only available in a limited quantity

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges


Brazed tools

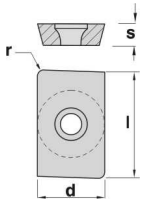
Milling cutters

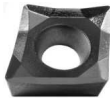
Solid carbide

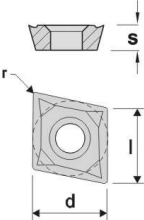
Boring heads


Arbors & adaptors

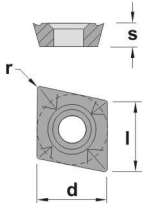
| APMW | | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|--|---------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | | APMW 200408E | 20,00 | 4,76 | 12,70 | 0,8 | | • | | | | | • | | • | |
| | | APMW 200408F | 20,00 | 4,76 | 12,70 | 0,8 | ○ | | | | | | | | | |




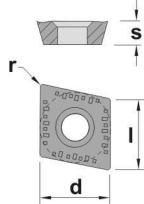
| CCGT-AL | | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|---|--|-----------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|---|
|  | | CCGT 060202-AL | 6,45 | 2,38 | 6,35 | 0,2 | • | | | | | | | | | ○ | |
| | | CCGT 060204-AL | 6,45 | 2,38 | 6,35 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 09T302-AL | 9,65 | 3,97 | 9,52 | 0,2 | • | | | | | | | | | | ○ |
| | | CCGT 09T304-AL | 9,65 | 3,97 | 9,52 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 09T308-AL | 9,65 | 3,97 | 9,52 | 0,8 | • | | | | | | | | | | ○ |
| | | CCGT 120402-AL | 12,90 | 4,76 | 12,70 | 0,2 | • | | | | | | | | | | ○ |
| | | CCGT 120404-AL | 12,90 | 4,76 | 12,70 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 120408-AL | 12,90 | 4,76 | 12,70 | 0,8 | • | | | | | | | | | | ○ |




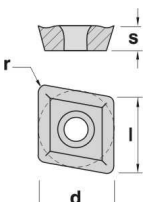
| CCGT-AP | | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|--|--|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|---|
|  | | CCGT 060202-AP | 6,45 | 2,38 | 6,35 | 0,2 | • | | | | | | | | | ○ | |
| | | CCGT 060204-AP | 6,45 | 2,38 | 6,35 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 09T302-AP | 9,65 | 3,97 | 9,52 | 0,2 | • | | | | | | | | | | ○ |
| | | CCGT 09T304-AP | 9,65 | 3,97 | 9,52 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 09T308-AP | 9,65 | 3,97 | 9,52 | 0,8 | • | | | | | | | | | | ○ |
| | | CCGT 120402-AP | 12,90 | 4,76 | 12,70 | 0,2 | • | | | | | | | | | | ○ |
| | | CCGT 120404-AP | 12,90 | 4,76 | 12,70 | 0,4 | • | | | | | | | | | | ○ |
| | | CCGT 120408-AP | 12,90 | 4,76 | 12,70 | 0,8 | • | | | | | | | | | | ○ |




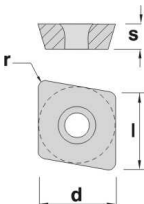
| CCKT | | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|--|--------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | | CCKT 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | | | | | • | • | | | |
| | | CCKT 080308 | 8,05 | 3,18 | 7,94 | 0,8 | | | | | | • | • | | | |
| | | CCKT 09T308 | 9,65 | 4,00 | 9,52 | 0,8 | | | | | | • | • | | | |
| | | CCKT 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | • | • | | | |



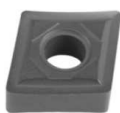
| CCMT-03 | | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK15 | TIC17 | TIC25 | TIC30 | TIC35 | Z10R |
|---|--|-----------------------|------|------|------|-----|------|------|------|------|------|-------|-------|-------|-------|------|
|  | | CCMT 060202-03 | 6,45 | 2,38 | 6,35 | 0,2 | | • | | | | | | | | |
| | | CCMT 060204-03 | 6,45 | 2,38 | 6,35 | 0,4 | • | • | | | | | | • | • | |
| | | CCMT 080304-03 | 8,05 | 3,18 | 7,94 | 0,4 | • | • | | | | | | • | • | |
| | | CCMT 080308-03 | 8,05 | 3,18 | 7,94 | 0,8 | • | • | | | | | | • | • | |
| | | CCMT 09T304-03 | 9,65 | 3,97 | 9,52 | 0,4 | • | • | | | | | | • | • | |
| | | CCMT 09T308-03 | 9,65 | 3,97 | 9,52 | 0,8 | • | • | | | | | | • | • | |



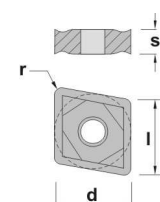
| CCMW | | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---|--|--------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
|  | | CCMW 060202 | 6,45 | 2,38 | 6,35 | 0,2 | | • | | | | | | ○ | | |
| | | CCMW 060204 | 6,45 | 2,38 | 6,35 | 0,4 | | • | | | | | | | ○ | |
| | | CCMW 080304 | 8,05 | 3,18 | 7,94 | 0,4 | | • | | | | | | | ○ | |
| | | CCMW 09T304 | 9,65 | 3,97 | 9,52 | 0,4 | | • | | | | | | | ○ | |
| | | CCMW 09T308 | 9,65 | 3,97 | 9,52 | 0,8 | | • | | | | | | | ○ | |
| | | CCMW 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | • | | | | | | | ○ | |




CNGP



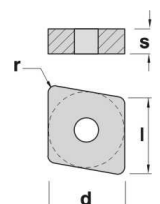
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNGP 120404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | |
| CNGP 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | |



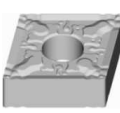
CNMA



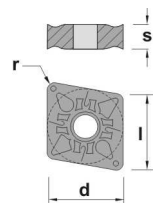
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | ● | | | | | ○ | | | | |
| CNMA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | | | | |




CNMG-CF



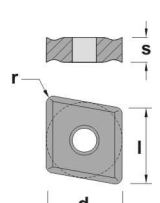
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120404-CF | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | | ● | | |




CNMG-CFC



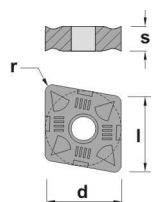
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120404-CFC | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | |



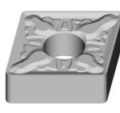
CNMG-CFM



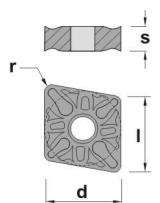
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120404-CFM | 12,90 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | |



CNMG-CM



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120408-CM | 12,90 | 4,76 | 12,70 | 0,8 | | | | | ● | | | ● | | |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery

○ Only available in a limited quantity

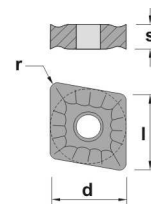
Inserts

Turning

CNMG-CMC



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120408-CMC | 12,90 | 4,76 | 12,70 | 0,8 | | | | • | | | | | | |



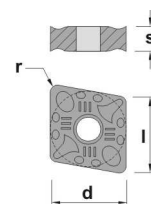
Automatic lathes

Ceramic tools

CNMG-CMF



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120408-CMF | 12,90 | 4,76 | 12,70 | 0,8 | | | | | • | | | • | | |

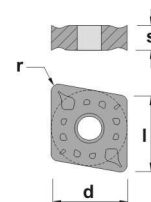


Parting & grooving

CNMG-CMR



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 090304-CMR | 9,65 | 3,18 | 9,52 | 0,4 | | | | | • | | | | | |
| CNMG 090308-CMR | 9,65 | 3,18 | 9,52 | 0,8 | | | | | | | • | | | |
| CNMG 120408-CMR | 12,90 | 4,76 | 12,70 | 0,8 | | • | | | • | | • | • | | |
| CNMG 120412-CMR | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | • | | | |



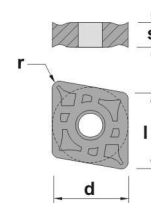
Threading

Drills

CNMG-CR



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 120408-CR | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | • | | |
| CNMG 120412-CR | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | | • | | |
| CNMG 160608-CR | 16,10 | 6,35 | 15,88 | 0,8 | | | | | | | | ○ | | |
| CNMG 160612-CR | 16,10 | 6,35 | 15,88 | 1,2 | | | | | | | | ○ | | |
| CNMG 190612-CR | 19,30 | 6,35 | 19,05 | 1,2 | | | | | | | | ○ | | |
| CNMG 190616-CR | 19,30 | 6,35 | 19,05 | 1,6 | | | | | | | | ○ | | |



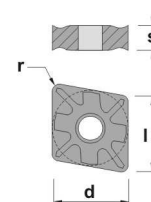
Cartridges

Brazed tools

CNMG-CS



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMG 090304-CS | 9,65 | 3,18 | 9,52 | 0,4 | | | | | | | | | | |
| CNMG 090308-CS | 9,65 | 3,18 | 9,52 | 0,8 | | | | | | | | | | |
| CNMG 120404-CS | 12,90 | 4,76 | 12,70 | 0,4 | | | | | | | | | | |
| CNMG 120408-CS | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | | • | |



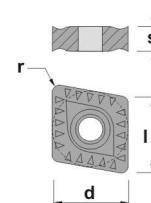
Milling cutters

Solid carbide

CNMM



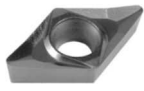
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| CNMM 120408 | 12,90 | 4,76 | 12,70 | 0,8 | | | | | | | | ○ | | |
| CNMM 120412 | 12,90 | 4,76 | 12,70 | 1,2 | | | | | | | | ○ | | |
| CNMM 160612 | 16,10 | 6,35 | 15,88 | 1,2 | | | | | | | | ○ | | |
| CNMM 190612 | 19,30 | 6,35 | 19,05 | 1,2 | | | | | | | | ○ | | |



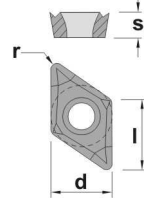
Boring heads

Arbors & adaptors

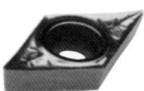
DCGT-AL



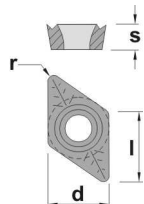
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DCGT 070202-AL | 7,75 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | ○ |
| DCGT 070204-AL | 7,75 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | ○ |
| DCGT 11T302-AL | 11,60 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | ○ |
| DCGT 11T304-AL | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| DCGT 11T308-AL | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |



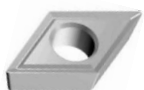
DCGT-AP



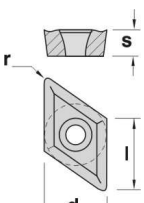
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DCGT 070202-AP | 7,75 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | ○ |
| DCGT 070204-AP | 7,75 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | ○ |
| DCGT 11T302-AP | 11,60 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | ○ |
| DCGT 11T304-AP | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| DCGT 11T308-AP | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |



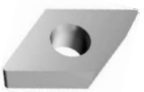
DCMT-03



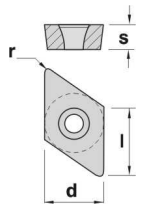
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DCMT 070204-03 | 7,75 | 2,38 | 6,35 | 0,4 | ○ | ● | | ● | ● | | | ● | ● | |
| DCMT 11T304-03 | 11,60 | 3,97 | 9,52 | 0,4 | ○ | ● | | ● | ● | | | ● | ● | |
| DCMT 11T308-03 | 11,60 | 3,97 | 9,52 | 0,8 | ○ | ● | | ● | ● | | | ● | ● | |
| DCMT 150408-03 | 15,50 | 4,76 | 12,70 | 0,8 | ○ | | | | ○ | | | | | |




DCMW



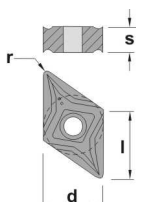
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DCMW 11T304 | 11,60 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | |
| DCMW 11T308 | 11,60 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | |
| DCMW 150408 | 15,50 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | |




DNGP



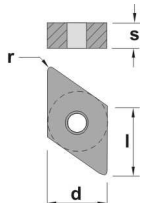
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DNGP 150404 | 15,50 | 4,76 | 12,70 | 0,4 | | | | | | ● | | | | |
| DNGP 150408 | 15,50 | 4,76 | 12,70 | 0,8 | | | | | | ● | | | | |



DNMA



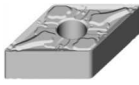
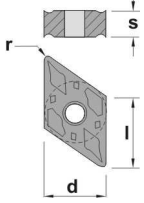
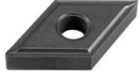
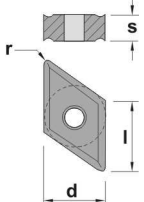
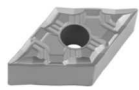
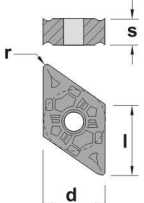
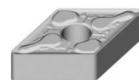
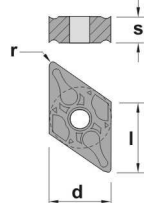
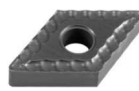
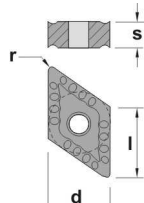

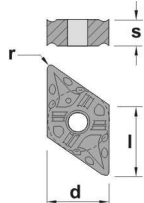
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DNMA 150608 | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | ○ | | | | |
| DNMA 150612 | 15,50 | 6,35 | 12,70 | 1,2 | | | | | | ○ | | | | |



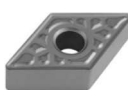
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery ○ Only available in a limited quantity

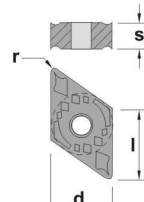
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

| DNMG-CF | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|---|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|---|
|  | DNMG 150604-CF | 15,50 | 6,35 | 12,70 | 0,4 | | | | | ● | | | ● | | |  |
| | | | | | | | | | | | | | | | | |
| DNMG-CFC | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|  | DNMG 150404-CFC | 15,50 | 4,76 | 12,70 | 0,4 | | | | ● | | | | | | |  |
| | | | | | | | | | | | | | | | | |
| DNMG-CFM | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|  | DNMG 150404-CFM | 15,50 | 4,76 | 12,70 | 0,4 | | | | | ● | | | ● | | |  |
| | DNMG 150604-CFM | 15,50 | 6,35 | 12,70 | 0,4 | | | | | ● | | | | | | |
| | | | | | | | | | | | | | | | | |
| DNMG-CM | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|  | DNMG 150608-CM | 15,50 | 6,35 | 12,70 | 0,8 | | | | | ● | | | ● | | |  |
| | | | | | | | | | | | | | | | | |
| DNMG-CMC | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|  | DNMG 150408-CMC | 15,50 | 4,76 | 12,70 | 0,8 | | | | ● | | | | | | |  |
| | | | | | | | | | | | | | | | | |
| DNMG-CMF | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|  | DNMG 150608-CMF | 15,50 | 6,35 | 12,70 | 0,8 | | | | | ● | | | ● | | |  |
| | | | | | | | | | | | | | | | | |


DNMG-CMR



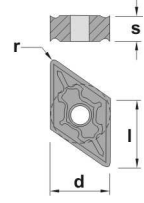
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DNMG 110404-CMR | 11,60 | 4,76 | 9,52 | 0,4 | | | | | ● | | | | | |
| DNMG 110408-CMR | 11,60 | 4,76 | 9,52 | 0,8 | | | | | | | ● | | | |
| DNMG 150408-CMR | 15,50 | 4,76 | 12,70 | 0,8 | | | | | | | ● | | | |
| DNMG 150608-CMR | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | | ● | ● | | |
| DNMG 150612-CMR | 15,50 | 6,35 | 12,70 | 1,2 | | | | | | | ● | ● | | |
| DNMG 190608-CMR | 19,40 | 6,35 | 15,88 | 0,8 | | | | | | | ○ | ○ | | |
| DNMG 190612-CMR | 19,40 | 6,35 | 15,88 | 1,2 | | | | | | | ○ | ○ | | |



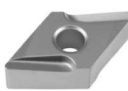
DNMG-CS



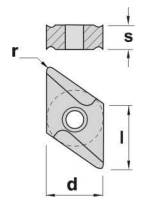
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DNMG 110404-CS | 11,60 | 4,76 | 9,52 | 0,4 | | | | | | | | | ● | |
| DNMG 110408-CS | 11,60 | 4,76 | 9,52 | 0,8 | | | | | | | | | ● | |
| DNMG 150604-CS | 15,50 | 6,35 | 12,70 | 0,4 | | | | | | | | | ● | |
| DNMG 150608-CS | 15,50 | 6,35 | 12,70 | 0,8 | | | | | | | | | ● | |




DNMX



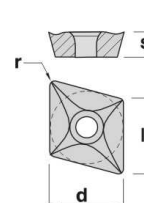
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| DNMX 150604R-22 | 6,57 | 2,38 | 6,35 | 0,4 | | | | | ● | | | ● | | |
| DNMX 150608R-22 | 8,20 | 3,18 | 7,93 | 0,4 | | | | | ● | | | ● | | |




ECMT



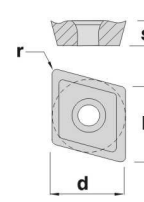
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| ECMT 060204 | 6,57 | 2,38 | 6,35 | 0,4 | | | | | ● | | | | | |
| ECMT 080304 | 8,20 | 3,18 | 7,93 | 0,4 | | | | | ● | | | | | |
| ECMT 120404 | 12,40 | 4,00 | 12,00 | 0,4 | | ○ | | | ● | | | | | |
| ECMT 120408 | 12,40 | 4,00 | 12,00 | 0,8 | | ○ | | | ● | | | | | |
| ECMT 120412 | 12,40 | 4,00 | 12,00 | 1,2 | | ○ | | | ● | | | | | |




EPMT



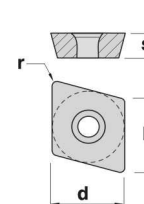
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| EPMT 080302-30 | 8,28 | 3,00 | 8,00 | 0,2 | | ○ | | | | | | | | |
| EPMT 080304-30 | 8,28 | 3,00 | 8,00 | 0,4 | | ● | | | ● | | | | | |
| EPMT 080308-30 | 8,28 | 3,00 | 8,00 | 0,8 | | | | | ● | | | | | |



EPMW



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| EPMW 040204 | 4,92 | 2,38 | 4,76 | 0,4 | | ● | | | ● | | | | | |
| EPMW 080304 | 8,28 | 3,00 | 8,00 | 0,4 | | ○ | | | | | | | | |
| EPMW 080308 | 8,28 | 3,00 | 8,00 | 0,8 | | ○ | | | | | | | | |



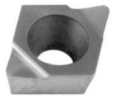
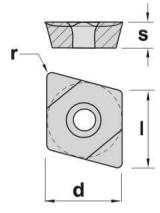
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery ○ Only available in a limited quantity

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors


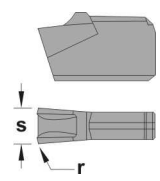
EPMX

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| EPMX 040204 | 4,92 | 2,38 | 4,76 | 0,4 | • | | | | | | | | | |


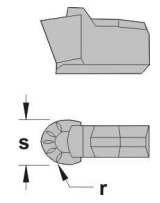
FRC

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------|---|------|---|------|------|------|------|------|------|-------|-------|------|------|------|
| FRC 1.6 | - | 1,60 | - | 0,15 | | | | | | | | | | • |
| FRC 2.2 | - | 2,20 | - | 0,20 | | | | | | | • | | | • |
| FRC 3.0 | - | 3,00 | - | 0,20 | | | | | | | • | | | • |
| FRC 4.0 | - | 4,00 | - | 0,20 | | | | | | | • | | | • |
| FRC 5.0 | - | 5,00 | - | 0,30 | | | | | | | • | | | • |
| FRC 6.0 | - | 6,00 | - | 0,30 | | | | | | | | | | • |


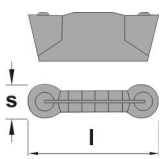
FRCR

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-----------------|---|------|---|------|------|------|------|------|------|-------|-------|------|------|------|
| FRCR 3.0 | - | 3,00 | - | 1,50 | | | | | | | • | | | • |
| FRCR 4.0 | - | 4,00 | - | 2,00 | | | | | | | • | | | • |
| FRCR 5.0 | - | 5,00 | - | 2,50 | | | | | | | • | | | • |
| FRCR 6.0 | - | 6,00 | - | 3,00 | | | | | | | • | | | • |


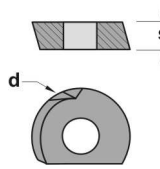
GXGP-AL

| REF. | l | s | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------------|-------|------|------|------|------|------|-------|-------|-------|-------|-------|------|
| GXGP-253.0-AL | 31,00 | 6,00 | • | | | | | | | | | ○ |
| GXGP-254.0-AL | 31,00 | 8,00 | • | | | | | | | | | ○ |


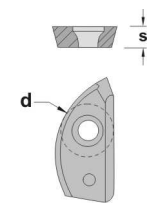
HPR

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| HPR 10 | - | 2,40 | 10,00 | - | | | | | | | | | | |
| HPR 12 | - | 2,50 | 12,00 | - | | | | | | | | • | | |
| HPR 16 | - | 3,00 | 16,00 | - | | | | | | | | • | | |
| HPR 20 | - | 3,00 | 20,00 | - | | | | | | | | • | | |
| HPR 25 | - | 4,00 | 25,00 | - | | | | | | | | • | | |
| HPR 32 | - | 5,00 | 32,00 | - | | | | | | | | • | | |

INT

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------|---|-----|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| INT 25 | - | 4,5 | 12,50 | - | | | | | | • | | | | |
| INT 32 | - | 5,6 | 16,00 | - | | | | | | • | | | | |
| INT 40 | - | 5,6 | 20,00 | - | | | | | | • | | | | |
| INT 50 | - | 7,9 | 25,00 | - | | | | | | • | | | | |

| INW | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|-----|--------|---|-----|-------|---|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | INW 25 | - | 4,5 | 12,50 | - | | | | | • | | | | | | |
| | INW 32 | - | 5,6 | 16,00 | - | | | | | • | | | | | | |
| | INW 40 | - | 5,6 | 20,00 | - | | | | | • | | | | | | |
| | INW 50 | - | 7,9 | 25,00 | - | | | | | • | | | | | | |

| KNUX | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|------|-----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | |
| | KNUX 160405L-21 | 16,00 | 4,76 | 9,52 | 0,5 | • | | | | • | | | • | | | |
| | KNUX 160405L-32 | 16,00 | 4,76 | 9,52 | 0,5 | | | | | • | | | | | | |
| | KNUX 160405R-21 | 16,00 | 4,76 | 9,52 | 0,5 | • | | | | • | | | • | | | |
| | KNUX 160405R-32 | 16,00 | 4,76 | 9,52 | 0,5 | • | | | | • | | | | | | |
| | KNUX 160410L-21 | 16,00 | 4,76 | 9,52 | 1,0 | • | | | | | | | • | | | |
| | KNUX 160410L-32 | 16,00 | 4,76 | 9,52 | 1,0 | • | | | | | | | • | | | |
| | KNUX 160410R-21 | 16,00 | 4,76 | 9,52 | 1,0 | • | | | ○ | | | | • | | | |
| | KNUX 160410R-32 | 16,00 | 4,76 | 9,52 | 1,0 | • | | | | | | | • | | | |

| MTK | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|-----|--------|-------|------|---|------|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | MTK 10 | 10,00 | 2,60 | - | 0,60 | | | | | | | | | • | | |
| | MTK 12 | 12,00 | 3,00 | - | 1,00 | | | | | | | | | • | | |
| | MTK 16 | 16,00 | 4,00 | - | 1,30 | | | | | | | | | • | | |
| | MTK 20 | 20,00 | 5,00 | - | 1,60 | | | | | | | | | • | | |
| | MTK 25 | 25,00 | 6,00 | - | 2,00 | | | | | | | | | • | | |

| ODMT | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|------|-------------|------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | ODMT 040408 | 4,00 | 4,76 | 12,70 | 0,8 | | | | | | • | • | | | | |
| | ODMT 060512 | 6,00 | 5,55 | 16,00 | 1,2 | | | | | | • | • | | | | |

| ODMW | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|------|-------------|------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | ODMW 040408 | 4,00 | 4,76 | 12,70 | 0,8 | | | | | | • | | | | | |
| | ODMW 060512 | 6,00 | 5,55 | 16,00 | 1,2 | | | | | | • | | | | | |

| RCGT-AL | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|---------|----------------|---|------|-------|---|------|------|------|------|-------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | |
| | RCGT 0803MO-AL | - | 3,18 | 8,00 | - | • | | | | | | | | | ○ | |
| | RCGT 1003MO-AL | - | 3,18 | 10,00 | - | • | | | | | | | | | ○ | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

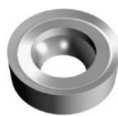
• Normally available for immediate delivery

○ Only available in a limited quantity

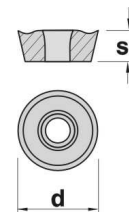
Inserts

Turning

RCGT-AP



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|---|------|------|---|------|------|------|------|-------|-------|-------|-------|-------|------|
| RCGT 0803MO-AP | - | 3,18 | 8,00 | - | • | | | | | | | | | ○ |

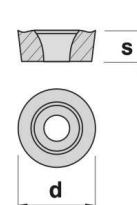


Automatic lathes

RCMT



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|---|------|-------|---|------|------|------|------|-------|-------|-------|-------|-------|------|
| RCMT 0602MO | - | 2,38 | 6,00 | - | | | | | • | | | | | |
| RCMT 0803MO | - | 3,18 | 8,00 | - | | | | | • | | | | | |
| RCMT 1003MO | - | 3,18 | 10,00 | - | | | | | • | | | | | |
| RCMT 10T3MO | - | 3,97 | 10,00 | - | | • | | | • | | | | | |
| RCMT 1204MO | - | 4,76 | 12,00 | - | ○ | • | | | • | | | | | |
| RCMT 1606MO-30 | - | 6,35 | 16,00 | - | | ○ | | | | | | | | |
| RCMT 2006MO-30 | - | 6,35 | 20,00 | - | | ○ | | | | | | | | |
| RCMT 2006MO-34 | - | 6,35 | 20,00 | - | | ○ | | | | | | | | |



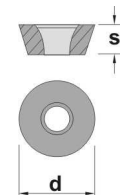
Ceramic tools

Parting & grooving

RDHW



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RDHW 0702MO | - | 2,38 | 7,00 | - | | | | | | | | • | • | |
| RDHW 1003MO | - | 3,18 | 10,00 | - | | | | | | | | • | • | |
| RDHW 12T3MO | - | 3,97 | 12,00 | - | | | | | | | | • | • | |
| RDHW 1604MO | - | 4,76 | 16,00 | - | | | | | | | | • | • | |
| RDHW 2006MO | - | 6,35 | 20,00 | - | | | | | | | | • | • | |



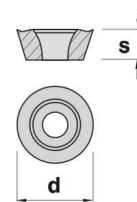
Threading

Drills

RDMT



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RDMT 1003MO | - | 3,18 | 10,00 | - | | | | | | | | | | • |
| RDMT 1204MO | - | 4,76 | 12,00 | - | | • | | | | | • | | | • |
| RDMT 12T3MO | - | 3,97 | 12,00 | - | | | | | | | | | | • |
| RDMT 1604MO | - | 4,76 | 16,00 | - | | | | | | | | | | • |



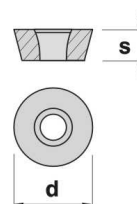
Cartridges

Brazed tools

RDMW



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RDMW 1003MO | - | 3,18 | 10,00 | - | | | | | | | | • | • | |
| RDMW 12T3MO | - | 3,97 | 12,00 | - | | | | | | | | • | • | |
| RDMW 1204MO | - | 4,76 | 12,00 | - | | • | | | | | • | | | |
| RDMW 1604MO | - | 4,76 | 16,00 | - | | | | | | | | | | • |



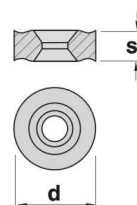
Milling cutters

Solid carbide

RNMG



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-------------|---|------|-------|---|------|------|------|------|-------|-------|-------|-------|-------|------|
| RNMG 090300 | - | 3,18 | 9,52 | - | | | | | | | ○ | | | |
| RNMG 120400 | - | 4,76 | 12,70 | - | | ○ | | | | | ○ | | | |
| RNMG 150600 | - | 6,35 | 15,88 | - | | | | | | | | ○ | | |
| RNMG 190600 | - | 6,35 | 19,05 | - | | | | | | | | ○ | | |
| RNMG 250900 | - | 9,52 | 25,40 | - | | | | | | | | ○ | | |



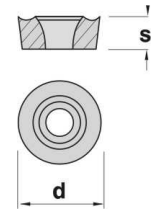
Boring heads

Arbors & adaptors

RPMT



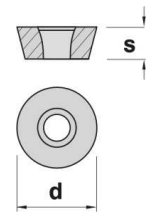
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RPMT 120400-39 | - | 4,76 | 12,70 | - | • | | | | | | • | | | |
| RPMT 1204MO | - | 4,76 | 12,70 | - | • | | | | • | • | | | • | |



RPMW



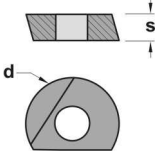
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|--------------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RPMW 0802MO | - | 2,38 | 8,00 | - | • | | | | | | • | | • | |
| RPMW 1003MO | - | 3,18 | 10,00 | - | • | | | | | | • | | • | |
| RPMW 1204MO | - | 4,76 | 12,00 | - | • | | | | | | • | | • | |
| RPMW 1204MOT | - | 4,76 | 12,00 | - | • | | | | • | • | | | • | |



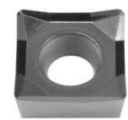
RPR



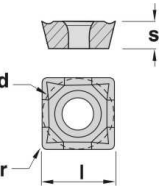
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TL10 | T40L | Z10R |
|--------|---|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| RPR 10 | - | 2,60 | 10,00 | - | | | | | | | | | • | |
| RPR 12 | - | 3,00 | 12,00 | - | | | | | | | | | • | |
| RPR 16 | - | 4,00 | 16,00 | - | | | | | | | | | • | |
| RPR 20 | - | 5,00 | 20,00 | - | | | | | | | | | • | |
| RPR 25 | - | 6,00 | 25,00 | - | | | | | | | | | • | |
| RPR 32 | - | 7,00 | 32,00 | - | | | | | | | | | • | |



SCGT-AL



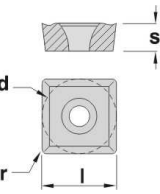
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SCGT 09T304-AL | 9,52 | 3,97 | 9,52 | 0,4 | • | | | | | | | | | ○ |
| SCGT 09T308-AL | 9,52 | 3,97 | 9,52 | 0,8 | • | | | | | | | | | ○ |
| SCGT 120408-AL | 12,70 | 4,76 | 12,70 | 0,8 | • | | | | | | | | | ○ |



SCMT-03



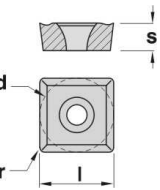
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|-------|-------|-------|------|
| SCMT 09T304-03 | 9,52 | 3,97 | 9,52 | 0,4 | ○ | • | | | ○ | | | | | | |
| SCMT 09T308-03 | 9,52 | 3,97 | 9,52 | 0,8 | ○ | • | | | ○ | | | | | | |
| SCMT 120408-03 | 12,70 | 4,76 | 12,70 | 0,8 | | • | | | • | | | | | | |
| SCMT 120412-03 | 12,70 | 4,76 | 12,70 | 1,2 | | • | | | ○ | | | | | | |



SCMT-39



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SCMT 09T304-39 | 9,52 | 3,97 | 9,52 | 0,4 | | • | | | | | ○ | | | |
| SCMT 09T308-39 | 9,52 | 3,97 | 9,52 | 0,8 | ○ | • | | | | | | | | |
| SCMT 120404-39 | 12,70 | 4,76 | 12,70 | 0,4 | | • | | | | | • | | | |
| SCMT 120408-39 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | • | | | | | | | | |
| SCMT 120412-39 | 12,70 | 4,76 | 12,70 | 1,2 | | • | | | | | ○ | | | |
| SCMT 120612-39 | 12,70 | 6,35 | 12,70 | 1,2 | | • | | | | | ○ | | | |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

• Normally available for immediate delivery ○ Only available in a limited quantity

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters


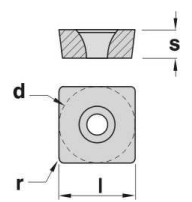
Solid carbide

Boring heads

Arbors & adaptors


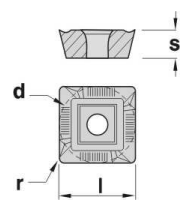
SCMW

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SCMW 09T308 | 9,52 | 3,97 | 9,52 | 0,8 | ● | | | | | | ○ | | | |
| SCMW 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | | | ○ | | | |
| SCMW 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ○ | | | | | | ○ | | | |


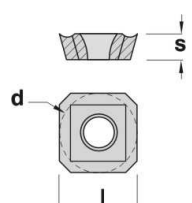
SDMT

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SDMT 12T308 | 13,29 | 3,97 | 13,29 | 0,8 | | | | | | | | ● | | |


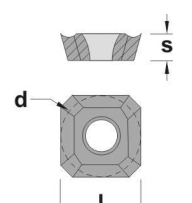
SEHT

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| SEHT 1204AF-N | 12,70 | 4,76 | 12,70 | - | | | | | | ● | ● | | | |


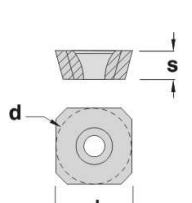
SEHT-AL

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| SEHT 1204AFFN-AL | 12,70 | 3,18 | 12,70 | - | ● | | | | | | | | | ● |

SEHW

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| SEHW 1204AFEN001 | 12,70 | 4,76 | 12,70 | - | ● | | | | | | | | | |
| SEHW 1204AFSN151 | 12,70 | 4,76 | 12,70 | - | | ● | | | | ● | ● | | | |

SEKN

| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| SEKN 1203AFEN-3A | 12,70 | 3,18 | 12,70 | - | ● | | | | | | | | | |
| SEKN 1203AFSN-3D | 12,70 | 3,18 | 12,70 | - | | ● | ● | | ● | ● | | ● | | |
| SEKN 1204AFEN-3A | 12,70 | 4,76 | 12,70 | - | ○ | | | | | | | | | |
| SEKN 1204AFSN-3D | 12,70 | 4,76 | 12,70 | - | | ● | | | | | ● | ● | | |
| SEKN 1504AFEN-4A | 15,88 | 4,76 | 15,88 | - | ○ | | | | | | | | | |
| SEKN 1504AFSN-4D | 15,88 | 4,76 | 15,88 | - | | ● | | | | | ● | ● | | |




| SEKR | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TIC28 | T40L | Z10R | |
|------|------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|-------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | SEKR 1203AFN | 12,70 | 3,18 | 12,70 | - | | | | | | | | • | | | |
| | SEKR 1203AFTN-94 | 12,70 | 3,18 | 12,70 | - | | | | | | • | • | | | | |

| SEMT | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TIC28 | T40L | Z10R | |
|------|--------------|-------|------|-------|---|------|------|------|------|------|-------|-------|-------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | SEMT 1204FTN | 12,70 | 4,76 | 12,70 | - | | | | | | | | • | | | |

| SFAN | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|------|--------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | SFAN 1203EFL | 12,70 | 3,18 | 12,70 | - | • | | | | | | | | | | |
| | SFAN 1203EFR | 12,70 | 3,18 | 12,70 | - | | • | | | | | | | | | |

| SNHX | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|------|--------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | SNHX 1102XX | 11,00 | 2,38 | 11,00 | - | | | | | | | | • | | • | |
| | SNHX 1103XX | 11,00 | 2,70 | 11,00 | - | | | | | | | | • | | • | |
| | SNHX 1203XX | 12,70 | 3,18 | 12,70 | - | | | | | | | | • | | • | |
| | SNHX 12045XX | 12,70 | 4,50 | 12,70 | - | | | | | | | | • | | • | |
| | SNHX 1205XX | 12,70 | 5,40 | 12,70 | - | | | | | | | | • | | • | |
| | SNHX 1207XX | 12,70 | 7,00 | 12,70 | - | | | | | | | | • | | • | |

| SNKN | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R | |
|------|--------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | SNKN 1204ENN | 12,70 | 4,76 | 12,70 | - | • | • | | | | | | | | | |

| SNMA | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|------|-------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | |
| | SNMA 120404 | 12,70 | 4,76 | 12,70 | 0,4 | | | | | | • | | | | | |
| | SNMA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | • | | | | | |
| | SNMA 120416 | 12,70 | 4,76 | 12,70 | 1,6 | | | | | | • | | | | | |
| | SNMA 190612 | 19,05 | 6,35 | 19,05 | 1,2 | | | | | | • | | | | | |
| | SNMA 190616 | 19,05 | 6,35 | 19,05 | 1,6 | | | | | | • | | | | | |

| SNMG-CFM | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | |
|----------|-----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | |
| | SNMG 120404-CFM | 12,70 | 4,76 | 12,70 | 0,4 | | | | | • | | | | | | |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

• Normally available for immediate delivery

◦ Only available in a limited quantity

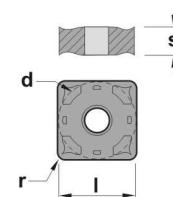
Inserts

Turning

SNMG-CMR



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| SNMG 120408-CMR | 12,70 | 4,76 | 12,70 | 0,4 | ○ | | | | | | ● | ● | | |

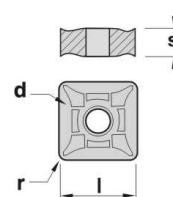


Automatic lathes

SNMG-CR



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| SNMG 120412-CR | 12,70 | 4,76 | 12,70 | 1,2 | | | | | | | | ● | | |
| SNMG 150612-CR | 15,88 | 6,35 | 15,88 | 1,2 | | | | | | | ○ | | | |
| SNMG 190616-CR | 19,05 | 6,35 | 19,05 | 1,6 | | | | | | | ○ | | | |



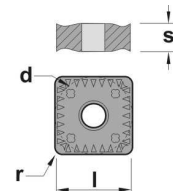
Ceramic tools

Parting & grooving

SNMM



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| SNMM 190612 | 19,05 | 6,35 | 19,05 | 1,2 | | | | | | | | ○ | | |
| SNMM 190616 | 19,05 | 6,35 | 19,05 | 1,6 | | | | | | | | ○ | | |
| SNMM 250724 | 25,40 | 7,94 | 25,40 | 2,4 | | | | | | | | ○ | | |



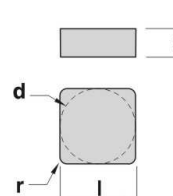
Threading

Drills

SNUN



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SNUN 120408E | 12,70 | 4,76 | 12,70 | 0,8 | | ● | | | | | | | | |
| SNUN 120408F | 12,70 | 4,76 | 12,70 | 0,8 | ○ | | | | | | | | | |
| SNUN 120412E | 12,70 | 4,76 | 12,70 | 1,2 | | ● | | | | | | | | |



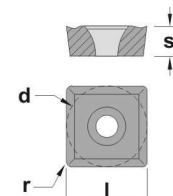
Cartridges

Brazed tools

SOMT



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SOMT 12M612SN-B | 12,70 | 6,00 | 12,70 | 1,2 | | ● | | | | ● | | | | |
| SOMT 15M612SN-B | 15,88 | 6,00 | 15,88 | 1,2 | | ● | | | | | | | | |



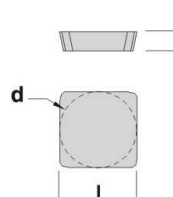
Milling cutters

Solid carbide

SPKN




| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TIC28 | T20L | Z10R |
|-------------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|-------|------|------|
| SPKN 1203EDER-3A | 12,70 | 3,18 | 12,70 | - | | ● | | | | | | | | |
| SPKN 1203EDSR-3C | 12,70 | 3,18 | 12,70 | - | | ● | | | | ● | ● | | | |
| SPKN 1203EDTR | 12,70 | 3,18 | 12,70 | - | | | | | | | | ● | | |
| SPKN 1504EDSR-2F | 15,88 | 4,76 | 15,88 | - | | | | | | | | | ● | |



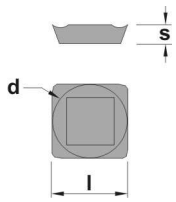
Boring heads

Arbors & adaptors


SPKR



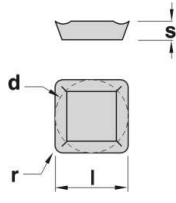
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | TIC28 | T40L | Z10R |
|----------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|-------|------|------|
| SPKR 1203EDR | 12,70 | 3,18 | 12,70 | - | | | | | | | | ● | | |
| SPKR 1203EDSR | 12,70 | 3,18 | 12,70 | - | | | | | | | ● | | | |




SPMR-33



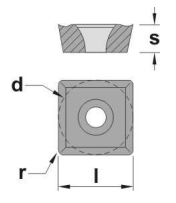
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| SPMR 090304-33 | 9,52 | 3,18 | 9,52 | 0,4 | | | | | ● | | | | | |
| SPMR 090308-33 | 9,52 | 3,18 | 9,52 | 0,8 | | | | | | | ● | | | |
| SPMR 120304-33 | 12,70 | 3,18 | 12,70 | 0,4 | | | | | ● | | | | | |
| SPMR 120308-33 | 12,70 | 3,18 | 12,70 | 0,8 | ● | | | | | | ● | | | |




SPMT



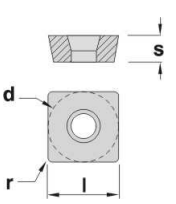
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC25 | TIC30 | TIC35 | T40L |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| SPMT 060304 | 6,35 | 3,18 | 6,35 | 0,4 | | | | | | | | | | ● |
| SPMT 070308 | 7,94 | 3,18 | 7,94 | 0,8 | | | | | | | | | | ● |
| SPMT 090308 | 9,52 | 3,18 | 9,52 | 0,8 | | | | | | | | | | ● |
| SPMT 120408 | 12,70 | 4,76 | 12,70 | 0,8 | | | | | | | | | | ● |




SPMW



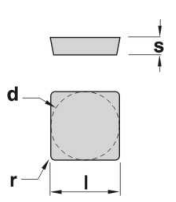
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SPMW 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | ● | | | | | ● | | ● | |




SPUN



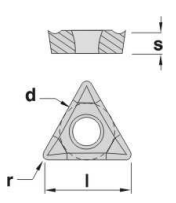
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| SPUN 090304E | 9,52 | 3,18 | 9,52 | 0,4 | | ○ | | | | | ○ | | | |
| SPUN 090308E | 9,52 | 3,18 | 9,52 | 0,8 | | ● | | | | | ● | | | |
| SPUN 090308F | 9,52 | 3,18 | 9,52 | 0,8 | ○ | | | | | | | | | |
| SPUN 120304E | 12,70 | 3,18 | 12,70 | 0,4 | | ● | | | | | ● | | | |
| SPUN 120308E | 12,70 | 3,18 | 12,70 | 0,8 | | ● | | | | | ● | | | |
| SPUN 120308F | 12,70 | 3,18 | 12,70 | 0,8 | ● | | | | | | | | | |
| SPUN 120312E | 12,70 | 3,18 | 12,70 | 1,2 | | ● | | | | ● | ● | | | |
| SPUN 120408E | 12,70 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | | | |
| SPUN 150408E | 15,88 | 4,76 | 15,88 | 0,8 | | ○ | | | | | | | | |
| SPUN 150412E | 15,88 | 4,76 | 15,88 | 1,2 | | ○ | | | | | | | | |
| SPUN 190412E | 19,05 | 4,76 | 19,05 | 1,2 | | ○ | | | | | | | | |



TCGT-AL



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| TCGT 110202-AL | 11,00 | 2,38 | 6,35 | 0,2 | ● | | | | | | | | | ○ |
| TCGT 110204-AL | 11,00 | 2,38 | 6,35 | 0,4 | ● | | | | | | | | | ○ |
| TCGT 16T302-AL | 16,50 | 3,97 | 9,52 | 0,2 | ● | | | | | | | | | ○ |
| TCGT 16T304-AL | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | ○ |
| TCGT 16T308-AL | 16,50 | 3,97 | 9,52 | 0,8 | ● | | | | | | | | | ○ |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery ○ Only available in a limited quantity

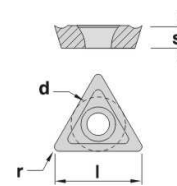
Inserts

Turning

TCMT-03



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC25 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TCMT 090204-03 | 9,62 | 2,38 | 5,55 | 0,4 | ○ | | | | ● | | | | | |
| TCMT 110204-03 | 11,00 | 2,38 | 6,35 | 0,4 | ● | ● | | | ● | ● | ● | ● | | |
| TCMT 16T304-03 | 16,50 | 3,97 | 9,52 | 0,4 | ● | ● | | | ● | | | | | |
| TCMT 16T308-03 | 16,50 | 3,97 | 9,52 | 0,8 | ● | ● | | | ● | | | | | |
| TCMT 220408-03 | 22,00 | 4,76 | 12,70 | 0,8 | ○ | | | | | | | | | |
| TCMT 220412-03 | 22,00 | 4,76 | 12,70 | 1,2 | ○ | | | | | | | | | |

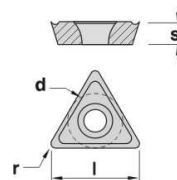


Automatic lathes

TCMT-39



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| TCMT 16T308-39 | 16,50 | 3,97 | 9,52 | 0,8 | | ● | | | | | ● | | ● | |
| TCMT 16T312-39 | 16,50 | 3,97 | 9,52 | 1,2 | | ● | | | | | ● | | | |



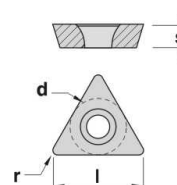
Ceramic tools

Parting & grooving

TCMW



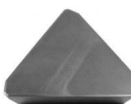
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|--------------------|-------|------|------|-----|------|------|------|------|------|-------|-------|------|------|------|
| TCMW 110204 | 11,00 | 2,38 | 6,35 | 0,4 | ○ | ● | | | | | | | | |
| TCMW 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | ● | | | | | | | | | |
| TCMW 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | ● | ● | | | | | | | | |



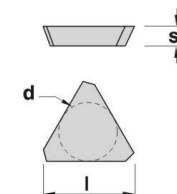
Threading

Drills

TEKN



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|----------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| TEKN 1603PETR | 16,50 | 3,18 | 9,52 | - | ○ | ● | | | | | ○ | | | |
| TEKN 2204PETR | 22,00 | 4,76 | 12,70 | - | ● | ● | | | | | ○ | | | |



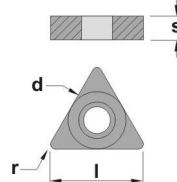
Cartridges

Brazed tools

TNMA



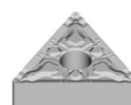
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | | ○ | | | | |
| TNMA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | ○ | | | | |
| TNMA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | | | | ○ | | | | |
| TNMA 220408 | 22,00 | 4,76 | 12,70 | 0,8 | | | | | | ○ | | | | |
| TNMA 220412 | 22,00 | 4,76 | 12,70 | 1,2 | | | | | | ○ | | | | |
| TNMA 220416 | 22,00 | 4,76 | 12,70 | 1,6 | | | | | | ○ | | | | |



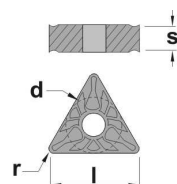
Milling cutters

Solid carbide

TNMG-CF



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160404-CF | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | | ● | | |


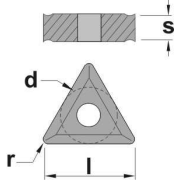


Boring heads

Arbors & adaptors


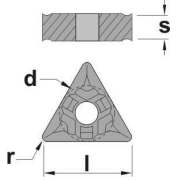
TNMG-CFC

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160404-CFC | 16,50 | 4,76 | 9,52 | 0,4 | | | | | • | | | | | |


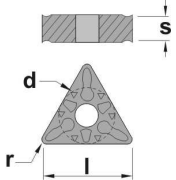
TNMG-CFM

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160404-CFM | 16,50 | 4,76 | 9,52 | 0,4 | | | | | • | | | | | |
| TNMG 220404-CFM | 22,00 | 4,76 | 12,70 | 0,4 | | | | | • | | | | | |

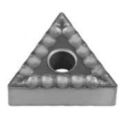
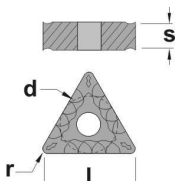
TNMG-CM

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160408-CM | 16,50 | 4,76 | 9,52 | 0,8 | | | | | • | | | • | | |

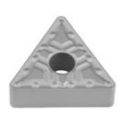
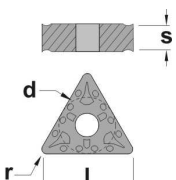
TNMG-CMC

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160408-CMC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | • | | | | | |

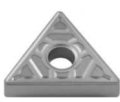
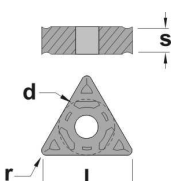
TNMG-CMF

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160408-CMF | 16,50 | 4,76 | 9,52 | 0,8 | | | | | • | | | • | | |
| TNMG 220408-CMF | 22,00 | 4,76 | 12,70 | 0,8 | | | | | • | | | • | | |

TNMG-CMR

| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160408-CMR | 16,50 | 4,76 | 9,52 | 0,8 | | • | | | | | | • | • | |
| TNMG 160412-CMR | 16,50 | 4,76 | 9,52 | 1,2 | | | | | | | | • | • | |
| TNMG 220408-CMR | 22,00 | 4,76 | 12,70 | 0,8 | | ○ | | | | | | • | • | |
| TNMG 220412-CMR | 22,00 | 4,76 | 12,70 | 1,2 | | | | | | | | • | • | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

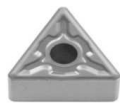
• Normally available for immediate delivery

○ Only available in a limited quantity

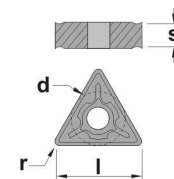
Inserts

Turning

TNMG-CS



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMG 160404-CS | 16,50 | 4,76 | 9,52 | 0,4 | | | | | | | | | • | |
| TNMG 160408-CS | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | | | • | |



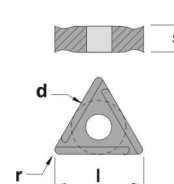
Automatic lathes

Ceramic tools

TNMX



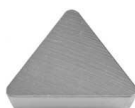
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|---------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TNMX 160404 R | 16,50 | 4,76 | 9,52 | 0,4 | | | | • | | | | | | |
| TNMX 160408 R | 16,50 | 4,76 | 9,52 | 0,8 | | | | • | | | | | | |
| TNMX 160404 L | 16,50 | 4,76 | 9,52 | 0,4 | | | | • | | | | | | |
| TNMX 160408 L | 16,50 | 4,76 | 9,52 | 0,8 | | | | • | | | | | | |



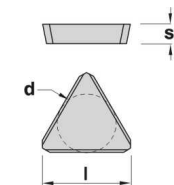
Parting & grooving

Threading

TPKN



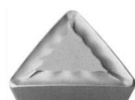
| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|------------------|-------|------|-------|---|------|------|------|------|------|-------|-------|------|------|------|
| TPKN 1103PPSN-1C | 11,00 | 3,18 | 6,35 | - | | • | | | | | ○ | | | |
| TPKN 1603PDER-1A | 16,50 | 3,18 | 9,52 | - | • | | | | | | | | | |
| TPKN 1603PDSR-1C | 16,50 | 3,18 | 9,52 | - | | • | | | | | • | • | | |
| TPKN 2204PDER-1A | 22,00 | 4,76 | 12,70 | - | • | | | | | | | | | |
| TPKN 2204PDSR-1F | 22,00 | 4,76 | 12,70 | - | | • | | | | | • | • | | |



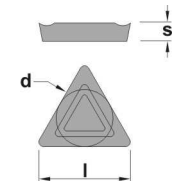
Drills

Cartridges

TPKR



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|---------------|-------|------|------|---|------|------|------|------|------|-------|-------|------|------|------|
| TPKR 1603PPSR | 16,50 | 3,18 | 9,52 | - | | | | | | | • | | • | |



Brazed tools

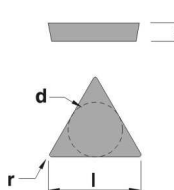
Milling cutters

Solid carbide

TPMN



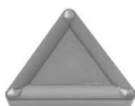
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TPMN 160308 | 16,50 | 3,18 | 9,52 | 0,8 | | | | • | | | | | | |



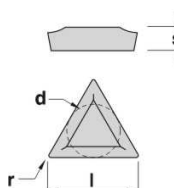
Boring heads

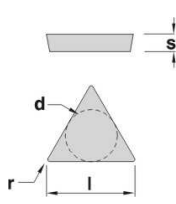
Arbors & adaptors

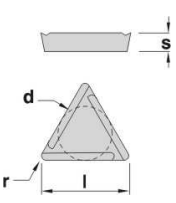
TPMR-33

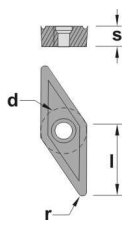


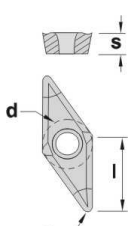
| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| TPMR 090204-33 | 9,62 | 2,38 | 5,55 | 0,4 | | | | | • | | | | | |
| TPMR 110304-33 | 11,00 | 3,18 | 6,35 | 0,4 | | • | | | | | | | | |
| TPMR 110308-33 | 11,00 | 3,18 | 6,35 | 0,8 | | • | | | | | | | | |
| TPMR 160304-33 | 16,50 | 3,18 | 9,52 | 0,4 | | • | | | | | • | • | | |
| TPMR 160308-33 | 16,50 | 3,18 | 9,52 | 0,8 | | • | | | ○ | | | • | | |

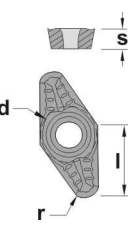


| TPUN | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC15 | TIC25 | T20L | T40L | Z10R |  |
|------|--------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|---|
| | | | | | | | | | | | | | | | | |
| | TPUN 110204E | 11,00 | 2,38 | 6,35 | 0,4 | | ● | | | | | ● | | | | |
| | TPUN 110204F | 11,00 | 2,38 | 6,35 | 0,4 | ○ | | | | | | | | | | |
| | TPUN 110208E | 11,00 | 2,38 | 6,35 | 0,8 | | ● | | | | | ● | | | | |
| | TPUN 110304E | 11,00 | 3,18 | 6,35 | 0,4 | | ● | | | | | ● | | | | |
| | TPUN 110308E | 11,00 | 3,18 | 6,35 | 0,8 | | ● | | | | | ● | | | | |
| | TPUN 110308F | 11,00 | 3,18 | 6,35 | 0,8 | ○ | | | | | | | | | | |
| | TPUN 160304E | 16,50 | 3,18 | 9,52 | 0,4 | | ● | | | | ○ | ● | | | | |
| | TPUN 160304F | 16,50 | 3,18 | 9,52 | 0,4 | ● | | | | | | | | | | |
| | TPUN 160308T | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | | | ● | | | | |
| | TPUN 160308E | 16,50 | 3,18 | 9,52 | 0,8 | | ● | | | | ○ | ● | | | | |
| | TPUN 160308F | 16,50 | 3,18 | 9,52 | 0,8 | ● | | | | | | | | | | |
| | TPUN 160312E | 16,50 | 3,18 | 9,52 | 1,2 | | ● | | | | | ● | | | | |
| | TPUN 160312F | 16,50 | 3,18 | 9,52 | 1,2 | ○ | | | | | | | | | | |
| | TPUN 220408E | 22,00 | 4,76 | 12,70 | 0,8 | | ● | | | | | ● | | | | |
| | TPUN 220408F | 22,00 | 4,76 | 12,70 | 0,8 | ● | | | | | | | | | | |
| | TPUN 220412E | 22,00 | 4,76 | 12,70 | 1,2 | | ● | | | | | ● | | | | |

| TPUX | REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC15 | TIC25 | T20L | T40L | Z10R |  |
|------|--------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|--|
| | | | | | | | | | | | | | | | | |
| | TPUX 110304L | 11,00 | 3,18 | 6,35 | 0,4 | ○ | ● | | | | | ● | | | | |
| | TPUX 110304R | 11,00 | 3,18 | 6,35 | 0,4 | ○ | ● | | | | | ● | | | | |
| | TPUX 160304L | 16,50 | 3,18 | 9,52 | 0,4 | ○ | ● | | | | | ● | | | | |
| | TPUX 160304R | 16,50 | 3,18 | 9,52 | 0,4 | ○ | ● | | | | | ● | | | | |
| | TPUX 160308L | 16,50 | 3,18 | 9,52 | 0,8 | ○ | ● | | | | | ● | | | | |
| | TPUX 160308R | 16,50 | 3,18 | 9,52 | 0,8 | ○ | ● | | | | | ● | | | | |
| | TPUX 220408L | 22,00 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | | | | | | | |
| | TPUX 220408R | 22,00 | 4,76 | 12,70 | 0,8 | ○ | ○ | | | | | | | | | |

| VBMT | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |  |
|------|-------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|---|
| | | | | | | | | | | | | | | | | |
| | VBMT 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | ● | | | | | | |
| | VBMT 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | ● | | | | | | |

| VCGT-AL | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |  |
|---------|----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|---|
| | | | | | | | | | | | | | | | | |
| | VCGT 160404-AL | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | ○ | |
| | VCGT 160408-AL | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | ○ | |
| | VCGT 160412-AL | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | ○ | |
| | VCGT 220530-AL | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | ○ | |

| VCGT-AP | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |  |
|---------|----------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|---|
| | | | | | | | | | | | | | | | | |
| | VCGT 160404-AP | 16,50 | 4,76 | 9,52 | 0,4 | ● | | | | | | | | | ○ | |
| | VCGT 160408-AP | 16,50 | 4,76 | 9,52 | 0,8 | ● | | | | | | | | | ○ | |
| | VCGT 160412-AP | 16,50 | 4,76 | 9,52 | 1,2 | ● | | | | | | | | | ○ | |
| | VCGT 220530-AP | 22,10 | 5,56 | 12,70 | 3,0 | ● | | | | | | | | | ○ | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

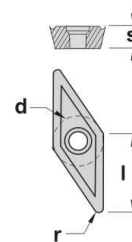
● Normally available for immediate delivery ○ Only available in a limited quantity

Inserts

VCMT-03



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| VCMT 110304-03 | 11,00 | 3,18 | 6,35 | 0,4 | | | | | • | | | | | |
| VCMT 130304-03 | 13,00 | 3,18 | 8,00 | 0,4 | | | | | • | | | | | |
| VCMT 160404-03 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | • | | | | | |
| VCMT 160408-03 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | • | | • | |



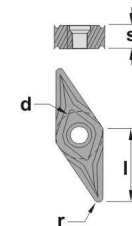
Turning

Automatic lathes

VNGP



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| VNGP 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | | | | | • | | | |
| VNGP 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | | | • | | | |



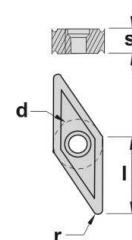
Ceramic tools

Parting & grooving

VNMG



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|--------------------|-------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| VNMG 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | | | • | | | | | |
| VNMG 220408 | 22,00 | 4,76 | 12,70 | 0,8 | | | | | | | • | | | |



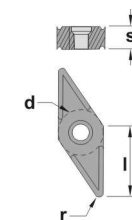
Threading

Drills

VNMG-CMC



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|------------------------|-------|------|------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| VNMG 160408-CMC | 16,50 | 4,76 | 9,52 | 0,4 | | | | | • | | | | | |
| VNMG 160408-CMC | 16,50 | 4,76 | 9,52 | 0,8 | | | | | • | | | | | |



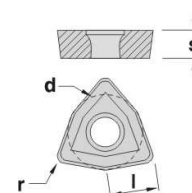
Cartridges

Brazed tools

WCMX



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC30 | T20L | T40L | Z10R |
|--------------------|------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| WCMX 030208 | 3,46 | 2,38 | 5,56 | 0,8 | | | | | | | | • | • | |
| WCMX 040208 | 3,99 | 2,38 | 6,35 | 0,8 | | | | | | | | • | • | |
| WCMX 050308 | 5,07 | 3,18 | 7,94 | 0,8 | | | | | | | | • | • | |
| WCMX 06T308 | 6,14 | 3,97 | 9,52 | 0,8 | | | | | | | | • | • | |
| WCMX 080408 | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | | • | • | |
| WCMX 080412 | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | | | • | • | |


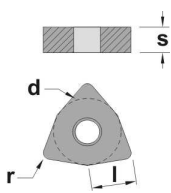
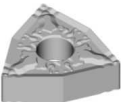
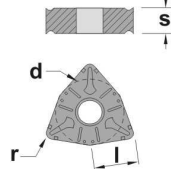
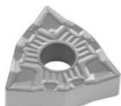
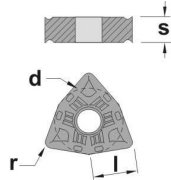
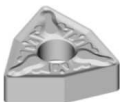
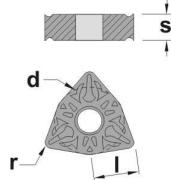
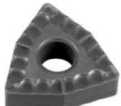
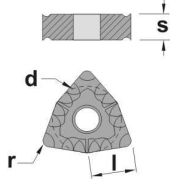
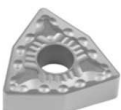
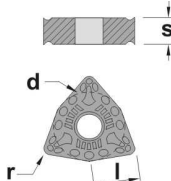


Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| WNMA | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|---|-----------------|------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|--|---|
|  | WNMA 080408 | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | ○ | | | | | |  |
| | WNMA 080412 | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | ○ | | | | | | |
| WNMG-CF | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|  | WNMG 080404-CF | 8,14 | 4,76 | 12,70 | 0,4 | | | | | ● | | | ● | | | |  |
| | | | | | | | | | | | | | | | | | |
| WNMG-CFM | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|  | WNMG 080404-CFM | 8,14 | 4,76 | 12,70 | 0,4 | | | | | ● | | | | | | |  |
| | | | | | | | | | | | | | | | | | |
| WNMG-CM | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|  | WNMG 080408-CM | 8,14 | 4,76 | 12,70 | 0,8 | | | | | ● | | | ● | | | |  |
| | | | | | | | | | | | | | | | | | |
| WNMG-CMC | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|  | WNMG 080408-CMC | 8,14 | 4,76 | 12,70 | 0,8 | | | | | ● | | | | | | |  |
| | | | | | | | | | | | | | | | | | |
| WNMG-CMF | REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R | | |
|  | WNMG 080408-CMF | 8,14 | 4,76 | 12,70 | 0,8 | | | | | ● | | | ● | | | |  |
| | | | | | | | | | | | | | | | | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

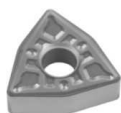
Arbors & adaptors

● Normally available for immediate delivery

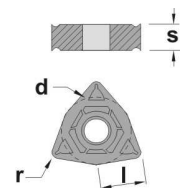
○ Only available in a limited quantity

Inserts

WNMG-CMR

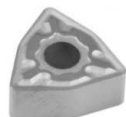


| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|-----------------|------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| WNMG 060404-CMR | 6,45 | 4,76 | 9,52 | 0,4 | | | | | • | | | | | |
| WNMG 060408-CMR | 6,45 | 4,76 | 9,52 | 0,8 | | | | | | | • | | | |
| WNMG 080408-CMR | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | • | • | | |
| WNMG 080412-CMR | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | | • | | | |

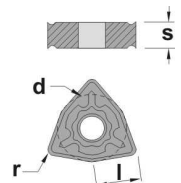


Turning

WNMG-CS



| REF. | l | s | d | r | K15K | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | TIC35 | Z10R |
|----------------|------|------|-------|-----|------|------|------|------|-------|-------|-------|-------|-------|------|
| WNMG 060404-CS | 6,45 | 4,76 | 9,52 | 0,4 | | | | | | | | | • | |
| WNMG 060408-CS | 6,45 | 4,76 | 9,52 | 0,8 | | | | | | | | | • | |
| WNMG 080404-CS | 8,14 | 4,76 | 12,70 | 0,4 | | | | | | | | | • | |
| WNMG 080408-CS | 8,14 | 4,76 | 12,70 | 0,8 | | | | | | | | | • | |
| WNMG 080412-CS | 8,14 | 4,76 | 12,70 | 1,2 | | | | | | | | | • | |



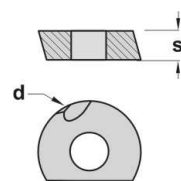
Automatic lathes

Ceramic tools

WPR



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|--------|---|------|----|---|------|------|------|------|------|-------|-------|------|------|------|
| WPR 10 | - | 2,50 | 10 | - | | • | | | | | • | | • | |
| WPR 12 | - | 2,50 | 12 | - | | • | | | | | • | | • | |
| WPR 16 | - | 3,00 | 16 | - | | • | | | | | • | | • | |
| WPR 20 | - | 3,00 | 20 | - | | • | | | | | • | | • | |
| WPR 25 | - | 4,00 | 25 | - | | • | | | | | • | | • | |
| WPR 32 | - | 5,00 | 32 | - | | • | | | | | • | | • | |



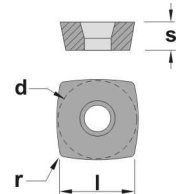
Parting & grooving

Threading

XDKW



| REF. | l | s | d | r | K15K | P25K | P40K | CK40 | TK30 | TIC21 | TIC25 | T20L | T40L | Z10R |
|-------------|-------|------|-------|-----|------|------|------|------|------|-------|-------|------|------|------|
| XDKW 090430 | 9,00 | 3,97 | 9,00 | 0,8 | | | | | | | • | | | |
| XDKW 120530 | 12,50 | 5,56 | 12,50 | 0,8 | | | | | | | • | | | |



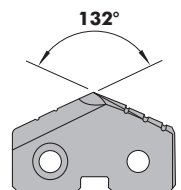
Drills

Cartridges

XPMT



| REF. | Metric | Diameter Inch | s | HS15 | T40L |
|---------|--------|------------------|-----|------|------|
| XPMT095 | 9,50 | 3/8 | 2,4 | ○ | ○ |
| XPMT098 | 9,80 | - | 2,4 | ● | ● |
| XPMT099 | 9,92 | 25/64 | 2,4 | ○ | ○ |
| XPMT100 | 10,00 | - | 2,4 | ● | ● |
| XPMT102 | 10,20 | - | 2,4 | ● | ● |
| XPMT103 | 10,32 | 13/32 | 2,4 | ○ | ○ |
| XPMT105 | 10,50 | - | 2,4 | ● | ● |
| XPMT107 | 10,72 | 27/64 | 2,4 | ○ | ○ |
| XPMT108 | 10,80 | - | 2,4 | ● | ● |
| XPMT110 | 11,00 | - | 2,4 | ● | ● |
| XPMT111 | 11,11 | 7/16 | 2,4 | ○ | ○ |
| XPMT115 | 11,50 | 29/64 | 2,4 | ○ | ○ |
| XPMT119 | 11,91 | 15/32 | 2,4 | ○ | ○ |
| XPMT120 | 12,00 | - | 2,4 | ● | ● |
| XPMT123 | 12,30 | 31/64 | 2,4 | ○ | ○ |
| XPMT125 | 12,50 | - | 2,4 | ● | ● |
| XPMT127 | 12,70 | 1/2 | 2,4 | ○ | ○ |
| XPMT130 | 13,00 | - | 3,2 | ● | ● |
| XPMT131 | 13,10 | 33/64 | 3,2 | ○ | ○ |
| XPMT135 | 13,50 | 17/32 | 3,2 | ○ | ○ |
| XPMT138 | 13,89 | 35/64 | 3,2 | ○ | ○ |
| XPMT140 | 14,00 | - | 3,2 | ● | ● |
| XPMT142 | 14,29 | 9/16 | 3,2 | ○ | ○ |
| XPMT145 | 14,50 | - | 3,2 | ● | ● |
| XPMT146 | 14,68 | 37/64 | 3,2 | ○ | ○ |
| XPMT150 | 15,00 | - | 3,2 | ● | ● |
| XPMT155 | 15,50 | 39/64 | 3,2 | ○ | ○ |
| XPMT158 | 15,88 | 5/8 | 3,2 | ○ | ○ |
| XPMT160 | 16,00 | - | 3,2 | ● | ● |
| XPMT162 | 16,27 | 41/64 | 3,2 | ○ | ○ |
| XPMT165 | 16,50 | - | 3,2 | ● | ● |
| XPMT166 | 16,67 | 21/32 | 3,2 | ○ | ○ |
| XPMT170 | 17,00 | - | 3,2 | ● | ● |
| XPMT174 | 17,46 | 11/16 | 3,2 | ○ | ○ |
| XPMT175 | 17,50 | - | 3,2 | ● | ● |




Brazed tools

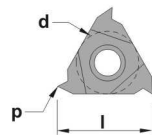
Milling cutters

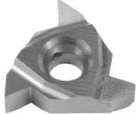
Solid carbide

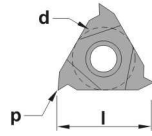
Boring heads


Arbors & adaptors

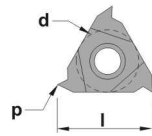
| ER-60° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 11ER-A60 | 11,00 | 6,35 | 60° | | | ○ | | |
| | 16ER-A60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 16ER-AG60 | 16,00 | 9,52 | 60° | | | ● | ○ | |
| | 16ER-G60 | 16,00 | 9,52 | 60° | | | ● | ○ | |
| | 22ER-N60 | 22,00 | 12,70 | 60° | | | ● | ○ | |
| | 27ER-S60 | 27,00 | 15,87 | 60° | | | ○ | | |




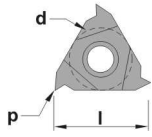
| EL-60° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 11EL-A60 | 11,00 | 6,35 | 60° | | | ○ | | |
| | 16EL-A60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 16EL-AG60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 16EL-G60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 22EL-N60 | 22,00 | 12,70 | 60° | | | ○ | | |
| | 27EL-S60 | 27,00 | 15,87 | 60° | | | ○ | | |

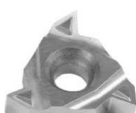


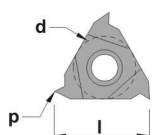
| ER-55° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|--|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 11ER-A55 | 11,00 | 6,35 | 55° | | | | ○ | |
| | 16ER-A55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16ER-AG55 | 16,00 | 9,52 | 55° | | ● | ● | ○ | |
| | 16ER-G55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 22ER-N55 | 22,00 | 12,70 | 55° | | | | ○ | |
| | 27ER-S55 | 27,00 | 15,87 | 55° | | | | ○ | |




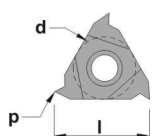
| EL-55° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 11EL-A55 | 11,00 | 6,35 | 55° | | | | ○ | |
| | 16EL-A55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16EL-AG55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16EL-G55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 22EL-N55 | 22,00 | 12,70 | 55° | | | | ○ | |
| | 27EL-S55 | 27,00 | 15,87 | 55° | | | | ○ | |



| ER-60° TD | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|---------------------|-------|------|-----|---|------|------|-------|------|
|  | 16ER-A60 TD | 16,00 | 9,52 | 60° | | | | ○ | |
| | 16ER-AG60 TD | 16,00 | 9,52 | 60° | | | ● | ○ | |
| | 16ER-G60 TD | 16,00 | 9,52 | 60° | | | ○ | | |



| ER-55° TD | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|---------------------|-------|------|-----|---|------|------|-------|------|
|  | 16ER-A55 TD | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16ER-AG55 TD | 16,00 | 9,52 | 55° | | | ● | ○ | |
| | 16ER-G55 TD | 16,00 | 9,52 | 55° | | | ○ | | |




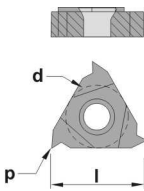
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors


● Normally available for immediate delivery

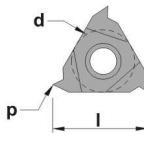
○ Only available in a limited quantity


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

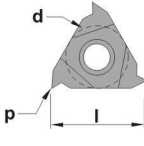
| NR-60° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 06NR-A60 | 6,00 | 3,96 | 60° | | | ○ | | |
| | 08NR-A60 | 8,00 | 4,76 | 60° | | | ○ | | |
| | 11NR-A60 | 11,00 | 6,35 | 60° | | | ● | ○ | |
| | 16NR-A60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 16NR-AG60 | 16,00 | 9,52 | 60° | | | ● | ○ | |
| | 16NR-G60 | 16,00 | 9,52 | 60° | | | ○ | | |
| | 22NR-N60 | 22,00 | 12,70 | 60° | | | ● | ○ | |
| | 27NR-S60 | 27,00 | 15,87 | 60° | | | ○ | | |




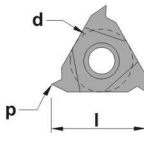
| NL-60° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 06NL-A60 | 6,00 | 3,96 | 60° | | | | ○ | |
| | 08NL-A60 | 8,00 | 4,76 | 60° | | | | ○ | |
| | 11NL-A60 | 11,00 | 6,35 | 60° | | | | ○ | |
| | 16NL-A60 | 16,00 | 9,52 | 60° | | | | ○ | |
| | 16NL-AG60 | 16,00 | 9,52 | 60° | | | | ○ | |
| | 16NL-G60 | 16,00 | 9,52 | 60° | | | | ○ | |
| | 22NL-N60 | 22,00 | 12,70 | 60° | | | | ○ | |
| | 27NL-S60 | 27,00 | 15,87 | 60° | | | | ○ | |




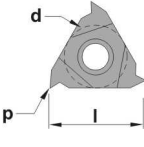
| NR-55° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|--|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 06NR-A55 | 6,00 | 3,96 | 55° | | | | ○ | |
| | 08NR-A55 | 8,00 | 4,76 | 55° | | | | ○ | |
| | 11NR-A55 | 11,00 | 6,35 | 55° | | | | ○ | |
| | 16NR-A55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16NR-AG55 | 16,00 | 9,52 | 55° | | | ● | ○ | |
| | 16NR-G55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 22NR-N55 | 22,00 | 12,70 | 55° | | | | ○ | |
| | 27NR-S55 | 27,00 | 15,87 | 55° | | | | ○ | |




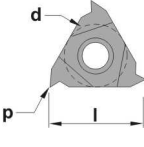
| NL-55° | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|------------------|-------|-------|-----|---|------|------|-------|------|
|  | 06NL-A55 | 6,00 | 3,96 | 55° | | | | | |
| | 08NL-A55 | 8,00 | 4,76 | 55° | | | | | |
| | 11NL-A55 | 11,00 | 6,35 | 55° | | | | ○ | |
| | 16NL-A55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16NL-AG55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16NL-G55 | 16,00 | 9,52 | 55° | | | | ○ | |
| | 22NL-N55 | 22,00 | 12,70 | 55° | | | | ○ | |
| | 27NL-S55 | 27,00 | 15,87 | 55° | | | | ○ | |

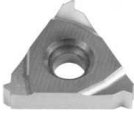


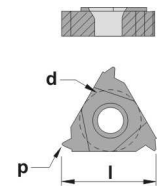
| NR-60° TD | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|---------------------|-------|------|-----|---|------|------|-------|------|
|  | 16NR-A60 TD | 16,00 | 9,52 | 60° | | | | ○ | |
| | 16NR-AG60 TD | 16,00 | 9,52 | 60° | | | ● | ○ | |
| | 16NR-G60 TD | 16,00 | 9,52 | 60° | | | | ○ | |

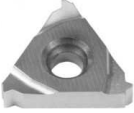


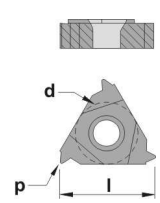
| NR-55° TD | | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|---------------------|-------|------|-----|---|------|------|-------|------|
|  | 16NR-A55 TD | 16,00 | 9,52 | 55° | | | | ○ | |
| | 16NR-AG55 TD | 16,00 | 9,52 | 55° | | | ● | ○ | |
| | 16NR-G55 TD | 16,00 | 9,52 | 55° | | | | ○ | |



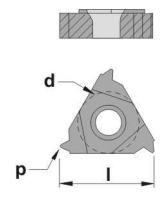
| ER-ISO | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|-------------|-------|-------|------|------|------|-------|------|
|  | 11ER-030ISO | 11,00 | 6,35 | 0,30 | | | o | |
| | 11ER-040ISO | 11,00 | 6,35 | 0,40 | | | o | |
| | 11ER-045ISO | 11,00 | 6,35 | 0,45 | | | o | |
| | 11ER-050ISO | 11,00 | 6,35 | 0,50 | | | o | |
| | 11ER-060ISO | 11,00 | 6,35 | 0,60 | | | o | |
| | 11ER-070ISO | 11,00 | 6,35 | 0,70 | | | o | |
| | 11ER-075ISO | 11,00 | 6,35 | 0,75 | | | o | |
| | 11ER-080ISO | 11,00 | 6,35 | 0,80 | | | o | |
| | 11ER-100ISO | 11,00 | 6,35 | 1,00 | | | o | |
| | 11ER-125ISO | 11,00 | 6,35 | 1,25 | | | o | |
| | 11ER-150ISO | 11,00 | 6,35 | 1,50 | | | o | |
| | 11ER-175ISO | 11,00 | 6,35 | 1,75 | | | o | |
| | 16ER-075ISO | 16,00 | 9,52 | 0,75 | | | o | |
| | 16ER-100ISO | 16,00 | 9,52 | 1,00 | | | o | |
| | 16ER-125ISO | 16,00 | 9,52 | 1,25 | | | o | |
| | 16ER-150ISO | 16,00 | 9,52 | 1,50 | | | o | |
| | 16ER-175ISO | 16,00 | 9,52 | 1,75 | | | o | |
| | 16ER-200ISO | 16,00 | 9,52 | 2,00 | | | o | |
| | 16ER-250ISO | 16,00 | 9,52 | 2,50 | | | o | |
| | 16ER-300ISO | 16,00 | 9,52 | 3,00 | | | o | |
| | 22ER-350ISO | 22,00 | 12,70 | 3,50 | | | o | |
| | 22ER-400ISO | 22,00 | 12,70 | 4,00 | | | o | |
| | 22ER-450ISO | 22,00 | 12,70 | 4,50 | | | o | |
| | 22ER-500ISO | 22,00 | 12,70 | 5,00 | | | o | |
| | 27ER-500ISO | 27,00 | 15,87 | 5,00 | | | o | |
| | 27ER-550ISO | 27,00 | 15,87 | 5,50 | | | o | |
| | 27ER-600ISO | 27,00 | 15,87 | 6,00 | | | o | |
| | 27ER-800ISO | 27,00 | 15,87 | 8,00 | | | o | |




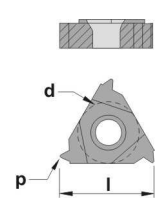
| EL-ISO | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|-------------|-------|-------|------|------|------|-------|------|
|  | 16EL-100ISO | 16,00 | 9,52 | 1,00 | | | o | |
| | 16EL-125ISO | 16,00 | 9,52 | 1,25 | | | o | |
| | 16EL-150ISO | 16,00 | 9,52 | 1,50 | | | o | |
| | 16EL-175ISO | 16,00 | 9,52 | 1,75 | | | o | |
| | 16EL-200ISO | 16,00 | 9,52 | 2,00 | | | o | |
| | 16EL-250ISO | 16,00 | 9,52 | 2,50 | | | o | |
| | 16EL-300ISO | 16,00 | 9,52 | 3,00 | | | o | |
| | 22EL-400ISO | 22,00 | 12,70 | 4,00 | | | o | |



| ER-ISO TD | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|----------------|-------|------|------|------|------|-------|------|
|  | 16ER-100ISO TD | 16,50 | 9,52 | 1,00 | | | o | |
| | 16ER-125ISO TD | 16,50 | 9,52 | 1,25 | | | o | |
| | 16ER-150ISO TD | 16,50 | 9,52 | 1,50 | | | o | |
| | 16ER-175ISO TD | 16,50 | 9,52 | 1,75 | | | o | |
| | 16ER-200ISO TD | 16,50 | 9,52 | 2,00 | | | o | |
| | 16ER-250ISO TD | 16,50 | 9,52 | 2,50 | | | o | |
| | 16ER-300ISO TD | 16,50 | 9,52 | 3,00 | | | o | |



| EL-ISO TD | REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|---|----------------|-------|------|------|------|------|-------|------|
|  | 16EL-100ISO TD | 16,50 | 9,52 | 1,00 | | | o | |
| | 16EL-125ISO TD | 16,50 | 9,52 | 1,25 | | | o | |
| | 16EL-150ISO TD | 16,50 | 9,52 | 1,50 | | | o | |
| | 16EL-175ISO TD | 16,50 | 9,52 | 1,75 | | | o | |
| | 16EL-200ISO TD | 16,50 | 9,52 | 2,00 | | | o | |
| | 16EL-250ISO TD | 16,50 | 9,52 | 2,50 | | | o | |
| | 16EL-300ISO TD | 16,50 | 9,52 | 3,00 | | | o | |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery ○ Only available in a limited quantity

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

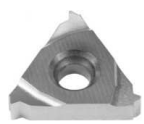
Milling cutters

Solid carbide

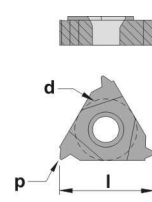
Boring heads

Arbors & adaptors

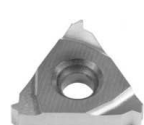
NR-ISO



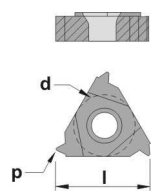
| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|-------------|-------|-------|------|------|------|-------|------|
| 06NR-050ISO | 6,00 | 3,96 | 0,50 | | | ○ | |
| 06NR-075ISO | 6,00 | 3,96 | 0,75 | | | ○ | |
| 06NR-100ISO | 6,00 | 3,96 | 1,00 | | | ○ | |
| 06NR-125ISO | 6,00 | 3,96 | 1,25 | | | ○ | |
| 08NR-050ISO | 8,00 | 4,76 | 0,50 | | | ○ | |
| 08NR-075ISO | 8,00 | 4,76 | 0,75 | | | ○ | |
| 08NR-100ISO | 8,00 | 4,76 | 1,00 | | | ○ | |
| 08NR-125ISO | 8,00 | 4,76 | 1,25 | | | ○ | |
| 08NR-150ISO | 8,00 | 4,76 | 1,50 | | | ○ | |
| 08NR-175ISO | 8,00 | 4,76 | 1,75 | | | ○ | |
| 11NR-035ISO | 11,00 | 6,35 | 0,35 | | | ○ | |
| 11NR-040ISO | 11,00 | 6,35 | 0,40 | | | ○ | |
| 11NR-045ISO | 11,00 | 6,35 | 0,45 | | | ○ | |
| 11NR-050ISO | 11,00 | 6,35 | 0,50 | | | ○ | |
| 11NR-060ISO | 11,00 | 6,35 | 0,60 | | | ○ | |
| 11NR-070ISO | 11,00 | 6,35 | 0,70 | | | ○ | |
| 11NR-075ISO | 11,00 | 6,35 | 0,75 | | | ○ | |
| 11NR-080ISO | 11,00 | 6,35 | 0,80 | | | ○ | |
| 11NR-100ISO | 11,00 | 6,35 | 1,00 | | | ○ | |
| 11NR-125ISO | 11,00 | 6,35 | 1,25 | | | ○ | |
| 11NR-150ISO | 11,00 | 6,35 | 1,50 | | | ○ | |
| 11NR-175ISO | 11,00 | 6,35 | 1,75 | | | ○ | |
| 11NR-200ISO | 11,00 | 6,35 | 2,00 | | | ○ | |
| 11NR-250ISO | 11,00 | 6,35 | 2,50 | | | ○ | |
| 16NR-075ISO | 16,00 | 9,52 | 0,75 | | | ○ | |
| 16NR-100ISO | 16,00 | 9,52 | 1,00 | | | ○ | |
| 16NR-125ISO | 16,00 | 9,52 | 1,25 | | | ○ | |
| 16NR-150ISO | 16,00 | 9,52 | 1,50 | | | ○ | |
| 16NR-175ISO | 16,00 | 9,52 | 1,75 | | | ○ | |
| 16NR-200ISO | 16,00 | 9,52 | 2,00 | | | ○ | |
| 16NR-250ISO | 16,00 | 9,52 | 2,50 | | | ○ | |
| 16NR-300ISO | 16,00 | 9,52 | 3,00 | | | ○ | |
| 22NR-350ISO | 22,00 | 12,70 | 3,50 | | | ○ | |
| 22NR-400ISO | 22,00 | 12,70 | 4,00 | | | ○ | |
| 22NR-450ISO | 22,00 | 12,70 | 4,50 | | | ○ | |
| 22NR-500ISO | 22,00 | 12,70 | 5,00 | | | ○ | |
| 27NR-500ISO | 27,00 | 15,87 | 5,00 | | | ○ | |
| 27NR-550ISO | 27,00 | 15,87 | 5,50 | | | ○ | |
| 27NR-600ISO | 27,00 | 15,87 | 6,00 | | | ○ | |
| 27NR-800ISO | 27,00 | 15,87 | 8,00 | | | ○ | |



NL-ISO



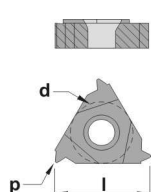
| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|-------------|-------|-------|------|------|------|-------|------|
| 06NL-050ISO | 6,00 | 3,96 | 0,50 | | | | |
| 06NL-075ISO | 6,00 | 3,96 | 0,75 | | | | |
| 06NL-100ISO | 6,00 | 3,96 | 1,00 | | | | |
| 06NL-125ISO | 6,00 | 3,96 | 1,25 | | | | |
| 08NL-050ISO | 8,00 | 4,76 | 0,50 | | | | |
| 08NL-075ISO | 8,00 | 4,76 | 0,75 | | | | |
| 08NL-100ISO | 8,00 | 4,76 | 1,00 | | | | |
| 08NL-125ISO | 8,00 | 4,76 | 1,25 | | | | |
| 08NL-150ISO | 8,00 | 4,76 | 1,50 | | | | |
| 08NL-175ISO | 8,00 | 4,76 | 1,75 | | | | |
| 11NL-100ISO | 11,00 | 6,35 | 1,00 | | | ○ | |
| 11NL-150ISO | 11,00 | 6,35 | 1,50 | | | ○ | |
| 16NL-100ISO | 16,00 | 9,52 | 1,00 | | | ○ | |
| 16NL-125ISO | 16,00 | 9,52 | 1,25 | | | ○ | |
| 16NL-150ISO | 16,00 | 9,52 | 1,50 | | | ○ | |
| 16NL-175ISO | 16,00 | 9,52 | 1,75 | | | ○ | |
| 16NL-200ISO | 16,00 | 9,52 | 2,00 | | | ○ | |
| 16NL-250ISO | 16,00 | 9,52 | 2,50 | | | ○ | |
| 16NL-300ISO | 16,00 | 9,52 | 3,00 | | | ○ | |
| 22NL-400ISO | 22,00 | 12,70 | 4,00 | | | ○ | |

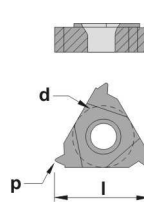


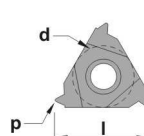
NR-ISO TD

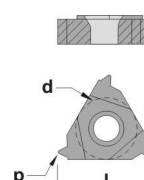


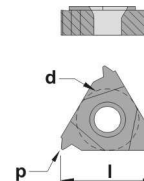
| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|----------------|-------|------|------|------|------|-------|------|
| 16NR-100ISO TD | 16,50 | 9,52 | 1,00 | | | ● | |
| 16NR-125ISO TD | 16,50 | 9,52 | 1,25 | | | ● | |
| 16NR-150ISO TD | 16,50 | 9,52 | 1,50 | | | ● | |
| 16NR-175ISO TD | 16,50 | 9,52 | 1,75 | | | ● | |
| 16NR-200ISO TD | 16,50 | 9,52 | 2,00 | | | ● | |
| 16NR-250ISO TD | 16,50 | 9,52 | 2,50 | | | ● | |
| 16NR-300ISO TD | 16,50 | 9,52 | 3,00 | | | ● | |



| ER-UN | REF. | l | d | p | K15K | P25K | TIC25 | T20L |  |
|-------|-----------|-------|------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 16ER-11UN | 16,00 | 9,52 | 11,0 | | | o | | |
| | 16ER-14UN | 16,00 | 9,52 | 14,0 | | | o | | |
| | 16ER-18UN | 16,00 | 9,52 | 18,0 | | | o | | |

| NR-UN | REF. | l | d | p | K15K | P25K | TIC25 | T20L |  |
|-------|-----------|-------|------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 16NR-20UN | 16,00 | 9,52 | 20,0 | | | o | | |
| | 16NR-24UN | 16,00 | 9,52 | 24,0 | | | o | | |

| ER-W | REF. | l | d | p | K15K | P25K | TIC25 | T20L |  |
|------|-----------|-------|-------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 11ER-14W | 11,00 | 6,35 | 14,0 | | | o | | |
| | 11ER-16W | 11,00 | 6,35 | 16,0 | | | o | | |
| | 11ER-18W | 11,00 | 6,35 | 18,0 | | | o | | |
| | 11ER-19W | 11,00 | 6,35 | 19,0 | | | o | | |
| | 11ER-22W | 11,00 | 6,35 | 22,0 | | | o | | |
| | 11ER-24W | 11,00 | 6,35 | 24,0 | | | o | | |
| | 11ER-26W | 11,00 | 6,35 | 26,0 | | | o | | |
| | 11ER-28W | 11,00 | 6,35 | 28,0 | | | o | | |
| | 11ER-40W | 11,00 | 6,35 | 40,0 | | | o | | |
| | 11ER-50W | 11,00 | 6,35 | 50,0 | | | o | | |
| | 11ER-56W | 11,00 | 6,35 | 56,0 | | | o | | |
| | 16ER-8W | 16,00 | 9,52 | 8,0 | | | o | | |
| | 16ER-9W | 16,00 | 9,52 | 9,0 | | | o | | |
| | 16ER-10W | 16,00 | 9,52 | 10,0 | | | o | | |
| | 16ER-11W | 16,00 | 9,52 | 11,0 | | | o | | |
| | 16ER-12W | 16,00 | 9,52 | 12,0 | | | o | | |
| | 16ER-14W | 16,00 | 9,52 | 14,0 | | | o | | |
| | 16ER-16W | 16,00 | 9,52 | 16,0 | | | o | | |
| | 16ER-18W | 16,00 | 9,52 | 18,0 | | | o | | |
| | 16ER-19W | 16,00 | 9,52 | 19,0 | | | o | | |
| | 16ER-20W | 16,00 | 9,52 | 20,0 | | | o | | |
| | 16ER-22W | 16,00 | 9,52 | 22,0 | | | o | | |
| | 16ER-24W | 16,00 | 9,52 | 24,0 | | | o | | |
| | 16ER-26W | 16,00 | 9,52 | 26,0 | | | o | | |
| | 16ER-28W | 16,00 | 9,52 | 28,0 | | | o | | |
| | 22ER-4W | 22,00 | 12,70 | 4,0 | | | o | | |
| | 22ER-4.5W | 22,00 | 12,70 | 4,5 | | | o | | |
| | 22ER-5W | 22,00 | 12,70 | 5,0 | | | o | | |
| | 22ER-6W | 22,00 | 12,70 | 6,0 | | | o | | |
| | 22ER-7W | 22,00 | 12,70 | 7,0 | | | o | | |
| | 22ER-8W | 22,00 | 12,70 | 8,0 | | | o | | |
| | 27ER-4W | 27,00 | 15,87 | 4,0 | | | o | | |
| | 27ER-4.5W | 27,00 | 15,87 | 4,5 | | | o | | |

| EL-W | REF. | l | d | p | K15K | P25K | TIC25 | T20L |  |
|------|----------|-------|------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 16EL-11W | 16,00 | 9,52 | 11,0 | | | o | | |
| | 16EL-14W | 16,00 | 9,52 | 14,0 | | | o | | |
| | 16EL-20W | 16,00 | 9,52 | 20,0 | | | o | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

• Normally available for immediate delivery

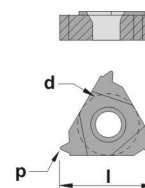
o Only available in a limited quantity

Inserts

ER-W TD



| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|-------------|-------|------|------|------|------|-------|------|
| 16ER-11W TD | 16,50 | 9,52 | 11,0 | | | o | |
| 16ER-14W TD | 16,50 | 9,52 | 14,0 | | | o | |
| 16ER-16W TD | 16,50 | 9,52 | 16,0 | | | o | |



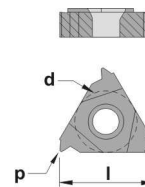
Turning

Automatic lathes

NR-W



| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|-----------|-------|-------|------|------|------|-------|------|
| 06NR-18W | 6,00 | 3,96 | 18,0 | | | o | |
| 06NR-19W | 6,00 | 3,96 | 19,0 | | | o | |
| 06NR-20W | 6,00 | 3,96 | 20,0 | | | o | |
| 06NR-22W | 6,00 | 3,96 | 22,0 | | | o | |
| 06NR-26W | 6,00 | 3,96 | 26,0 | | | o | |
| 08NR-16W | 8,00 | 4,76 | 16,0 | | | o | |
| 08NR-18W | 8,00 | 4,76 | 18,0 | | | o | |
| 08NR-19W | 8,00 | 4,76 | 19,0 | | | o | |
| 08NR-20W | 8,00 | 4,76 | 20,0 | | | o | |
| 08NR-24W | 8,00 | 4,76 | 24,0 | | | o | |
| 08NR-28W | 8,00 | 4,76 | 28,0 | | | o | |
| 11NR-11W | 11,00 | 6,35 | 11,0 | | | o | |
| 11NR-12W | 11,00 | 6,35 | 12,0 | | | o | |
| 11NR-14W | 11,00 | 6,35 | 14,0 | | | o | |
| 11NR-16W | 11,00 | 6,35 | 16,0 | | | o | |
| 11NR-18W | 11,00 | 6,35 | 18,0 | | | o | |
| 11NR-19W | 11,00 | 6,35 | 19,0 | | | o | |
| 11NR-20W | 11,00 | 6,35 | 20,0 | | | o | |
| 11NR-22W | 11,00 | 6,35 | 22,0 | | | o | |
| 11NR-24W | 11,00 | 6,35 | 24,0 | | | o | |
| 11NR-26W | 11,00 | 6,35 | 26,0 | | | o | |
| 11NR-28W | 11,00 | 6,35 | 28,0 | | | o | |
| 11NR-32W | 11,00 | 6,35 | 32,0 | | | o | |
| 11NR-36W | 11,00 | 6,35 | 36,0 | | | o | |
| 11NR-40W | 11,00 | 6,35 | 40,0 | | | o | |
| 11NR-48W | 11,00 | 6,35 | 48,0 | | | o | |
| 16NR-8W | 16,00 | 9,52 | 8,0 | | | o | |
| 16NR-9W | 16,00 | 9,52 | 9,0 | | | o | |
| 16NR-10W | 16,00 | 9,52 | 10,0 | | | o | |
| 16NR-11W | 16,00 | 9,52 | 11,0 | | | o | |
| 16NR-12W | 16,00 | 9,52 | 12,0 | | | o | |
| 16NR-14W | 16,00 | 9,52 | 14,0 | | | o | |
| 16NR-16W | 16,00 | 9,52 | 16,0 | | | o | |
| 16NR-18W | 16,00 | 9,52 | 18,0 | | | o | |
| 16NR-19W | 16,00 | 9,52 | 19,0 | | | o | |
| 16NR-20W | 16,00 | 9,52 | 20,0 | | | o | |
| 16NR-22W | 16,00 | 9,52 | 22,0 | | | o | |
| 16NR-24W | 16,00 | 9,52 | 24,0 | | | o | |
| 16NR-26W | 16,00 | 9,52 | 26,0 | | | o | |
| 16NR-28W | 16,00 | 9,52 | 28,0 | | | o | |
| 22NR-4W | 22,00 | 12,70 | 4,0 | | | o | |
| 22NR-4.5W | 22,00 | 12,70 | 4,5 | | | o | |
| 22NR-5W | 22,00 | 12,70 | 5,0 | | | o | |
| 22NR-6W | 22,00 | 12,70 | 6,0 | | | o | |
| 22NR-7W | 22,00 | 12,70 | 7,0 | | | o | |



Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

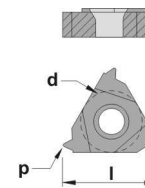
Milling cutters

Solid carbide

NL-W



| REF. | l | d | p | K15K | P25K | TIC25 | T20L |
|----------|-------|------|------|------|------|-------|------|
| 06NL-18W | 6,00 | 3,96 | 18,0 | | | o | |
| 06NL-20W | 6,00 | 3,96 | 20,0 | | | o | |
| 06NL-22W | 6,00 | 3,96 | 22,0 | | | o | |
| 06NL-26W | 6,00 | 3,96 | 26,0 | | | o | |
| 08NL-16W | 8,00 | 4,76 | 16,0 | | | o | |
| 08NL-18W | 8,00 | 4,76 | 18,0 | | | o | |
| 08NL-19W | 8,00 | 4,76 | 19,0 | | | o | |
| 08NL-20W | 8,00 | 4,76 | 20,0 | | | o | |
| 08NL-24W | 8,00 | 4,76 | 24,0 | | | o | |
| 08NL-28W | 8,00 | 4,76 | 28,0 | | | o | |
| 16NL-11W | 16,00 | 9,52 | 11,0 | | | o | |
| 16NL-14W | 16,00 | 9,52 | 14,0 | | | o | |
| 16NL-16W | 16,00 | 9,52 | 16,0 | | | o | |



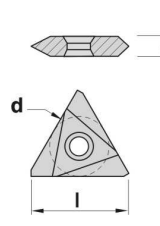
Boring heads

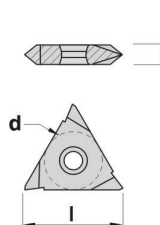
Arbors & adaptors

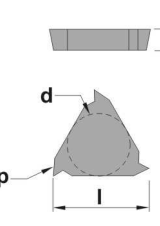
| NR-W TD | REF. | l | d | p | K15K | P25K | TIC25 | T20L |  |
|---------|-------------|-------|------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 16NR-8W TD | 16,50 | 9,52 | 8,0 | | | ○ | | |
| | 16NR-9W TD | 16,50 | 9,52 | 9,0 | | | ○ | | |
| | 16NR-10W TD | 16,50 | 9,52 | 10,0 | | | ○ | | |
| | 16NR-11W TD | 16,50 | 9,52 | 11,0 | | | ● | ○ | |
| | 16NR-12W TD | 16,50 | 9,52 | 12,0 | | | ○ | | |
| | 16NR-14W TD | 16,50 | 9,52 | 14,0 | | | ● | ○ | |
| | 16NR-16W TD | 16,50 | 9,52 | 16,0 | | | ○ | | |
| | 16NR-18W TD | 16,50 | 9,52 | 18,0 | | | ○ | | |
| | 16NR-19W TD | 16,50 | 9,52 | 19,0 | | | ○ | | |

| ER-LG | REF. | l | d | W | K15K | P25K | TIC25 | T20L |  |
|-------|------------|-------|------|------|------|------|-------|------|---|
| | | | | | | | | | |
| | 16ER-100LG | 16,00 | 9,52 | 1,15 | | | | ● | |
| | 16ER-120LG | 16,00 | 9,52 | 1,35 | | | | ● | |
| | 16ER-150LG | 16,00 | 9,52 | 1,65 | | | | ● | |
| | 16ER-175LG | 16,00 | 9,52 | 1,90 | | | | ● | |
| | 16ER-200LG | 16,00 | 9,52 | 2,15 | | | | ● | |

| EL-LG | REF. | l | d | W | K15K | P25K | TIC25 | T20L |  |
|-------|------------|-------|------|------|------|------|-------|------|--|
| | | | | | | | | | |
| | 16EL-100LG | 16,00 | 9,52 | 1,15 | | | | ● | |
| | 16EL-120LG | 16,00 | 9,52 | 1,35 | | | | ● | |
| | 16EL-150LG | 16,00 | 9,52 | 1,65 | | | | ● | |
| | 16EL-175LG | 16,00 | 9,52 | 1,90 | | | | ● | |
| | 16EL-200LG | 16,00 | 9,52 | 2,15 | | | | ● | |

| TNMC | REF. | l | s | d | K15K | P25K | TIC15 | T20L |  |
|------|-------------|-------|------|-------|------|------|-------|------|---|
| | | | | | | | | | |
| | TNMC 1603XX | 16,50 | 3,18 | 9,52 | | ○ | ○ | | |
| | TNMC 2204XX | 22,00 | 4,76 | 12,70 | | ● | ○ | | |

| TPMC | REF. | l | s | d | K15K | P25K | TIC15 | T20L |  |
|------|-------------|-------|------|-------|------|------|-------|------|---|
| | | | | | | | | | |
| | TPMC 1603XX | 16,50 | 3,18 | 9,52 | | ○ | | | |
| | TPMC 2204XX | 22,00 | 4,76 | 12,70 | | ○ | | | |

| L166G-ISO | REF. | l | s | d | p | K15K | P25K | TIC25 | T20L |  |
|-----------|--------------|-------|------|------|------|------|------|-------|------|---|
| | | | | | | | | | | |
| | L166G-3BA075 | 16,50 | 3,18 | 9,52 | 0,75 | | ○ | | | |
| | L166G-3BA100 | 16,50 | 3,18 | 9,52 | 1,00 | | ○ | | | |
| | L166G-3BA125 | 16,50 | 3,18 | 9,52 | 1,25 | | ○ | | | |
| | L166G-3BA150 | 16,50 | 3,18 | 9,52 | 1,50 | | ○ | | | |
| | L166G-3BA175 | 16,50 | 3,18 | 9,52 | 1,75 | | ○ | | | |
| | L166G-3BA200 | 16,50 | 3,18 | 9,52 | 2,00 | | ○ | | | |
| | L166G-3BA250 | 16,50 | 3,18 | 9,52 | 2,50 | | ○ | | | |
| | L166G-3BA300 | 16,50 | 3,18 | 9,52 | 3,00 | | ○ | | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

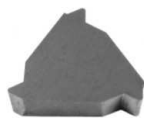
Arbors & adaptors

● Normally available for immediate delivery

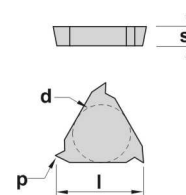
○ Only available in a limited quantity

Inserts

R166G-ISO



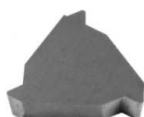
| REF. | l | s | d | p | K15K | P25K | TIC25 | T20L |
|---------------------|-------|------|------|------|------|------|-------|------|
| R166G-3BA075 | 16,50 | 3,18 | 9,52 | 0,75 | | o | | |
| R166G-3BA100 | 16,50 | 3,18 | 9,52 | 1,00 | | o | | |
| R166G-3BA125 | 16,50 | 3,18 | 9,52 | 1,25 | | o | | |
| R166G-3BA150 | 16,50 | 3,18 | 9,52 | 1,50 | | o | | |
| R166G-3BA175 | 16,50 | 3,18 | 9,52 | 1,75 | | o | | |
| R166G-3BA200 | 16,50 | 3,18 | 9,52 | 2,00 | | o | | |
| R166G-3BA250 | 16,50 | 3,18 | 9,52 | 2,50 | | o | | |
| R166G-3BA300 | 16,50 | 3,18 | 9,52 | 3,00 | | o | | |



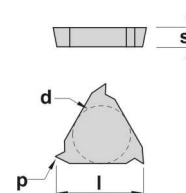
Turning

Automatic lathes

R166G-B



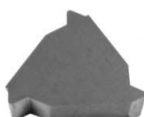
| REF. | l | s | d | p | K15K | P25K | TIC25 | T20L |
|---------------------|-------|------|------|----|------|------|-------|------|
| R166G-3BK080 | 16,50 | 3,18 | 9,52 | 08 | | o | | |
| R166G-3BK160 | 16,50 | 3,18 | 9,52 | 16 | | o | | |



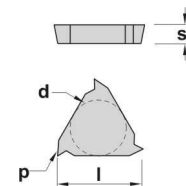
Ceramic tools

Parting & grooving

L166L-ISO



| REF. | l | s | d | p | K15K | P25K | TIC25 | T20L |
|---------------------|-------|------|------|------|------|------|-------|------|
| L166L-3BA150 | 16,50 | 3,18 | 9,52 | 1,50 | | o | | |
| L166L-3BA175 | 16,50 | 3,18 | 9,52 | 1,75 | | o | | |
| L166L-3BA200 | 16,50 | 3,18 | 9,52 | 2,00 | | o | | |
| L166L-3BA250 | 16,50 | 3,18 | 9,52 | 2,50 | | o | | |
| L166L-3BA300 | 16,50 | 3,18 | 9,52 | 3,00 | | o | | |



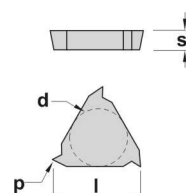
Threading

Drills

R166L-ISO



| REF. | l | s | d | p | K15K | P25K | TIC25 | T20L |
|---------------------|-------|------|------|------|------|------|-------|------|
| R166L-2BA100 | 11,00 | 3,18 | 6,35 | 1,00 | | o | | |
| R166L-2BA150 | 11,00 | 3,18 | 6,35 | 1,50 | | o | | |
| R166L-3BA150 | 16,50 | 3,18 | 9,52 | 1,50 | | o | | |
| R166L-3BA175 | 16,50 | 3,18 | 9,52 | 1,75 | | o | | |
| R166L-3BA200 | 16,50 | 3,18 | 9,52 | 2,00 | | o | | |
| R166L-3BA250 | 16,50 | 3,18 | 9,52 | 2,50 | | o | | |
| R166L-3BA300 | 16,50 | 3,18 | 9,52 | 3,00 | | o | | |
| R166L-3BK080 | 16,50 | 3,18 | 9,52 | 08 | | o | | |



Cartridges


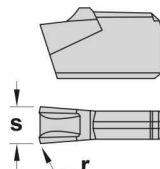
Brazed tools

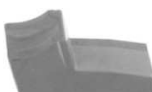
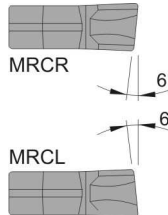
Milling cutters


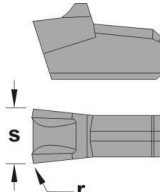
Solid carbide

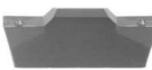
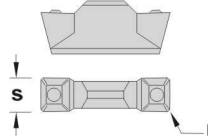
Boring heads


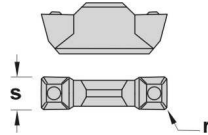
Arbors & adaptors


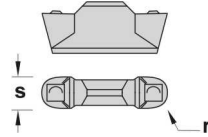
| MRCN | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R | T40L |   |
|------|-----------------|-----|------|------|------|------|-------|-------|-------|-------|------|------|--|
| | | | | o | o | o | o | o | o | o | o | o | |
| | MRCN 1.6 | 1,6 | 0,15 | o | o | | | | | • | | | |
| | MRCN 2.2 | 2,2 | 0,20 | o | • | | | | | • | | o | |
| | MRCN 3.0 | 3,0 | 0,20 | o | • | | | | | • | | o | |
| | MRCN 4.0 | 4,0 | 0,20 | o | • | | | | | • | | o | |
| | MRCN 5.0 | 5,0 | 0,30 | o | o | | | | | • | | o | |
| | MRCN 6.0 | 6,0 | 0,40 | | | | | | | • | | o | |

| MRCR/L | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R | T40L |   |
|--------|-----------------|-----|------|------|------|------|-------|-------|-------|-------|------|------|--|
| | | | | o | o | o | o | o | o | o | o | o | |
| | MRCR 3.0 | 3,0 | 0,20 | | | | | | | | | o | |
| | MRCR 4.0 | 4,0 | 0,20 | | | | | | | | | o | |
| | MRCL 3.0 | 3,0 | 0,20 | | | | | | | | | o | |
| | MRCL 4.0 | 4,0 | 0,20 | | | | | | | | | o | |

| MTE | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R | T40L |   |
|-----|----------------|-----|------|------|------|------|-------|-------|-------|-------|------|------|--|
| | | | | o | o | o | o | o | o | o | o | | |
| | MTE 3.0 | 3,0 | 0,20 | | | | | | | | | o | |
| | MTE 4.0 | 4,0 | 0,20 | | | | | | | | | o | |

| MTC | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |   |
|-----|----------------|-----|------|------|------|------|-------|-------|-------|-------|------|--|
| | | | | • | • | o | o | o | o | | | |
| | MTC 3.0 | 3,0 | 0,15 | • | • | | | | | o | | |
| | MTC 4.0 | 4,0 | 0,20 | • | • | | | | | • | | |

| MTCJ | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |   |
|------|-----------------|-----|------|------|------|------|-------|-------|-------|-------|------|--|
| | | | | • | • | o | o | o | o | | | |
| | MTCJ 3.0 | 3,0 | 0,15 | • | • | | | | | • | | |
| | MTCJ 4.0 | 4,0 | 0,20 | • | • | | | | | • | | |

| MTR | REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |   |
|-----|----------------|-----|------|------|------|------|-------|-------|-------|-------|------|--|
| | | | | o | o | o | o | o | o | | | |
| | MTR 3.0 | 3,0 | 1,50 | o | o | | | | | o | | |
| | MTR 3.8 | 3,8 | 1,90 | o | o | | | | | o | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

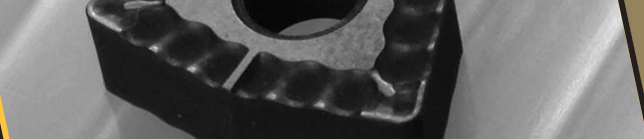
Solid carbide

Boring heads

Arbors & adaptors

• Normally available for immediate delivery

o Only available in a limited quantity



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

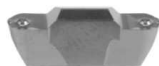
Milling cutters

Solid carbide

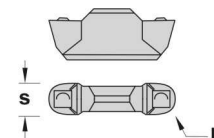
Boring heads

Arbors & adaptors

MTRJ



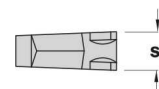
| REF. | s | r | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |
|----------|-----|------|------|------|------|-------|-------|-------|-------|------|
| MTRJ 3.0 | 3,0 | 1,50 | | | | | | | ○ | |
| MTRJ 3.8 | 3,8 | 1,90 | | | | | | | ○ | |



PTNT



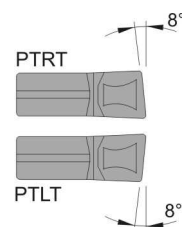
| REF. | s | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |
|---------|------|------|------|------|-------|-------|-------|-------|------|
| PTNT 02 | 2,10 | | ● | ● | | | | ● | |
| PTNT 03 | 3,10 | ○ | ● | ● | | | | ● | |
| PTNT 04 | 4,10 | | ● | ● | | | | ● | |
| PTNT 05 | 5,10 | ○ | ○ | | | | | ○ | |
| PTNT 06 | 6,10 | ○ | ○ | | | | | ○ | |
| PTNT 08 | 8,10 | | | | | | | | |
| PTNT 09 | 9,10 | | ○ | | | | | | |



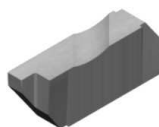
PTR/LT



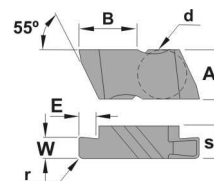
| REF. | s | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |
|------------|-----|------|------|------|-------|-------|-------|-------|------|
| PTRT 03 R8 | 3,0 | | | | | | | ○ | |
| PTRT 04 R8 | 4,0 | | | | | | | ○ | |
| PTLT 03 R8 | 3,0 | | | | | | | ○ | |
| PTLT 04 R8 | 4,0 | | | | | | | ○ | |



NG



| REF. | d | A | B | E | r | s | W | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R |
|------------|------|-------|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|------|
| NG-2031R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 0,79 | | | | ○ | | | | |
| NG-210R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 0,99 | | | | ○ | | | | |
| NG2041R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,04 | | | | ○ | | | | |
| NG2047R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,19 | | | | ○ | | | | |
| NG2058R/L | 4,76 | 5,56 | 6,86 | 1,27 | 0,05 | 3,81 | 1,47 | | | | ○ | | | | |
| NG2062R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 1,57 | | | | ○ | | | | |
| NG220R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 2,01 | | | | ○ | | | | |
| NG2094R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 2,39 | | | | ○ | | | | |
| NG230R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 3,00 | | | | ○ | | | | |
| NG2125R/L | 4,76 | 5,56 | 6,86 | 2,79 | 0,05 | 3,81 | 3,18 | | | | ○ | | | | |
| NG3031R/L | 9,53 | 8,74 | 10,29 | 1,27 | 0,05 | 4,95 | 0,79 | | | | ○ | | | | |
| NG310R/L | 9,53 | 8,74 | 10,29 | 1,27 | 0,05 | 4,95 | 0,99 | | | | ○ | | | | |
| NG3047R/L | 9,53 | 8,74 | 10,29 | 1,91 | 0,05 | 4,95 | 1,19 | | | | ○ | | | | |
| NG3062R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,57 | | | | ○ | | | | |
| NG3072R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,83 | | | | ○ | | | | |
| NG3078R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 1,98 | | | | ○ | | | | |
| NG320R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 2,01 | | | | ○ | | | | |
| NG3088R/L | 9,53 | 8,74 | 10,29 | 3,05 | 0,13 | 4,95 | 2,24 | | | | ○ | | | | |
| NG3094R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,39 | | | | ○ | | | | |
| NG3105R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,67 | | | | ○ | | | | |
| NG3110R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 2,79 | | | | ○ | | | | |
| NG330R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,10 | | | | ○ | | | | |
| NG3122R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,10 | | | | ○ | | | | |
| NG3125R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,18 | | | | ○ | | | | |
| NG3142R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,61 | | | | ○ | | | | |
| NG3156R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 3,96 | | | | ○ | | | | |
| NG340R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 4,01 | | | | ○ | | | | |
| NG3178R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,13 | 4,95 | 4,52 | | | | ○ | | | | |
| NG3185R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,51 | 4,95 | 4,70 | | | | ○ | | | | |
| NG3189R/L | 9,53 | 8,74 | 10,29 | 4,57 | 0,51 | 4,95 | 4,80 | | | | ○ | | | | |
| NG4125R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,13 | 6,48 | 3,18 | | | | ○ | | | | |
| NG4189R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 4,80 | | | | ○ | | | | |
| NG450R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,25 | 6,48 | 5,00 | | | | ○ | | | | |
| NG4213R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,13 | 6,48 | 5,41 | | | | ○ | | | | |
| NG4219R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 5,56 | | | | ○ | | | | |
| NG4250R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,51 | 6,48 | 6,35 | | | | ○ | | | | |
| NG4312R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 6,48 | 7,92 | | | | ○ | | | | |
| NG6281R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 7,14 | | | | ○ | | | | |
| NG6312R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 7,92 | | | | ○ | | | | |
| NG6375R/L | 9,53 | 11,51 | 16,15 | 6,35 | 0,76 | 9,73 | 9,53 | | | | ○ | | | | |



| NR | REF. | d | A | B | E | r | s | W | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R | |
|----|-----------|------|-------|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | | |
| | NR2031R/L | 4,76 | 5,56 | 6,81 | 2,79 | 0,79 | 3,81 | 1,57 | | | | o | | | | | |
| | NR2047R/L | 4,76 | 5,56 | 6,79 | 2,79 | 1,19 | 3,81 | 2,39 | | | | o | | | | | |
| | NR2062R/L | 4,76 | 5,56 | 6,77 | 2,79 | 1,57 | 3,81 | 3,18 | | | | o | | | | | |
| | NR3031R/L | 9,53 | 8,74 | 10,24 | 3,81 | 0,79 | 4,95 | 1,57 | | | | o | | | | | |
| | NR3047R/L | 9,53 | 8,74 | 10,22 | 3,81 | 1,19 | 4,95 | 2,39 | | | | o | | | | | |
| | NR3062R/L | 9,53 | 8,74 | 10,20 | 3,81 | 1,57 | 4,95 | 3,18 | | | | o | | | | | |
| | NR3078R/L | 9,53 | 8,74 | 10,18 | 3,81 | 1,98 | 4,95 | 3,96 | | | | o | | | | | |
| | NR3094R/L | 9,53 | 8,74 | 10,16 | 3,81 | 2,39 | 4,95 | 4,78 | | | | o | | | | | |
| | NR4062R/L | 9,53 | 11,51 | 16,07 | 6,35 | 1,57 | 6,48 | 3,18 | | | | o | | | | | |
| | NR4094R/L | 9,53 | 11,51 | 10,03 | 6,35 | 2,39 | 6,48 | 4,78 | | | | o | | | | | |
| | NR4125R/L | 9,53 | 11,51 | 15,98 | 6,35 | 3,18 | 6,48 | 6,35 | | | | o | | | | | |

| NT | REF. | d | A | B | E | r | s | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC30 | Z10R | |
|----|--------|------|-------|-------|------|------|------|------|------|------|-------|-------|-------|-------|------|--|
| | | | | | | | | | | | | | | | | |
| | NT2R/L | 4,76 | 5,56 | 6,76 | 1,91 | 0,08 | 3,81 | | | | o | | | | | |
| | NT3R/L | 9,53 | 8,74 | 10,16 | 2,49 | 0,13 | 4,95 | | | | o | | | | | |
| | NT4R/L | 9,53 | 11,51 | 15,98 | 3,25 | 0,13 | 6,48 | | | | o | | | | | |

| ER-LG | REF. | l | d | W | K15K | P25K | TIC25 | T20L | |
|-------|------------|-------|------|------|------|------|-------|------|--|
| | | | | | | | | | |
| | 16ER-100LG | 16,00 | 9,52 | 1,15 | | | | • | |
| | 16ER-120LG | 16,00 | 9,52 | 1,35 | | | | • | |
| | 16ER-150LG | 16,00 | 9,52 | 1,65 | | | | • | |
| | 16ER-175LG | 16,00 | 9,52 | 1,90 | | | | • | |
| | 16ER-200LG | 16,00 | 9,52 | 2,15 | | | | • | |

| EL-LG | REF. | l | d | W | K15K | P25K | TIC25 | T20L | |
|-------|------------|-------|------|------|------|------|-------|------|--|
| | | | | | | | | | |
| | 16EL-100LG | 16,00 | 9,52 | 1,15 | | | | • | |
| | 16EL-120LG | 16,00 | 9,52 | 1,35 | | | | • | |
| | 16EL-150LG | 16,00 | 9,52 | 1,65 | | | | • | |
| | 16EL-175LG | 16,00 | 9,52 | 1,90 | | | | • | |
| | 16EL-200LG | 16,00 | 9,52 | 2,15 | | | | • | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

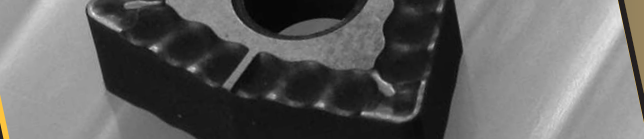
Solid carbide

Boring heads

Arbors & adaptors

• Normally available for immediate delivery

o Only available in a limited quantity



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

AB

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|------|------|------|------|------|----|------|------|------|-------|-------|-------|-------|-------|------|
| AB 6 | 6,00 | 2,50 | 4,00 | 2,00 | - | • | | | | | | | | |
| AB 8 | 8,00 | 3,00 | 5,00 | 3,00 | - | • | | | | | | | | |

ABC

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|--------|-------|------|-------|---|-----|------|------|------|-------|-------|-------|-------|-------|------|
| ABC 10 | 11,00 | 4,00 | 6,00 | - | 16° | • | • | | | | | | | |
| ABC 12 | 13,00 | 5,00 | 8,00 | - | 18° | • | • | | | | | | | |
| ABC 16 | 17,00 | 6,00 | 10,00 | - | 18° | • | • | | | | | | | |
| ABC 20 | 21,00 | 7,00 | 12,00 | - | 16° | • | • | | | | | | | |
| ABC 25 | 26,00 | 8,00 | 14,00 | - | 16° | • | • | | | | | | | |

Only for:
-ABC 10
-ABC 20
-ABC 25

Only for:
-ABC 12
-ABC 16

C

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|------|-------|------|-------|---|-----|------|------|------|-------|-------|-------|-------|-------|------|
| C 7 | 7,00 | 2,50 | 5,00 | - | 0° | • | • | | | | | | | |
| C 8 | 8,00 | 3,25 | 5,00 | - | 0° | • | • | | | | | | | |
| C 10 | 10,00 | 4,00 | 6,00 | - | 18° | • | • | | | | | | | |
| C 12 | 12,00 | 5,00 | 8,00 | - | 18° | • | • | | | | | | | |
| C 16 | 16,00 | 6,00 | 10,00 | - | 18° | • | • | | | | | | | |
| C 20 | 20,00 | 7,00 | 12,00 | - | 18° | • | • | | | | | | | |
| C 25 | 25,00 | 8,00 | 14,00 | - | 18° | • | • | | | | | | | |

D

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|------|-------|-------|-------|---|-----|------|------|------|-------|-------|-------|-------|-------|------|
| D 3 | 3,00 | 3,00 | 8,00 | - | 0° | • | • | | | | | | | |
| D 4 | 4,00 | 4,00 | 10,00 | - | 14° | • | • | | | | | | | |
| D 5 | 5,00 | 5,00 | 12,00 | - | 14° | • | • | | | | | | | |
| D 6 | 6,00 | 6,00 | 14,00 | - | 14° | • | • | | | | | | | |
| D 8 | 8,00 | 8,00 | 16,00 | - | 14° | • | • | | | | | | | |
| D 10 | 10,00 | 10,00 | 18,00 | - | 14° | • | • | | | | | | | |


E

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|------|-------|------|-------|---|----|------|------|------|-------|-------|-------|-------|-------|------|
| E 5 | 5,00 | 3,00 | 12,00 | - | 9° | • | • | | | | | | | |
| E 6 | 6,00 | 4,00 | 14,00 | - | 9° | • | • | | | | | | | |
| E 8 | 8,00 | 4,00 | 16,00 | - | 9° | • | • | | | | | | | |
| E 10 | 10,00 | 5,00 | 18,00 | - | 9° | • | • | | | | | | | |
| E 12 | 12,00 | 6,00 | 20,00 | - | 9° | • | • | | | | | | | |

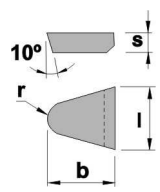
FIL

| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|---------|-------|------|------|------|----|------|------|------|-------|-------|-------|-------|-------|------|
| FIL 3,5 | 12,00 | 3,50 | 3,50 | 1,00 | 5° | • | • | | | | | | | |
| FIL 4 | 14,00 | 4,00 | 4,00 | 1,20 | 5° | • | • | | | | | | | |
| FIL 5 | 16,00 | 5,00 | 5,00 | 1,50 | 5° | • | • | | | | | | | |
| FIL 6 | 18,00 | 6,00 | 6,00 | 1,80 | 5° | • | • | | | | | | | |

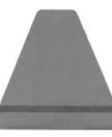
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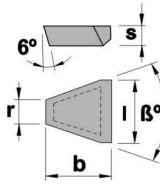
| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|--------------|-------|------|-------|------|---------------|------|------|------|-------|-------|-------|-------|-------|------|
| PR 8 | 8,00 | 4,00 | 12,00 | 1,00 | 30° | • | | | | | | | | |
| PR 10 | 10,00 | 4,00 | 14,00 | 1,50 | 30° | • | | | | | | | | |
| PR 12 | 12,00 | 5,00 | 17,00 | 2,50 | 30° | • | | | | | | | | |



TR



| REF. | l | s | b | r | β° | K15K | P25K | P40K | TIC15 | TIC17 | TIC20 | TIC25 | TIC30 | Z10R |
|-----------------|-------|------|-------|------|---------------|------|------|------|-------|-------|-------|-------|-------|------|
| TR 16-32 | 16,00 | 6,00 | 21,00 | 5,00 | 32° | • | | | | | | | | |
| TR 16-36 | 16,00 | 6,00 | 21,00 | 4,00 | 36° | • | | | | | | | | |
| TR 20-32 | 20,00 | 6,00 | 25,00 | 7,50 | 32° | • | | | | | | | | |
| TR 20-36 | 20,00 | 6,00 | 25,00 | 5,80 | 36° | • | | | | | | | | |
| TR 20-38 | 20,00 | 6,00 | 25,00 | 7,50 | 38° | • | | | | | | | | |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

• Normally available for immediate delivery

◦ Only available in a limited quantity

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

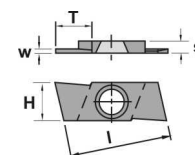
Boring heads

Arbors & adaptors

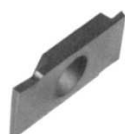
GISG



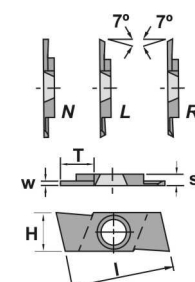
| REF. | l | s | H | T | w | K15K | P25K | TIC25 | T20L |
|-------------------|-------|------|------|------|------|------|------|-------|------|
| GISG05R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,50 | | | • | |
| GISG07R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,70 | | | • | |
| GISG08R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,80 | | | • | |
| GISG09R-L | 17,00 | 2,00 | 7,00 | 2,54 | 0,90 | | | • | |
| GISG11R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,10 | | | • | |
| GISG13R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,30 | | | • | |
| GISG16R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,60 | | | • | |
| GISG185R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,85 | | | • | |



GIGP



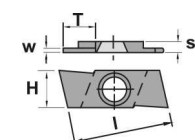
| REF. | l | s | H | T | w | K15K | P25K | TIC25 | T20L |
|-----------------|-------|------|------|------|------|------|------|-------|------|
| GIGP10RN | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | • | |
| GIGP10RR | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | • | |
| GIGP10LN | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | • | |
| GIGP10LL | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | • | |
| GIGP15RN | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | • | |
| GIGP15RR | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | • | |
| GIGP15LN | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | • | |
| GIGP15LL | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | • | |
| GIGP20RN | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | • | |
| GIGP20RR | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | • | |
| GIGP20LN | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | • | |
| GIGP20LL | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | • | |



GIGR



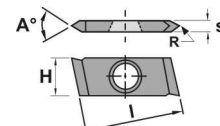
| REF. | l | s | H | T | w | K15K | P25K | TIC25 | T20L |
|------------------|-------|------|------|------|------|------|------|-------|------|
| GIGR10R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,00 | | | • | |
| GIGR15R-L | 17,00 | 2,00 | 7,00 | 6,00 | 1,50 | | | • | |
| GIGR20R-L | 17,00 | 2,00 | 7,00 | 6,00 | 2,00 | | | • | |



GIGW



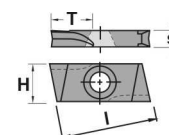
| REF. | l | s | H | R | A° | K15K | P25K | TIC25 | T20L |
|------------------|-------|------|------|------|-----|------|------|-------|------|
| GIGW55R-L | 17,00 | 2,00 | 7,00 | 0,10 | 55° | | | • | |
| GIGW60R-L | 17,00 | 2,00 | 7,00 | 0,10 | 60° | | | • | |



GIST



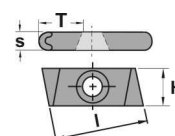
| REF. | l | s | H | T | w | K15K | P25K | TIC25 | T20L |
|-----------------|-------|------|------|------|---|------|------|-------|------|
| GIST3R-L | 17,00 | 3,17 | 7,00 | 6,00 | - | | | • | |




GISC



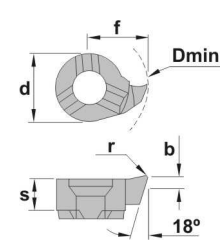
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|-----------------|-------|------|------|------|---|------|------|-------|------|
| GISC3R-L | 17,00 | 3,17 | 7,00 | 6,00 | - | | | • | |




L



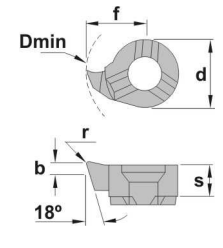
| REF. | Dmin | b | f | s | d | r | K15K | P25K | TIC25 | T20L |
|--------------|------|-----|------|-----|------|-----|------|------|-------|------|
| LS08.1846.02 | 7,8 | 3,3 | 4,65 | 3,5 | 6,0 | 0,2 | | | | • |
| LS11.1855.02 | 9,8 | 3,9 | 5,50 | 4,2 | 8,0 | 0,2 | | | | • |
| LS11.1867.02 | 11,0 | 3,9 | 6,70 | 4,2 | 8,0 | 0,2 | | | | • |
| LS14.1867.02 | 13,8 | 5,0 | 8,70 | 5,1 | 9,0 | 0,2 | | | | • |
| LS16.1897.02 | 15,5 | 5,0 | 9,70 | 5,4 | 11,0 | 0,2 | | | | • |




R



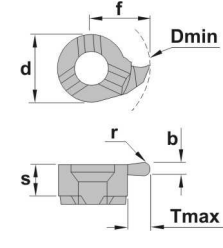
| REF. | Dmin | b | f | s | d | r | K15K | P25K | TIC25 | T20L |
|--------------|------|-----|------|-----|------|-----|------|------|-------|------|
| RS08.1846.02 | 7,8 | 3,3 | 4,65 | 3,5 | 6,0 | 0,2 | | | | • |
| RS11.1855.02 | 9,8 | 3,9 | 5,50 | 4,2 | 8,0 | 0,2 | | | | • |
| RS11.1867.02 | 11,0 | 3,9 | 6,70 | 4,2 | 8,0 | 0,2 | | | | • |
| RS14.1867.02 | 13,8 | 5,0 | 8,70 | 5,1 | 9,0 | 0,2 | | | | • |
| RS16.1897.02 | 15,5 | 5,0 | 9,70 | 5,4 | 11,0 | 0,2 | | | | • |




L



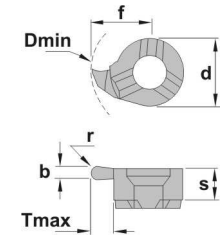
| REF. | Dmin | b | r | f | s | d | tmax | K15K | P25K | TIC25 | T20L |
|-------------|------|-----|-----|------|-----|------|------|------|------|-------|------|
| LS08.008R04 | 8,0 | 0,8 | 0,4 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS08.012R06 | 8,0 | 1,2 | 0,6 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS08.018R09 | 8,0 | 1,8 | 0,9 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS11.008R04 | 11,0 | 0,8 | 0,4 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS11.012R06 | 11,0 | 1,2 | 0,6 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS11.018R09 | 11,0 | 1,8 | 0,9 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS11.020R10 | 11,0 | 2,0 | 1,0 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS11.030R15 | 11,0 | 3,0 | 1,5 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS14.012R06 | 14,0 | 1,2 | 0,6 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| LS14.018R09 | 14,0 | 1,8 | 0,9 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| LS14.020R10 | 14,0 | 2,0 | 1,0 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| LS14.022R11 | 14,0 | 2,2 | 1,1 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| LS14.030R15 | 14,0 | 3,0 | 1,5 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| LS16.018R09 | 16,0 | 1,8 | 0,9 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| LS16.022R11 | 16,0 | 2,2 | 1,1 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| LS16.030R15 | 16,0 | 3,0 | 1,5 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| LS16.040R20 | 16,0 | 4,0 | 2,0 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |



R



| REF. | Dmin | b | r | f | s | d | tmax | K15K | P25K | TIC25 | T20L |
|-------------|------|-----|-----|------|-----|------|------|------|------|-------|------|
| RS08.008R04 | 8,0 | 0,8 | 0,4 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS08.012R06 | 8,0 | 1,2 | 0,6 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS08.018R09 | 8,0 | 1,8 | 0,9 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS11.008R04 | 11,0 | 0,8 | 0,4 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS11.012R06 | 11,0 | 1,2 | 0,6 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS11.018R09 | 11,0 | 1,8 | 0,9 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS11.020R10 | 11,0 | 2,0 | 1,0 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS11.030R15 | 11,0 | 3,0 | 1,5 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS14.012R06 | 14,0 | 1,2 | 0,6 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| RS14.018R09 | 14,0 | 1,8 | 0,9 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| RS14.020R10 | 14,0 | 2,0 | 1,0 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| RS14.022R11 | 14,0 | 2,2 | 1,1 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| RS14.030R15 | 14,0 | 3,0 | 1,5 | 9,0 | 4,0 | 9,0 | 4,0 | | | | • |
| RS16.018R09 | 16,0 | 1,8 | 0,9 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| RS16.022R11 | 16,0 | 2,2 | 1,1 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| RS16.030R15 | 16,0 | 3,0 | 1,5 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |
| RS16.040R20 | 16,0 | 4,0 | 2,0 | 11,0 | 5,4 | 11,0 | 4,3 | | | | • |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

Turning



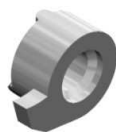
Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills



Cartridges

Brazed tools

Milling cutters

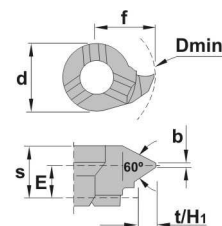
Solid carbide

Boring heads

Arbors & adaptors

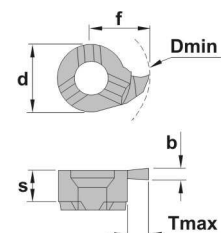
L

| REF. | Dmin | pitch. | t/H1 | f | E | s | b | d | K15K | P25K | TIC25 | T20L |
|--------------|------|----------|------|------|-----|-----|------|------|------|------|-------|------|
| LS08.0815.01 | 8,0 | 1,5/1,75 | 0,95 | 4,8 | 2,5 | 3,5 | 0,18 | 6,0 | | | | • |
| LS11.1020.01 | 11,0 | 2,0 | 1,08 | 6,7 | 3,0 | 4,3 | 0,25 | 8,0 | | | | • |
| LS11.1325.01 | 11,0 | 2,5 | 1,35 | 6,7 | 3,0 | 4,3 | 0,31 | 8,0 | | | | • |
| LS14.1020.01 | 14,0 | 2,0 | 1,08 | 9,0 | 4,2 | 5,4 | 0,25 | 9,0 | | | | • |
| LS14.1325.01 | 14,0 | 2,5 | 1,35 | 9,0 | 4,7 | 5,4 | 0,31 | 9,0 | | | | • |
| LS16.1325.01 | 16,0 | 2,5 | 1,35 | 10,2 | 4,2 | 5,5 | 0,31 | 11,0 | | | | • |
| LS08.0205.01 | 8,0 | 0,5/0,75 | 0,43 | 4,8 | 2,7 | 3,5 | 0,06 | 6,0 | | | | • |
| LS08.0510.01 | 8,0 | 1,0/1,25 | 0,70 | 4,8 | 2,7 | 3,5 | 0,12 | 6,0 | | | | • |
| LS11.0205.01 | 11,0 | 0,5/0,75 | 0,75 | 6,7 | 3,5 | 4,3 | 0,06 | 8,0 | | | | • |
| LS11.0510.01 | 11,0 | 1,0 | 0,55 | 6,7 | 3,5 | 4,3 | 0,12 | 8,0 | | | | • |
| LS11.0815.01 | 11,0 | 1,5 | 0,81 | 6,7 | 3,5 | 4,3 | 0,18 | 8,0 | | | | • |
| LS14.0510.01 | 14,0 | 1,0 | 0,55 | 9,0 | 4,7 | 5,4 | 0,12 | 9,0 | | | | • |
| LS14.0815.01 | 14,0 | 1,5 | 0,81 | 9,0 | 4,5 | 5,4 | 0,18 | 9,0 | | | | • |
| LS16.0510.01 | 16,0 | 1,0 | 0,55 | 10,2 | 4,7 | 5,5 | 0,12 | 11,0 | | | | • |
| LS16.0815.01 | 16,0 | 1,5 | 0,81 | 10,2 | 4,5 | 5,5 | 0,18 | 11,0 | | | | • |
| LS16.1020.01 | 16,0 | 2,0 | 1,08 | 10,2 | 4,2 | 5,5 | 0,25 | 11,0 | | | | • |



L

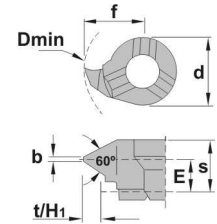
| REF. | Dmin | b | f | s | d | tmax | K15K | P25K | TIC25 | T20L |
|------------|------|------|------|-----|------|------|------|------|-------|------|
| LS008.0070 | 8,0 | 0,73 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0080 | 8,0 | 0,83 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0090 | 8,0 | 0,93 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0110 | 8,0 | 1,20 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0130 | 8,0 | 1,40 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0160 | 8,0 | 1,70 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0100 | 8,0 | 1,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0150 | 8,0 | 1,50 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS008.0200 | 8,0 | 2,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| LS011.0070 | 11,0 | 0,73 | 6,7 | 4,2 | 8,0 | 1,2 | | | | • |
| LS011.0080 | 11,0 | 0,83 | 6,7 | 4,2 | 8,0 | 1,3 | | | | • |
| LS011.0090 | 11,0 | 0,93 | 6,7 | 4,2 | 8,0 | 1,5 | | | | • |
| LS011.0110 | 11,0 | 1,20 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0130 | 11,0 | 1,40 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0160 | 11,0 | 1,70 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0100 | 11,0 | 1,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0150 | 11,0 | 1,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0200 | 11,0 | 2,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0250 | 11,0 | 2,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS011.0300 | 11,0 | 3,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| LS014.0070 | 14,0 | 0,73 | 9,0 | 5,3 | 9,0 | 1,2 | | | | • |
| LS014.0080 | 14,0 | 0,83 | 9,0 | 5,3 | 9,0 | 1,3 | | | | • |
| LS014.0090 | 14,0 | 0,93 | 9,0 | 5,3 | 9,0 | 1,5 | | | | • |
| LS014.0110 | 14,0 | 1,20 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0130 | 14,0 | 1,40 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0160 | 14,0 | 1,70 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0150 | 14,0 | 1,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0200 | 14,0 | 2,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0250 | 14,0 | 2,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS014.0300 | 14,0 | 3,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| LS016.0070 | 16,0 | 0,73 | 10,2 | 5,4 | 11,0 | 1,2 | | | | • |
| LS016.0080 | 16,0 | 0,83 | 10,2 | 5,4 | 11,0 | 1,3 | | | | • |
| LS016.0090 | 16,0 | 0,93 | 10,2 | 5,4 | 11,0 | 1,5 | | | | • |
| LS016.0110 | 16,0 | 1,20 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0130 | 16,0 | 1,40 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0160 | 16,0 | 1,70 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0150 | 16,0 | 1,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0200 | 16,0 | 2,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0250 | 16,0 | 2,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0300 | 16,0 | 3,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0350 | 16,0 | 3,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| LS016.0400 | 16,0 | 4,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |



R



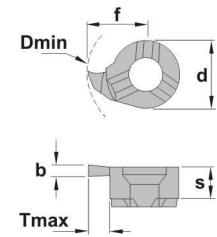
| REF. | Dmin | pitch. | t/H1 | f | E | s | b | d | K15K | P25K | TIC25 | T20L |
|--------------|------|----------|------|------|-----|-----|------|------|------|------|-------|------|
| RS08.0815.01 | 8,0 | 1,5/1,75 | 0,95 | 4,8 | 2,5 | 3,5 | 0,18 | 6,0 | | | | • |
| RS11.1020.01 | 11,0 | 2,0 | 1,08 | 6,7 | 3,0 | 4,3 | 0,25 | 8,0 | | | | • |
| RS11.1325.01 | 11,0 | 2,5 | 1,35 | 6,7 | 3,0 | 4,3 | 0,31 | 8,0 | | | | • |
| RS14.1020.01 | 14,0 | 2,0 | 1,08 | 9,0 | 4,2 | 5,4 | 0,25 | 9,0 | | | | • |
| RS14.1325.01 | 14,0 | 2,5 | 1,35 | 9,0 | 4,7 | 5,4 | 0,31 | 9,0 | | | | • |
| RS16.1325.01 | 16,0 | 2,5 | 1,35 | 10,2 | 4,2 | 5,5 | 0,31 | 11,0 | | | | • |
| RS08.0205.01 | 8,0 | 0,5/0,75 | 0,43 | 4,8 | 2,7 | 3,5 | 0,06 | 6,0 | | | | • |
| RS08.0510.01 | 8,0 | 1,0/1,25 | 0,70 | 4,8 | 2,7 | 3,5 | 0,12 | 6,0 | | | | • |
| RS11.0205.01 | 11,0 | 0,5/0,75 | 0,75 | 6,7 | 3,5 | 4,3 | 0,06 | 8,0 | | | | • |
| RS11.0510.01 | 11,0 | 1,0 | 0,55 | 6,7 | 3,5 | 4,3 | 0,12 | 8,0 | | | | • |
| RS11.0815.01 | 11,0 | 1,5 | 0,81 | 6,7 | 3,5 | 4,3 | 0,18 | 8,0 | | | | • |
| RS14.0510.01 | 14,0 | 1,0 | 0,55 | 9,0 | 4,7 | 5,4 | 0,12 | 9,0 | | | | • |
| RS14.0815.01 | 14,0 | 1,5 | 0,81 | 9,0 | 4,5 | 5,4 | 0,18 | 9,0 | | | | • |
| RS16.0510.01 | 16,0 | 1,0 | 0,55 | 10,2 | 4,7 | 5,5 | 0,12 | 11,0 | | | | • |
| RS16.0815.01 | 16,0 | 1,5 | 0,81 | 10,2 | 4,5 | 5,5 | 0,18 | 11,0 | | | | • |
| RS16.1020.01 | 16,0 | 2,0 | 1,08 | 10,2 | 4,2 | 5,5 | 0,25 | 11,0 | | | | • |



R



| REF. | Dmin | b | f | s | d | tmax | K15K | P25K | TIC25 | T20L |
|------------|------|------|------|-----|------|------|------|------|-------|------|
| RS008.0070 | 8,0 | 0,73 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0080 | 8,0 | 0,83 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0090 | 8,0 | 0,93 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0110 | 8,0 | 1,20 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0130 | 8,0 | 1,40 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0160 | 8,0 | 1,70 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0100 | 8,0 | 1,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0150 | 8,0 | 1,50 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS008.0200 | 8,0 | 2,00 | 4,8 | 3,3 | 6,0 | 1,0 | | | | • |
| RS011.0070 | 11,0 | 0,73 | 6,7 | 4,2 | 8,0 | 1,2 | | | | • |
| RS011.0080 | 11,0 | 0,83 | 6,7 | 4,2 | 8,0 | 1,3 | | | | • |
| RS011.0090 | 11,0 | 0,93 | 6,7 | 4,2 | 8,0 | 1,5 | | | | • |
| RS011.0110 | 11,0 | 1,20 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0130 | 11,0 | 1,40 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0160 | 11,0 | 1,70 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0100 | 11,0 | 1,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0150 | 11,0 | 1,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0200 | 11,0 | 2,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0250 | 11,0 | 2,50 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS011.0300 | 11,0 | 3,00 | 6,7 | 4,2 | 8,0 | 2,3 | | | | • |
| RS014.0070 | 14,0 | 0,73 | 9,0 | 5,3 | 9,0 | 1,2 | | | | • |
| RS014.0080 | 14,0 | 0,83 | 9,0 | 5,3 | 9,0 | 1,3 | | | | • |
| RS014.0090 | 14,0 | 0,93 | 9,0 | 5,3 | 9,0 | 1,5 | | | | • |
| RS014.0110 | 14,0 | 1,20 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0130 | 14,0 | 1,40 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0160 | 14,0 | 1,70 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0150 | 14,0 | 1,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0200 | 14,0 | 2,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0250 | 14,0 | 2,50 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS014.0300 | 14,0 | 3,00 | 9,0 | 5,3 | 9,0 | 4,0 | | | | • |
| RS016.0070 | 16,0 | 0,73 | 10,2 | 5,4 | 11,0 | 1,2 | | | | • |
| RS016.0080 | 16,0 | 0,83 | 10,2 | 5,4 | 11,0 | 1,3 | | | | • |
| RS016.0090 | 16,0 | 0,93 | 10,2 | 5,4 | 11,0 | 1,5 | | | | • |
| RS016.0110 | 16,0 | 1,20 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0130 | 16,0 | 1,40 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0160 | 16,0 | 1,70 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0150 | 16,0 | 1,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0200 | 16,0 | 2,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0250 | 16,0 | 2,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0300 | 16,0 | 3,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0350 | 16,0 | 3,50 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |
| RS016.0400 | 16,0 | 4,00 | 10,2 | 5,4 | 11,0 | 4,3 | | | | • |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

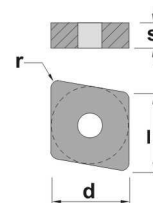
Arbors & adaptors

Inserts

CNGA



| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| CNGA 120404 | 12,90 | 4,76 | 12,70 | 0,4 | | | • | • |
| CNGA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | • | | • | • |
| CNGA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | • | | • | • |



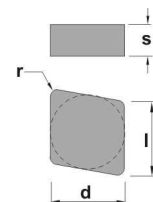
Turning

Automatic lathes

CNGN



| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| CNGN 120408 | 12,90 | 4,76 | 12,70 | 0,8 | • | | • | • |
| CNGN 120412 | 12,90 | 4,76 | 12,70 | 1,2 | • | | • | |
| CNGN 120416 | 12,90 | 4,76 | 12,70 | 1,6 | • | | • | |
| CNGN 120708 | 12,90 | 7,94 | 12,70 | 0,8 | • | | • | |
| CNGN 120712 | 12,90 | 7,94 | 12,70 | 1,2 | • | | • | |
| CNGN 120716 | 12,90 | 7,94 | 12,70 | 1,6 | • | | • | |



Ceramic tools

Parting & grooving

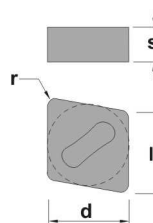
Threading

Drills

CNGX



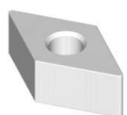
| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| CNGX 120708 | 12,90 | 7,94 | 12,70 | 0,8 | • | | | |
| CNGX 120712 | 12,90 | 7,94 | 12,70 | 1,2 | • | | | |
| CNGX 120716 | 12,90 | 7,94 | 12,70 | 1,6 | ○ | | | |
| CNGX 160708 | 16,10 | 7,94 | 15,87 | 0,8 | ○ | | | |
| CNGX 160712 | 16,10 | 7,94 | 15,87 | 1,2 | ○ | | | |
| CNGX 160716 | 16,10 | 7,94 | 15,87 | 1,6 | ○ | | | |



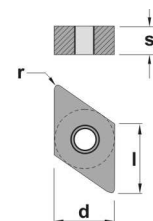
Cartridges

Brazed tools

DNGA



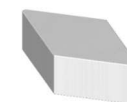
| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| DNGA 150404 | 12,90 | 4,76 | 12,70 | 0,4 | | | | |
| DNGA 150408 | 12,90 | 4,76 | 12,70 | 0,8 | • | • | • | • |
| DNGA 150412 | 12,90 | 4,76 | 12,70 | 1,2 | • | • | • | • |



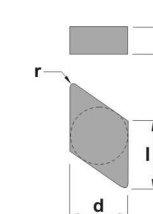
Milling cutters

Solid carbide

DNGN



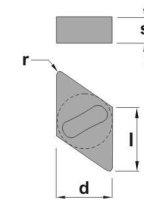
| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| DNGN 150708 | 15,50 | 7,94 | 12,70 | 0,8 | | | • | |
| DNGN 150712 | 15,50 | 7,94 | 12,70 | 1,2 | | | • | |
| DNGN 150716 | 15,50 | 7,94 | 12,70 | 1,6 | | | • | |



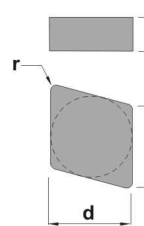
Boring heads

Arbors & adaptors

| DNGX | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|------|-------------|-------|------|-------|-----|-----|-----|-----|-----|
| | DNGX 120708 | 12,20 | 7,94 | 10,00 | 0,8 | ○ | | | |
| | DNGX 120712 | 12,20 | 7,94 | 10,00 | 1,2 | ○ | | | |
| | DNGX 120716 | 12,20 | 7,94 | 10,00 | 1,6 | ○ | | | |
| | DNGX 150708 | 15,50 | 7,94 | 12,70 | 0,8 | ● | | | |
| | DNGX 150712 | 15,50 | 7,94 | 12,70 | 1,2 | ● | | | |
| | DNGX 150716 | 15,50 | 7,94 | 12,70 | 1,6 | ○ | | | |



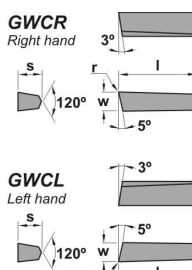
| ENGN | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|------|-------------|-------|------|-------|-----|-----|-----|-----|-----|
| | ENGN 130708 | 13,15 | 7,94 | 12,70 | 0,8 | | | ● | |
| | ENGN 130712 | 13,15 | 7,94 | 12,70 | 1,2 | | | ● | |
| | ENGN 130716 | 13,15 | 7,94 | 12,70 | 1,6 | | | ● | |
| | ENGN 130720 | 13,15 | 7,94 | 12,70 | 2,0 | | | ● | |
| | | | | | | | | | |



| GWC R/L | REF. | l | s | w | r | KX1 | KC1 | KC2 | KC4 |
|---------|---------|-------|------|------|-----|-----|-----|-----|-----|
| | GWC 06R | 15,00 | 7,50 | 6,00 | 0,6 | | ○ | | |
| | GWC 08R | 15,00 | 7,50 | 8,00 | 0,6 | | ○ | | |
| | GWC 06L | 15,00 | 7,50 | 6,00 | 0,6 | | ○ | | |
| | GWC 08L | 15,00 | 7,50 | 8,00 | 0,6 | | ○ | | |
| | | | | | | | | | |

GWCR
Right hand
3°
120°
5°

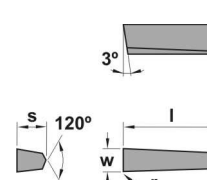
GWCL
Left hand
3°
120°
5°



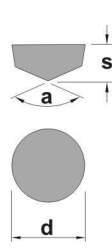
| GWF | REF. | l | s | w | r | KX1 | KC1 | KC2 | KC4 |
|-----|----------|-------|------|-------|-----|-----|-----|-----|-----|
| | GWF 04 M | 12,00 | 5,00 | 4,00 | 2,0 | | ○ | | |
| | GWF 05 M | 12,00 | 5,00 | 5,00 | 2,5 | | ○ | | |
| | GWF 06 M | 15,00 | 7,50 | 6,00 | 3,0 | | ○ | | |
| | GWF 07 | 15,00 | 7,50 | 7,00 | 3,5 | | ○ | | |
| | GWF 08 | 15,00 | 7,50 | 8,00 | 4,0 | | ○ | | |
| | GWF 10 | 15,00 | 7,50 | 10,00 | 5,0 | | ○ | | |
| | | | | | | | | | |



| GWG | REF. | l | s | w | r | KX1 | KC1 | KC2 | KC4 |
|-----|----------|-------|------|-------|-----|-----|-----|-----|-----|
| | GWG 04 M | 12,00 | 5,00 | 4,00 | 0,5 | | ○ | | |
| | GWG 05 M | 12,00 | 5,00 | 5,00 | 0,8 | | ○ | | |
| | GWG 06 M | 15,00 | 7,50 | 6,00 | 0,8 | | ○ | | |
| | GWG 07 | 15,00 | 7,50 | 7,00 | 0,8 | | ○ | | |
| | GWG 08 | 15,00 | 7,50 | 8,00 | 0,8 | | ○ | | |
| | GWG 10 | 15,00 | 7,50 | 10,00 | 0,8 | | ○ | | |
| | | | | | | | | | |



| RCGX | REF. | s | d | a | KX1 | KC1 | KC2 | KC4 |
|------|-------------|-------|-------|------|-----|-----|-----|-----|
| | RCGX 060700 | 7,94 | 6,35 | 120° | | | ● | |
| | RCGX 090700 | 7,94 | 9,52 | 120° | | | ● | |
| | RCGX 120700 | 7,94 | 12,70 | 120° | | | ● | |
| | RCGX 151000 | 10,00 | 15,87 | 120° | | | ● | |
| | RCGX 191000 | 10,00 | 19,05 | 120° | | | ● | |
| | | | | | | | | |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

● Normally available for immediate delivery ○ Only available in a limited quantity

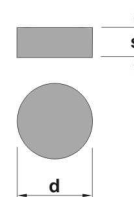
Inserts

Turning

RNGN



| REF. | s | d | KX1 | KC1 | KC2 | KC4 |
|--------------------|------|-------|-----|-----|-----|-----|
| RNGN 120400 | 4,76 | 12,70 | • | | • | |
| RNGN 120700 | 7,94 | 12,70 | | | • | |

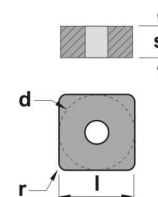


Automatic lathes

SNGA



| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| SNGA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | • | | | |
| SNGA 120412 | 12,70 | 4,76 | 12,70 | 1,2 | • | | | |
| SNGA 120416 | 12,70 | 4,76 | 12,70 | 1,6 | • | | | |



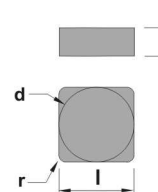
Ceramic tools

Parting & grooving

SNGN



| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| SNGN 120404 | 12,70 | 4,76 | 12,70 | 0,4 | | | • | |
| SNGN 120408 | 12,70 | 4,76 | 12,70 | 0,8 | • | | • | |
| SNGN 120412 | 12,70 | 4,76 | 12,70 | 1,2 | • | | • | |
| SNGN 120416 | 12,70 | 4,76 | 12,70 | 1,6 | • | | • | |
| SNGN 120420 | 12,70 | 4,76 | 12,70 | 2,0 | • | | • | |
| SNGN 120424 | 12,70 | 4,76 | 12,70 | 2,4 | • | | • | |
| SNGN 120708 | 12,70 | 7,94 | 12,70 | 0,8 | | | • | |
| SNGN 120712 | 12,70 | 7,94 | 12,70 | 1,2 | | | ○ | |
| SNGN 120716 | 12,70 | 7,94 | 12,70 | 1,6 | | | • | |
| SNGN 120720 | 12,70 | 7,94 | 12,70 | 2,0 | | | • | |



Threading

Drills

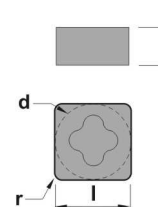
Cartridges

Brazed tools

SNGX



| REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--------------------|-------|------|-------|-----|-----|-----|-----|-----|
| SNGX 120708 | 12,70 | 7,94 | 12,70 | 0,8 | • | | | |
| SNGX 120712 | 12,70 | 7,94 | 12,70 | 1,2 | • | | | |
| SNGX 120716 | 12,70 | 7,94 | 12,70 | 1,6 | ○ | | | |
| SNGX 150708 | 15,87 | 7,94 | 15,87 | 0,8 | ○ | | | |
| SNGX 150712 | 15,87 | 7,94 | 15,87 | 1,2 | ○ | | | |
| SNGX 150716 | 15,87 | 7,94 | 15,87 | 1,6 | ○ | | | |

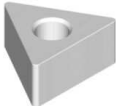


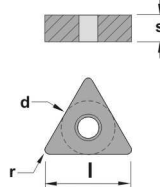
Milling cutters


Solid carbide

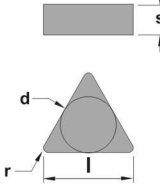
Boring heads

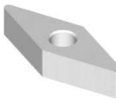
Arbors & adaptors

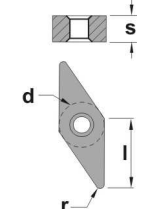
| TNGA | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|---|-------------|------|------|------|-----|-----|-----|-----|-----|
|  | TNGA 160404 | 9,52 | 4,76 | 9,52 | 0,4 | | | | • |
| | TNGA 160408 | 9,52 | 4,76 | 9,52 | 0,8 | • | | • | • |
| | TNGA 160412 | 9,52 | 4,76 | 9,52 | 1,2 | • | | • | |
| | TNGA 160416 | 9,52 | 4,76 | 9,52 | 1,6 | ○ | | | |

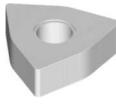


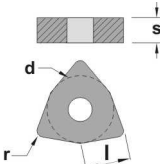
| TNGN | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|---|-------------|------|------|------|-----|-----|-----|-----|-----|
|  | TNGN 160408 | 9,52 | 4,76 | 9,52 | 0,8 | • | | • | |
| | TNGN 160412 | 9,52 | 4,76 | 9,52 | 1,2 | • | | ○ | |
| | TNGN 160416 | 9,52 | 4,76 | 9,52 | 1,6 | • | | • | |
| | TNGN 160708 | 9,52 | 7,94 | 9,52 | 0,8 | • | | • | |
| | TNGN 160712 | 9,52 | 7,94 | 9,52 | 1,2 | • | | • | |
| | TNGN 160724 | 9,52 | 7,94 | 9,52 | 2,4 | • | | • | |




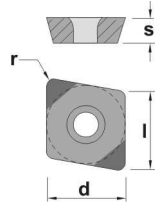
| VNGA | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|--|-------------|-------|------|------|-----|-----|-----|-----|-----|
|  | VNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | | | • | |
| | VNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | | | • | |
| | VNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | | | • | |



| WNGA | REF. | l | s | d | r | KX1 | KC1 | KC2 | KC4 |
|---|-------------|------|------|-------|-----|-----|-----|-----|-----|
|  | WNGA 080408 | 8,14 | 4,76 | 12,70 | 0,8 | • | | | |
| | WNGA 080412 | 8,14 | 4,76 | 12,70 | 1,2 | • | | | |



| CCMW | REF. | l | s | d | r | CBN | PKD |
|---|-------------|------|------|------|-----|-----|-----|
|  | CCMW 060202 | 6,50 | 2,38 | 6,35 | 0,2 | ○ | |
| | CCMW 060204 | 6,50 | 2,38 | 6,35 | 0,4 | • | |
| | CCMW 09T304 | 9,70 | 3,97 | 9,52 | 0,4 | • | |
| | CCMW 09T308 | 9,70 | 3,97 | 9,52 | 0,8 | • | |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

• Normally available for immediate delivery ○ Only available in a limited quantity

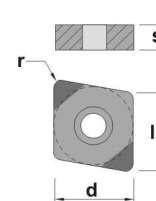
Inserts

Turning

CNGA



| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|-------|-----|-----|-----|
| CNGA 120404 | 12,90 | 4,76 | 12,70 | 0,4 | • | |
| CNGA 120408 | 12,90 | 4,76 | 12,70 | 0,8 | • | |
| CNGA 120412 | 12,90 | 4,76 | 12,70 | 1,2 | ○ | |



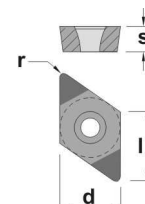
Automatic lathes

Ceramic tools

DCMW



| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|------|-----|-----|-----|
| DCMW 070202 | 7,80 | 2,38 | 6,35 | 0,2 | ○ | |
| DCMW 070204 | 7,80 | 2,38 | 6,35 | 0,4 | • | |
| DCMW 11T302 | 11,60 | 3,97 | 9,52 | 0,2 | ○ | |
| DCMW 11T304 | 11,60 | 3,97 | 9,52 | 0,4 | • | |
| DCMW 11T308 | 11,60 | 3,97 | 9,52 | 0,8 | • | |

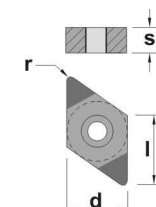


Parting & grooving

DNGA



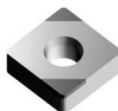
| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|-------|-----|-----|-----|
| DNGA 150404 | 15,50 | 4,76 | 12,70 | 0,4 | • | |
| DNGA 150408 | 15,50 | 4,76 | 12,70 | 0,8 | • | |
| DNGA 150412 | 15,50 | 4,76 | 12,70 | 1,2 | ○ | |



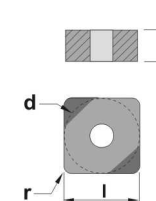
Threading

Drills

SNGA



| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|-------|-----|-----|-----|
| SNGA 120404 | 12,70 | 4,76 | 12,70 | 0,4 | ○ | |
| SNGA 120408 | 12,70 | 4,76 | 12,70 | 0,8 | ○ | |
| SNGA 120412 | 12,70 | 4,76 | 12,70 | 1,2 | ○ | |



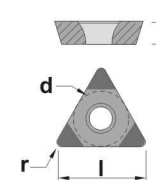
Cartridges

Brazed tools

TCMW



| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|------|-----|-----|-----|
| TCMW 110204 | 11,00 | 2,38 | 6,35 | 0,4 | • | |
| TCMW 16T304 | 16,50 | 3,97 | 9,52 | 0,4 | • | |
| TCMW 16T308 | 16,50 | 3,97 | 9,52 | 0,8 | ○ | |



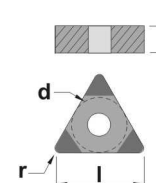
Milling cutters

Solid carbide

TNGA



| REF. | l | s | d | r | CBN | PKD |
|--------------------|-------|------|------|-----|-----|-----|
| TNGA 160404 | 16,50 | 4,76 | 9,52 | 0,4 | • | |
| TNGA 160408 | 16,50 | 4,76 | 9,52 | 0,8 | • | |
| TNGA 160412 | 16,50 | 4,76 | 9,52 | 1,2 | ○ | |



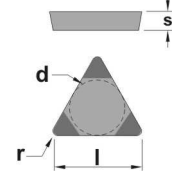
Boring heads

Arbors & adaptors

TPMN



| REF. | l | s | d | r | CBN | PKD |
|-------------|-------|------|------|-----|-----|-----|
| TPMN 110304 | 11,00 | 3,18 | 6,35 | 0,4 | • | |
| TPMN 110308 | 11,00 | 3,18 | 6,35 | 0,8 | • | |
| TPMN 160304 | 16,50 | 3,18 | 9,52 | 0,4 | • | |
| TPMN 160308 | 16,50 | 3,18 | 9,52 | 0,8 | • | |
| TPMN 160312 | 16,50 | 3,18 | 9,52 | 1,2 | • | |



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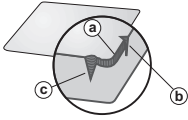
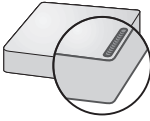
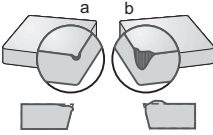
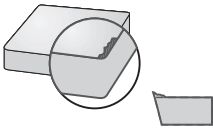
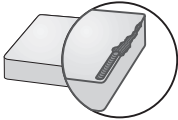
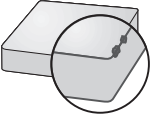
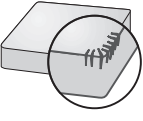
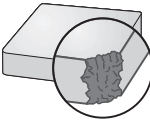
Milling cutters

Solid carbide

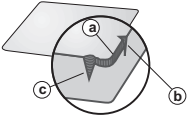
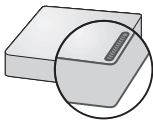
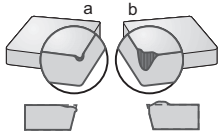
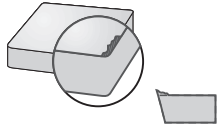
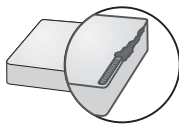
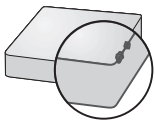
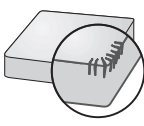
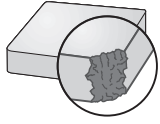
Boring heads

Arbors & adaptors

Turning insert wear and tool life

| | Problem | Cause and Remedy |
|---|---|---|
|  | <p>★ Rapid flank wear causing poor surface finish or out of tolerance (a).</p> <p>★ Notch wear causing poor surface finish and risk of edge breakage (b,c)</p> | <p>☆ A too high cutting speed or insufficient wear resistance (a).</p> <p>☆ Oxidation or excessive attrition wear caused by a hard surface (b,c)</p> <p>Reduce the cutting speed. Select a more wear resistant grade. Select an Al₂O₃ coated grade for steel machining. For work hardening materials select a larger lead angle or a more wear resistant grade.</p> |
|  | <p>★ Excessive crater wear causing a weakened edge. Cutting edge break through on the trailing edge causes poor surface finish.</p> | <p>☆ Diffusion wear due to too high cutting temperatures on the rake face.</p> <p>Select an Al₂O₃ coated grade. Select a positive insert geometry. Obtain a lower temperature by reducing the feed and speed.</p> |
|  | <p>★ Plastic deformation (edge depression (a) or flank impression (b)) leading to poor chip control and poor surface finish. Risk of excessive flank wear leading to insert breakage.</p> | <p>☆ A too high cutting temperature in combination with a high pressure.</p> <p>Select a harder grade with better resistance to plastic deformation. (a) Reduce cutting speed. (b) Reduce feed.</p> |
|  | <p>★ Built-up edge (B.U.E.) causing poor surface finish and cutting edge chattering when the B.U.E. is torn away.</p> | <p>☆ Workpiece material is welded to the insert due to:</p> <ul style="list-style-type: none"> -low cutting speed. -relative cutting geometry. -"sticky" material, e.g. certain stainless steels and pure aluminium. <p>Increase cutting speed. Select a positive geometry. Increase cutting speed drastically. If tool life turns out to be short, apply coolant in large quantities.</p> |
|  | <p>★ The part of the cutting edge not in cut is damaged through chip hammering. Both the top side and the support for the insert, can be damaged.</p> | <p>☆ The chips are of an excessive length and are deflected against the cutting edge.</p> <p>Change the feed slightly. Select an alternative insert geometry. Change the lead angle of the holder.</p> |
|  | <p>★ Small cutting edge fractures (frittering) causing poor surface finish and excessive flank wear.</p> | <p>☆ Grade too brittle. ☆ Insert geometry too weak. ☆ Built-up edge.</p> <p>Select a tougher grade. Select an insert with a stronger geometry. Increase cutting speed or select a positive geometry.</p> |
|  | <p>★ Small cracks perpendicular to the cutting edge causing chattering and poor surface finish.</p> | <p>☆ Thermal cracks due to temperature variations caused by:</p> <ul style="list-style-type: none"> -Intermittent machining. -Varying coolant supply. <p>Select a tougher grade with better resistant to thermal shocks. Coolant should be applied copiously or not at all.</p> |
|  | <p>★ Insert breakage that damages not only the insert but also the shim and workpiece.</p> | <p>☆ Grade too brittle. ☆ Excessive load on the insert. ☆ Insert geometry too weak. ☆ Insert size is too small.</p> <p>Select a tougher grade. Reduce the feed and/or the depth of the cut. Select a stronger geometry, preferably a single sided insert. Select a thicker/larger insert.</p> |

Usure et longueur de vie de la plaquette de tournage

| | Problème | Causes et solutions |
|--|--|---|
| Usure en dépouille et du rayon  | <ul style="list-style-type: none"> ★ Usure rapide en dépouille qui provoque un état de surface mauvais ou hors tolérance (a). ★ Usure du rayon qui provoque un mauvais état de surface et un risque de rupture des arêtes (b, c). | <ul style="list-style-type: none"> ☆ Vitesse de coupe trop haute ou bien résistance insuffisante à l'usure (a). ☆ Oxydation ou bien usure par attrition excessive causée par une surface dure (b, c). <p>Réduire la vitesse de coupe Choisir une nuance plus résistante à l'usure Choisir une nuance revêtu Al_2O_3 pour usiner l'acier Pour les matériels qui durcissent quand on les usine, choisir un angle de positionnement plus large ou bien une nuance plus résistante à l'usure.</p> |
| Usure en cratère  | <ul style="list-style-type: none"> ★ Usure en cratère excessive, qui provoque une arête faible. La rupture de l'arête de coupe par la partie postérieure donne comme résultat un mauvais état de surface. | <ul style="list-style-type: none"> ☆ Usure par diffusion causée par des températures trop hautes à l'angle de dépouille. <p>Choisir une nuance revêtu Al_2O_3 Choisir une plaquette à géométrie positive Obtenir une température plus basse en faisant diminuer l'avance et la vitesse.</p> |
| Déformation plastique  | <ul style="list-style-type: none"> ★ Déformation plastique (affaissement de l'arête -a- ou bien renforcement en dépouille -b-) qui provoque un contrôle de copeaux déficient et aussi un mauvais état de surface. Il y a le risque d'usure excessive en dépouille qui conduit à la rupture de la plaquette. | <ul style="list-style-type: none"> ☆ Une température de coupe trop haute en combinaison avec une haute pression. <p>Choisir une nuance plus tenace offrant une meilleure résistance à la déformation plastique. (a) Réduire la vitesse de coupe (b) Réduire l'avance</p> |
| Arête rapportée  | <ul style="list-style-type: none"> ★ Arête rapportée qui provoque de mauvais états de surface et des écaillages des arêtes de coupe à cause du collage de matière. | <ul style="list-style-type: none"> ☆ La matière de la pièce à usiner se colle à la plaquette à cause de: <ul style="list-style-type: none"> - Basse vitesse de coupe - Géométrie de coupe négative - Matière « collante », par exemple quelques aciers inoxydables ou l'aluminium pur: <p>Augmenter la vitesse de coupe Choisir une géométrie positive Augmenter la vitesse de coupe drastiquement. Si la durée de la plaquette est trop courte, appliquez une grande quantité d'arrosage.</p> |
| Martèlement des copeaux  | <ul style="list-style-type: none"> ★ La partie de l'arête de coupe qui n'est pas utilisée, est endommagée à cause du martèlement des copeaux. Cela peut arriver à la partie supérieure de la plaquette et aussi à son support. | <ul style="list-style-type: none"> ☆ Les copeaux ont une longueur excessive et sont déviés contre l'arête de coupe. <p>Changer légèrement l'avance Choisir une plaquette avec une géométrie alternative Changer l'angle de positionnement du porte-outils</p> |
| Écaillage  | <ul style="list-style-type: none"> ★ Petites fractures (écaillage) qui provoquent un mauvais état de surface et une usure excessive en dépouille. | <ul style="list-style-type: none"> ☆ Nuance trop fragile. ☆ Géométrie de la plaquette trop faible. ☆ Arête rapportée. <p>Choisir une nuance plus tenace Choisir une plaquette avec une géométrie plus forte Augmenter la vitesse de coupe ou bien choisir une géométrie positive</p> |
| Fissuration thermique  | <ul style="list-style-type: none"> ★ Petites fissures perpendiculaires à l'arête de coupe et qui provoquent des écaillages et un mauvais état de surface. | <ul style="list-style-type: none"> ☆ Fissures thermiques provoquées par des variations de température causées par: <ul style="list-style-type: none"> - Usinage intermittent. - Variations de l'arrosage. <p>Choisir une nuance plus tenace offrant une plus grande résistance aux chocs thermiques. L'arrosage devrait s'appliquer en abondance ou bien pas du tout.</p> |
| Rupture  | <ul style="list-style-type: none"> ★ Rupture de la plaquette qui n'endommage pas seulement la plaquette, mais aussi la sous-plaquette et la pièce à usiner. | <ul style="list-style-type: none"> ☆ Nuance trop fragile. ☆ Trop de charge sur la plaquette. ☆ Géométrie de la plaquette trop faible. ☆ Dimensions de la plaquette trop petites. <p>Choisir une nuance plus dure Réduire l'avance et/ou la profondeur de coupe Choisir une géométrie renforcée, si possible une plaquette non reversible Choisir une plaquette plus épaisse ou plus large</p> |

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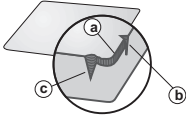
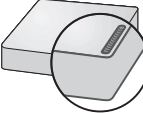
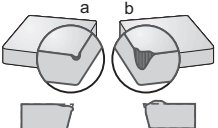
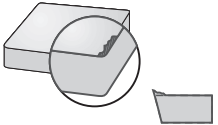
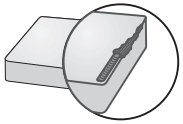
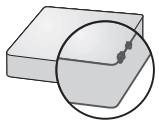
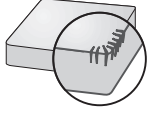
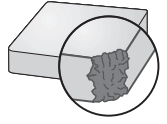
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Verschleiß und Standzeit der Dreh-Wendeschneidplatten

| | Problem | Ursache und Maßnahmen |
|---|---|--|
| Freiflächen- und Kerbverschleiß  | <ul style="list-style-type: none"> ★ Schneller Freiflächenverschleiß, was eine schlechte Oberflächengüte oder eine schlechte Maßgenauigkeit verursacht (a) ★ Kerbverschleiß, was eine schlechte Oberflächengüte und Gefahr von Schneidkantenbruch verursacht (b, c) | <ul style="list-style-type: none"> ☆ Zu hohe Schnittgeschwindigkeit oder ungenügende Verschleißfestigkeit (a). ☆ Oxidation oder zu hoher Abriebverschleiß wegen einer harten Oberfläche (b, c) <p>Schnittgeschwindigkeit reduzieren Eine verschleißfestere Sorte wählen Eine Al₂O₃ beschichtete Sorte für Stahlbearbeitung wählen Um kaltherfestigendes Material zu bearbeiten, einen kleineren Einstellwinkel oder eine verschleißfestere Sorte wählen</p> |
| Kolkverschleiß  | <ul style="list-style-type: none"> ★ Schneller Kolkverschleiß, was eine schwache Schneidkante verursacht. Die Schneidkante bricht an der Nebenschneide, was eine schlechte Oberflächengüte verursacht. | <ul style="list-style-type: none"> ☆ Diffusionsverschleiß wegen zu hoher Schnitttemperatur im Spanwinkel. <p>Eine Al₂O₃ beschichtete Sorte wählen Eine positive Schneidengeometrie wählen Eine niedrigere Temperatur erreichen, indem man Vorschub und Geschwindigkeit reduziert.</p> |
| Plastische Verformung  | <ul style="list-style-type: none"> ★ Plastische Verformung (a – Schneidkante, b – Freifläche), was schlechter Spankontrolle und eine schlechte Oberflächengüte verursacht. Es gibt ein Risiko zu übermäßigem Freiflächenverschleiß, was Wendepplattenbruch verursacht. | <ul style="list-style-type: none"> ☆ Zu hohe Schneidtemperatur zusammen mit zu hohem Druck. <p>Eine härtere Sorte mit besserem Widerstand gegen plastische Verformung wählen. Für a) – Schnittgeschwindigkeit reduzieren Für b) – Vorschub reduzieren</p> |
| Aufbauschneide  | <ul style="list-style-type: none"> ★ Schneidenaufbau, was eine schlechte Oberflächengüte und Kantenausbrüche verursacht, wenn man den Schneidenaufbau abreißt. | <ul style="list-style-type: none"> ☆ Das Werkstücksmaterial verschleißt sich mit der Wendeplatte wegen: <ul style="list-style-type: none"> - zu niedrige Schnittgeschwindigkeit - negative Schneidengeometrie - klebriges Material, z.B. einige rostfreie Stähle und reines Aluminium <p>Schnittgeschwindigkeit erhöhen Eine positive Schneidengeometrie wählen Schnittgeschwindigkeit drastisch erhöhen und wenn die Dauerhaftigkeit sehr klein ist, Kühlmittel reichlich anwenden</p> |
| Späneschlag  | <ul style="list-style-type: none"> ★ Der nicht schneidende Teil der Schneidkante ist von den Spänen geschlagen und beschädigt. Dadurch können Spanfläche und Plattensitz beschädigt werden. | <ul style="list-style-type: none"> ☆ Die Späne sind zu lang und werden gegen die Schneidkante abgelenkt. <p>Vorschub leicht ändern Eine andere Schneidengeometrie wählen Den Einstellwinkel der Bohrstange ändern</p> |
| Kantenausbrüche  | <ul style="list-style-type: none"> ★ Kleine Ausbrüche längs der Schneidkante, was schlechte Oberflächengüte und schneller Freiflächenverschleiß verursacht. | <ul style="list-style-type: none"> ☆ Zu verschleißfeste Sorte ☆ Zu schwache Geometrie ☆ Schneidenaufbau <p>Eine zähere Sorte wählen Eine Wendeschneidplatte mit einer stärkeren Geometrie wählen Schnittgeschwindigkeit erhöhen oder eine positive Geometrie wählen</p> |
| Kammrisse  | <ul style="list-style-type: none"> ★ Kleine Risse senkrecht zur Schneidkante, was Kantenausbruch und schlechte Oberflächengüte verursachen. | <ul style="list-style-type: none"> ☆ Kammrisse wegen Wärmewechselbelastungen aufgrund von: <ul style="list-style-type: none"> - Unterbrochenem Schnitt - Ungleichmäßiger Kühlmittelzufuhr <p>Eine zähere Sorte mit höherem Widerstand gegen Wärmewechselbelastungen wählen Kühlmittel soll reichlich oder überhaupt nicht zugeführt werden</p> |
| Plattenbruch  | <ul style="list-style-type: none"> ★ Plattenbruch, der nicht nur die Wendeplatte selbst, sondern auch den Plattensitz und das Werkstück beschädigt | <ul style="list-style-type: none"> ☆ Zu verschleißfeste Sorte ☆ Zu hohe Belastung der Wendeplatte ☆ Zu schwache Wendeplattengeometrie ☆ Zu kleine Wendeplatte <p>Zähere Sorte wählen Vorschub und/oder Schnitttiefe reduzieren Eine stärkere Geometrie wählen, vorzugsweise eine einseitige Wendeplatte Eine dickere/größere Wendeplatte wählen</p> |

Technical information
Information technique
Technische Auskunft

B02

Code Key
Système de codification
Kodifizierungs-System

B03

Applications
Applications
Anwendungen

B04

Top clamp toolholders
Porte-outils avec bride supérieure
Klemmhalter mit oberer Prätze

B07

Dimple lock toolholders
Porte-outils avec fixation type "Dimple lock"
Dimple lock Klemmhalter

B12

Double lock toolholders
Porte-outils avec double fixation
Klemmhalter mit doppelter Klemmung

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Lever lock toolholders
Porte-outils avec levier
Klemmhalter mit Kniehebel-Klemmung

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Center screw toolholders
Porte-outils avec vis centrale
Klemmhalter mit Zentralschrauben-Klemmung

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Cutting data
Conditions de coupe
Schnittbedingungen

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Inserts

Turning

Automatic
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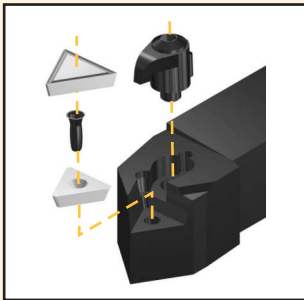
Brazed
tools

Milling
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Solid
carbide

Boring
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Arbors &
adaptors

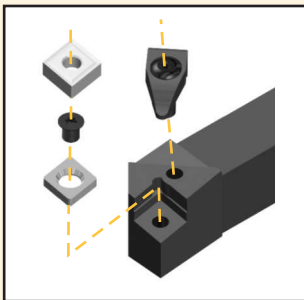
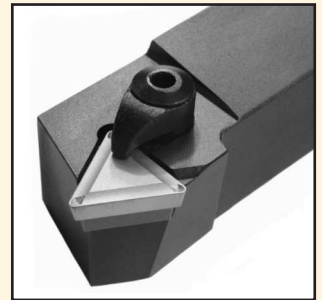


(C) Top clamp / Fixation par bride / Obere Klemmung

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

Ce système classique de fixation de plaquettes positives a été conçu pour fixer les plaquettes plates positives, que ce soit avec brise-copeaux additionnel que sinterisé.

Dieses klassische Klemmsystem von positiven Wendepplatten erlaubt die Verwendung von allen Wendepplatten dieses Typs, in üblicher Sinterausführung sowohl als auch mit Spanbrecher.

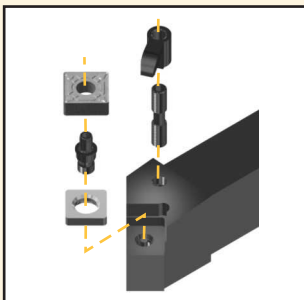
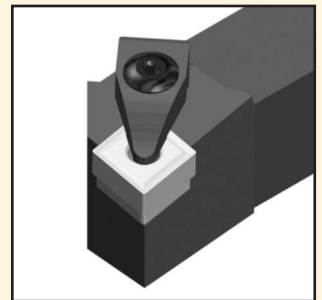


(D) Dimple lock / Fixation type "Dimple lock / Dimple lock

The "D" clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

Le système de fixation "D" évite le mouvement de la plaquette lors d'une haute avance ou d'un usinage fortement interrompu, grâce à son indexation très exacte, laquelle maintient la plaquette solidement serrée.

Das "D"-Klemmsystem vermeidet die Bewegung der Wendeschneidplatte bei hohem Vorschub oder bei stark unterbrochener Bearbeitung dank der genauen Positionierung, die die Wendeschneidplatte sicher befestigt.

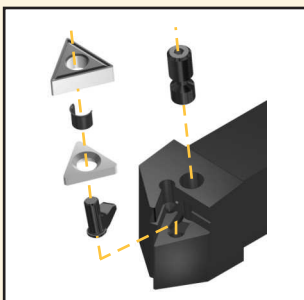


(M-K) Double lock / Double fixation / Doppelte Klemmung

The double lock system offers good rigidity in negative inserts clamping, it is the first choice for center hole negative ceramic and cermet inserts.

Le système de double fixation offre une bonne rigidité pour la fixation de plaquettes négatives. C'est le premier choix pour les plaquettes négatives en céramique ou cermet avec trou centrale.

Das doppelte Klemmsystem bietet eine gute Unbeweglichkeit bei der Klemmung von negativen Wendeschneidplatten. Es ist die erste Wahl für negative Keramik-Wendeschneidplatten mit zentralem Loch und auch für Cermet-Wendeschneidplatten.

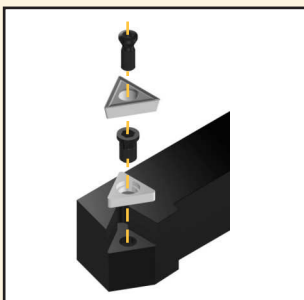


(P) Lever lock / Fixation par levier / Kniehebel Klemmung

The classic lever lock system allows a wide range of applications, it is the first choice for general purpose turning toolholders.

Le système classique de fixation par levier permet une large gamme d'applications. C'est le premier choix pour l'usage général avec des porte-outils de tournage.

Das klassische Hebel-System erlaubt eine breite Reihe von Anwendungen. Es ist die erste Wahl für allgemeine Drehoperationen.

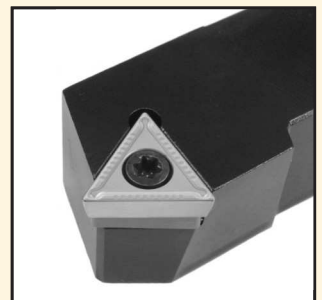


(S) Center screw / Fixation par vis / Zentralschrauben Klemmung

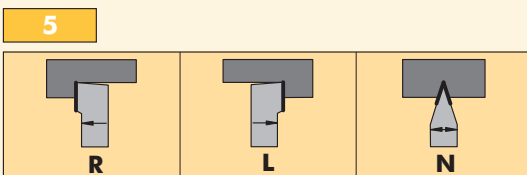
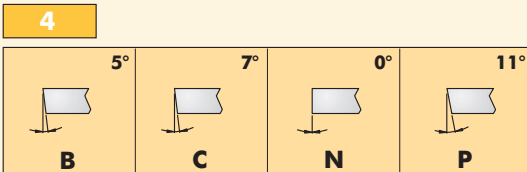
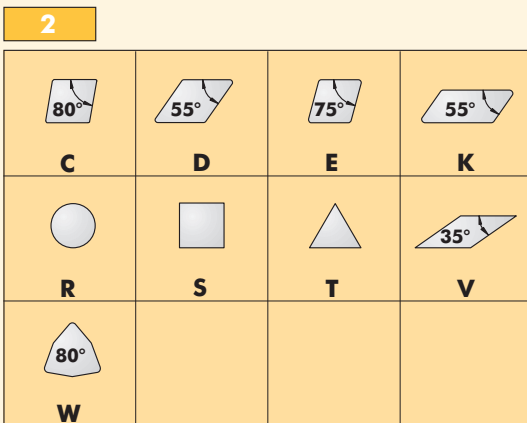
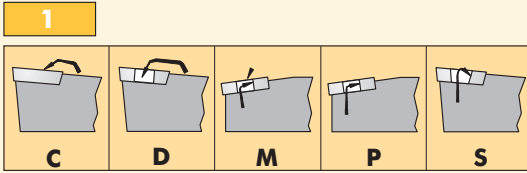
Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.

Seit der Einführung der Torx-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmmöglichkeiten mit Schraube.



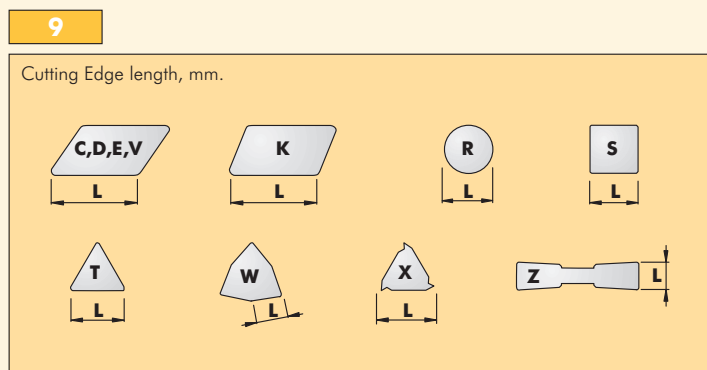
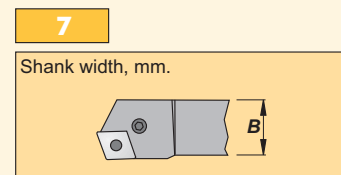
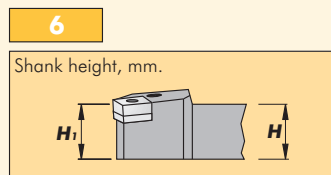
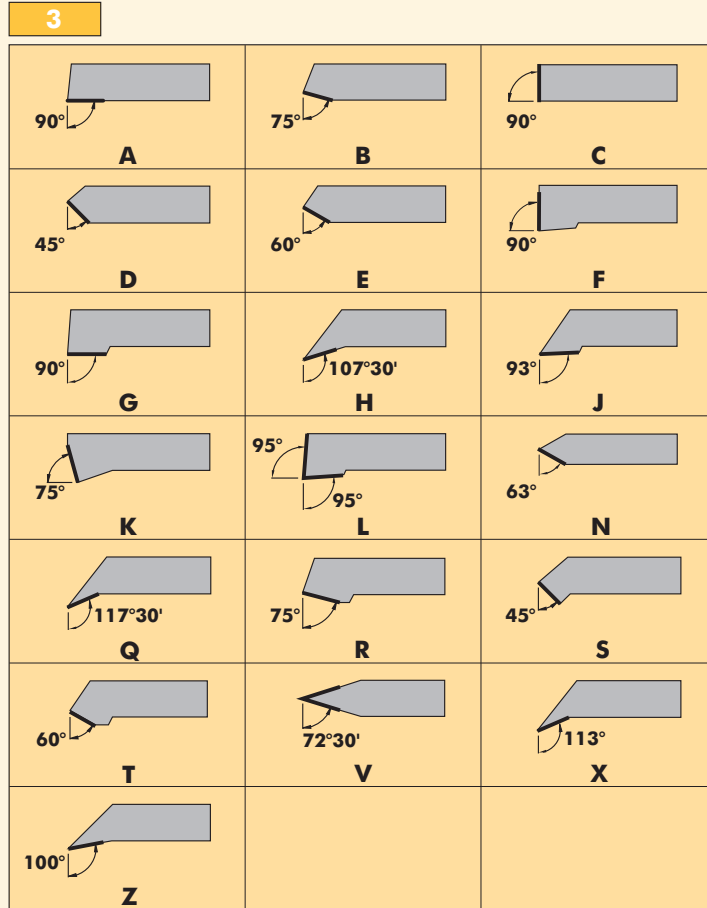
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|----------|----------|----------|----------|----------|-----------|-----------|----------|-----------|
| P | C | L | N | R | 25 | 25 | M | 12 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |



8

Tool length, mm.

| | | | |
|----------|-----|----------|---------|
| D | 60 | P | 170 |
| E | 70 | R | 200 |
| F | 80 | S | 250 |
| H | 100 | T | 300 |
| K | 125 | U | 350 |
| L | 140 | V | 400 |
| M | 150 | X | Special |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
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- Arbors & adaptors

Top clamp toolholders - Porte-outils avec bride supérieure - Klemhalter mit oberer Pratzte

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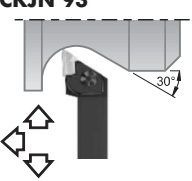
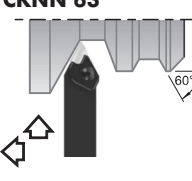
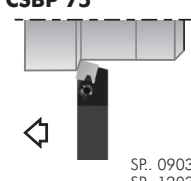
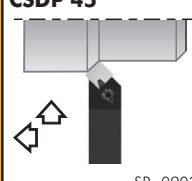
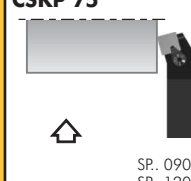
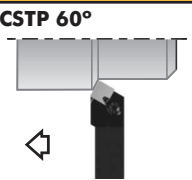
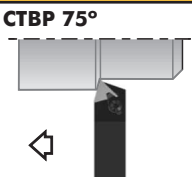
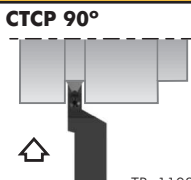
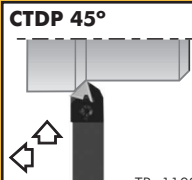
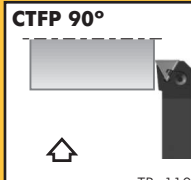
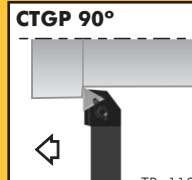
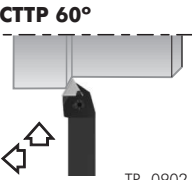
Brazed tools

Milling cutters

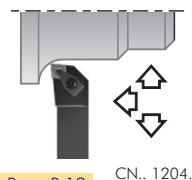
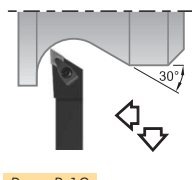
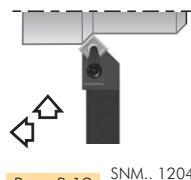
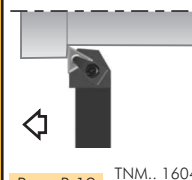
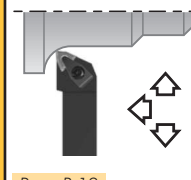
Solid carbide

Boring heads

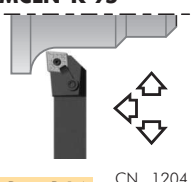
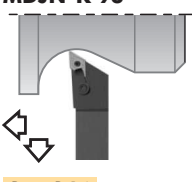
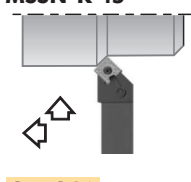
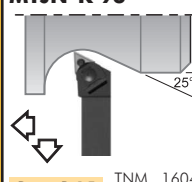
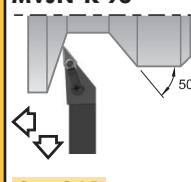

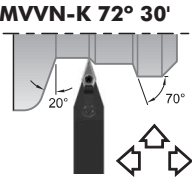
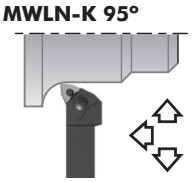
Arbors & adaptors

| | | | | | |
|--|---|--|---|--|--|
| <p>CKJN 93°</p>  <p>Page B.07 KNUX 1604..</p> | <p>CKNN 63°</p>  <p>Page B.07 KNUX 1604..</p> | <p>CSBP 75°</p>  <p>Page B.07 SP. 0903.. SP. 1203.. SP. 1904..</p> | <p>CSDP 45°</p>  <p>Page B.08 SP. 0903.. SP. 1203..</p> | <p>CSKP 75°</p>  <p>Page B.08 SP. 0903.. SP. 1203.. SP. 1904..</p> | <p>CSSP 45°</p>  <p>Page B.08 SP. 0903.. SP. 1203.. SP. 1904..</p> |
| <p>CSTP 60°</p>  <p>Page B.09 SP. 0903.. SP. 1203..</p> | <p>CTBP 75°</p>  <p>Page B.09 TP. 1103.. TP. 1603..</p> | <p>CTCP 90°</p>  <p>Page B.09 TP. 1103.. TP. 1603.. TP. 2204..</p> | <p>CTDP 45°</p>  <p>Page B.10 TP. 1103.. TP. 1603.. TP. 2204..</p> | <p>CTFP 90°</p>  <p>Page B.10 TP. 1103.. TP. 1603.. TP. 2204..</p> | <p>CTGP 90°</p>  <p>Page B.10 TP. 1103.. TP. 1603.. TP. 2204..</p> |
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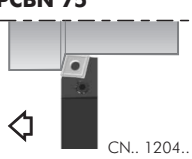
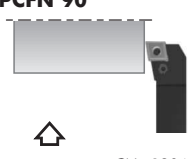
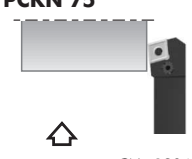
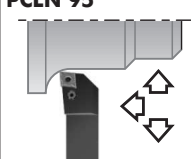
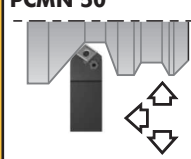
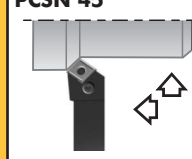
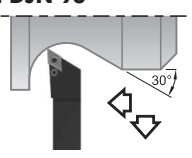
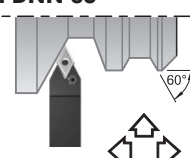
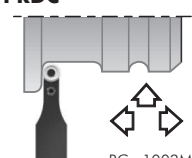
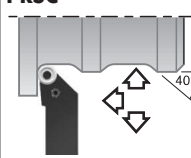
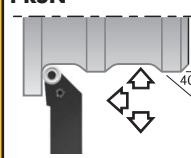
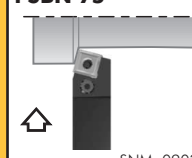
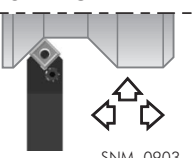
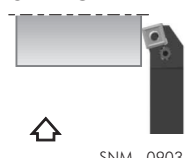
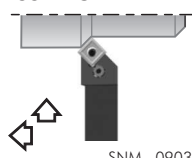
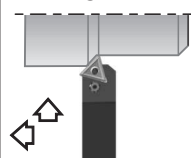
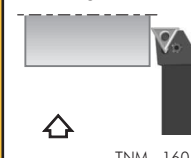
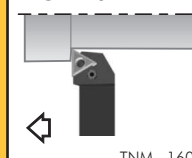
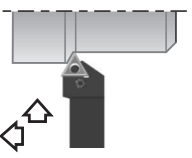
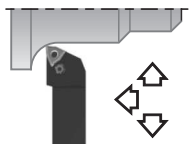
Dimple lock toolholders - Porte-outils fixation type "Dimple lock" - Dimple-Lock Klemhalter

| | | | | | |
|---|--|---|--|---|--|
| <p>DCLN 95°</p>  <p>Page B.12 CN. 1204.. CN. 1906..</p> | <p>DDJN 93°</p>  <p>Page B.12 DN. 1506..</p> | <p>DSSN 45°</p>  <p>Page B.12 SNM. 1204.. SNM. 1906..</p> | <p>DTGN 90°</p>  <p>Page B.13 TNM. 1604.. TNM. 2204..</p> | <p>DWLN 95°</p>  <p>Page B.13 WNMG 0804..</p> | |
|---|--|---|--|---|--|

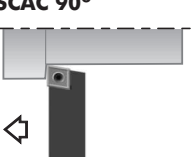
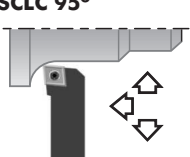
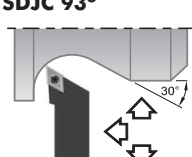
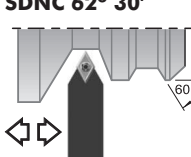
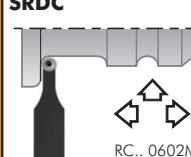
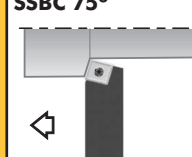
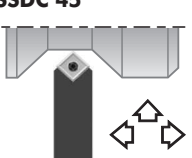
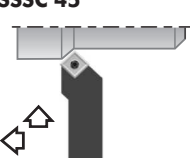
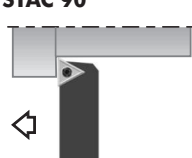
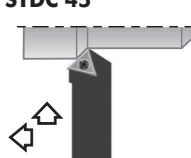
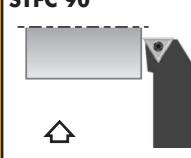
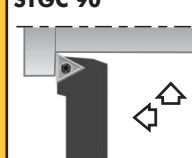
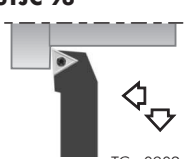
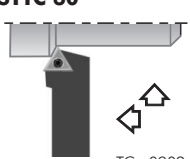
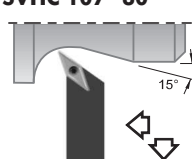
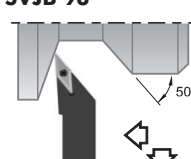
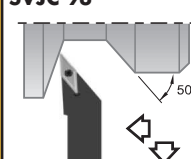
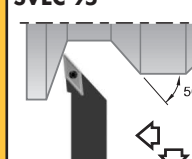
Double lock toolholders - Porte-outils avec double fixation - Klemhalter mit doppelter Klemmung

| | | | | | |
|---|---|---|--|--|---|
| <p>MCLN-K 95°</p>  <p>Page B.14 CN. 1204.. CN. 1906..</p> | <p>MDJN-K 93°</p>  <p>Page B.14 DN. 1506..</p> | <p>MSSN-K 45°</p>  <p>Page B.14 SNM. 1204..</p> | <p>MTJN-K 93°</p>  <p>Page B.15 TNM. 1604.. TNM. 2204..</p> | <p>MVJN-K 93°</p>  <p>Page B.15 VN. 1604..</p> | <p>MVQN-K 117° 30'</p>  <p>Page B.15 VN. 1604..</p> |
| <p>MVFN-K 72° 30'</p>  <p>Page B.16 VN. 1604..</p> | <p>MWLN-K 95°</p>  <p>Page B.16 WNM. 0804..</p> | | | | |

Lever lock toolholders - Porte-outils avec levier - Klemmhalter mit Kniehebel-Klemmung

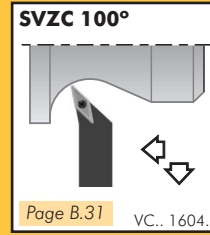
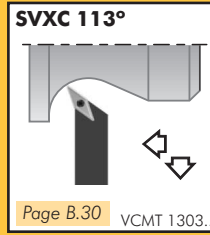
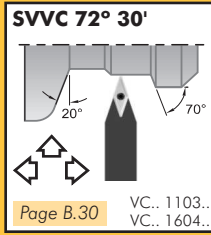
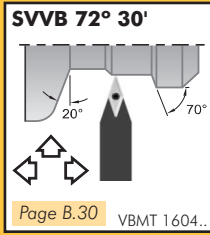
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|--|--|--|--|--|--|
| <p>PCBN 75°</p>  <p>Page B.17</p> <p>CN.. 1204.. CN.. 1606.. CN.. 1906.. CN.. 2509..</p> | <p>PCFN 90°</p>  <p>Page B.17</p> <p>CN.. 1204.. CN.. 1606.. CN.. 1906..</p> | <p>PCKN 75°</p>  <p>Page B.17</p> <p>CN.. 1204.. CN.. 1906.. CN.. 2509..</p> | <p>PCLN 95°</p>  <p>Page B.18</p> <p>CN.. 0903.. ... CN.. 2509..</p> | <p>PCMN 50°</p>  <p>Page B.18</p> <p>CN.. 1204.. CN.. 1906..</p> | <p>PCSN 45°</p>  <p>Page B.18</p> <p>CN.. 1204.. CN.. 1606.. CN.. 1906..</p> |
| <p>PDJN 93°</p>  <p>Page B.19</p> <p>DN.. 1104.. DN.. 1506..</p> | <p>PDNN 63°</p>  <p>Page B.19</p> <p>DN.. 1506..</p> | <p>PRDC</p>  <p>Page B.19</p> <p>RC.. 1003M0 ... RC.. 3209M0</p> | <p>PRSC</p>  <p>Page B.20</p> <p>RC.. 10..32 RNMG 09..25</p> | <p>PRSN</p>  <p>Page B.20</p> <p>RC.. 10..32 RNMG 09..25</p> | <p>PSBN 75°</p>  <p>Page B.20</p> <p>SNM..0903.. ... SNM.. 2507..</p> |
| <p>PSDN 45°</p>  <p>Page B.21</p> <p>SNM..0903.. ... SNM.. 2507..</p> | <p>PSKN 75°</p>  <p>Page B.21</p> <p>SNM.. 0903.. ... SNM.. 2507..</p> | <p>PSSN 45°</p>  <p>Page B.21</p> <p>SNM.. 0903.. ... SNM.. 2507..</p> | <p>PTDN 45°</p>  <p>Page B.22</p> <p>TNM.. 2204</p> | <p>PTFN 90°</p>  <p>Page B.22</p> <p>TNM.. 1604.. TNM.. 2204.. TNM.. 2706..</p> | <p>PTGN 90°</p>  <p>Page B.22</p> <p>TNM.. 1604.. ... TNM.. 3307..</p> |
| <p>PTTN 60°</p>  <p>Page B.23</p> <p>TNM.. 1604.. TNM.. 2204..</p> | <p>PWLN 95°</p>  <p>Page B.23</p> <p>WNM.. 0604.. WNM.. 0804..</p> | | | | |

Center screw toolholders - Porte-outils avec vis centrale - Klemmhalter mit Zentralschrauben-Klemmung

| | | | | | |
|--|--|--|--|---|--|
| <p>SCAC 90°</p>  <p>Page B.24</p> <p>CC.. 0602.. CC.. 09T3.. CC.. 1204..</p> | <p>SCLC 95°</p>  <p>Page B.24</p> <p>CC.. 0602.. CC.. 09T3.. CC.. 1204..</p> | <p>SDJC 93°</p>  <p>Page B.24</p> <p>DC.. 0702.. DC.. 11T3..</p> | <p>SDNC 62° 30'</p>  <p>Page B.25</p> <p>DC.. 0702.. DC.. 11T3..</p> | <p>SRDC</p>  <p>Page B.25</p> <p>RC.. 0602M0 RC.. 0803M0 RC.. 10T3M0 RC.. 1204M0</p> | <p>SSBC 75°</p>  <p>Page B.25</p> <p>SC.. 09T3.. SC.. 1204..</p> |
| <p>SSDC 45°</p>  <p>Page B.26</p> <p>SC.. 09T3.. SC.. 1204..</p> | <p>SSSC 45°</p>  <p>Page B.26</p> <p>SC.. 09T3.. SC.. 1204..</p> | <p>STAC 90°</p>  <p>Page B.26</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STDC 45°</p>  <p>Page B.27</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STFC 90°</p>  <p>Page B.27</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STGC 90°</p>  <p>Page B.27</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> |
| <p>STJC 93°</p>  <p>Page B.28</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STTC 60°</p>  <p>Page B.28</p> <p>TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>SVHC 107° 30'</p>  <p>Page B.28</p> <p>VC.. 1604..</p> | <p>SVJB 93°</p>  <p>Page B.29</p> <p>VBMT 1604..</p> | <p>SVJC 93°</p>  <p>Page B.29</p> <p>VC.. 1103 VC.. 1604..</p> | <p>SVLC 95°</p>  <p>Page B.29</p> <p>VCMT 1303..</p> |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts



Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

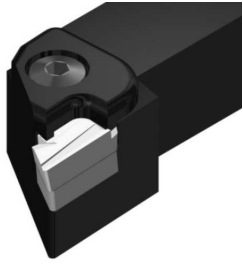
Milling
cutters

Solid
carbide

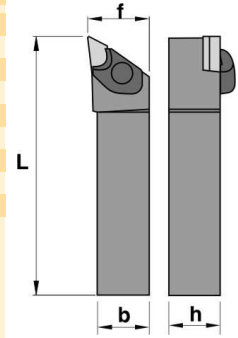
Boring
heads

Arbors &
adaptors

CKJN 93°



| REF. | h | b | L | f | KNUX | | | | | | |
|------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|---------|
| CKJN L 2020 K16 | 20 | 20 | 125 | 30 | 1604.. | 246 | 169 | 504 | 423 | 495 | 328 403 |
| CKJN R 2020 K16 | 20 | 20 | 125 | 30 | 1604.. | 237 | 169 | 504 | 423 | 495 | 327 403 |
| CKJN L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKJN R 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |
| CKJN L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKJN R 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |
| CKJN L 3232 P16 | 32 | 32 | 170 | 40 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKJN R 3232 P16 | 32 | 32 | 170 | 40 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |
| CKJN L 4025 R16 | 40 | 25 | 200 | 32 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKJN R 4025 R16 | 40 | 25 | 200 | 32 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

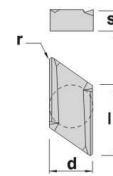
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|-----------------------|-------|------|------|
| KNUX 1604.. 05 | 16,00 | 4,76 | 9,52 |
| KNUX 1604.. 10 | 16,00 | 4,76 | 9,52 |

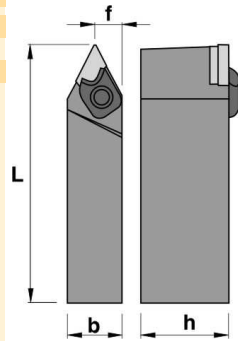


For more information see page: A.45

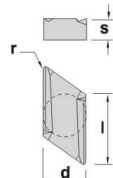
CKNN 63°



| REF. | h | b | L | f | KNUX | | | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|-----|---------|
| CKNN L 4025 R16 | 40 | 25 | 200 | 14,3 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKNN R 4025 R16 | 40 | 25 | 200 | 14,3 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |
| CKNN L 5032 S16 | 50 | 32 | 250 | 16,8 | 1604.. | 246 | 169 | 504 | 424 | 495 | 328 403 |
| CKNN R 5032 S16 | 50 | 32 | 250 | 16,8 | 1604.. | 237 | 169 | 504 | 424 | 495 | 327 403 |

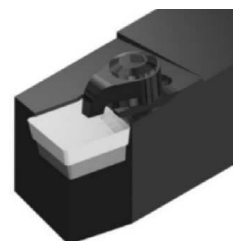


| REF. | l | s | d |
|-----------------------|-------|------|------|
| KNUX 1604.. 05 | 16,00 | 4,76 | 9,52 |
| KNUX 1604.. 10 | 16,00 | 4,76 | 9,52 |

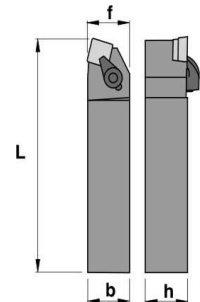


For more information see page: A.45

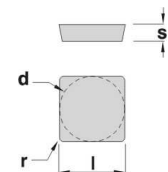
CSBP 75°



| REF. | h | b | L | f | SP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CSBP R/L 1212 F09 | 12 | 12 | 80 | 11 | 0903.. | 227 | 525 | 309 | 402 |
| CSBP R/L 1616 H09 | 16 | 16 | 100 | 13 | 0903.. | 227 | 525 | 309 | 402 |
| CSBP R/L 2020 K09 | 20 | 20 | 125 | 17 | 0903.. | 227 | 525 | 309 | 402 |
| CSBP R/L 2020 K12 | 20 | 20 | 125 | 17 | 1203.. | 229 | 503 | 314 | 402 |
| CSBP R/L 2525 M12 | 25 | 25 | 150 | 22 | 1203.. | 229 | 503 | 314 | 402 |
| CSBP R/L 3225 P12 | 32 | 25 | 170 | 22 | 1203.. | 229 | 503 | 314 | 402 |
| CSBP R/L 3232 P19 | 32 | 32 | 170 | 27 | 1904.. | 231 | 504 | 320 | 403 |
| CSBP R/L 4040 S19 | 40 | 40 | 250 | 35 | 1904.. | 231 | 504 | 320 | 403 |
| CSBP R/L 5050 T19 | 50 | 50 | 300 | 43 | 1904.. | 231 | 504 | 320 | 403 |



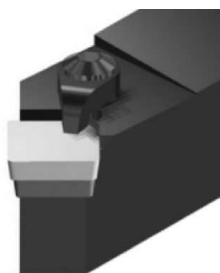
| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1904.. | 19,05 | 4,76 | 19,05 |



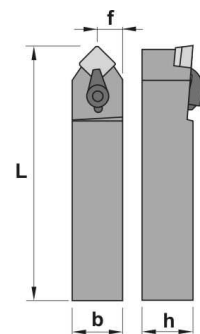
For more information see page: A.51

Inserts

CSDP 45°



| REF. | h | b | L | f | SP. | | | | |
|--------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| CSDP R/L 1010 E09 | 10 | 10 | 70 | 5,6 | 0903.. | 207 | 525 | - | - |
| CSDP R/L 1212 F09 | 12 | 12 | 80 | 7,6 | 0903.. | 227 | 525 | 309 | 402 |
| CSDP R/L 1616 H09 | 16 | 16 | 100 | 11,6 | 0903.. | 227 | 525 | 309 | 402 |
| CSDP R/L 2020 K12 | 20 | 20 | 125 | 14,0 | 1203.. | 229 | 503 | 314 | 402 |
| CSDP R/L 2525 M12 | 25 | 25 | 150 | 19,0 | 1203.. | 229 | 503 | 314 | 402 |
| CSDP N 1010 E09 | 10 | 10 | 70 | 5,0 | 0903.. | 207 | 525 | - | - |
| CSDP N 1212 F09 | 12 | 12 | 80 | 6,0 | 0903.. | 227 | 525 | 309 | 402 |
| CSDP N 1616 H09 | 16 | 16 | 100 | 8,0 | 0903.. | 227 | 525 | 309 | 402 |
| CSDP N 2020 K12 | 20 | 20 | 125 | 10,0 | 1203.. | 229 | 503 | 314 | 402 |
| CSDP N 2525 M12 | 25 | 25 | 150 | 12,5 | 1203.. | 229 | 503 | 314 | 402 |



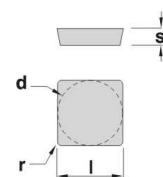
Turning

Automatic lathes

Ceramic tools



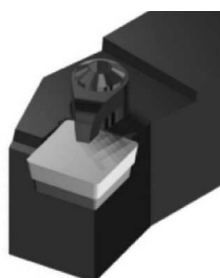
| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |



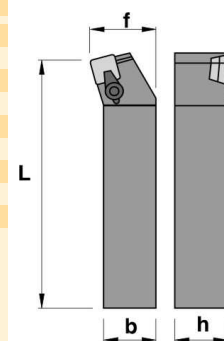
For more information see page: A.51

Parting & grooving

CSKP 75°



| REF. | h | b | L | f | SP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CSKP R/L 1212 F09 | 12 | 12 | 80 | 16 | 0903.. | 227 | 525 | 309 | 402 |
| CSKP R/L 1616 H09 | 16 | 16 | 100 | 20 | 0903.. | 227 | 525 | 309 | 402 |
| CSKP R/L 2020 K09 | 20 | 20 | 125 | 25 | 0903.. | 227 | 525 | 309 | 402 |
| CSKP R/L 2020 K12 | 20 | 20 | 125 | 25 | 1203.. | 229 | 503 | 314 | 402 |
| CSKP R/L 2525 M12 | 25 | 25 | 150 | 32 | 1203.. | 229 | 503 | 314 | 402 |
| CSKP R/L 3225 P12 | 32 | 25 | 170 | 32 | 1203.. | 229 | 503 | 314 | 402 |
| CSKP R/L 3232 P19 | 32 | 32 | 170 | 40 | 1904.. | 231 | 504 | 320 | 403 |
| CSKP R/L 4040 S19 | 40 | 40 | 250 | 50 | 1904.. | 231 | 504 | 320 | 403 |
| CSKP R/L 5050 T19 | 50 | 50 | 300 | 60 | 1904.. | 231 | 504 | 320 | 403 |



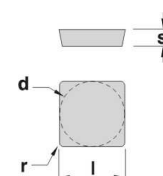
Threading

Drills

Cartridges



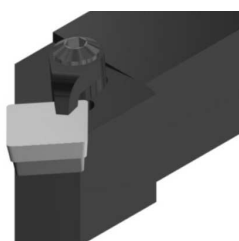
| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1904.. | 19,05 | 4,76 | 19,05 |



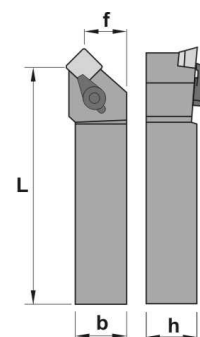
For more information see page: A.51

Brazed tools

CSSP 45°



| REF. | h | b | L | f | SP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CSSP R/L 1212 F09 | 12 | 12 | 80 | 16 | 0903.. | 227 | 525 | 309 | 402 |
| CSSP R/L 1616 H09 | 16 | 16 | 100 | 20 | 0903.. | 227 | 525 | 309 | 402 |
| CSSP R/L 2020 K12 | 20 | 20 | 125 | 25 | 1203.. | 229 | 503 | 314 | 402 |
| CSSP R/L 2525 M12 | 25 | 25 | 150 | 32 | 1203.. | 229 | 503 | 314 | 402 |
| CSSP R/L 3225 P12 | 32 | 25 | 170 | 32 | 1203.. | 229 | 503 | 314 | 402 |
| CSSP R/L 3232 P19 | 32 | 32 | 170 | 40 | 1904.. | 231 | 504 | 320 | 403 |
| CSSP R/L 4040 S19 | 40 | 40 | 250 | 50 | 1904.. | 231 | 504 | 320 | 403 |



Milling cutters

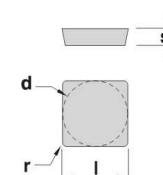
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1904.. | 19,05 | 4,76 | 19,05 |

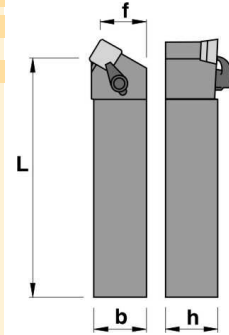


For more information see page: A.51

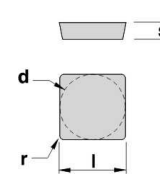
CSTP 60°



| REF. | h | b | L | f | SP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CSTP R/L 1616 H09 | 16 | 16 | 100 | 13 | 0903.. | 227 | 525 | 309 | 402 |
| CSTP R/L 2020 K09 | 20 | 20 | 125 | 17 | 0903.. | 227 | 525 | 309 | 402 |
| CSTP R/L 2020 K12 | 20 | 20 | 125 | 17 | 1203.. | 229 | 503 | 314 | 402 |
| CSTP R/L 2525 M12 | 25 | 25 | 150 | 22 | 1203.. | 229 | 503 | 314 | 402 |

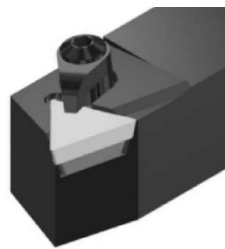


| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |

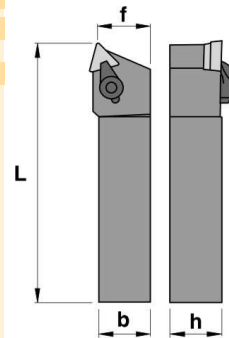


For more information see page: A.51

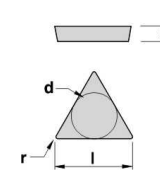
CTBP 75°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CTBP R/L 1212 F11 | 12 | 12 | 80 | 11 | 1103.. | 227 | 525 | - | - |
| CTBP R/L 1616 H11 | 16 | 16 | 100 | 13 | 1103.. | 227 | 525 | - | - |
| CTBP R/L 2020 K16 | 20 | 20 | 125 | 17 | 1603.. | 229 | 503 | 317 | 402 |
| CTBP R/L 2525 M16 | 25 | 25 | 150 | 22 | 1603.. | 229 | 503 | 317 | 402 |



| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |

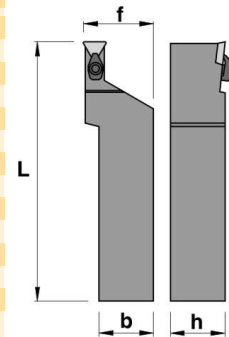


For more information see page: A.54,55

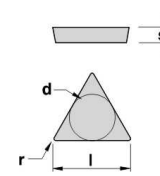
CTCP 90°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CTCP N 1009 E11 | 10 | 9 | 70 | 11 | 1103.. | 234 | 525 | - | - |
| CTCP N 2009 K11 | 20 | 9 | 125 | 11 | 1103.. | 234 | 525 | - | - |
| CTCP N 2509 R11 | 25 | 9 | 200 | 11 | 1103.. | 234 | 525 | - | - |
| CTCP N 2513 R16 | 25 | 13 | 200 | 16 | 1603.. | 235 | 503 | 317 | 402 |
| CTCP N 2518 R22 | 25 | 18 | 200 | 22 | 2204.. | 231 | 504 | 324 | 403 |
| CTCP N 4018 R22 | 40 | 18 | 200 | 22 | 2204.. | 231 | 504 | 324 | 403 |
| CTCP R/L 1212 F11 | 12 | 12 | 80 | 16 | 1103.. | 234 | 525 | - | - |
| CTCP R/L 1616 H11 | 16 | 16 | 100 | 20 | 1103.. | 234 | 525 | - | - |
| CTCP R/L 2020 K11 | 20 | 20 | 125 | 25 | 1103.. | 234 | 525 | - | - |
| CTCP R/L 2525 M11 | 25 | 25 | 150 | 32 | 1103.. | 234 | 525 | - | - |
| CTCP R/L 3225 P16 | 32 | 25 | 170 | 32 | 1603.. | 235 | 503 | 317 | 402 |
| CTCP R/L 3232 P16 | 32 | 32 | 170 | 40 | 1603.. | 235 | 503 | 317 | 402 |
| CTCP R/L 3225 P22 | 32 | 25 | 170 | 32 | 2204.. | 231 | 504 | 324 | 403 |
| CTCP R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | 231 | 504 | 324 | 403 |



| REF. | l | s | d |
|-------------------|-------|------|-------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.54,55

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

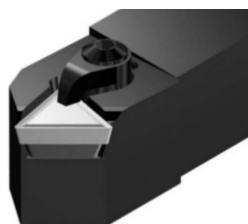
Boring heads

Arbors & adaptors

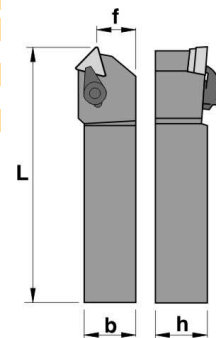


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

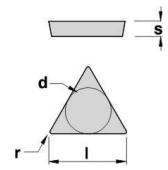
CTDP 45°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| CTDP R/L 1212 F11 | 12 | 12 | 80 | 6,3 | 1103.. | 227 | 525 | - | - |
| CTDP R/L 1616 H11 | 16 | 16 | 100 | 10,3 | 1103.. | 227 | 525 | - | - |
| CTDP R/L 2020 K16 | 20 | 20 | 125 | 12,2 | 1603.. | 229 | 503 | 317 | 402 |
| CTDP R/L 2525 M16 | 25 | 25 | 150 | 17,2 | 1603.. | 229 | 503 | 317 | 402 |
| CTDP R/L 3232 P16 | 32 | 32 | 170 | 23,5 | 1603.. | 229 | 503 | 317 | 402 |
| CTDP R/L 3232 P22 | 32 | 32 | 170 | 20,5 | 2204.. | 231 | 504 | 324 | 403 |



| REF. | l | s | d |
|-------------------|-------|------|-------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

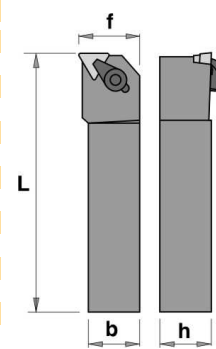


For more information see page: A.54,55

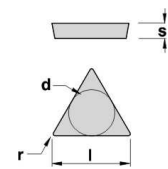
CTFP 90°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CTFP R/L 1010 E11 | 10 | 10 | 70 | 12 | 1103.. | 200 | 545 | - | - |
| CTFP R/L 1212 F11 | 12 | 12 | 80 | 16 | 1103.. | 227 | 525 | - | - |
| CTFP R/L 1616 H11 | 16 | 16 | 100 | 20 | 1103.. | 227 | 525 | - | - |
| CTFP R/L 2020 K11 | 20 | 20 | 125 | 25 | 1103.. | 227 | 525 | - | - |
| CTFP R/L 2020 K16 | 20 | 20 | 125 | 25 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 2525 M16 | 25 | 25 | 150 | 32 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 3225 P16 | 32 | 25 | 170 | 32 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 3232 P16 | 32 | 32 | 170 | 40 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 4040 S16 | 40 | 40 | 250 | 50 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 5050 T16 | 50 | 50 | 300 | 60 | 1603.. | 229 | 503 | 317 | 402 |
| CTFP R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | 231 | 504 | 324 | 403 |
| CTFP R/L 4040 S22 | 40 | 40 | 250 | 50 | 2204.. | 231 | 504 | 324 | 403 |
| CTFP R/L 5050 T22 | 50 | 50 | 300 | 60 | 2204.. | 231 | 504 | 324 | 403 |

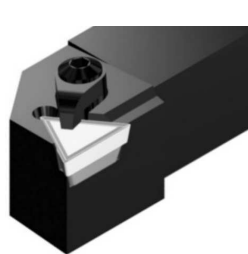


| REF. | l | s | d |
|-------------------|-------|------|-------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

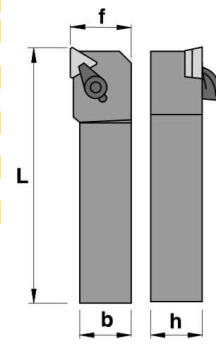


For more information see page: A.54,55

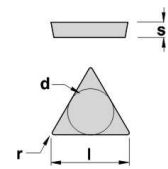
CTGP 90°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CTGP R/L 1010 E11 | 10 | 10 | 70 | 12 | 1103.. | 200 | 545 | - | - |
| CTGP R/L 1212 F11 | 12 | 12 | 80 | 16 | 1103.. | 207 | 525 | - | - |
| CTGP R/L 1616 H11 | 16 | 16 | 100 | 20 | 1103.. | 207 | 525 | - | - |
| CTGP R/L 2020 K11 | 20 | 20 | 125 | 25 | 1103.. | 207 | 525 | - | - |
| CTGP R/L 2020 K16 | 20 | 20 | 125 | 25 | 1603.. | 209 | 503 | 317 | 402 |
| CTGP R/L 2525 M16 | 25 | 25 | 150 | 32 | 1603.. | 209 | 503 | 317 | 402 |
| CTGP R/L 3225 P16 | 32 | 25 | 170 | 32 | 1603.. | 209 | 503 | 317 | 402 |
| CTGP R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | 231 | 504 | 324 | 403 |
| CTGP R/L 4040 S22 | 40 | 40 | 250 | 50 | 2204.. | 231 | 504 | 324 | 403 |
| CTGP R/L 5050 T22 | 50 | 50 | 300 | 60 | 2204.. | 231 | 504 | 324 | 403 |



| REF. | l | s | d |
|-------------------|-------|------|-------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

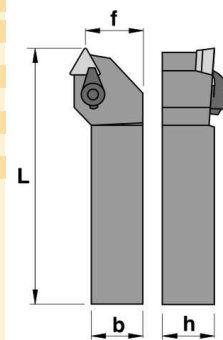


For more information see page: A.54,55

CTTP 60°



| REF. | h | b | L | f | TP. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| CTTP R/L 0808 D09 | 8 | 8 | 60 | 7 | 0902.. | 200 | 545 | - | - |
| CTTP R/L 1010 E09 | 10 | 10 | 70 | 9 | 0902.. | 200 | 545 | - | - |
| CTTP R/L 1010 E11 | 10 | 10 | 70 | 9 | 1103.. | 200 | 545 | - | - |
| CTTP R/L 1212 F11 | 12 | 12 | 80 | 11 | 1103.. | 227 | 525 | - | - |
| CTTP R/L 1616 H11 | 16 | 16 | 100 | 13 | 1103.. | 227 | 525 | - | - |
| CTTP R/L 2020 K11 | 20 | 20 | 125 | 17 | 1103.. | 227 | 525 | - | - |
| CTTP R/L 2020 K16 | 20 | 20 | 125 | 17 | 1603.. | 229 | 503 | 317 | 402 |
| CTTP R/L 2525 M16 | 25 | 25 | 150 | 22 | 1603.. | 229 | 503 | 317 | 402 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

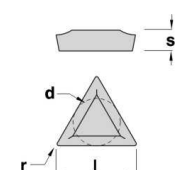
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 0902.. | 9,62 | 2,38 | 5,55 |
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |



For more information see page: A.54,55

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

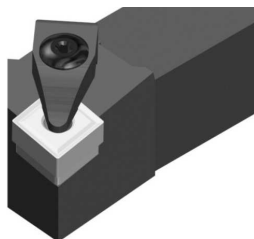
Milling
cutters

Solid
carbide

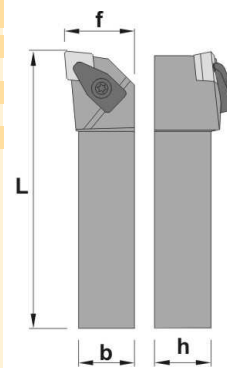
Boring
heads

Arbors &
adaptors

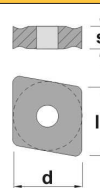
DCLN 95°



| REF. | h | b | L | f | CN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|----------|-----|-----|-----|-----|-----|
| DCLN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | ICSN-432 | 470 | 242 | 487 | 495 | 504 |
| DCLN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | ICSN-432 | 470 | 242 | 487 | 495 | 504 |
| DCLN R/L 3232 P12 | 32 | 32 | 170 | 40 | 1204.. | ICSN-432 | 470 | 242 | 487 | 495 | 504 |
| DCLN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 369 | 478 | 249 | 487 | 495 | 504 |
| DCLN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 369 | 478 | 249 | 487 | 495 | 504 |

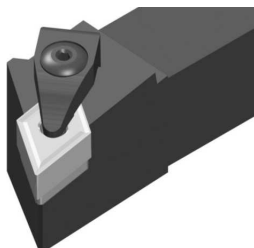


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

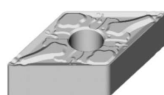
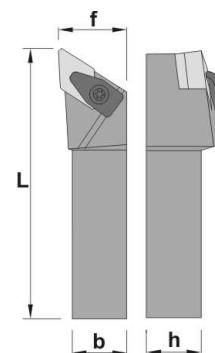


For more information see page: A.39,40

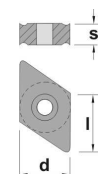
DDJN 93°



| REF. | h | b | L | f | DN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|----------|-----|-----|-----|-----|-----|
| DDJN R/L 2020 K15 | 20 | 20 | 125 | 25 | 1506.. | IDSN-432 | 470 | 242 | 487 | 495 | 504 |
| DDJN R/L 2525 M15 | 25 | 25 | 150 | 32 | 1506.. | IDSN-432 | 470 | 242 | 487 | 495 | 504 |
| DDJN R/L 3232 P15 | 32 | 32 | 170 | 40 | 1506.. | IDSN-432 | 470 | 242 | 487 | 495 | 504 |

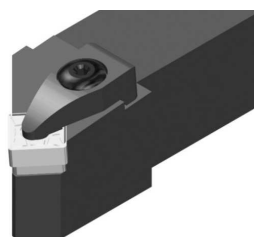


| REF. | l | s | d |
|-------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

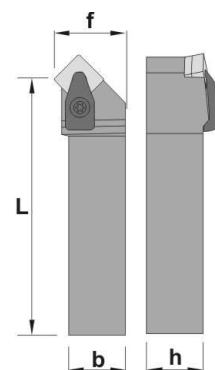


For more information see page: A.42,43

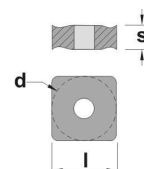
DSSN 45°



| REF. | h | b | L | f | SN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|----------|-----|-----|-----|-----|-----|
| DSSN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | ISSN-432 | 470 | 242 | 487 | 495 | 504 |
| DSSN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | ISSN-432 | 470 | 242 | 487 | 495 | 504 |
| DSSN R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | ISSN-432 | 470 | 242 | 487 | 495 | 504 |
| DSSN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 359 | 478 | 249 | 487 | 495 | 504 |
| DSSN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 359 | 478 | 249 | 487 | 495 | 504 |

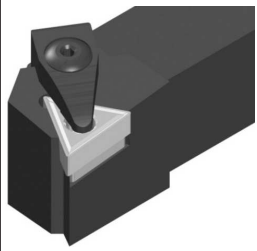


| REF. | l | s | d |
|-------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |

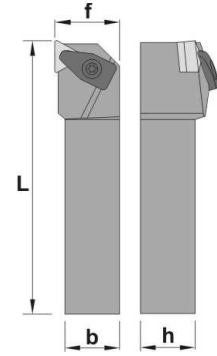


For more information see page: A.50

DTGN 90°



| REF. | h | b | L | f | TN.. | | | | | |
|--------------------------|----|----|-----|----|--------|----------|-----|-----|-----|---------|
| DTGN R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | ITSN-322 | 465 | 238 | 485 | 496 525 |
| DTGN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | ITSN-322 | 465 | 238 | 485 | 496 525 |
| DTGN R/L 2525 M22 | 25 | 25 | 150 | 32 | 2204.. | ITSN-433 | 470 | 242 | 487 | 495 504 |
| DTGN R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | ITSN-433 | 470 | 242 | 487 | 495 504 |



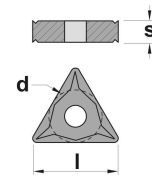
Inserts

Turning

Automatic lathes



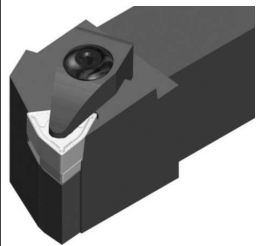
| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |



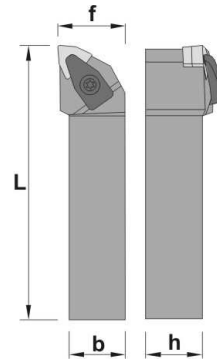
For more information see page: A.52,53,54

Ceramic tools

DWLN 95°



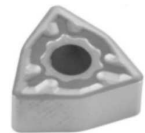
| REF. | h | b | L | f | WN.. | | | | | |
|--------------------------|----|----|-----|----|--------|----------|-----|-----|-----|---------|
| DWLN R/L 2020 K08 | 20 | 20 | 125 | 25 | 0804.. | IWSN-433 | 470 | 242 | 487 | 495 504 |
| DWLN R/L 2525 M08 | 25 | 25 | 150 | 32 | 0804.. | IWSN-433 | 470 | 242 | 487 | 495 504 |
| DWLN R/L 3232 P08 | 32 | 32 | 170 | 40 | 0804.. | IWSN-433 | 470 | 242 | 487 | 495 504 |



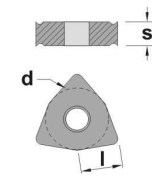
Parting & grooving

Threading

Drills



| REF. | l | s | d |
|--------------------|------|------|------|
| WN.. 0804.. | 8,14 | 4,76 | 12,7 |



For more information see page: A.57,58

Cartridges

Brazed tools

Milling cutters

Solid carbide

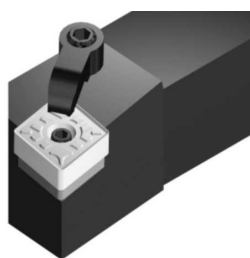
Boring heads

Arbors & adaptors

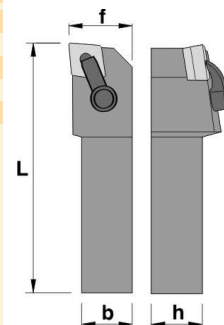
Inserts

Turning

MCLN-K 95°

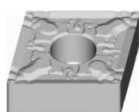


| REF. | h | b | L | f | CN.. | | | | | | |
|----------------------------|----|----|-----|----|--------|-----|-----|-----|----------|-----|-----|
| MCLN R/L 2020 L12-K | 20 | 20 | 125 | 25 | 1204.. | 221 | 165 | 503 | ICSN-432 | 446 | 525 |
| MCLN R/L 2525 M12-K | 25 | 25 | 150 | 32 | 1204.. | 221 | 165 | 503 | ICSN-432 | 446 | 525 |
| MCLN R/L 3225 P12-K | 32 | 25 | 170 | 32 | 1204.. | 221 | 165 | 503 | ICSN-432 | 446 | 525 |
| MCLN R/L 2525 M19-K | 25 | 25 | 150 | 32 | 1906.. | 212 | 189 | 504 | ICSN-633 | 468 | 504 |
| MCLN R/L 3232 P19-K | 32 | 32 | 170 | 40 | 1906.. | 212 | 189 | 504 | ICSN-633 | 468 | 504 |

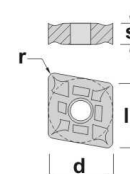


Automatic lathes

Ceramic tools



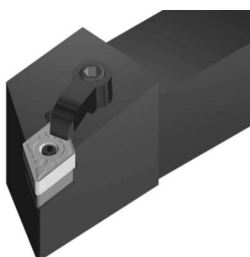
| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |



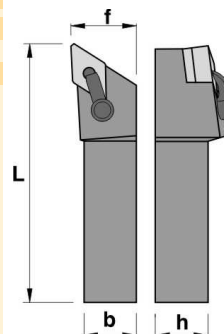
For more information see page: A.39,40

Parting & grooving

MDJN-K 93°



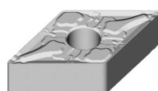
| REF. | h | b | L | f | DN.. | | | | | | |
|----------------------------|----|----|-----|----|--------|-----|-----|-----|----------|-----|-----|
| MDJN R/L 2020 K15-K | 20 | 20 | 125 | 25 | 1506.. | 222 | 165 | 503 | IDSN-432 | 456 | 525 |
| MDJN R/L 2525 M15-K | 25 | 25 | 150 | 32 | 1506.. | 222 | 165 | 503 | IDSN-432 | 456 | 525 |
| MDJN R/L 3225 P15-K | 32 | 25 | 170 | 32 | 1506.. | 222 | 165 | 503 | IDSN-432 | 456 | 525 |



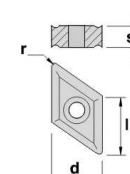
Threading

Drills

Cartridges



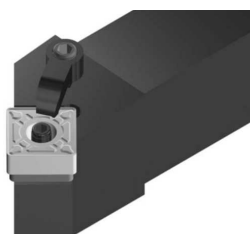
| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



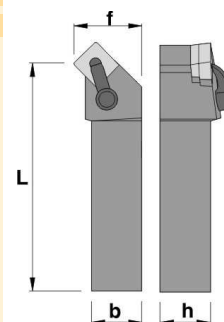
For more information see page: A.42,43

Brazed tools

MSSN-K 45°



| REF. | h | b | L | f | SN.. | | | | | | |
|----------------------------|----|----|-----|----|--------|-----|-----|-----|----------|-----|-----|
| MSSN R/L 2020 K12-K | 20 | 20 | 125 | 27 | 1204.. | 221 | 165 | 503 | ISSN-432 | 446 | 525 |
| MSSN R/L 2525 M12-K | 25 | 25 | 150 | 32 | 1204.. | 221 | 165 | 503 | ISSN-432 | 446 | 525 |



Milling cutters

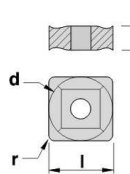
Solid carbide

Boring heads

Arbors & adaptors

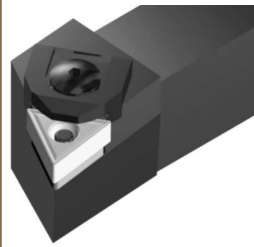


| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |

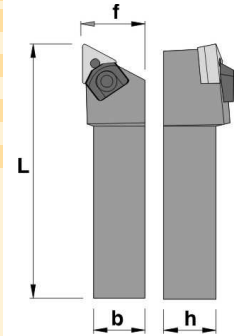


For more information see page: A.49,50

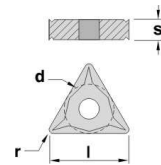
MTJN-K 93°



| REF. | h | b | L | f | TN.. | | | | | |
|---------------------|----|----|-----|----|--------|-----|-----|----------|-----|-----|
| MTJN R/L 2020 K16-K | 20 | 20 | 125 | 25 | 1604.. | 232 | 525 | 341 | 452 | 483 |
| MTJN R/L 2525 M16-K | 25 | 25 | 150 | 32 | 1604.. | 232 | 525 | 341 | 452 | 483 |
| MTJN R/L 2525 M22-K | 25 | 25 | 150 | 32 | 2204.. | 219 | 503 | ITSN-433 | 461 | 484 |
| MTJN R/L 3225 P22-K | 32 | 25 | 170 | 32 | 2204.. | 219 | 503 | ITSN-433 | 461 | 484 |
| MTJN R/L 3232 P22-K | 32 | 32 | 170 | 40 | 2204.. | 219 | 503 | ITSN-433 | 461 | 484 |
| MTJN R/L 4025 R22-K | 40 | 25 | 200 | 32 | 2204.. | 219 | 503 | ITSN-433 | 461 | 484 |
| MTJN R/L 5032 S22-K | 50 | 32 | 250 | 40 | 2204.. | 219 | 503 | ITSN-433 | 461 | 484 |

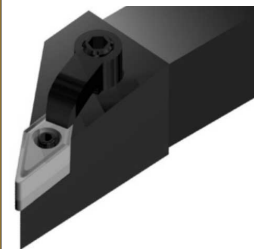


| REF. | l | s | d |
|-------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |

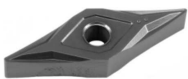
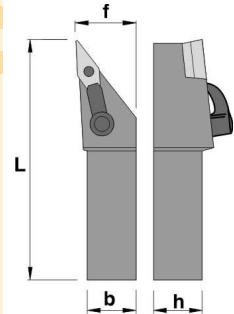


For more information see page: A.52,53,54

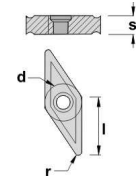
MVJN-K 93°



| REF. | h | b | L | f | VN.. | | | | | |
|---------------------|----|----|-----|----|--------|-----|-----|-----|----------|---------|
| MVJN R/L 2020 K16-K | 20 | 20 | 125 | 25 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |
| MVJN R/L 2525 M16-K | 25 | 25 | 150 | 32 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |
| MVJN R/L 3225 P16-K | 32 | 25 | 170 | 32 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |

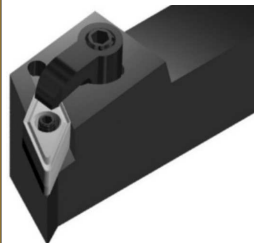


| REF. | l | s | d |
|-------------|-------|------|------|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |

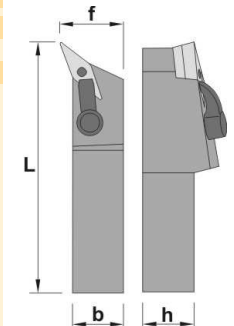


For more information see page: A.56

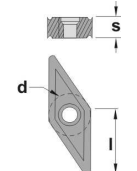
MVQN-K 117° 30'



| REF. | h | b | L | f | VN.. | | | | | |
|---------------------|----|----|-----|----|--------|-----|-----|-----|----------|---------|
| MVQN R/L 2020 K16-K | 20 | 20 | 125 | 25 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |
| MVQN R/L 2525 M16-K | 25 | 25 | 150 | 32 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |
| MVQN R/L 3225 P16-K | 32 | 25 | 170 | 32 | 1604.. | 266 | 165 | 503 | IVSN-322 | 434 502 |



| REF. | l | s | d |
|-------------|-------|------|------|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |



For more information see page: A.56

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

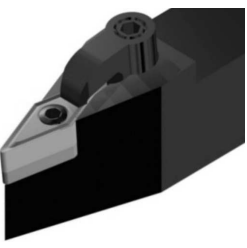
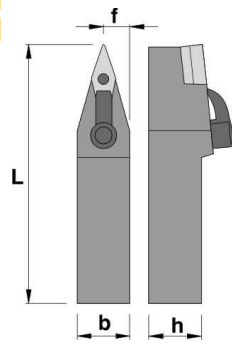
Arbors & adaptors




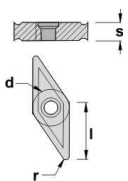
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

MVVN-K 72° 30'

| REF. | h | b | L | f | VN.. | | | | | | |
|--------------------------|----|----|-----|------|--------|-----|-----|-----|----------|-----|-----|
| MVVN N 2020 K16-K | 20 | 20 | 125 | 10,0 | 1604.. | 266 | 165 | 503 | IWSN-322 | 434 | 502 |
| MVVN N 2525 M16-K | 25 | 25 | 150 | 12,5 | 1604.. | 266 | 165 | 503 | IWSN-322 | 434 | 502 |

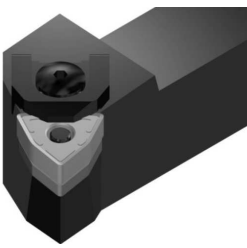
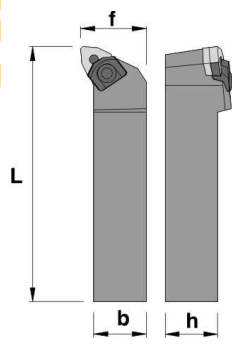
| REF. | l | s | d |
|--------------------|-------|------|------|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |

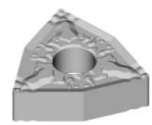
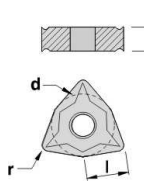
For more information see page: A.56

MWLN-K 95°

| REF. | h | b | L | f | WN.. | | | | | |
|----------------------------|----|----|-----|----|--------|-----|-----|----------|-----|-----|
| MWLN R/L 2020 K08-K | 20 | 20 | 125 | 25 | 0804.. | 208 | 525 | IWSN-433 | 461 | 484 |
| MWLN R/L 2525 M08-K | 25 | 25 | 150 | 32 | 0804.. | 208 | 525 | IWSN-433 | 461 | 484 |
| MWLN R/L 3232 P08-K | 32 | 32 | 170 | 40 | 0804.. | 208 | 525 | IWSN-433 | 461 | 484 |

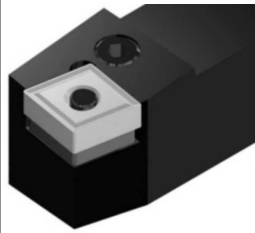



| REF. | l | s | d |
|--------------------|------|------|-------|
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |

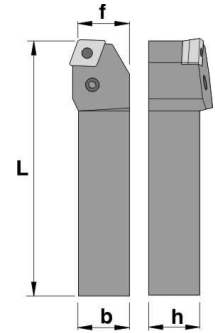



For more information see page: A.57

PCBN 75°



| REF. | h | b | L | f | CN.. | | | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PCBN R/L 2020 K12 | 20 | 20 | 125 | 17 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCBN R/L 2525 M12 | 25 | 25 | 150 | 22 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCBN R/L 2525 M16 | 25 | 25 | 150 | 22 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCBN R/L 3225 P16 | 32 | 25 | 170 | 22 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCBN R/L 3232 P16 | 32 | 32 | 170 | 27 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCBN R/L 3225 P19 | 32 | 25 | 170 | 22 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCBN R/L 3232 P19 | 32 | 32 | 170 | 27 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCBN R/L 4040 S19 | 40 | 40 | 250 | 35 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCBN R/L 4040 S25 | 40 | 40 | 250 | 41 | 2509.. | 825 | 168 | 505 | 365 | 425 | 035 |
| PCBN R/L 5050 T25 | 50 | 50 | 300 | 51 | 2509.. | 825 | 168 | 505 | 365 | 425 | 035 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

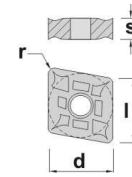
Solid carbide

Boring heads

Arbors & adaptors

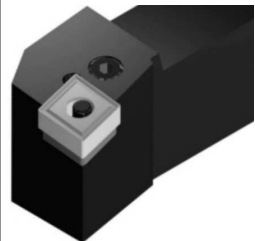


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |

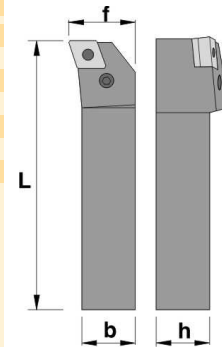


For more information see page: A.39,40

PCFN 90°



| REF. | h | b | L | f | CN.. | | | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PCFN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCFN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCFN R/L 3225 P16 | 32 | 25 | 170 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCFN R/L 3232 P16 | 32 | 32 | 170 | 40 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCFN R/L 3225 P19 | 32 | 25 | 170 | 32 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCFN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCFN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |



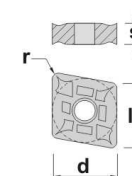
Drills

Cartridges

Brazed tools

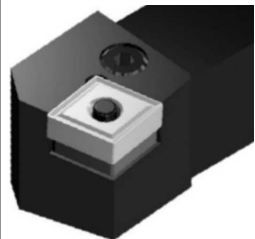


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

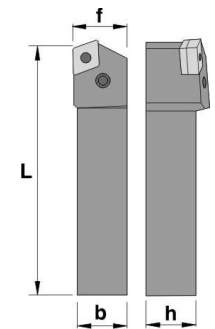


For more information see page: A.39,40

PCKN 75°



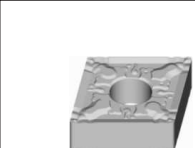
| REF. | h | b | L | f | CN.. | | | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PCKN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCKN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCKN R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCKN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCKN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |



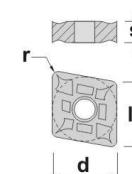
Milling cutters

Solid carbide

Boring heads



| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |



For more information see page: A.39,40

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

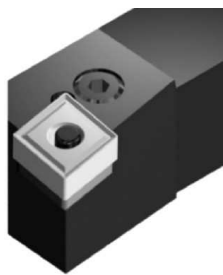
Milling cutters

Solid carbide

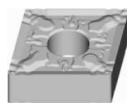
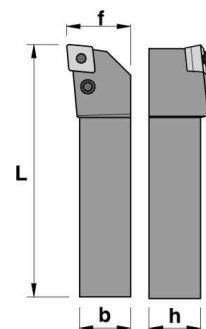
Boring heads

Arbors & adaptors

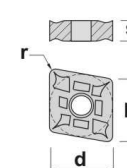
PCLN 95°



| REF. | h | b | L | f | CN.. | | | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PCLN R/L 1616 H09 | 16 | 16 | 100 | 20 | 0903.. | 809 | 162 | 525 | 368 | 409 | 009 |
| PCLN R/L 2020 K09 | 20 | 20 | 125 | 25 | 0903.. | 809 | 162 | 525 | 368 | 409 | 009 |
| PCLN R/L 2525 M09 | 25 | 25 | 150 | 32 | 0903.. | 809 | 162 | 525 | 368 | 409 | 009 |
| PCLN R/L 1616 H12 | 16 | 16 | 100 | 20 | 1204.. | 842 | 173 | 503 | 302 | 412 | 002 |
| PCLN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCLN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCLN R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCLN R/L 3232 P12 | 32 | 32 | 170 | 40 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCLN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCLN R/L 3225 P16 | 32 | 25 | 170 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCLN R/L 3232 P16 | 32 | 32 | 170 | 40 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCLN R/L 4040 S16 | 40 | 40 | 250 | 50 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCLN R/L 2525 M19 | 25 | 25 | 150 | 32 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCLN R/L 3225 P19 | 32 | 25 | 170 | 32 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCLN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCLN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCLN R/L 4040 S25 | 40 | 40 | 250 | 50 | 2509.. | 825 | 168 | 505 | 365 | 425 | 035 |
| PCLN R/L 5050 T25 | 50 | 50 | 300 | 60 | 2509.. | 825 | 168 | 505 | 365 | 425 | 035 |

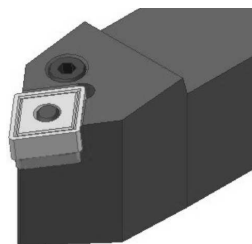


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |
| CN.. 2509.. | 25,80 | 9,52 | 25,40 |

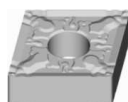
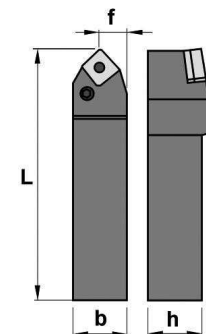


For more information see page: A.39,40

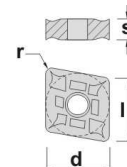
PCMN 50°



| REF. | h | b | L | f | CN.. | | | | | | |
|-----------------|----|----|-----|------|--------|-----|-----|-----|-----|-----|-----|
| PCMN N 2020 K12 | 20 | 20 | 125 | 10,0 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCMN N 2525 M12 | 25 | 25 | 150 | 12,5 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCMN N 3225 P12 | 32 | 25 | 170 | 12,5 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCMN N 3232 P19 | 32 | 32 | 170 | 16,0 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCMN N 4040 S19 | 40 | 40 | 250 | 20,0 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

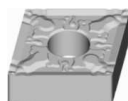
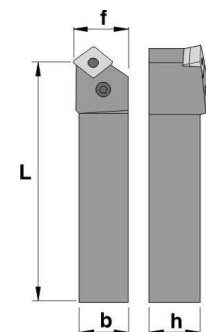


For more information see page: A.39,40

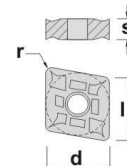
PCSN 45°



| REF. | h | b | L | f | CN.. | | | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PCSN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCSN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| PCSN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCSN R/L 3225 P16 | 32 | 25 | 170 | 32 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCSN R/L 3232 P16 | 32 | 32 | 170 | 40 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| PCSN R/L 3225 P19 | 32 | 25 | 170 | 32 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCSN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |
| PCSN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 369 | 419 | 029 |

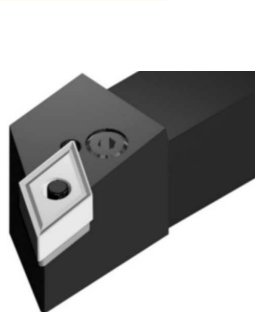


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |

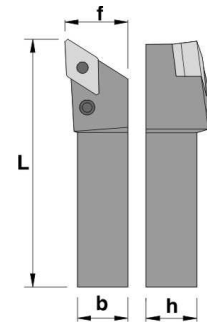


For more information see page: A.39,40

PDJN 93°



| REF. | h | b | L | f | DN.. | [Icons] | | | | | |
|-------------------|----|----|-----|----|--------|---------|-----|-----|-----|-----|-----|
| PDJN R/L 1616 H11 | 16 | 16 | 100 | 20 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| PDJN R/L 2020 K11 | 20 | 20 | 125 | 25 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| PDJN R/L 2525 M11 | 25 | 25 | 150 | 32 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| PDJN R/L 3225 P11 | 32 | 25 | 170 | 32 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| PDJN R/L 2020 K15 | 20 | 16 | 125 | 25 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDJN R/L 2525 M15 | 25 | 25 | 150 | 32 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDJN R/L 3225 P15 | 32 | 25 | 170 | 32 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDJN R/L 3232 P15 | 32 | 32 | 170 | 40 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDJN R/L 4025 R15 | 40 | 25 | 200 | 32 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDJN R/L 5032 S15 | 50 | 32 | 250 | 40 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

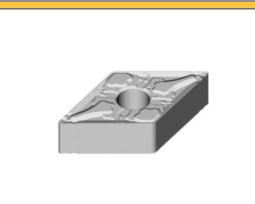
Brazed tools

Milling cutters

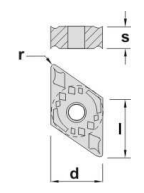
Solid carbide

Boring heads

Arbors & adaptors

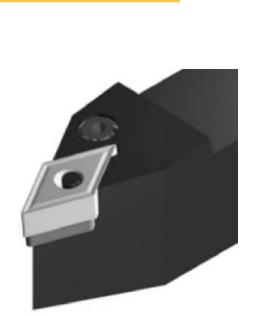


| REF. | l | s | d |
|-------------|-------|------|-------|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

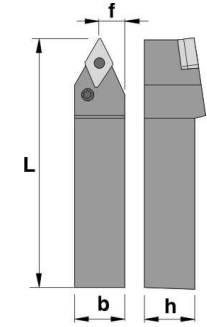


For more information see page: A.42,43

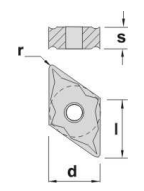
PDNN 63°



| REF. | h | b | L | f | DN.. | [Icons] | | | | | |
|---------------------|----|----|-----|------|--------|---------|-----|-----|-----|-----|-----|
| PDNN R/L/N 2020 K15 | 20 | 20 | 125 | 10,0 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDNN R/L/N 2525 M15 | 25 | 25 | 150 | 12,5 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDNN R/L/N 3225 P15 | 32 | 25 | 170 | 12,5 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDNN R/L/N 3232 P15 | 32 | 32 | 170 | 16,0 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDNN R/L/N 4025 S15 | 40 | 25 | 250 | 12,5 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| PDNN R/L/N 5032 S15 | 50 | 32 | 250 | 16,0 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |

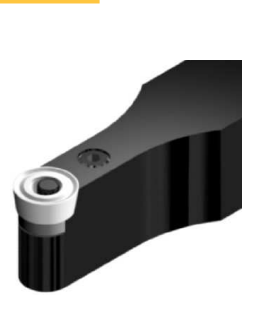


| REF. | l | s | d |
|-------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

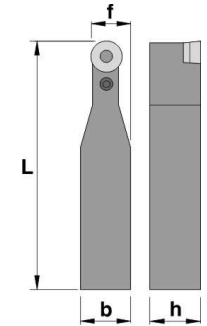


For more information see page: A.42,43

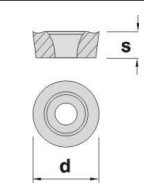
PRDC



| REF. | h | b | L | f | RC.. | [Icons] | | | | | |
|-----------------|----|----|-----|------|--------|---------|-----|-----|-----|-----|-----|
| PRDC N 2020 K10 | 20 | 20 | 125 | 15,0 | 1003.. | 820 | 175 | 502 | 310 | 410 | 009 |
| PRDC N 2020 K12 | 20 | 20 | 125 | 16,0 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 2525 M10 | 25 | 25 | 150 | 18,5 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 2525 M12 | 25 | 25 | 150 | 18,5 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 3225 P10 | 32 | 25 | 170 | 18,5 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 3225 P12 | 32 | 25 | 170 | 18,5 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 4025 S12 | 40 | 25 | 250 | 18,5 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRDC N 3225 P16 | 32 | 25 | 170 | 20,5 | 1606.. | 826 | 176 | 525 | 386 | 416 | 002 |
| PRDC N 3232 P16 | 32 | 32 | 170 | 24,0 | 1606.. | 826 | 176 | 525 | 386 | 416 | 002 |
| PRDC N 3232 P20 | 32 | 32 | 170 | 26,0 | 2006.. | 830 | 178 | 503 | 380 | 415 | 005 |
| PRDC N 4040 S20 | 40 | 40 | 250 | 30,0 | 2006.. | 830 | 178 | 503 | 380 | 415 | 005 |
| PRDC N 4040 S25 | 40 | 40 | 250 | 32,5 | 2507.. | 835 | 180 | 504 | 385 | 419 | 029 |
| PRDC N 4040 U25 | 40 | 40 | 350 | 32,5 | 2507.. | 835 | 180 | 504 | 385 | 419 | 029 |
| PRDC N 5050 U25 | 50 | 50 | 350 | 37,5 | 2507.. | 835 | 180 | 504 | 385 | 419 | 029 |
| PRDC N 5050 V32 | 50 | 50 | 400 | 41,0 | 3209.. | 852 | 168 | 505 | 383 | 425 | 035 |



| REF. | l | s | d |
|-------------|---|------|-------|
| RC.. 1003M0 | - | 3,18 | 10,00 |
| RC.. 1204M0 | - | 4,76 | 12,00 |
| RC.. 1606M0 | - | 6,35 | 16,00 |
| RC.. 2006M0 | - | 6,35 | 20,00 |
| RC.. 2507M0 | - | 7,94 | 25,00 |
| RC.. 3209M0 | - | 9,52 | 32,00 |

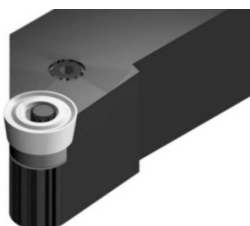


For more information see page: A.45,46

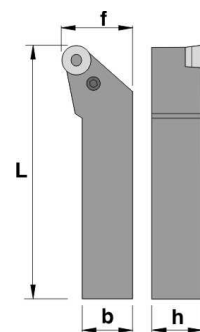
Inserts

Turning

PRSC

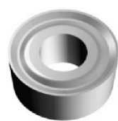


| REF. | h | b | L | f | RC.. | [Icons] | | | | | |
|-------------------|----|----|-----|----|--------|---------|-----|-----|-----|-----|-----|
| PRSC R/L 2020 K10 | 20 | 20 | 125 | 25 | 1003.. | 820 | 175 | 502 | 310 | 410 | 009 |
| PRSC R/L 2525 M10 | 25 | 25 | 150 | 32 | 1003.. | 820 | 175 | 502 | 310 | 410 | 009 |
| PRSC R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRSC R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRSC R/L 3225 P10 | 32 | 25 | 170 | 32 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRSC R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | 822 | 162 | 525 | 303 | 410 | 009 |
| PRSC R/L 2525 M16 | 25 | 25 | 150 | 32 | 1606.. | 826 | 176 | 525 | 386 | 416 | 002 |
| PRSC R/L 3225 P16 | 32 | 25 | 170 | 32 | 1606.. | 826 | 176 | 525 | 386 | 416 | 002 |
| PRSC R/L 3232 P20 | 32 | 32 | 170 | 40 | 2006.. | 830 | 178 | 503 | 380 | 415 | 005 |
| PRSC R/L 4040 S20 | 40 | 40 | 250 | 50 | 2006.. | 830 | 178 | 503 | 380 | 415 | 005 |
| PRSC R/L 4040 S25 | 40 | 40 | 250 | 50 | 2507.. | 835 | 180 | 504 | 385 | 419 | 029 |
| PRSC R/L 5050 T32 | 50 | 50 | 300 | 63 | 3209.. | 852 | 168 | 505 | 383 | 425 | 035 |



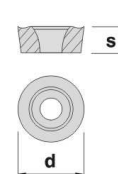
Automatic lathes

Ceramic tools



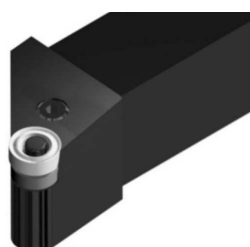
| REF. | l | s | d |
|-------------|---|------|-------|
| RC.. 1003M0 | - | 3,18 | 10,00 |
| RC.. 1204M0 | - | 4,76 | 12,00 |
| RC.. 1606M0 | - | 6,35 | 16,00 |
| RC.. 2006M0 | - | 6,35 | 20,00 |
| RC.. 2507M0 | - | 7,94 | 25,00 |
| RC.. 3209M0 | - | 9,52 | 32,00 |

For more information see page: A.45,46

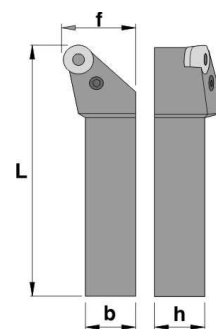


Parting & grooving

PRSN



| REF. | h | b | L | f | RNMG | [Icons] | | | | | |
|-------------------|----|----|-----|----|--------|---------|-----|-----|-----|-----|-----|
| PRSN R/L 2020 K09 | 20 | 20 | 125 | 25 | 0903.. | 809 | 162 | 525 | 391 | 410 | 009 |
| PRSN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 393 | 412 | 002 |
| PRSN R/L 3225 P15 | 32 | 25 | 170 | 32 | 1506.. | 815 | 178 | 503 | 395 | 415 | 005 |
| PRSN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 399 | 419 | 029 |
| PRSN R/L 4040 S25 | 40 | 40 | 250 | 50 | 2509.. | 825 | 168 | 505 | 396 | 425 | 035 |



Threading

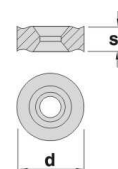
Drills

Cartridges



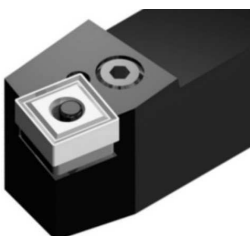
| REF. | l | s | d |
|-------------|---|------|-------|
| RNMG 090300 | - | 3,18 | 9,52 |
| RNMG 120400 | - | 4,76 | 12,70 |
| RNMG 150600 | - | 6,35 | 15,88 |
| RNMG 190600 | - | 6,35 | 19,05 |
| RNMG 250900 | - | 9,52 | 25,40 |

For more information see page: A.46

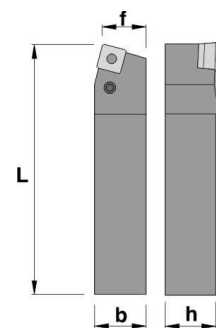


Brazed tools

PSBN 75°



| REF. | h | b | L | f | SN.. | [Icons] | | | | | |
|-------------------|----|----|-----|----|--------|---------|-----|-----|-----|-----|-----|
| PSBN R/L 1212 F09 | 12 | 12 | 80 | 11 | 0903.. | 805 | 174 | 502 | - | - | - |
| PSBN R/L 1616 H09 | 16 | 16 | 100 | 13 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSBN R/L 2020 K09 | 20 | 20 | 125 | 17 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSBN R/L 2020 K12 | 20 | 20 | 125 | 17 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSBN R/L 2525 M12 | 25 | 25 | 150 | 22 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSBN R/L 3225 P12 | 32 | 25 | 170 | 22 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSBN R/L 2525 M15 | 25 | 25 | 150 | 22 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSBN R/L 3232 P15 | 32 | 32 | 170 | 27 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSBN R/L 3232 P19 | 32 | 32 | 170 | 27 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSBN R/L 4040 S19 | 40 | 40 | 250 | 35 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSBN R/L 4040 S25 | 40 | 40 | 250 | 35 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |
| PSBN R/L 5050 T25 | 50 | 50 | 300 | 43 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |



Milling cutters

Solid carbide

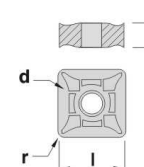
Boring heads

Arbors & adaptors

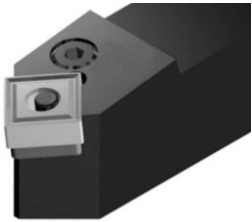


| REF. | l | s | d |
|-------------|-------|------|-------|
| SN.. 0903.. | 9,52 | 3,18 | 9,52 |
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1506.. | 15,88 | 6,35 | 15,88 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |
| SN.. 2507.. | 25,40 | 7,94 | 25,40 |

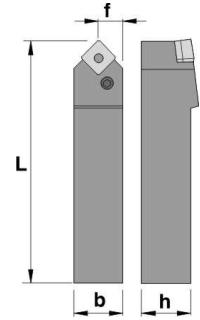
For more information see page: A.49,50



PSDN 45°



| REF. | h | b | L | f | SN.. | | | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|-----|-----|
| PSDN N 1010 E09 | 10 | 10 | 70 | 5,0 | 0903.. | 805 | 174 | 502 | - | - | - |
| PSDN N 1212 F09 | 12 | 12 | 80 | 6,0 | 0903.. | 805 | 174 | 502 | - | - | - |
| PSDN N 1616 H09 | 16 | 16 | 100 | 8,0 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSDN N 2020 K12 | 20 | 20 | 125 | 10,0 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSDN N 2525 M12 | 25 | 25 | 150 | 12,5 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSDN N 3232 P12 | 32 | 32 | 170 | 16,0 | 1204.. | 812 | 163 | 503 | 313 | 412 | 003 |
| PSDN N 3225 P19 | 32 | 25 | 170 | 12,5 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSDN N 3232 P19 | 32 | 32 | 170 | 16,0 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSDN N 4040 S25 | 40 | 40 | 250 | 25,0 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

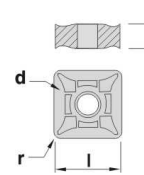
Solid carbide

Boring heads

Arbors & adaptors

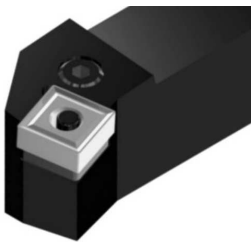


| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 0903.. | 9,52 | 3,18 | 9,52 |
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1506.. | 15,88 | 6,35 | 15,88 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |
| SN.. 2507.. | 25,40 | 7,94 | 25,40 |

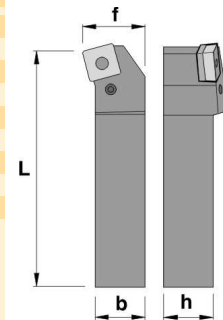


For more information see page: A.49,50

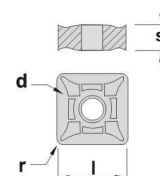
PSKN 75°



| REF. | h | b | L | f | SN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PSKN R/L 1616 H09 | 16 | 16 | 100 | 20 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSKN R/L 2020 K09 | 20 | 20 | 125 | 25 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSKN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSKN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSKN R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSKN R/L 2525 M15 | 25 | 25 | 150 | 32 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSKN R/L 3232 P15 | 32 | 32 | 170 | 40 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSKN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSKN R/L 4040 S19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSKN R/L 5050 T25 | 50 | 50 | 300 | 60 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |

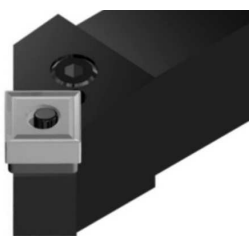


| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 0903.. | 9,52 | 3,18 | 9,52 |
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1506.. | 15,88 | 6,35 | 15,88 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |
| SN.. 2507.. | 25,40 | 7,94 | 25,40 |

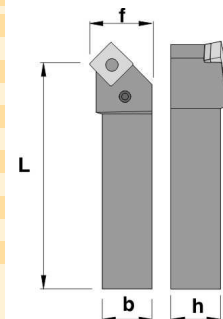


For more information see page: A.49,50

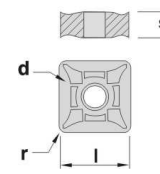
PSSN 45°



| REF. | h | b | L | f | SN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PSSN R/L 1616 H09 | 16 | 16 | 100 | 20 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSSN R/L 2020 K09 | 20 | 20 | 125 | 25 | 0903.. | 809 | 162 | 525 | 358 | 410 | 009 |
| PSSN R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSSN R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSSN R/L 3225 P12 | 32 | 25 | 170 | 32 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| PSSN R/L 2525 M15 | 25 | 25 | 150 | 32 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSSN R/L 3232 P15 | 32 | 32 | 170 | 40 | 1506.. | 816 | 170 | 503 | 355 | 415 | 005 |
| PSSN R/L 3232 P19 | 32 | 32 | 170 | 40 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSSN R/L 4040 P19 | 40 | 40 | 250 | 50 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSSN R/L 5050 T19 | 50 | 50 | 300 | 60 | 1906.. | 819 | 164 | 504 | 359 | 419 | 029 |
| PSSN R/L 4040 S25 | 40 | 40 | 250 | 50 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |
| PSSN R/L 5050 T25 | 50 | 50 | 300 | 60 | 2509.. | 825 | 168 | 505 | 357 | 425 | 035 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 0903.. | 9,52 | 3,18 | 9,52 |
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1506.. | 15,88 | 6,35 | 15,88 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |
| SN.. 2507.. | 25,40 | 7,94 | 25,40 |

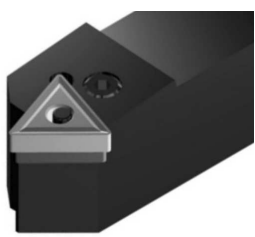


For more information see page: A.49,50

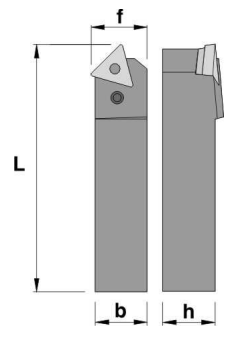


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

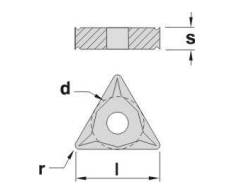
PTDN 45°



| REF. | h | b | L | f | TN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PTDN R/L 2525 M22 | 25 | 25 | 150 | 27 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTDN R/L 3225 P22 | 32 | 25 | 170 | 27 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |

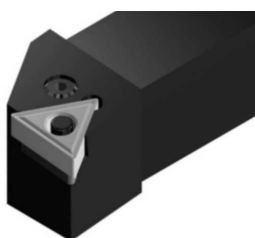


| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |

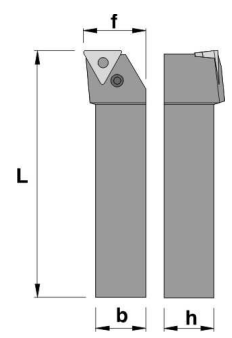


For more information see page: A.52,53

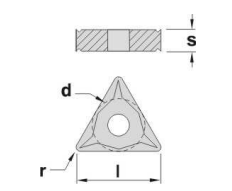
PTFN 90°



| REF. | h | b | L | f | TN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PTFN R/L 1616 H16 | 16 | 16 | 100 | 20 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTFN R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTFN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTFN R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTFN R/L 2525 M22 | 25 | 25 | 150 | 32 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTFN R/L 3225 P22 | 32 | 25 | 170 | 32 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTFN R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTFN R/L 3232 P27 | 32 | 32 | 170 | 40 | 2706.. | 815 | 178 | 503 | 349 | 415 | 005 |
| PTFN R/L 4040 S27 | 40 | 40 | 250 | 50 | 2706.. | 815 | 178 | 503 | 349 | 415 | 005 |

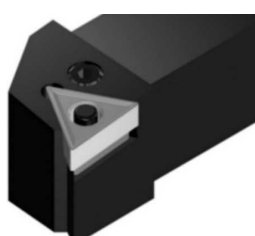


| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |
| TN.. 2706.. | 27,00 | 6,35 | 15,88 |

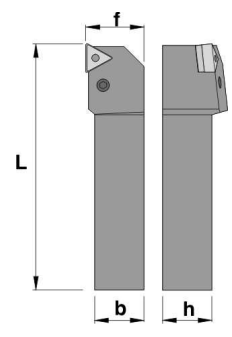


For more information see page: A.52,53,54

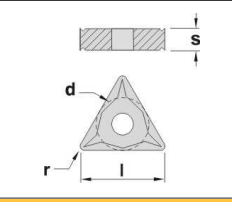
PTGN 90°



| REF. | h | b | L | f | TN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PTGN R/L 1616 H16 | 16 | 16 | 100 | 20 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTGN R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTGN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTGN R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTGN R/L 2525 M22 | 25 | 25 | 150 | 32 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTGN R/L 3225 P22 | 32 | 25 | 170 | 32 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTGN R/L 3232 P22 | 32 | 32 | 170 | 40 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTGN R/L 4040 S22 | 40 | 40 | 250 | 50 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTGN R/L 3232 S27 | 32 | 32 | 170 | 40 | 2706.. | 815 | 178 | 503 | 349 | 415 | 005 |
| PTGN R/L 4040 S27 | 40 | 40 | 250 | 50 | 2706.. | 815 | 178 | 503 | 349 | 415 | 005 |
| PTGN R/L 5050 T33 | 50 | 50 | 300 | 60 | 3307.. | 819 | 164 | 504 | 333 | 433 | 029 |

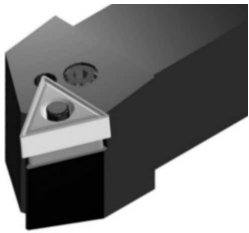


| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |
| TN.. 2706.. | 27,00 | 6,35 | 15,88 |
| TN.. 3307.. | 33,00 | 7,93 | 19,05 |

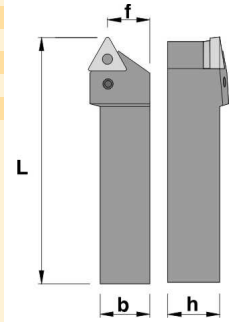


For more information see page: A.52,53,54

PTTN 60°



| REF. | h | b | L | f | TN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PTTN R/L 1616 H16 | 16 | 16 | 100 | 13 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTTN R/L 2020 K16 | 20 | 20 | 125 | 17 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTTN R/L 2525 M16 | 25 | 25 | 150 | 22 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| PTTN R/L 2525 M22 | 25 | 25 | 150 | 22 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| PTTN R/L 3225 P22 | 32 | 25 | 170 | 22 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

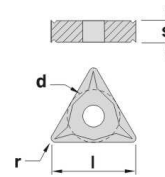
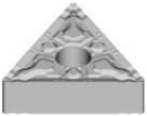
Milling cutters

Solid carbide

Boring heads

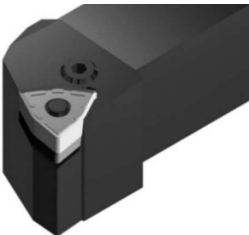
Arbors & adaptors

| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |

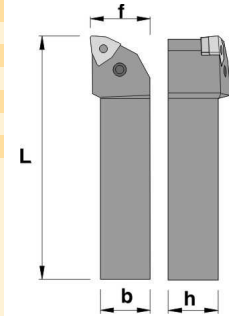


For more information see page: A.52,53,54

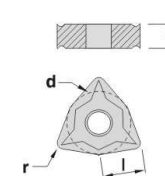
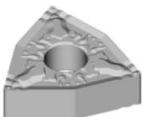
PWLN 95°



| REF. | h | b | L | f | WN.. | | | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|-----|-----|
| PWLN R/L 1616 H06 | 16 | 16 | 100 | 20 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| PWLN R/L 2020 K06 | 20 | 20 | 125 | 25 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| PWLN R/L 2525 M06 | 25 | 25 | 150 | 32 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| PWLN R/L 2020 K08 | 20 | 20 | 125 | 25 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| PWLN R/L 2525 M08 | 25 | 25 | 150 | 32 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| PWLN R/L 3225 P08 | 32 | 25 | 170 | 32 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| PWLN R/L 3232 P08 | 32 | 32 | 170 | 40 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |



| REF. | l | s | d |
|--------------------|------|------|-------|
| WN.. 0604.. | 6,14 | 4,76 | 9,52 |
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |

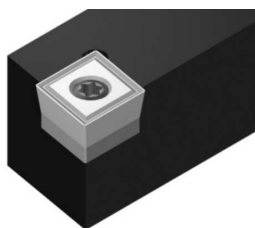


For more information see page: A.57,58

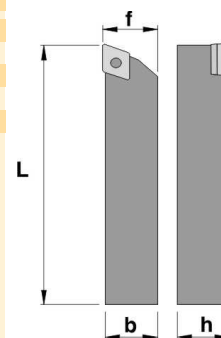


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

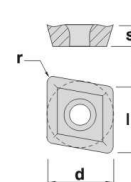
SCAC 90°



| REF. | h | b | L | f | CC.. | | | | |
|-------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SCAC R/L 0808 D06 | 8 | 8 | 60 | 8,5 | 0602.. | 125 | 507 | - | - |
| SCAC R/L 1010 E06 | 10 | 10 | 70 | 10,5 | 0602.. | 125 | 507 | - | - |
| SCAC R/L 1212 F09 | 12 | 12 | 80 | 12,5 | 09T3.. | 140 | 515 | - | - |
| SCAC R/L 1616 H09 | 16 | 16 | 100 | 16,5 | 09T3.. | 140 | 515 | - | - |
| SCAC R/L 2020 K12 | 20 | 20 | 125 | 20,5 | 1204.. | 196 | 523 | 361 | 195 |
| SCAC R/L 2525 M12 | 25 | 25 | 150 | 25,5 | 1204.. | 196 | 523 | 361 | 195 |

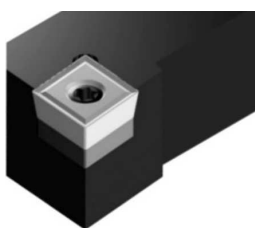


| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

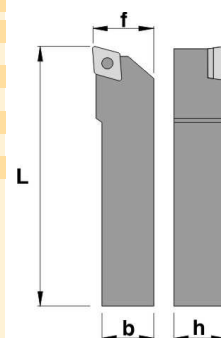


For more information see page: A.38

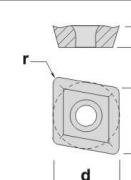
SCLC 95°



| REF. | h | b | L | f | CC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SCLC R/L 0808 D06 | 8 | 8 | 60 | 10 | 0602.. | 125 | 507 | - | - |
| SCLC R/L 1010 E06 | 10 | 10 | 70 | 12 | 0602.. | 125 | 507 | - | - |
| SCLC R/L 1212 F09 | 12 | 12 | 80 | 16 | 09T3.. | 140 | 515 | - | - |
| SCLC R/L 1616 H09 | 16 | 16 | 100 | 20 | 09T3.. | 140 | 515 | - | - |
| SCLC R/L 2020 K09 | 20 | 20 | 125 | 25 | 09T3.. | 140 | 515 | - | - |
| SCLC R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 196 | 523 | 361 | 195 |
| SCLC R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 196 | 523 | 361 | 195 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

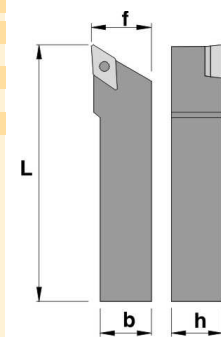


For more information see page: A.38

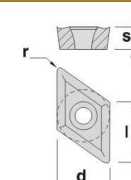
SDJC 93°



| REF. | h | b | L | f | DC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SDJC R/L 1010 E07 | 10 | 10 | 70 | 12 | 0702.. | 125 | 507 | - | - |
| SDJC R/L 1212 F07 | 12 | 12 | 80 | 16 | 0702.. | 125 | 507 | - | - |
| SDJC R/L 1212 F11 | 12 | 12 | 80 | 16 | 11T3.. | 140 | 515 | - | - |
| SDJC R/L 1616 H11 | 16 | 16 | 100 | 20 | 11T3.. | 133 | 521 | 371 | 194 |
| SDJC R/L 2020 K11 | 20 | 20 | 125 | 25 | 11T3.. | 133 | 521 | 371 | 194 |
| SDJC R/L 2525 M11 | 25 | 25 | 150 | 32 | 11T3.. | 133 | 521 | 371 | 194 |



| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

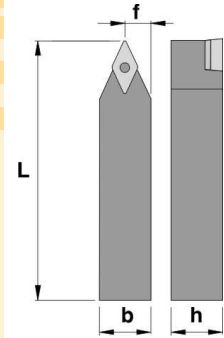


For more information see page: A.41

SDNC 62° 30'



| REF. | h | b | L | f | DC.. | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SDNC N 0808 D07 | 8 | 8 | 60 | 4,0 | 0702.. | 125 | 507 | - | - |
| SDNC N 1010 E07 | 10 | 10 | 70 | 5,0 | 0702.. | 125 | 507 | - | - |
| SDNC N 1212 F07 | 12 | 12 | 80 | 6,0 | 0702.. | 125 | 507 | - | - |
| SDNC N 1616 H11 | 16 | 16 | 100 | 8,0 | 11T3.. | 133 | 521 | 371 | 194 |
| SDNC N 2020 K11 | 20 | 20 | 125 | 10,0 | 11T3.. | 133 | 521 | 371 | 194 |
| SDNC N 2525 M11 | 25 | 25 | 150 | 12,5 | 11T3.. | 133 | 521 | 371 | 194 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

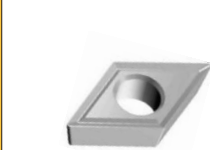
Brazed tools

Milling cutters

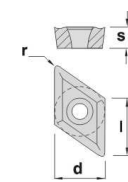
Solid carbide

Boring heads

Arbors & adaptors

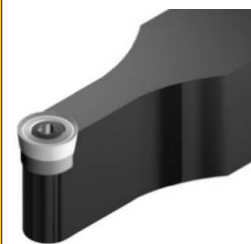


| REF. | l | s | d |
|--------------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

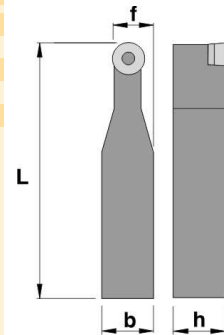


For more information see page: A.41

SRDC



| REF. | h | b | L | f | RC.. | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SRDC N 2020 K10 | 20 | 20 | 125 | 15,0 | 10T3.. | 133 | 521 | 381 | 194 |
| SRDC N 2525 M10 | 25 | 25 | 150 | 17,5 | 10T3.. | 133 | 521 | 381 | 194 |
| SRDC N 2020 K12 | 20 | 20 | 125 | 16,0 | 1204.. | 133 | 521 | 384 | 194 |
| SRDC N 2525 M12 | 25 | 25 | 150 | 18,5 | 1204.. | 133 | 521 | 384 | 194 |
| SRDC N 3225 P12 | 32 | 25 | 170 | 18,5 | 1204.. | 133 | 521 | 384 | 194 |
| SRDC N 3232 P12 | 32 | 32 | 170 | 22,0 | 1204.. | 133 | 521 | 384 | 194 |



Drills

Cartridges

Brazed tools

Milling cutters

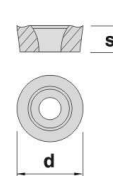
Solid carbide

Boring heads

Arbors & adaptors

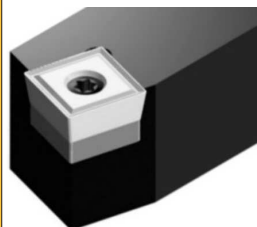


| REF. | l | s | d |
|--------------------|---|------|-------|
| RC.. 10T3M0 | - | 3,97 | 10,00 |
| RC.. 1204M0 | - | 4,76 | 12,00 |

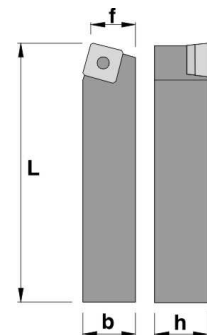


For more information see page: A.45,46

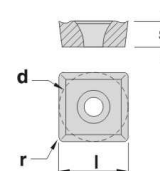
SSBC 75°



| REF. | h | b | L | f | SC.. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SSBC R/L 1212 F09 | 12 | 12 | 80 | 11 | 09T3.. | 140 | 515 | - | - |
| SSBC R/L 1616 H09 | 16 | 16 | 100 | 13 | 09T3.. | 140 | 515 | - | - |
| SSBC R/L 2020 K12 | 20 | 20 | 125 | 17 | 1204.. | 196 | 523 | 351 | 195 |
| SSBC R/L 2525 M12 | 25 | 25 | 150 | 22 | 1204.. | 196 | 523 | 351 | 195 |



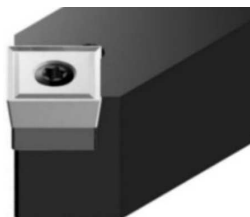
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



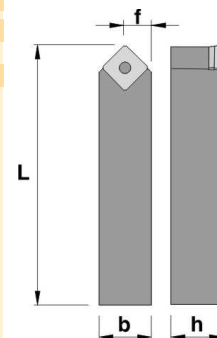
For more information see page: A.47,48

Inserts

SSDC 45°



| REF. | h | b | L | f | SC.. | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SSDC N 1212 F09 | 12 | 12 | 80 | 6,0 | 09T3.. | 140 | 515 | - | - |
| SSDC N 1616 H09 | 16 | 16 | 100 | 8,0 | 09T3.. | 140 | 515 | - | - |
| SSDC N 2020 K12 | 20 | 20 | 125 | 10,0 | 1204.. | 196 | 523 | 351 | 195 |
| SSDC N 2525 M12 | 25 | 25 | 150 | 12,5 | 1204.. | 196 | 523 | 351 | 195 |



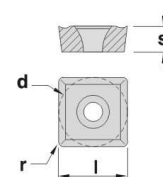
Turning

Automatic lathes

Ceramic tools



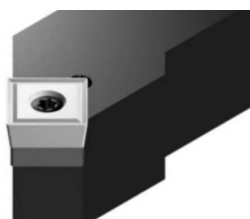
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



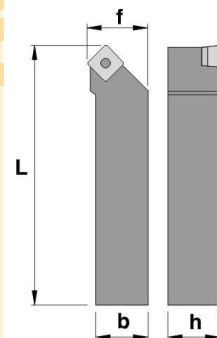
For more information see page: A.47,48

Parting & grooving

SSSC 45°



| REF. | h | b | L | f | SC.. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SSSC R/L 1212 F09 | 12 | 12 | 80 | 16 | 09T3.. | 140 | 515 | - | - |
| SSSC R/L 1616 H09 | 16 | 16 | 100 | 20 | 09T3.. | 140 | 515 | - | - |
| SSSC R/L 2020 K12 | 20 | 20 | 125 | 25 | 1204.. | 196 | 523 | 351 | 195 |
| SSSC R/L 2525 M12 | 25 | 25 | 150 | 32 | 1204.. | 196 | 523 | 351 | 195 |



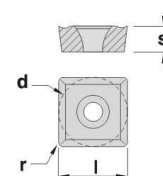
Threading

Drills

Cartridges



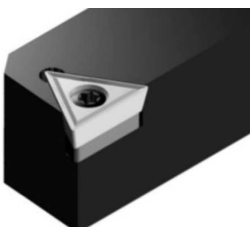
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SC.. 09T3M0 | 9,52 | 3,97 | 9,52 |
| SC.. 1204M0 | 12,70 | 4,76 | 12,70 |



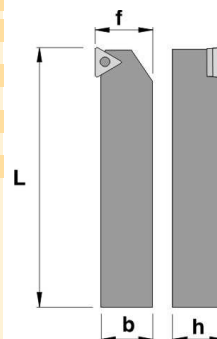
For more information see page: A.47,48

Milling cutters

STAC 90°



| REF. | h | b | L | f | TC.. | | | | |
|--------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| STAC R/L 0808 D09 | 8 | 8 | 60 | 8,5 | 0902.. | 122 | 506 | - | - |
| STAC R/L 1010 E09 | 10 | 10 | 70 | 10,5 | 0902.. | 122 | 506 | - | - |
| STAC R/L 1212 F11 | 12 | 12 | 80 | 12,5 | 1102.. | 125 | 507 | - | - |
| STAC R/L 1616 H11 | 16 | 16 | 100 | 16,5 | 1102.. | 125 | 507 | - | - |
| STAC R/L 1616 H16 | 16 | 16 | 100 | 16,5 | 16T3.. | 133 | 521 | 341 | 194 |
| STAC R/L 2020 K16 | 20 | 20 | 125 | 20,5 | 16T3.. | 133 | 521 | 341 | 194 |
| STAC R/L 2525 M16 | 25 | 25 | 150 | 20,5 | 16T3.. | 133 | 521 | 341 | 194 |



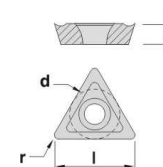
Solid carbide

Boring heads

Arbors & adaptors

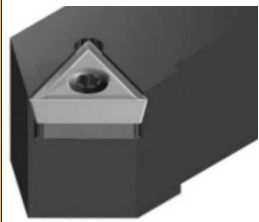


| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

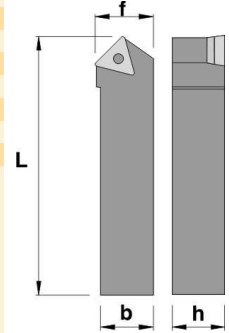


For more information see page: A.51,52

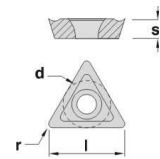
STDC 45°



| REF. | h | b | L | f | TC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| STDC R/L 0808 D09 | 8 | 8 | 60 | 10 | 0902.. | 122 | 506 | - | - |
| STDC R/L 1010 E09 | 10 | 10 | 70 | 11 | 0902.. | 122 | 506 | - | - |
| STDC R/L 1212 F11 | 12 | 12 | 80 | 13 | 1102.. | 125 | 507 | - | - |
| STDC R/L 1616 H11 | 16 | 16 | 100 | 17 | 1102.. | 125 | 507 | - | - |
| STDC R/L 1212 F16 | 12 | 12 | 80 | 17 | 16T3.. | 140 | 515 | - | - |
| STDC R/L 1616 H16 | 16 | 16 | 100 | 17 | 16T3.. | 133 | 521 | 341 | 194 |
| STDC R/L 2020 K16 | 20 | 20 | 125 | 22 | 16T3.. | 133 | 521 | 341 | 194 |
| STDC R/L 2525 M16 | 25 | 25 | 150 | 27 | 16T3.. | 133 | 521 | 341 | 194 |

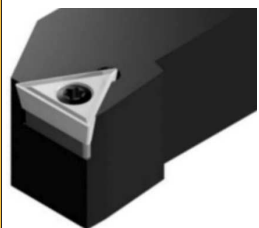


| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

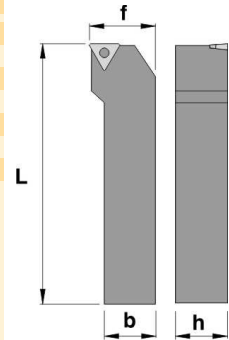


For more information see page: A.51,52

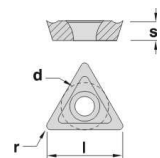
STFC 90°



| REF. | h | b | L | f | TC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| STFC R/L 0808 D09 | 8 | 8 | 60 | 10 | 0902.. | 122 | 506 | - | - |
| STFC R/L 1010 E09 | 10 | 10 | 70 | 12 | 0902.. | 122 | 506 | - | - |
| STFC R/L 1212 F11 | 12 | 12 | 80 | 16 | 1102.. | 125 | 507 | - | - |
| STFC R/L 1616 H11 | 16 | 16 | 100 | 20 | 1102.. | 125 | 507 | - | - |
| STFC R/L 1212 F16 | 12 | 12 | 80 | 16 | 16T3.. | 140 | 515 | - | - |
| STFC R/L 1616 H16 | 16 | 16 | 100 | 20 | 16T3.. | 133 | 521 | 341 | 194 |
| STFC R/L 2020 K16 | 20 | 20 | 125 | 25 | 16T3.. | 133 | 521 | 341 | 194 |
| STFC R/L 2525 M16 | 25 | 25 | 150 | 32 | 16T3.. | 133 | 521 | 341 | 194 |

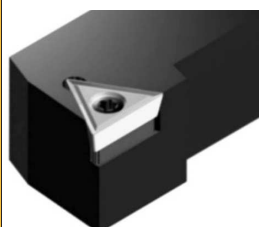


| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

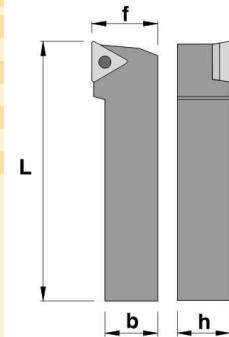


For more information see page: A.51,52

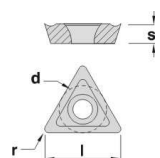
STGC 90°



| REF. | h | b | L | f | TC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| STGC R/L 0808 D09 | 8 | 8 | 60 | 10 | 0902.. | 122 | 506 | - | - |
| STGC R/L 1010 E09 | 10 | 10 | 70 | 12 | 0902.. | 122 | 506 | - | - |
| STGC R/L 1212 F11 | 12 | 12 | 80 | 16 | 1102.. | 125 | 507 | - | - |
| STGC R/L 1616 H11 | 16 | 16 | 100 | 20 | 1102.. | 125 | 507 | - | - |
| STGC R/L 1212 F16 | 12 | 12 | 80 | 16 | 16T3.. | 140 | 515 | - | - |
| STGC R/L 1616 H16 | 16 | 16 | 100 | 20 | 16T3.. | 133 | 521 | 341 | 194 |
| STGC R/L 2020 K16 | 20 | 20 | 125 | 25 | 16T3.. | 133 | 521 | 341 | 194 |
| STGC R/L 2525 M16 | 25 | 25 | 150 | 32 | 16T3.. | 133 | 521 | 341 | 194 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

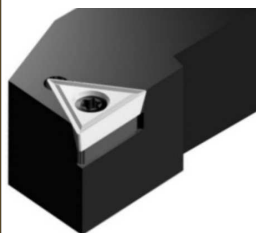
Boring heads

Arbors & adaptors

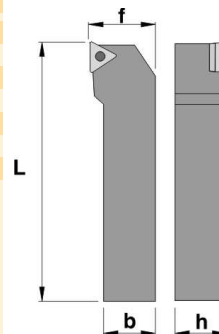


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

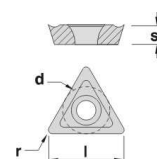
STJC 93°



| REF. | h | b | L | f | TC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| STJC R/L 0808 D09 | 8 | 8 | 60 | 10 | 0902.. | 122 | 506 | - | - |
| STJC R/L 1010 E09 | 10 | 10 | 70 | 12 | 0902.. | 122 | 506 | - | - |
| STJC R/L 1212 F11 | 12 | 12 | 80 | 16 | 1102.. | 125 | 507 | - | - |
| STJC R/L 1616 H11 | 16 | 16 | 100 | 20 | 1102.. | 125 | 507 | - | - |
| STJC R/L 1212 F16 | 12 | 12 | 80 | 16 | 16T3.. | 140 | 515 | - | - |
| STJC R/L 1616 H16 | 16 | 16 | 100 | 20 | 16T3.. | 133 | 521 | 341 | 194 |
| STJC R/L 2020 K16 | 20 | 20 | 125 | 25 | 16T3.. | 133 | 521 | 341 | 194 |
| STJC R/L 2525 M16 | 25 | 25 | 150 | 32 | 16T3.. | 133 | 521 | 341 | 194 |

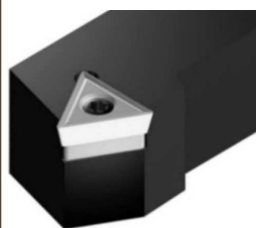


| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

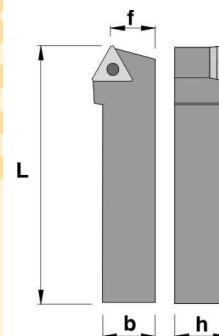


For more information see page: A.51,52

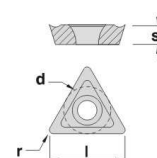
STTC 60°



| REF. | h | b | L | f | TC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| STTC R/L 0808 D09 | 8 | 8 | 60 | 7 | 0902.. | 122 | 506 | - | - |
| STTC R/L 1010 E09 | 10 | 10 | 70 | 9 | 0902.. | 122 | 506 | - | - |
| STTC R/L 1212 F11 | 12 | 12 | 80 | 11 | 1102.. | 125 | 507 | - | - |
| STTC R/L 1616 H11 | 16 | 16 | 100 | 13 | 1102.. | 125 | 507 | - | - |
| STTC R/L 1212 F16 | 12 | 12 | 80 | 11 | 16T3.. | 140 | 515 | - | - |
| STTC R/L 1616 H16 | 16 | 16 | 100 | 13 | 16T3.. | 133 | 521 | 341 | 194 |
| STTC R/L 2020 K16 | 20 | 20 | 125 | 17 | 16T3.. | 133 | 521 | 341 | 194 |
| STTC R/L 2525 M16 | 25 | 25 | 150 | 22 | 16T3.. | 133 | 521 | 341 | 194 |

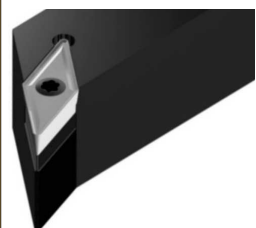


| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

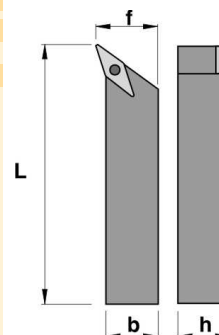


For more information see page: A.51,52

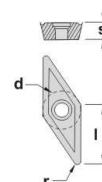
SVHC 107° 30'



| REF. | h | b | L | f | VC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SVHC R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 133 | 521 | 378 | 194 |
| SVHC R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 133 | 521 | 378 | 194 |
| SVHC R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 133 | 521 | 378 | 194 |

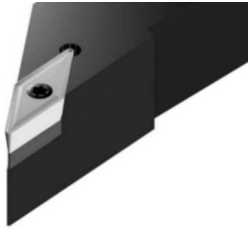


| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

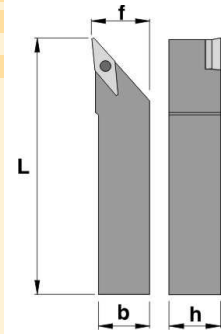


For more information see page: A.55,56

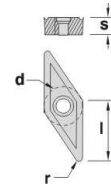
SVJB 93°



| REF. | h | b | L | f | VBMT | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SVJB R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 133 | 521 | 378 | 194 |
| SVJB R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 133 | 521 | 378 | 194 |
| SVJB R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 133 | 521 | 378 | 194 |

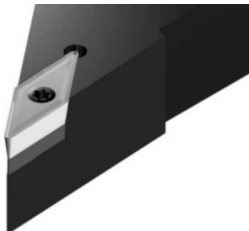


| REF. | l | s | d |
|-------------|-------|------|------|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |

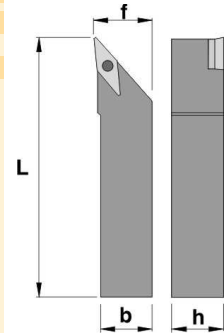


For more information see page: A.55

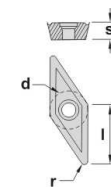
SVJC 93°



| REF. | h | b | L | f | VC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SVJC R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 133 | 521 | 378 | 194 |
| SVJC R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 133 | 521 | 378 | 194 |
| SVJC R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 133 | 521 | 378 | 194 |

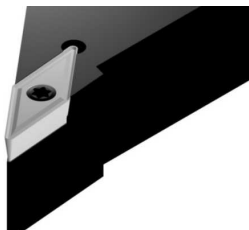


| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

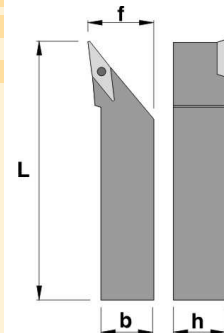


For more information see page: A.55,56

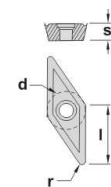
SVLC 95°



| REF. | h | b | L | f | VC.. | | | | |
|-------------------|----|----|-----|----|--------|-----|-----|--|--|
| SVLC R/L 1212 G13 | 12 | 12 | 90 | 16 | 1303.. | 130 | 508 | | |
| SVLC R/L 1616 H13 | 16 | 16 | 100 | 20 | 1303.. | 130 | 508 | | |
| SVLC R/L 2020 K13 | 20 | 20 | 125 | 25 | 1303.. | 130 | 508 | | |
| SVLC R/L 2525 M13 | 25 | 25 | 150 | 32 | 1303.. | 130 | 508 | | |



| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1303.. | 13,00 | 3,18 | 8,00 |



For more information see page: A.56

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

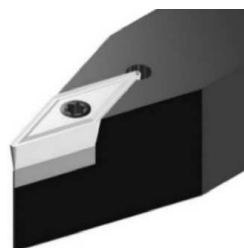
Boring heads

Arbors & adaptors

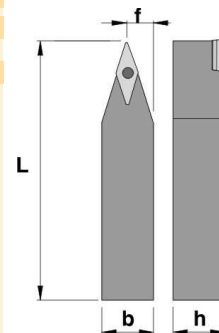


Inserts

SVVB 72° 30'



| REF. | h | b | L | f | VBMT | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SVVB N 2020 K16 | 20 | 20 | 125 | 10,6 | 1604.. | 133 | 521 | 378 | 194 |
| SVVB N 2525 M16 | 25 | 25 | 150 | 13,1 | 1604.. | 133 | 521 | 378 | 194 |
| SVVB N 3225 P16 | 32 | 25 | 170 | 13,1 | 1604.. | 133 | 521 | 378 | 194 |



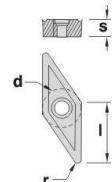
Turning

Automatic lathes

Ceramic tools



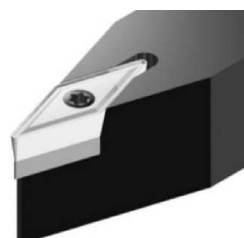
| REF. | l | s | d |
|--------------------|-------|------|------|
| VBMT 1604.. | 16,50 | 4,76 | 9,52 |



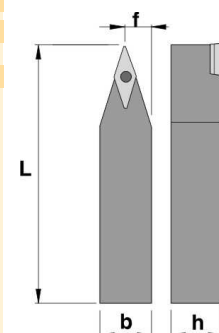
For more information see page: A.55

Parting & grooving

SVVC 72° 30'



| REF. | h | b | L | f | VC.. | | | | |
|------------------------|----|----|-----|------|--------|-----|-----|-----|-----|
| SVVC N 2020 K16 | 20 | 20 | 125 | 10,6 | 1604.. | 133 | 521 | 378 | 194 |
| SVVC N 2525 M16 | 25 | 25 | 150 | 13,1 | 1604.. | 133 | 521 | 378 | 194 |
| SVVC N 3225 P16 | 32 | 25 | 170 | 13,1 | 1604.. | 133 | 521 | 378 | 194 |



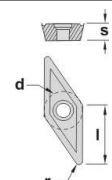
Threading

Drills

Cartridges



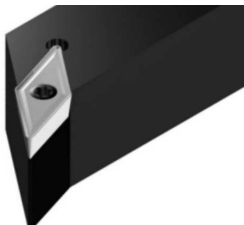
| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |



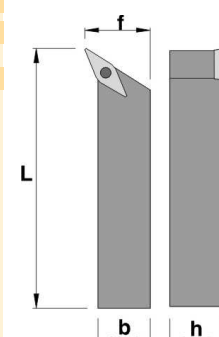
For more information see page: A.55,56

Brazed tools

SVXC 113°



| REF. | h | b | L | f | VC.. | | |
|--------------------------|----|----|-----|----|--------|-----|-----|
| SVXC R/L 1212 G13 | 12 | 12 | 90 | 16 | 1303.. | 130 | 508 |
| SVXC R/L 1616 H13 | 16 | 16 | 100 | 20 | 1303.. | 130 | 508 |
| SVXC R/L 2020 K13 | 20 | 20 | 125 | 25 | 1303.. | 130 | 508 |
| SVXC R/L 2525 M13 | 25 | 25 | 150 | 32 | 1303.. | 130 | 508 |



Milling cutters

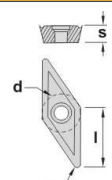
Solid carbide

Boring heads

Arbors & adaptors

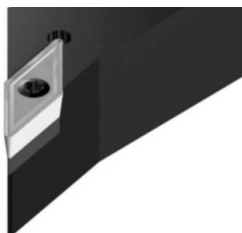


| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1303.. | 13,00 | 3,18 | 8,00 |

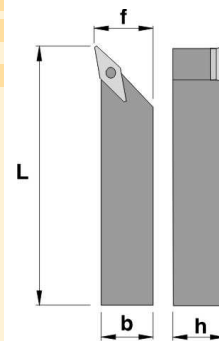


For more information see page: A.56

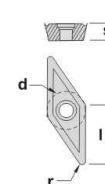
SVZC 100°



| REF. | h | b | L | f | VC.. | | | | |
|--------------------------|----|----|-----|----|--------|-----|-----|-----|-----|
| SVZC R/L 2020 K16 | 20 | 20 | 125 | 25 | 1604.. | 133 | 521 | 378 | 194 |
| SVZC R/L 2525 M16 | 25 | 25 | 150 | 32 | 1604.. | 133 | 521 | 378 | 194 |
| SVZC R/L 3225 P16 | 32 | 25 | 170 | 32 | 1604.. | 133 | 521 | 378 | 194 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |



For more information see page: A.55,56

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

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Nominal cutting speed and feed values for toolholders

| Material P | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force $K_{0,4}$ |
|--------------------|-----|----------------------|----------------------|------|-----------|-------------|-------------|-------------|----------------------------------|
| | | | P25K | P40K | CK30 | TIC15 | TIC20 | TIC30 | |
| | | | 0.3-0.6-1.2 | | 0.1 - 0.3 | 0.1-0.4-0.8 | 0.1-0.4-0.8 | 0.2-0.5-1.2 | |
| Unalloyed steel | 125 | C=0.15% | 150 115 80 | | 350 280 | 480 345 250 | 440 300 205 | 330 230 110 | 1900 |
| | 150 | C=0.35% | 145 105 70 | | 270 230 | 440 315 230 | 400 275 190 | 300 210 150 | 2100 |
| | 200 | C=0.60% | 115 90 65 | | 240 190 | 385 275 200 | 350 240 165 | 260 185 130 | 2250 |
| Low alloyed steel | 180 | Annealed | 90 70 45 | | 300 260 | 380 265 195 | 320 220 170 | 200 140 100 | 2100 |
| | 275 | Hardened | 65 45 30 | | 220 140 | 260 180 130 | 215 150 115 | 140 100 70 | 2600 |
| | 300 | Hardened | 60 40 25 | | 230 180 | 240 165 120 | 200 135 105 | 125 90 60 | 2700 |
| | 350 | Hardened | 50 35 20 | | 220 140 | 210 145 105 | 170 120 90 | 110 75 55 | 2850 |
| High alloyed steel | 200 | Annealed | 80 60 45 | | 200 160 | 350 230 170 | 280 185 135 | 175 115 80 | 2600 |
| | 325 | Hardened | 40 25 20 | | 200 160 | 170 110 | 120 80 60 | 85 55 40 | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Steel castings | 180 | Unalloyed | 60 50 35 | | 300 260 | 260 185 145 | 230 160 120 | 135 105 75 | 2000 |
| | 200 | Low alloyed | 50 45 30 | | 230 180 | 230 160 120 | 190 125 85 | 120 90 60 | 2500 |
| | 225 | High alloyed | 40 30 20 | | 220 140 | 190 130 95 | 170 115 80 | 95 70 55 | 2700 |

| Material M | HB | Condition | Cutting speed m/min. | | | | | | | Specific cutting force $K_{0,4}$ | |
|--------------------------|------|---|----------------------|------|---------|-------------|---------|-------------|-------------|----------------------------------|-------------|
| | | | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | | TIC35 |
| | | | 0.1-0.3 | | 0.1-0.3 | 0.1-0.4-0.8 | 0.1-0.3 | 0.2-0.4-0.6 | | | 0.2-0.4-0.6 |
| Stainless steel annealed | 180 | Austenitic Ni > 8%, Cr 12-25% Austenitic/Ferritic Austenitic/Ferritic, Low S | 205 170 | | 240 200 | 180 150 120 | 600 100 | | 190 160 130 | 190 160 130 | 2450 |
| | | | | | | 160 130 | 400 100 | | 190 160 100 | 190 160 130 | |
| | | | | | | 160 130 | 400 100 | | 140 110 | 160 130 100 | |
| Heat resistant alloys | 200 | Annealed | | | | 50 20 | | 40 20 | 40 20 | 3000 | |
| | 280 | Aged | | | | 50 20 | | 35 15 | 35 15 | 3050 | |
| | 250 | Annealed | | | | 40 15 | | 25 6 | 25 8 | 3500 | |
| | 350 | Aged | | | | 35 20 | | 15 4 | 15 4 | 4150 | |
| 320 | Cast | 25 10 | 15 4 | 15 4 | 4150 | | | | | | |
| Titanium alloys | 400 | Ti | | | | 140 80 | | | 80 130 | 1530 | |
| | 950 | Cast a, almost a and a+b | | | | 45 25 | | | 15 35 | 1675 | |
| | 1050 | Aged cast a+b | | | | 45 25 | | | 15 35 | 1690 | |

| Material K | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force $K_{0,4}$ | |
|-------------------------|-----|--------------------------|----------------------|---------------|-------------|-------------|-------------|-------------|----------------------------------|------|
| | | | K15K | TIC17 | CK30 | TIC15 | TIC20 | Z10R | | |
| | | | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | 0.2-0.5 | 0.2-0.5-1.0 | 0.2-0.5-1.0 | | |
| Hardened steel | 350 | Hardened steel | 27 16 10 | 180 150 110 | | 175 145 100 | | | 4500 | |
| | 250 | Manganese steel 12% | 65 40 16 | 120 90 60 | | 120 85 50 | | | 3600 | |
| Malleable cast iron | 130 | Ferritic | 105 75 45 | 250 180 100 | | 225 150 90 | | | 1100 | |
| | 230 | Pearlitic | 80 60 30 | 160 100 60 | | 155 95 55 | | | 1100 | |
| Cast iron | 180 | Low tensile strenght | 135 95 60 | 180 120 80 | 300 200 | 165 110 70 | | | 1100 | |
| | 260 | High tensile strenght | 95 65 40 | 140 105 60 | 250 180 | 120 90 55 | | | 1500 | |
| Nodular SG iron | 160 | Ferritic | 115 80 45 | 220 180 100 | | | | | 1100 | |
| | 250 | Pearlitic | 80 50 30 | 150 100 50 | | | | | 180 120 | 1800 |
| Chilled cast iron | 400 | | 17 11 | 17 11 | | | | | 3000 | |
| Aluminium alloys | 60 | Non heat treatable | 1750 1280 800 | 1750 1280 800 | | | | | 500 | |
| | 100 | Heat treatable | 510 370 250 | 510 370 250 | | | | | 1750 1280 800 | 800 |
| Aluminium alloys (Cast) | 75 | Non heat treatable | 460 285 175 | 460 285 175 | | | | | 750 | |
| | 90 | Heat treatable | 300 180 110 | 300 180 110 | | | | | 300 180 110 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb>1% | 610 430 295 | 610 430 295 | | | | | 700 | |
| | 90 | Brass and bronze | 310 250 195 | 310 250 195 | | | | | 310 250 195 | 750 |
| | 100 | Inc. electrolytic copper | 225 160 115 | 225 160 115 | | | | | 225 160 115 | 1750 |
| Other materials | | Hard plastics | 380 240 | 380 240 | | | | | 380 240 | |
| | | Fibre | 190 120 | 190 120 | | | | | 190 120 | |
| | | Hard rubber | 225 160 | 225 160 | | | | | 225 160 | |

Technical information
Information technique
Technische Auskunft

C02

Code Key
Système de codification
Kodifizierungs-System

C03

Applications
Applications
Anwendungen

C04

Top Clamping boring bars
Barres d'alésage avec bride supérieure
Bohrstangen mit oberer Prätze

C06

Dimple lock boring bars
Barres d'alésage avec fixation type "Dimple lock"
Dimple lock Bohrstangen

C07

Double lock boring bars
Barres d'alésage avec double fixation
Bohrstangen mit doppelter Klemmung

C08

Lever lock boring bars
Barres d'alésage avec levier
Bohrstangen mit Kniehebel-Klemmung

C10

Center screw boring bars
Barres d'alésage avec vis centrale
Bohrstangen mit Zentralschrauben-Klemmung

C15

Anti-Vibration tools
Outils anti-vibratoires
Schwingungsgedämpfte Bohrstangen

C25

Kits
Kits
Kits

C30

Cutting data
Conditions de coupe
Schnittbedingungen

C33

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

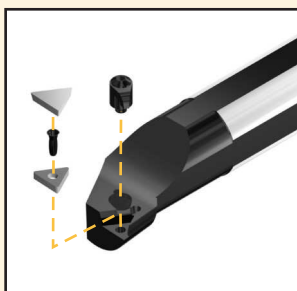
Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

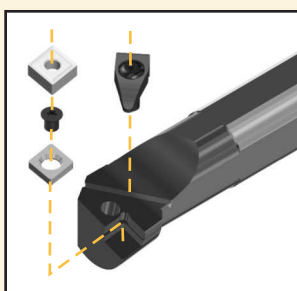


(C) Top clamp / Fixation par bride supérieure / Obere Klemmung

The classic positive insert clamping system is designed to hold flat positive inserts, both with additional or sintered chipbreaker.

Ce système classique de fixation de plaquettes positives a été conçu pour fixer les plaquettes plates positives, que ce soit avec brise-copeaux additionnel que sintérisé.

Dieses klassische Klemmsystem von positiven Wendepplatten erlaubt die Verwendung von allen Wendepplatten dieses Typs, in üblicher Sinterausführung als auch mit Spanbrecher.

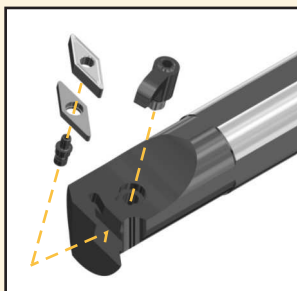
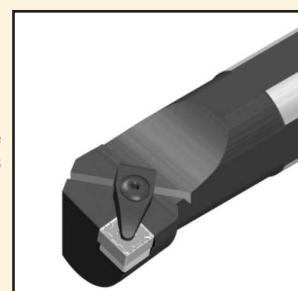


(D) Dimple lock / Fixation type "Dimple lock" / Dimple lock

The "D" clamping system avoid insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.

Le système de fixation "D" évite le mouvement de la plaquette lors d'une haute avance ou d'un usinage fortement interrompu, grâce à son indexation très exacte, laquelle maintient la plaquette solidement serrée.

Das "D"-Klemmsystem vermeidet die Bewegung der Wendeschneidplatte bei hohem Vorschub oder bei stark unterbrochener Bearbeitung dank der genauen Positionierung, die die Wendeschneidplatte sicher befestigt.

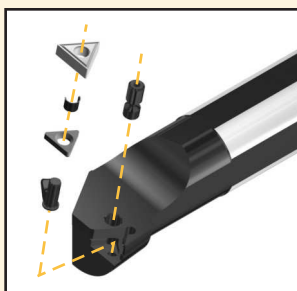


(M-K) Double lock / Double fixation / Doppelte Klemmung

The double lock system offers good rigidity in negative inserts clamping, it is the first choice for center hole negative ceramic and cermet inserts.

Le système de double fixation offre une bonne rigidité pour la fixation de plaquettes négatives. C'est le premier choix pour les plaquettes négatives en céramique ou cermet avec trou central.

Das doppelte Klemmsystem bietet eine gute Unbeweglichkeit bei der Klemmung von negativen Wendeschneidplatten. Es ist die erste Wahl für negative Keramik-Wendeschneidplatten mit zentralem Loch und auch für Cermet-Wendeschneidplatten.

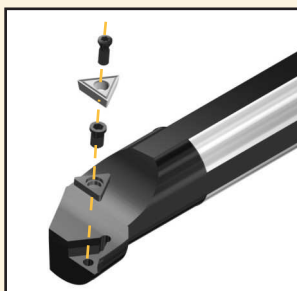


(P) Lever lock / Fixation par levier / Kniehebel-Klemmung

The classic lever lock system allows a wide range of applications, it is the first choice for general purpose turning boring bars.

Le système classique de fixation par levier permet une large gamme d'applications. C'est le premier choix pour l'usinage général avec des porte-outils de tournage.

Das klassische Hebel-System erlaubt eine breite Reihe von Anwendungen. Es ist die erste Wahl für allgemeine Drehoperationen.



(S) Center screw / Fixation par vis / Zentralschrauben-Klemmung

Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.







Seit der Einführung der Torx-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmöglichkeiten mit Schraube.



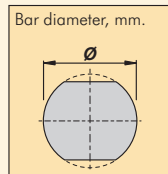
S 25 T S D U C R 11 - EX

1 2 3 4 5 6 7 8 9 10

1

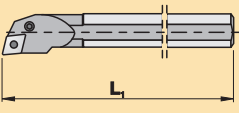
| Type of bar | | | |
|-------------|--|---|---|
| A | Steel shank with internal coolant. |  |  |
| H | Anti-vibration shank (Heavy metal) |  |  |
| J | Anti-vibration shank (heavy metal) with internal coolant |  |  |
| S | Steel shank | | |

2



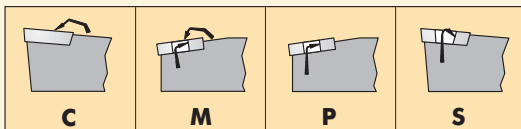
3

Bar length, mm.

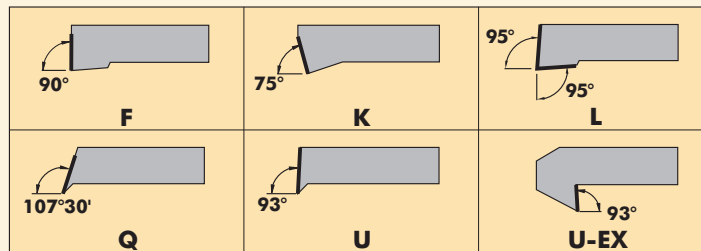


| | | | |
|----------|-----|----------|---------|
| H | 100 | T | 300 |
| J | 110 | U | 350 |
| K | 125 | V | 400 |
| L | 140 | W | 450 |
| M | 150 | Y | 500 |
| Q | 180 | X | Special |
| R | 200 | | |
| S | 250 | | |

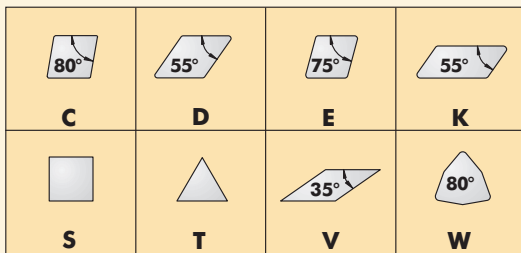
4



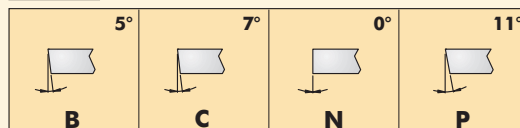
6



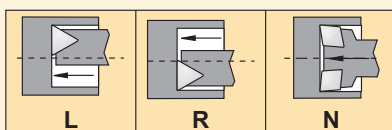
5



7



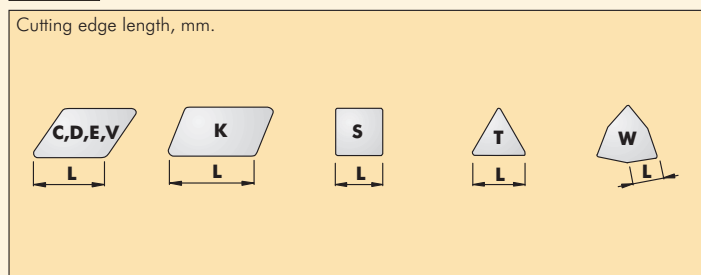
8



10

Manufacturer's option

9



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

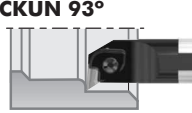
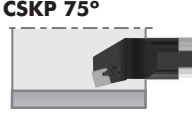
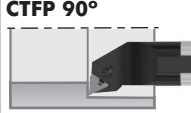
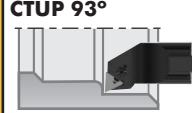
Boring heads

Arbors & adaptors

Top Clamping boring bars - Barres d'alésage avec bride supérieure - Bohrstangen mit oberer Prätze

Inserts

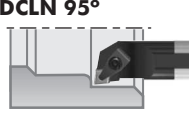
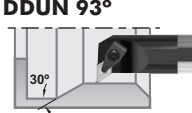
Turning

| | | | | | |
|---|---|---|--|--|--|
| <p>CKUN 93°</p>  <p>Page C.06 KNUX 1604..</p> | <p>CSPK 75°</p>  <p>Page C.06 SP.. 0903.. SP.. 1203.. SE.. 1904..</p> | <p>CTFP 90°</p>  <p>Page C.06 TP.. 0902.. TP.. 1103.. TP.. 1603.. TP.. 2204..</p> | <p>CTUP 93°</p>  <p>Page C.07 TP.. 0902.. TP.. 1103.. TP.. 1603.. TP.. 2204..</p> | | |
|---|---|---|--|--|--|

Automatic lathes

Dimple lock boring bars - Barres d'alésage avec fixation type "Dimple lock" - Dimple lock Bohrstangen

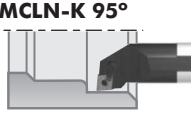
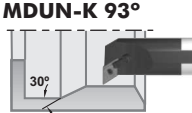
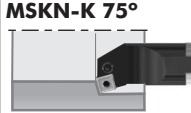
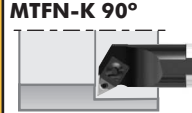
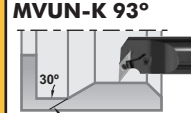
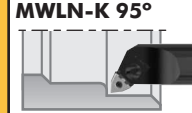
Ceramic tools

| | | | | | |
|---|---|--|--|--|--|
| <p>DCLN 95°</p>  <p>Page C.07 CN.. 1204..</p> | <p>DDUN 93°</p>  <p>Page C.07 CN.. 1506..</p> | | | | |
|---|---|--|--|--|--|

Parting & grooving

Double lock boring bars - Barres d'alésage avec double fixation - Bohrstangen mit doppelter Klemmung

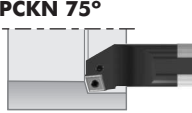
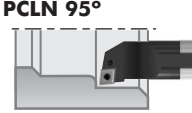
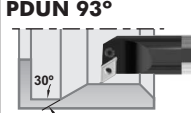
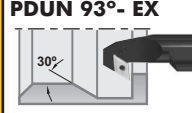
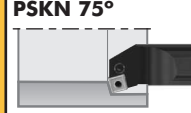
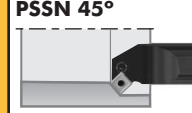
Threading

| | | | | | |
|--|--|---|---|--|--|
| <p>MCLN-K 95°</p>  <p>Page C.08 CN.. 1204..</p> | <p>MDUN-K 93°</p>  <p>Page C.08 DN.. 1506..</p> | <p>MSKN-K 75°</p>  <p>Page C.08 SNM.. 1204..</p> | <p>MTFN-K 90°</p>  <p>Page C.09 TNM.. 1604.. TNM.. 2204..</p> | <p>MVUN-K 93°</p>  <p>Page C.09 VN.. 1604..</p> | <p>MWLN-K 95°</p>  <p>Page C.09 WNM.. 0604.. WNM.. 0804..</p> |
|--|--|---|---|--|--|

Drills

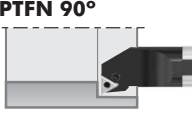
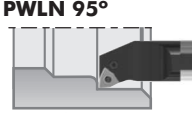
Lever lock boring bars - Barres d'alésage avec levier - Bohrstangen mit Kniehebel-Klemmung

Cartridges

| | | | | | |
|---|---|---|--|---|--|
| <p>PCKN 75°</p>  <p>Page C.10 CN.. 1204.. CN.. 1606.. CN.. 1906..</p> | <p>PCLN 95°</p>  <p>Page C.10 CN.. 0903.. CN.. 1204.. CN.. 1606.. CN.. 1906..</p> | <p>PDUN 93°</p>  <p>Page C.11 DN.. 1104.. DN.. 1506..</p> | <p>PDUN 93°- EX</p>  <p>Page C.11 DN.. 1506..</p> | <p>PSKN 75°</p>  <p>Page C.12 SNM.. 1204.. SNM.. 1906..</p> | <p>PSSN 45°</p>  <p>Page C.12 SNM.. 1204..</p> |
|---|---|---|--|---|--|

Brazed tools

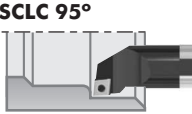
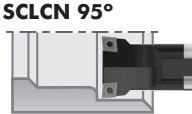
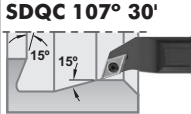
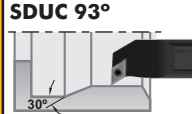
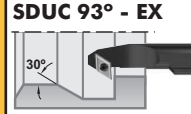
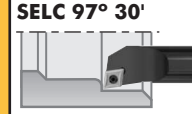
Milling cutters

| | | | | | |
|---|---|--|--|--|--|
| <p>PTFN 90°</p>  <p>Page C.13 TNM.. 1604.. TNM.. 2204..</p> | <p>PWLN 95°</p>  <p>Page C.14 WNM.. 0604.. WNM.. 0804..</p> | | | | |
|---|---|--|--|--|--|

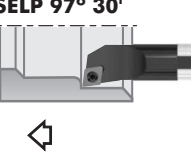
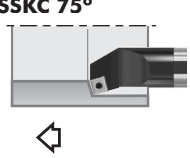
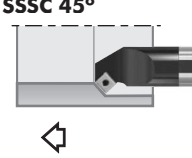
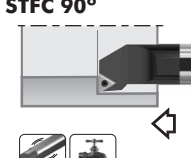
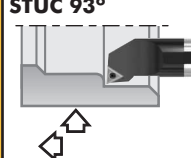
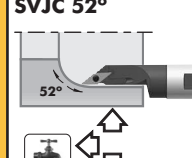
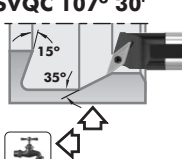
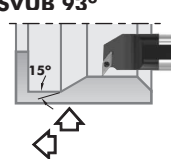
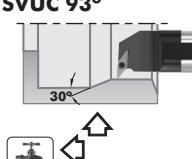
Solid carbide

Center screw boring bars - Barres d'alésage avec vis centrale - Bohrstangen mit Zentralschrauben-Klemmung

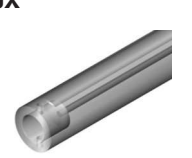
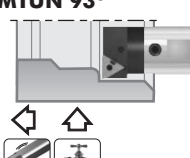
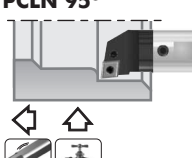
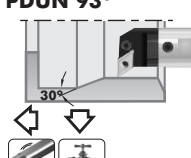
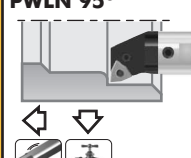
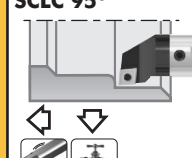
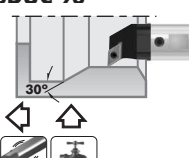
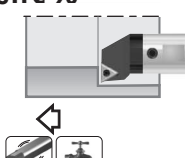
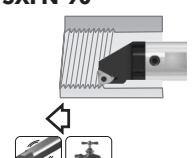
Boring heads

| | | | | | |
|---|--|--|--|--|---|
| <p>SCLC 95°</p>  <p>Page C.15 CC.. 0602 CC.. 0913.. CC.. 1204..</p> | <p>SCLCN 95°</p>  <p>Page C.17 CC.. 0602 CC.. 0913.. CC.. 1204..</p> | <p>SDQC 107° 30'</p>  <p>Page C.17 DC.. 0702.. DC.. 1113..</p> | <p>SDUC 93°</p>  <p>Page C.18 DC.. 0702.. DC.. 1113..</p> | <p>SDUC 93° - EX</p>  <p>Page C.19 DC.. 0702.. DC.. 1113..</p> | <p>SELC 97° 30'</p>  <p>Page C.20 ECMT.. 0602.. ECMT.. 0803..</p> |
|---|--|--|--|--|---|








Arbors & adaptors

| | | | | | |
|--|---|---|---|--|---|
| <p>SELP 97° 30'</p>  <p>Page C.20 EPM.. 0402.. EPM.. 0803..</p> | <p>SSKC 75°</p>  <p>Page C.20 SC.. 09T3.. SC.. 1204..</p> | <p>SSSC 45°</p>  <p>Page C.21 SC.. 09T3..</p> | <p>STFC 90°</p>  <p>Page C.21 TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STUC 93°</p>  <p>Page C.22 TC.. 1102.. TC.. 16T3..</p> | <p>SVJC 52°</p>  <p>Page C.25 VC.. 1103.. VC.. 1604..</p> |
| <p>SVQC 107° 30'</p>  <p>Page C.23 VC.. 1103.. VC.. 1303.. VC.. 1604..</p> | <p>SVUB 93°</p>  <p>Page C.23 VBMT.. 1604..</p> | <p>SVUC 93°</p>  <p>Page C.24 VC.. 1103.. VC.. 1604..</p> | | | |

Anti-vibration tools - Outils anti-vibratoires - Schwingungsgedämpfte Bohrstangen

| | | | | | |
|---|---|---|---|---|---|
| <p>JX</p>  <p>Page C.25</p> | <p>MTUN 93°</p>  <p>Page C.26 TNM.. 1604.. TNM.. 2204..</p> | <p>PCLN 95°</p>  <p>Page C.26 CN.. 1204.. CN.. 1606..</p> | <p>PDUN 93°</p>  <p>Page C.26 DN.. 1506..</p> | <p>PWLN 95°</p>  <p>Page C.27 WNM.. 0804..</p> | <p>SCLC 95°</p>  <p>Page C.27 CC.. 09T3.. CC.. 1204..</p> |
| <p>SDUC 93°</p>  <p>Page C.27 DC.. 11T3..</p> | <p>STFC 90°</p>  <p>Page C.28 TC.. 16T3..</p> | <p>SXFN 90°</p>  <p>Page C.28 16 NR/L.. 22 NR/L..</p> | | | |

Kits - Kits - Kits

| | | | | | |
|---|--|---|---|---|--|
| <p>KIT SCLC 95°</p>  <p>Page C.30 CC.. 0602..</p> | <p>KIT SDQC 107° 30'</p>  <p>Page C.30 CN.. 1506..</p> | <p>KIT SDUC 93°</p>  <p>Page C.30 DC.. 0702..</p> | <p>KIT STFC 90°</p>  <p>Page C.31 TC.. 1102..</p> | <p>KIT MT-12</p>  <p>Page C.32</p> | <p>KIT MT-16</p>  <p>Page C.32</p> |
| <p>KIT MT</p>  <p>Page C.32</p> | | | | | |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

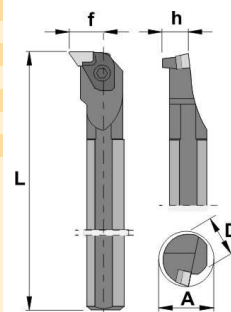


Inserts

CKUN 93°



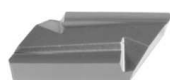
| REF. | D | h | L | f | A | KNUX | | | | | | | |
|----------------|----|------|-----|------|----|--------|-----|-----|-----|-----|-----|-----|-----|
| S25T CKUN L 16 | 25 | 11,5 | 300 | 20,5 | 37 | 1604.. | 237 | 169 | 504 | 495 | 421 | - | - |
| S32U CKUN L 16 | 32 | 15,0 | 350 | 22,0 | 39 | 1604.. | 237 | 169 | 504 | 495 | 422 | 327 | 403 |
| S40V CKUN L 16 | 40 | 18,5 | 400 | 27,0 | 48 | 1604.. | 237 | 169 | 504 | 495 | 424 | 327 | 403 |
| S50W CKUN L 16 | 50 | 23,5 | 450 | 35,0 | 61 | 1604.. | 237 | 169 | 504 | 495 | 424 | 327 | 403 |
| S25T CKUN R 16 | 25 | 11,5 | 300 | 20,5 | 37 | 1604.. | 246 | 169 | 504 | 495 | 421 | - | - |
| S32U CKUN R 16 | 32 | 15,0 | 350 | 22,0 | 39 | 1604.. | 246 | 169 | 504 | 495 | 422 | 328 | 403 |
| S40V CKUN R 16 | 40 | 18,5 | 400 | 27,0 | 48 | 1604.. | 246 | 169 | 504 | 495 | 424 | 328 | 403 |
| S50W CKUN R 16 | 50 | 23,5 | 450 | 35,0 | 61 | 1604.. | 246 | 169 | 504 | 495 | 424 | 328 | 403 |



Turning

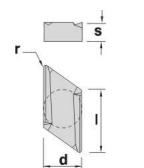
Automatic lathes

Ceramic tools



| REF. | l | s | d |
|-------------|-------|------|------|
| KNUX 1604.. | 16,00 | 4,76 | 9,52 |

For more information see page: A.45

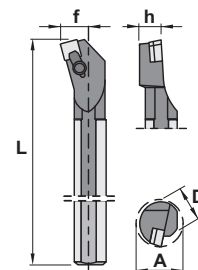


Parting & grooving

CSKP 75°



| REF. | D | h | L | f | A | SP. | | | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|---|---|
| S16R CSKP R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 0903.. | 207 | 525 | - | - | - | - |
| S20S CSKP R/L 09 | 20 | 9,0 | 250 | 13 | 24 | 0903.. | 207 | 525 | - | - | - | - |
| S25T CSKP R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1203.. | 209 | 503 | - | - | - | - |
| S32U CSKP R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1203.. | 209 | 503 | 314 | 402 | - | - |
| S40V CSKP R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1203.. | 229 | 503 | 314 | 402 | - | - |
| S50W CSKP R/L 12 | 50 | 23,5 | 450 | 35 | 61 | 1203.. | 229 | 503 | 314 | 402 | - | - |
| S50W CSKP R/L 19 | 50 | 23,5 | 450 | 35 | 61 | 1904.. | 231 | 504 | 320 | 403 | - | - |



Threading

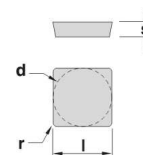
Drills

Cartridges



| REF. | l | s | d |
|------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1904.. | 19,05 | 4,76 | 19,05 |

For more information see page: A.51

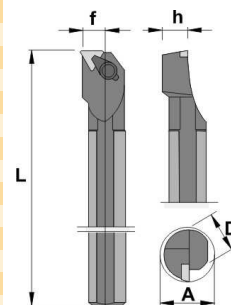


Brazed tools

CTFP 90°



| REF. | D | h | L | f | A | TP. | | | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|---|---|
| S10M CTFP R/L 09 | 10 | 4,5 | 150 | 7 | 13 | 0902.. | 200 | 545 | - | - | - | - |
| S12M CTFP R/L 09 | 12 | 5,5 | 150 | 9 | 16 | 0902.. | 200 | 545 | - | - | - | - |
| S12M CTFP R/L 11 | 12 | 5,5 | 150 | 9 | 16 | 1103.. | 234 | 525 | - | - | - | - |
| S16R CTFP R/L 11 | 16 | 7,5 | 200 | 11 | 20 | 1103.. | 207 | 525 | - | - | - | - |
| S20S CTFP R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 1103.. | 207 | 525 | - | - | - | - |
| S16R CTFP R/L 16 | 16 | 7,5 | 200 | 11 | 20 | 1603.. | 210 | 503 | - | - | - | - |
| S20S CTFP R/L 16 | 20 | 9,0 | 250 | 13 | 24 | 1603.. | 210 | 503 | - | - | - | - |
| S25T CTFP R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1603.. | 209 | 503 | - | - | - | - |
| S32U CTFP R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 1603.. | 229 | 503 | 317 | 402 | - | - |
| S40V CTFP R/L 16 | 40 | 18,5 | 400 | 27 | 48 | 1603.. | 229 | 503 | 317 | 402 | - | - |
| S50W CTFP R/L 16 | 50 | 23,5 | 450 | 35 | 61 | 1603.. | 229 | 503 | 317 | 402 | - | - |
| S40V CTFP R/L 22 | 40 | 18,5 | 400 | 27 | 48 | 2204.. | 231 | 504 | 324 | 403 | - | - |
| S50W CTFP R/L 22 | 50 | 23,5 | 450 | 35 | 61 | 2204.. | 231 | 504 | 324 | 403 | - | - |



Milling cutters

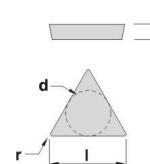
Solid carbide

Boring heads



| REF. | l | s | d |
|------------|-------|------|-------|
| TP. 0902.. | 9,62 | 2,38 | 5,55 |
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

For more information see page: A.54,55

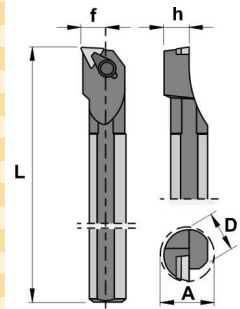


Arbors & adaptors

CTUP 93°



| REF. | D | h | L | f | A | TP.. | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S10M CTUP R/L 09 | 10 | 4,5 | 150 | 7 | 13 | 0902.. | 200 | 545 | - | - |
| S12M CTUP R/L 09 | 12 | 5,5 | 150 | 9 | 16 | 0902.. | 200 | 545 | - | - |
| S12M CTUP R/L 11 | 12 | 5,5 | 150 | 9 | 16 | 1103.. | 234 | 525 | - | - |
| S16R CTUP R/L 11 | 16 | 7,5 | 200 | 11 | 20 | 1103.. | 207 | 525 | - | - |
| S20S CTUP R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 1103.. | 207 | 525 | - | - |
| S16R CTUP R/L 16 | 16 | 7,5 | 200 | 11 | 20 | 1603.. | 210 | 503 | - | - |
| S20S CTUP R/L 16 | 20 | 9,0 | 250 | 13 | 24 | 1603.. | 210 | 503 | - | - |
| S25T CTUP R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1603.. | 209 | 503 | - | - |
| S32U CTUP R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 1603.. | 229 | 503 | 317 | 402 |
| S40V CTUP R/L 16 | 40 | 18,5 | 400 | 27 | 48 | 1603.. | 229 | 503 | 317 | 402 |
| S50W CTUP R/L 16 | 50 | 23,5 | 450 | 35 | 61 | 1603.. | 229 | 503 | 317 | 402 |
| S40V CTUP R/L 22 | 40 | 18,5 | 400 | 27 | 48 | 2204.. | 231 | 504 | 324 | 403 |
| S50W CTUP R/L 22 | 50 | 23,5 | 450 | 35 | 61 | 2204.. | 231 | 504 | 324 | 403 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

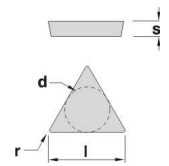
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|------------|-------|------|-------|
| TP. 0902.. | 9,52 | 2,38 | 5,55 |
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

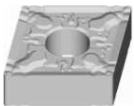
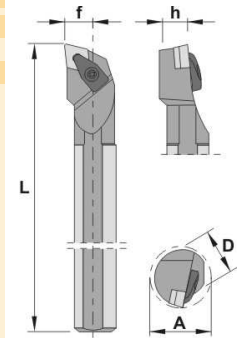


For more information see page: A.54,55

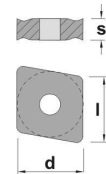
DCLN 95°



| REF. | D | h | L | f | A | CN.. | | | | | | |
|------------------|----|------|-----|----|----|--------|----------|-----|-----|-----|-----|-----|
| S25T DCLN R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1204.. | ICSN-432 | 193 | 242 | 487 | 495 | 504 |
| S32U DCLN R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | ICSN-432 | 471 | 242 | 487 | 495 | 504 |
| S40V DCLN R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | ICSN-432 | 470 | 242 | 487 | 495 | 504 |

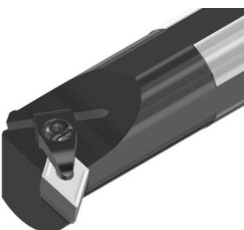


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |

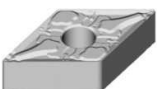
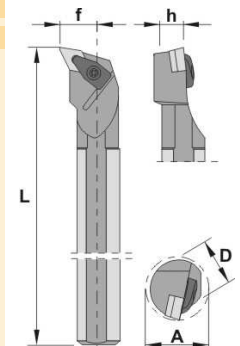


For more information see page: A.39,40

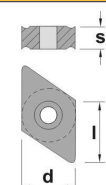
DDUN 93°



| REF. | D | h | L | f | A | DN.. | | | | | | |
|------------------|----|------|-----|----|----|--------|----------|-----|-----|-----|-----|-----|
| S32U DDUN R/L 15 | 32 | 15,0 | 350 | 22 | 39 | 1506.. | IDSN-432 | 471 | 242 | 487 | 495 | 504 |
| S40V DDUN R/L 15 | 40 | 18,5 | 400 | 27 | 48 | 1506.. | IDSN-432 | 470 | 242 | 487 | 495 | 504 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



For more information see page: A.41,42,43

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

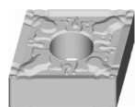
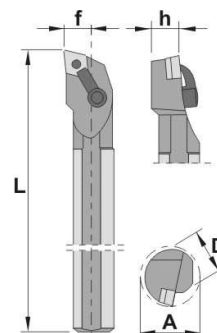
Boring
heads

Arbors &
adaptors

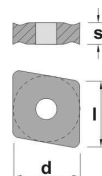
MCLN-K 95°



| REF. | D | h | L | f | A | CN.. | | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|-----|-----|----------|-----|-----|
| S25T MCLN R/L 12-K | 25 | 11,5 | 300 | 17 | 31 | 1204.. | 221 | 167 | 503 | ICSN-432 | 443 | 525 |
| S23U MCLN R/L 12-K | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 221 | 165 | 503 | ICSN-432 | 446 | 525 |
| S40V MCLN R/L 12-K | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 221 | 165 | 503 | ICSN-432 | 446 | 525 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,09 | 4,76 | 12,70 |

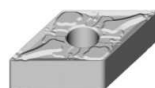
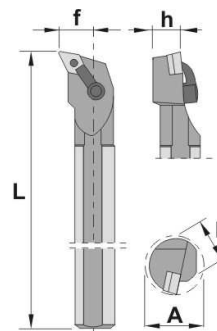


For more information see page: A.39,40

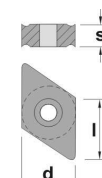
MDUN-K 93°



| REF. | D | h | L | f | A | DN.. | | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|-----|-----|----------|-----|-----|
| S25T MDUN R/L 15-K | 25 | 11,5 | 300 | 17 | 31 | 1506.. | 222 | 167 | 503 | IDSN-432 | 443 | 525 |
| S32U MDUN R/L 15-K | 32 | 15,0 | 350 | 22 | 39 | 1506.. | 222 | 165 | 503 | IDSN-432 | 456 | 525 |
| S40V MDUN R/L 15-K | 40 | 18,5 | 400 | 27 | 48 | 1506.. | 222 | 165 | 503 | IDSN-432 | 456 | 525 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |

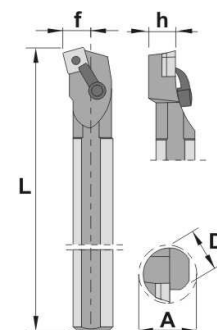


For more information see page: A.41,42,43

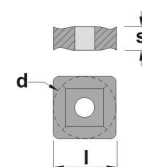
MSKN-K 75°



| REF. | D | h | L | f | A | SN.. | | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|-----|-----|----------|-----|-----|
| S32U MSKN R/L 12-K | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 221 | 165 | 503 | ISSN-432 | 446 | 525 |
| S40V MSKN R/L 12-K | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 221 | 165 | 503 | ISSN-432 | 446 | 525 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |

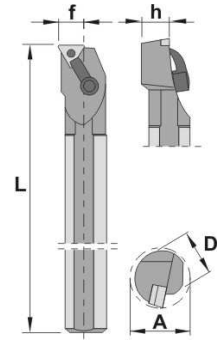


For more information see page: A.49,50

MTFN-K 90°



| REF. | D | h | L | f | A | TN.. | | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|-----|-----|----------|-----|-----|
| S25T MTFN R/L 16-K | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 221 | 165 | 503 | ITSN-322 | 434 | 502 |
| S23U MTFN R/L 16-K | 32 | 15,0 | 350 | 22 | 39 | 1604.. | 221 | 165 | 503 | ITSN-322 | 434 | 502 |
| S40V MTFN R/L 16-K | 40 | 18,5 | 400 | 27 | 48 | 1604.. | 221 | 165 | 503 | ITSN-322 | 434 | 502 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

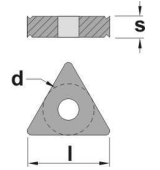
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|--------------------|-------|------|------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |

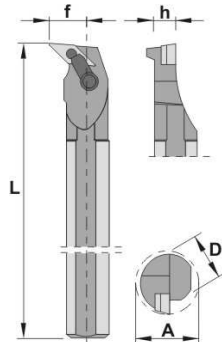


For more information see page: A.52,53,54

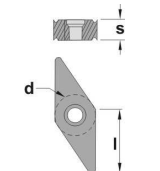
MVUN-K 93°



| REF. | D | h | L | f | A | VN.. | | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|-----|----------|-----|-----|-----|
| S25T MVUN R/L 16-K | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 222 | 503 | IVSN-322 | 167 | 434 | 502 |
| S23U MVUN R/L 16-K | 32 | 15,0 | 350 | 22 | 39 | 1604.. | 222 | 503 | IVSN-322 | 165 | 434 | 502 |
| S40V MVUN R/L 16-K | 40 | 18,5 | 400 | 27 | 48 | 1604.. | 222 | 503 | IVSN-322 | 165 | 434 | 502 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| VN.. 1604.. | 15,50 | 4,76 | 9,52 |

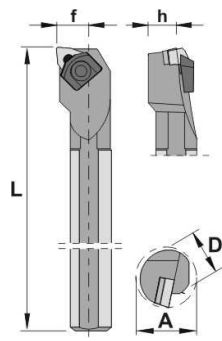


For more information see page: A.56

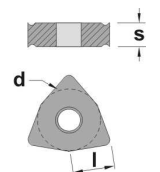
MWLN-K 95°



| REF. | D | h | L | f | A | WN.. | | | | | |
|---------------------------|----|------|-----|----|----|--------|-----|----------|-----|-----|-----|
| S25T MWLN R/L 08-K | 25 | 11,5 | 300 | 17 | 31 | 0804.. | 208 | IWSN-433 | 457 | 525 | 494 |
| S32U MWLN R/L 08-K | 32 | 15,0 | 350 | 22 | 39 | 0804.. | 208 | IWSN-433 | 461 | 525 | 494 |
| S40V MWLN R/L 08-K | 40 | 18,5 | 400 | 27 | 48 | 0804.. | 208 | IWSN-433 | 461 | 525 | 494 |
| S50W MWLN R/L 08-K | 50 | 23,5 | 450 | 35 | 61 | 0804.. | 208 | IWSN-433 | 461 | 525 | 494 |



| REF. | l | s | d |
|--------------------|------|------|-------|
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |



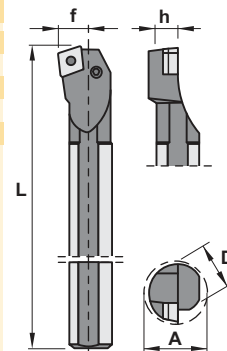
For more information see page: A.57,58

Inserts

PCKN 75°



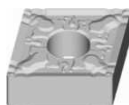
| REF. | D | h | L | f | A | CN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| S25T PCKN R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| S32U PCKN R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 842 | 173 | 503 | 302 | 412 | 002 |
| S40V PCKN R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| S50W PCKN R/L 16 | 50 | 23,5 | 450 | 35 | 61 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| S50W PCKN R/L 19 | 50 | 23,5 | 450 | 35 | 61 | 1906.. | 839 | 164 | 504 | 369 | 419 | 029 |



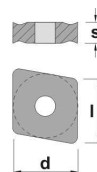
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |



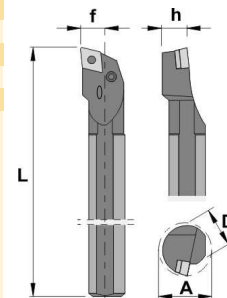
For more information see page: A.39,40

Parting & grooving

A-PCLN 95°



| REF. | D | h | L | f | A | CN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| A16M PCLN R/L 09 | 16 | 7,5 | 150 | 11 | 20 | 0903.. | 805 | 161 | 502 | - | - | - |
| A20Q PCLN R/L 09 | 20 | 9,0 | 180 | 13 | 25 | 0903.. | 805 | 161 | 502 | - | - | - |
| A25R PCLN R/L 12 | 25 | 11,5 | 200 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| A32S PCLN R/L 12 | 32 | 15,0 | 250 | 22 | 39 | 1204.. | 832 | 173 | 503 | 302 | 412 | 002 |
| A40T PCLN R/L 12 | 40 | 18,5 | 300 | 27 | 48 | 1204.. | 832 | 163 | 503 | 302 | 412 | 002 |

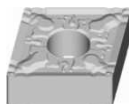


Characteristics:
Boring bars with internal coolant.

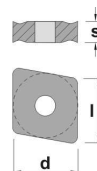
Threading

Drills

Cartridges



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |
| CN.. 1906.. | 19,30 | 6,35 | 19,05 |



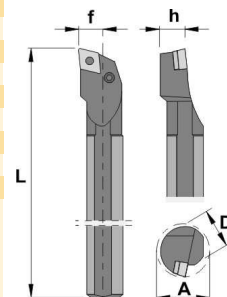
For more information see page: A.39,40

Brazed tools

PCLN 95°



| REF. | D | h | L | f | A | CN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| S16R PCLN R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 0903.. | 805 | 161 | 502 | - | - | - |
| S20S PCLN R/L 09 | 20 | 9,0 | 250 | 13 | 25 | 0903.. | 805 | 161 | 502 | - | - | - |
| S25T PCLN R/L 09 | 25 | 11,5 | 300 | 17 | 32 | 0903.. | 809 | 171 | 525 | 368 | 409 | 009 |
| S25T PCLN R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| S32U PCLN R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 842 | 173 | 503 | 302 | 412 | 002 |
| S40V PCLN R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 812 | 163 | 503 | 302 | 412 | 002 |
| S50W PCLN R/L 12 | 50 | 23,5 | 450 | 35 | 61 | 1606.. | 812 | 163 | 503 | 302 | 412 | 002 |
| S50W PCLN R/L 16 | 50 | 23,5 | 450 | 35 | 61 | 1606.. | 816 | 170 | 503 | 366 | 415 | 005 |
| S50W PCLN R/L 19 | 50 | 23,5 | 450 | 35 | 61 | 1606.. | 839 | 180 | 504 | 369 | 429 | 029 |

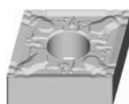


Milling cutters

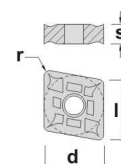
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 0903.. | 9,65 | 3,18 | 9,52 |
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |



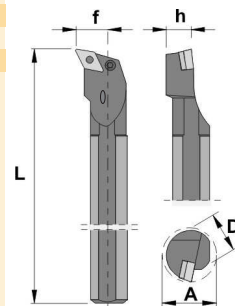
For more information see page: A.39,40

A-PDUN 93°

| REF. | D | h | L | f | A | DN.. | [Icons] | | | | | |
|-------------------------|----|------|-----|----|----|--------|---------|-----|-----|-----|-----|-----|
| A25R PDUN R/L 11 | 25 | 11,5 | 200 | 17 | 31 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| A32S PDUN R/L 15 | 32 | 15,0 | 250 | 22 | 39 | 1506.. | 845 | 173 | 503 | 305 | 412 | 002 |
| A40T PDUN R/L 15 | 40 | 18,5 | 300 | 27 | 48 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |



Characteristics:
Boring bars with internal coolant.



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

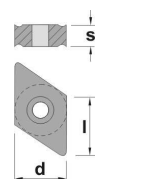
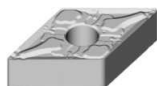
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

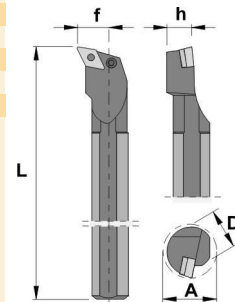
| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



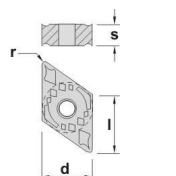
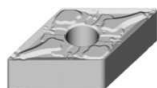
For more information see page: A.41,42,43

PDUN 93°

| REF. | D | h | L | f | A | DN.. | [Icons] | | | | | |
|-------------------------|----|------|-----|----|----|--------|---------|-----|-----|-----|-----|-----|
| S25T PDUN R/L 11 | 25 | 11,5 | 300 | 17 | 32 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| S32U PDUN R/L 11 | 32 | 15,0 | 350 | 22 | 40 | 1104.. | 809 | 162 | 525 | 311 | 409 | 009 |
| S32U PDUN R/L 15 | 32 | 15,0 | 350 | 22 | 39 | 1506.. | 845 | 173 | 503 | 305 | 412 | 002 |
| S40V PDUN R/L 15 | 40 | 18,0 | 400 | 27 | 48 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| S50W PDUN R/L 15 | 50 | 23,5 | 450 | 35 | 61 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |



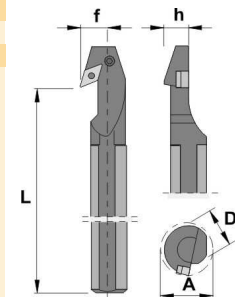
| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1104.. | 11,60 | 4,76 | 9,52 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



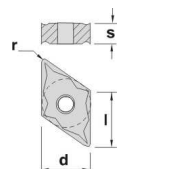
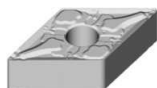
For more information see page: A.41,42,43

PDUN 93°-EX

| REF. | D | h | L | f | A | DN.. | [Icons] | | | | | |
|----------------------------|----|------|-----|----|----|--------|---------|-----|-----|-----|-----|-----|
| S32U PDUN R/L 15-EX | 32 | 15,0 | 350 | 22 | 39 | 1506.. | 845 | 173 | 503 | - | - | - |
| S40V PDUN R/L 15-EX | 40 | 18,5 | 400 | 27 | 48 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |
| S50W PDUN R/L 15-EX | 50 | 23,5 | 450 | 35 | 61 | 1506.. | 845 | 172 | 503 | 305 | 412 | 002 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



For more information see page: A.41,42,43

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

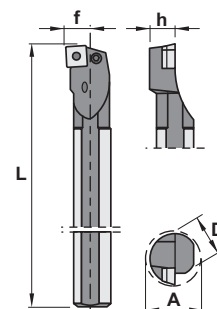
A-PSKN 75°



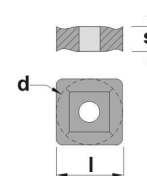
| REF. | D | h | L | f | A | SN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| A25R PSKN R/L 12 | 25 | 11,5 | 200 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| A32S PSKN R/L 12 | 32 | 15,0 | 250 | 22 | 39 | 1204.. | 842 | 173 | 503 | 313 | 412 | 002 |
| A40T PSKN R/L 12 | 40 | 18,5 | 300 | 27 | 48 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |



Characteristics:
Boring bars with internal coolant.



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |

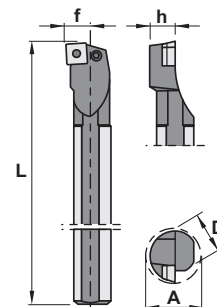


For more information see page: A.49,50

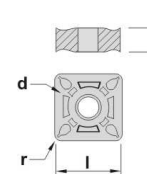
PSKN 75°



| REF. | D | h | L | f | A | SN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| S25T PSKN R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| S32U PSKN R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 842 | 173 | 503 | 313 | 412 | 002 |
| S40V PSKN R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 812 | 163 | 503 | 313 | 412 | 002 |
| S50W PSKN R/L 19 | 50 | 23,5 | 450 | 35 | 61 | 1906.. | 839 | 164 | 504 | 359 | 429 | 029 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1906.. | 19,05 | 6,35 | 19,05 |



For more information see page: A.49,50

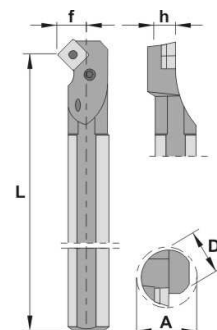
A-PSSN 45°



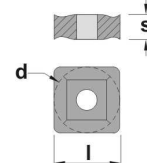
| REF. | D | h | L | f | A | SN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| A25R PSSN R/L 12 | 25 | 11,5 | 200 | 17 | 31 | 1204.. | 832 | 171 | 525 | - | - | - |
| A32S PSSN R/L 12 | 32 | 15,0 | 250 | 22 | 39 | 1204.. | 842 | 173 | 503 | 313 | 412 | 002 |



Characteristics:
Boring bars with internal coolant.



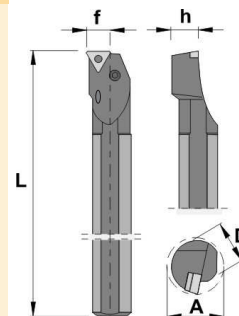
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |



For more information see page: A.49,50

A-PTFN 90°

| REF. | D | h | L | f | A | TN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| A25R PTFN R/L 16 | 25 | 11,5 | 200 | 17 | 31 | 1604.. | 836 | 161 | 502 | - | - | - |
| A32S PTFN R/L 16 | 32 | 15,0 | 250 | 22 | 39 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| A40T PTFN R/L 22 | 40 | 18,5 | 300 | 27 | 48 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |



Characteristics:
Boring bars with internal coolant.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

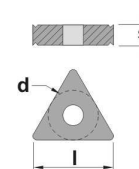
Solid carbide

Boring heads

Arbors & adaptors



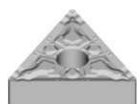
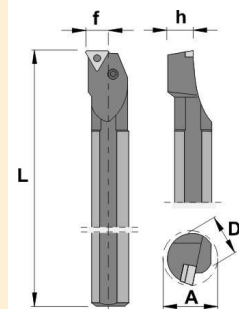
| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |



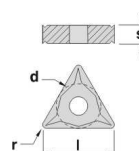
For more information see page: A.52,53,54

PTFN 90°

| REF. | D | h | L | f | A | TN.. | | | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|-----|-----|
| S25T PTFN R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 836 | 161 | 502 | - | - | - |
| S32U PTFN R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 1604.. | 809 | 162 | 525 | 336 | 409 | 009 |
| S40V PTFN R/L 22 | 40 | 18,5 | 400 | 27 | 48 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |
| S50W PTFN R/L 22 | 50 | 23,5 | 450 | 35 | 61 | 2204.. | 812 | 163 | 503 | 323 | 412 | 002 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.52,53,54

Inserts

Turning

Automatic lathes

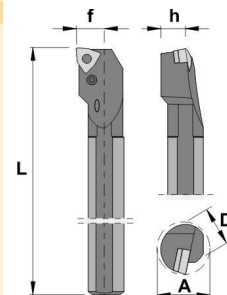
Ceramic tools

Parting & grooving

A-PWLN 95°

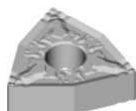


| REF. | D | h | L | f | A | WN.. | Icons: L, B, H, A, F, S | | | | | |
|-------------------------|----|------|-----|----|----|--------|-------------------------|-----|-----|-----|-----|-----|
| A16M PWLN R/L 06 | 16 | 7,5 | 150 | 11 | 20 | 0604.. | 836 | 161 | 502 | - | - | - |
| A20Q PWLN R/L 06 | 20 | 9,0 | 180 | 13 | 27 | 0604.. | 836 | 161 | 502 | - | - | - |
| A25R PWLN R/L 06 | 25 | 11,5 | 200 | 17 | 31 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| A25R PWLN R/L 08 | 25 | 11,5 | 200 | 17 | 31 | 0804.. | 832 | 171 | 525 | - | - | 002 |
| A32S PWLN R/L 06 | 32 | 15,0 | 250 | 22 | 39 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| A32S PWLN R/L 08 | 32 | 15,0 | 250 | 22 | 39 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| A40T PWLN R/L 08 | 40 | 18,5 | 300 | 27 | 48 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |

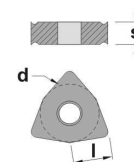


Characteristics:
Boring bars with internal coolant.

Threading



| REF. | l | s | d |
|--------------------|------|------|-------|
| WN.. 0604.. | 6,45 | 4,76 | 9,52 |
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |



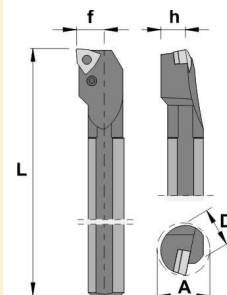
For more information see page: A.57,58

Drills

PWLN 95°



| REF. | D | h | L | f | A | WN.. | Icons: L, B, H, A, F, S | | | | | |
|-------------------------|----|------|-----|----|----|--------|-------------------------|-----|-----|-----|-----|-----|
| S16R PWLN R/L 06 | 16 | 7,5 | 200 | 11 | 20 | 0604.. | 836 | 161 | 502 | - | - | - |
| S20S PWLN R/L 06 | 20 | 9,0 | 250 | 13 | 27 | 0604.. | 836 | 161 | 502 | - | - | - |
| S25T PWLN R/L 06 | 25 | 11,5 | 300 | 17 | 31 | 0604.. | 809 | 162 | 525 | 307 | 409 | 009 |
| S25T PWLN R/L 08 | 25 | 11,5 | 300 | 17 | 31 | 0804.. | 832 | 171 | 525 | - | - | - |
| S32U PWLN R/L 08 | 32 | 15,0 | 350 | 22 | 39 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| S40V PWLN R/L 08 | 40 | 18,5 | 400 | 27 | 48 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |



Cartridges

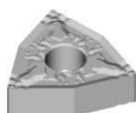
Brazed tools

Milling cutters

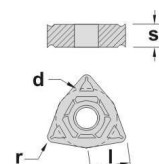
Solid carbide

Boring heads

Arbors & adaptors







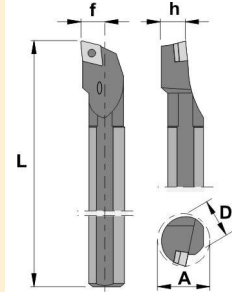
| REF. | l | s | d |
|--------------------|------|------|-------|
| WN.. 0604.. | 6,45 | 4,76 | 9,52 |
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |



For more information see page: A.57,58

A-SCLC 95°

| REF. | D | h | L | f | A | CC.. |  |  |  |  |
|------------------|----|------|-----|----|----|--------|--|---|---|---|
| A08F SCLC R/L 06 | 8 | 3,5 | 80 | 5 | 11 | 0602.. | 155 | 507 | - | - |
| A10H SCLC R/L 06 | 10 | 4,5 | 100 | 7 | 13 | 0602.. | 155 | 507 | - | - |
| A12K SCLC R/L 06 | 12 | 5,5 | 125 | 9 | 16 | 0602.. | 155 | 507 | - | - |
| A16M SCLC R/L 09 | 16 | 7,5 | 150 | 11 | 20 | 09T3.. | 138 | 515 | - | - |
| A20Q SCLC R/L 09 | 20 | 9,0 | 180 | 13 | 24 | 09T3.. | 138 | 515 | - | - |
| A25R SCLC R/L 09 | 25 | 11,5 | 200 | 17 | 31 | 09T3.. | 138 | 515 | - | - |
| A32S SCLC R/L 12 | 32 | 15,0 | 250 | 22 | 39 | 1204.. | 196 | 523 | 361 | 195 |
| A40T SCLC R/L 12 | 40 | 18,5 | 300 | 27 | 48 | 1204.. | 196 | 523 | 361 | 195 |



Characteristics:
Boring bars with internal coolant.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

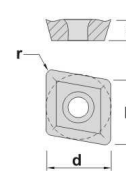
Milling cutters

Solid carbide

Boring heads





Arbors & adaptors

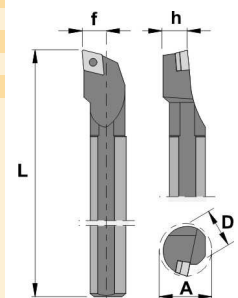
| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



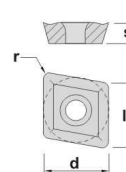
For more information see page: A.38

SCLC 95°

| REF. | D | h | L | f | A | CC.. |  |  |  |  |
|------------------|----|------|-----|----|----|--------|--|---|---|---|
| S08K SCLC R/L 06 | 8 | 3,5 | 125 | 5 | 11 | 0602.. | 155 | 507 | - | - |
| S10M SCLC R/L 06 | 10 | 4,5 | 150 | 7 | 13 | 0602.. | 155 | 507 | - | - |
| S12M SCLC R/L 06 | 12 | 5,5 | 150 | 9 | 16 | 0602.. | 155 | 507 | - | - |
| S12M SCLC R/L 09 | 12 | 5,5 | 150 | 9 | 16 | 09T3.. | 138 | 515 | - | - |
| S16R SCLC R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 09T3.. | 138 | 515 | - | - |
| S20S SCLC R/L 09 | 20 | 9,0 | 250 | 13 | 24 | 09T3.. | 138 | 515 | - | - |
| S25T SCLC R/L 09 | 25 | 11,5 | 300 | 17 | 31 | 09T3.. | 140 | 515 | - | - |
| S20S SCLC R/L 12 | 20 | 9,0 | 250 | 13 | 24 | 1204.. | 150 | 520 | - | - |
| S25T SCLC R/L 12 | 25 | 11,5 | 300 | 17 | 31 | 1204.. | 150 | 520 | - | - |
| S32U SCLC R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 196 | 523 | 361 | 195 |
| S40V SCLC R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 196 | 523 | 361 | 195 |
| S50W SCLC R/L 12 | 50 | 23,5 | 450 | 35 | 61 | 1204.. | 196 | 523 | 361 | 195 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



For more information see page: A.38

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

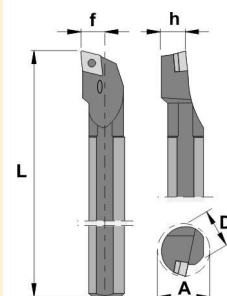
Boring
heads

Arbors &
adaptors

H-SCLC 95°



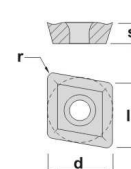
| REF. | D | h | L | f | A | CC.. | | |
|------------------|----|-----|-----|----|----|--------|-----|-----|
| H08K SCLC R/L 06 | 8 | 3,5 | 125 | 5 | 11 | 0602.. | 155 | 507 |
| H10M SCLC R/L 06 | 10 | 4,5 | 150 | 7 | 13 | 0602.. | 155 | 507 |
| H12M SCLC R/L 06 | 12 | 5,5 | 150 | 9 | 16 | 0602.. | 155 | 507 |
| H16R SCLC R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 09T3.. | 138 | 515 |



Characteristics:
Boring bars with anti-vibration shank.



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

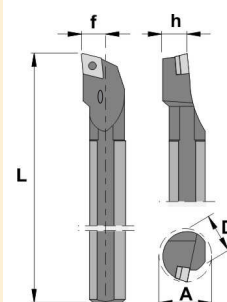


For more information see page: A.38

J-SCLC 95°



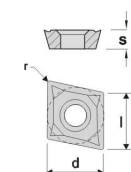
| REF. | D | h | L | f | A | CC.. | | |
|------------------|----|-----|-----|----|----|--------|-----|-----|
| J08K SCLC R/L 06 | 8 | 3,5 | 125 | 5 | 11 | 0602.. | 155 | 507 |
| J10M SCLC R/L 06 | 10 | 4,5 | 150 | 7 | 13 | 0602.. | 155 | 507 |
| J12M SCLC R/L 06 | 12 | 5,5 | 150 | 9 | 16 | 0602.. | 155 | 507 |
| J16R SCLC R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 09T3.. | 138 | 515 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

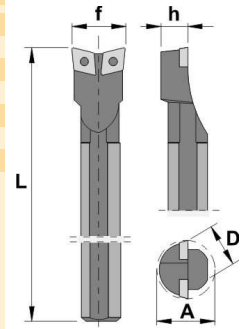


For more information see page: A.38

SCLCN 95°



| REF. | D | h | L | f | A | CC.. | | | | |
|----------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S12M SCLC N 06 | 12 | 5,5 | 150 | 18 | 20 | 0602.. | 155 | 507 | - | - |
| S16R SCLC N 06 | 16 | 7,5 | 200 | 22 | 25 | 0602.. | 125 | 507 | - | - |
| S20S SCLC N 06 | 20 | 9,0 | 250 | 26 | 30 | 0602.. | 125 | 507 | - | - |
| S25T SCLC N 09 | 25 | 11,5 | 300 | 34 | 40 | 09T3.. | 138 | 515 | - | - |
| S32U SCLC N 12 | 32 | 15,0 | 350 | 44 | 50 | 1204.. | 196 | 523 | 361 | 195 |
| S40V SCLC N 12 | 40 | 18,5 | 400 | 54 | 60 | 1204.. | 196 | 523 | 361 | 195 |
| S50W SCLC N 12 | 50 | 23,5 | 450 | 62 | 68 | 1204.. | 196 | 523 | 361 | 195 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

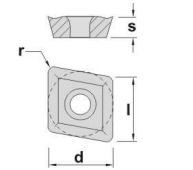
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

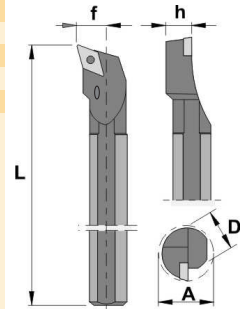


For more information see page: A.38

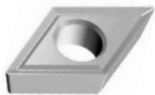
A-SDQC 107° 30'



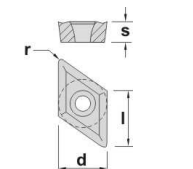
| REF. | D | h | L | f | A | DC.. | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| A12K SDQC R/L 07 | 12 | 5,5 | 125 | 9 | 16 | 0702.. | 125 | 507 | - | - |
| A16M SDQC R/L 07 | 16 | 7,5 | 150 | 11 | 20 | 0702.. | 125 | 507 | - | - |
| A20Q SDQC R/L 11 | 20 | 9,0 | 180 | 13 | 24 | 11T3.. | 140 | 515 | - | - |
| A25R SDQC R/L 11 | 25 | 11,5 | 200 | 17 | 31 | 11T3.. | 140 | 515 | - | - |
| A32S SDQC R/L 11 | 32 | 15,0 | 250 | 22 | 39 | 11T3.. | 133 | 521 | 371 | 194 |
| A40T SDQC R/L 11 | 40 | 18,5 | 300 | 27 | 48 | 11T3.. | 133 | 521 | 371 | 194 |



Characteristics:
Boring bars with internal coolant.



| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

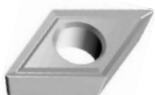
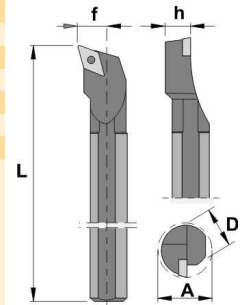


For more information see page: A.41

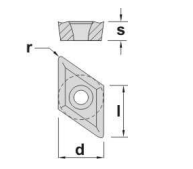
SDQC 107° 30'



| REF. | D | h | L | f | A | DC.. | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S10M SDQC R/L 07 | 10 | 4,5 | 150 | 7 | 13 | 0702.. | 155 | 507 | - | - |
| S12M SDQC R/L 07 | 12 | 5,5 | 150 | 9 | 16 | 0702.. | 125 | 507 | - | - |
| S16R SDQC R/L 07 | 16 | 7,5 | 200 | 11 | 20 | 0702.. | 125 | 507 | - | - |
| S20S SDQC R/L 07 | 20 | 9,0 | 250 | 13 | 24 | 0702.. | 125 | 507 | - | - |
| S20S SDQC R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 11T3.. | 140 | 515 | - | - |
| S25T SDQC R/L 11 | 25 | 11,5 | 300 | 17 | 31 | 11T3.. | 140 | 515 | - | - |
| S32U SDQC R/L 11 | 32 | 15,0 | 350 | 22 | 39 | 11T3.. | 133 | 515 | 371 | 194 |
| S40V SDQC R/L 11 | 40 | 18,5 | 400 | 27 | 48 | 11T3.. | 133 | 515 | 371 | 194 |



| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



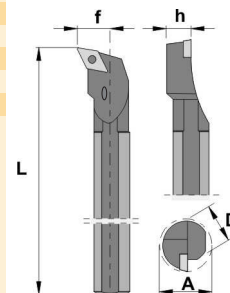
For more information see page: A.41

Inserts

A-SDUC 93°



| REF. | D | h | L | f | A | DC.. | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| A12K SDUC R/L 07 | 12 | 5,5 | 125 | 9 | 16 | 0702.. | 125 | 507 | - | - |
| A16M SDUC R/L 07 | 16 | 7,5 | 150 | 11 | 20 | 0702.. | 125 | 507 | - | - |
| A20Q SDUC R/L 11 | 20 | 9,0 | 180 | 13 | 24 | 11T3.. | 138 | 515 | - | - |
| A25R SDUC R/L 11 | 25 | 11,5 | 200 | 17 | 31 | 11T3.. | 140 | 515 | - | - |
| A32S SDUC R/L 11 | 32 | 15,0 | 250 | 22 | 39 | 11T3.. | 133 | 521 | 371 | 194 |
| A40T SDUC R/L 11 | 40 | 18,5 | 300 | 27 | 48 | 11T3.. | 133 | 521 | 371 | 194 |



Characteristics:
Boring bars with internal coolant.

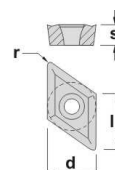
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|--------------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



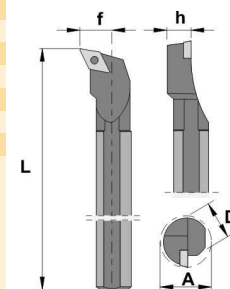
For more information see page: A.41

Parting & grooving

SDUC 93°



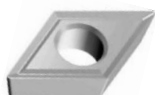
| REF. | D | h | L | f | A | DC.. | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S10M SDUC R/L 07 | 10 | 4,5 | 150 | 7 | 13 | 0702.. | 155 | 507 | - | - |
| S12M SDUC R/L 07 | 12 | 5,5 | 150 | 9 | 16 | 0702.. | 125 | 507 | - | - |
| S16R SDUC R/L 07 | 16 | 7,5 | 200 | 11 | 20 | 0702.. | 125 | 507 | - | - |
| S20S SDUC R/L 07 | 20 | 9,0 | 250 | 13 | 24 | 0702.. | 125 | 507 | - | - |
| S20S SDUC R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 11T3.. | 140 | 515 | - | - |
| S25T SDUC R/L 11 | 25 | 11,5 | 300 | 17 | 31 | 11T3.. | 140 | 515 | - | - |
| S32U SDUC R/L 11 | 32 | 15,0 | 350 | 22 | 39 | 11T3.. | 133 | 521 | 371 | 194 |
| S40V SDUC R/L 11 | 40 | 18,5 | 400 | 27 | 48 | 11T3.. | 133 | 521 | 371 | 194 |



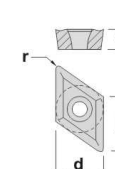
Threading

Drills

Cartridges



| REF. | l | s | d |
|--------------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



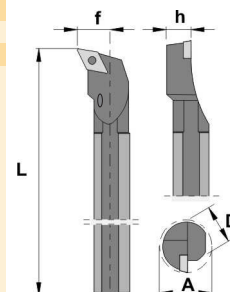
For more information see page: A.41

Brazed tools

H-SDUC 93°



| REF. | D | h | L | f | A | DC.. | | |
|-------------------------|----|-----|-----|----|----|--------|-----|-----|
| H10M SDUC R/L 07 | 10 | 4,5 | 150 | 7 | 13 | 0702.. | 155 | 507 |
| H12M SDUC R/L 07 | 12 | 5,5 | 150 | 9 | 16 | 0702.. | 125 | 507 |
| H16R SDUC R/L 07 | 16 | 7,5 | 200 | 11 | 20 | 0702.. | 125 | 507 |



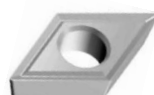
Characteristics:
Boring bars with anti-vibration shank.

Milling cutters

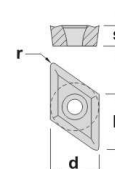
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|--------------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

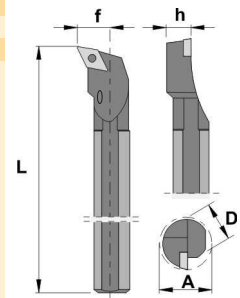


For more information see page: A.41

J-SDUC 93°



| REF. | D | h | L | f | A | DC.. | | |
|------------------|----|-----|-----|----|----|--------|-----|-----|
| J10M SDUC R/L 07 | 10 | 4,5 | 150 | 7 | 13 | 0702.. | 155 | 507 |
| J12M SDUC R/L 07 | 12 | 5,5 | 150 | 9 | 16 | 0702.. | 125 | 507 |
| J16R SDUC R/L 07 | 16 | 7,5 | 200 | 11 | 20 | 0702.. | 125 | 507 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

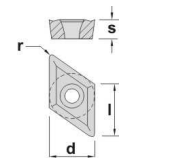
Milling cutters

Solid carbide

Boring heads

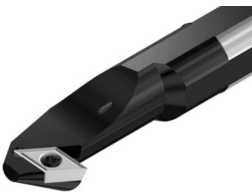
Arbors & adaptors

| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

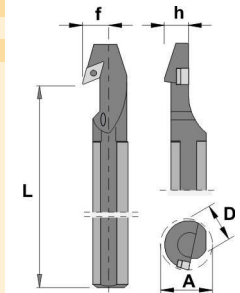


For more information see page: A.41

A-SDUC 93°-EX

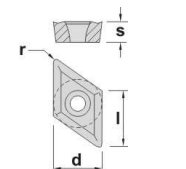


| REF. | D | h | L | f | A | DC.. | | |
|---------------------|----|------|-----|----|----|--------|-----|-----|
| A12K SDUC R/L 07-EX | 12 | 5,5 | 125 | 9 | 16 | 0702.. | 125 | 507 |
| A16M SDUC R/L 07-EX | 16 | 7,5 | 150 | 11 | 20 | 0702.. | 125 | 507 |
| A20Q SDUC R/L 11-EX | 20 | 9,0 | 180 | 13 | 24 | 11T3.. | 140 | 515 |
| A25R SDUC R/L 11-EX | 25 | 11,5 | 200 | 17 | 31 | 11T3.. | 140 | 515 |



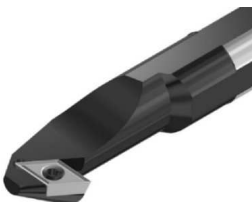
Characteristics:
Boring bars with internal coolant.

| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

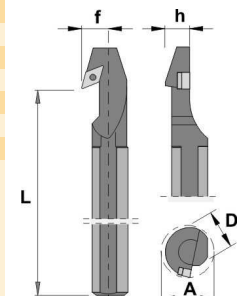


For more information see page: A.41

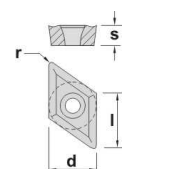
SDUC 93°-EX



| REF. | D | h | L | f | A | DC.. | | | | |
|---------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S12M SDUC R/L 07-EX | 12 | 5,5 | 150 | 9 | 16 | 0702.. | 125 | 507 | - | - |
| S16R SDUC R/L 07-EX | 16 | 7,5 | 200 | 11 | 20 | 0702.. | 125 | 507 | - | - |
| S20S SDUC R/L 07-EX | 20 | 9,0 | 250 | 13 | 24 | 0702.. | 125 | 507 | - | - |
| S20S SDUC R/L 11-EX | 20 | 9,0 | 250 | 13 | 24 | 11T3.. | 140 | 515 | - | - |
| S25T SDUC R/L 11-EX | 25 | 11,5 | 300 | 17 | 31 | 11T3.. | 140 | 515 | - | - |
| S32U SDUC R/L 11-EX | 32 | 15,0 | 350 | 22 | 39 | 11T3.. | 133 | 521 | 371 | 194 |
| S40V SDUC R/L 11-EX | 40 | 18,5 | 400 | 27 | 48 | 11T3.. | 133 | 521 | 371 | 194 |



| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



For more information see page: A.41

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

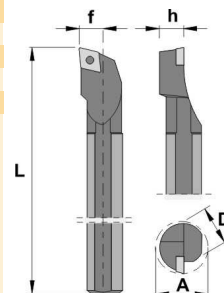
Boring heads

Arbors & adaptors

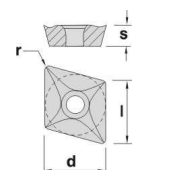
SELC 95°



| REF. | D | h | L | f | A | ECMT | |
|------------------|----|----|-----|----|----|--------|---------|
| S08K SELC R/L 06 | 8 | 7 | 125 | 5 | 11 | 0602.. | 155 507 |
| S10M SELC R/L 06 | 10 | 9 | 150 | 7 | 13 | 0602.. | 155 507 |
| S12M SELC R/L 08 | 12 | 11 | 150 | 9 | 16 | 0803.. | 148 508 |
| S16R SELC R/L 08 | 16 | 15 | 200 | 11 | 20 | 0803.. | 148 508 |
| S20S SELC R/L 08 | 20 | 18 | 250 | 13 | 24 | 0803.. | 130 508 |



| REF. | l | s | d |
|-------------|------|------|------|
| ECMT 060204 | 6,57 | 2,38 | 6,35 |
| ECMT 080304 | 8,20 | 3,18 | 7,93 |

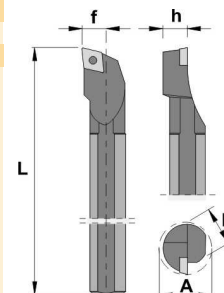


For more information see page: A.43

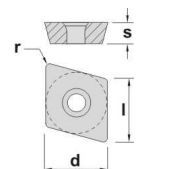
SELP 95°



| REF. | D | h | L | f | A | EP. | |
|------------------|----|-----|-----|----|----|--------|---------|
| S08K SELP R/L 04 | 8 | 3,5 | 125 | 5 | 11 | 0402.. | 121 506 |
| S10M SELP R/L 08 | 10 | 4,5 | 150 | 7 | 13 | 0803.. | 138 515 |
| S12M SELP R/L 08 | 12 | 5,5 | 150 | 9 | 16 | 0803.. | 138 515 |
| S16R SELP R/L 08 | 16 | 7,5 | 200 | 11 | 20 | 0803.. | 138 515 |



| REF. | l | s | d |
|------------|------|------|------|
| EP. 0402.. | 4,92 | 2,38 | 4,76 |
| EP. 0803.. | 8,28 | 3,00 | 8,00 |

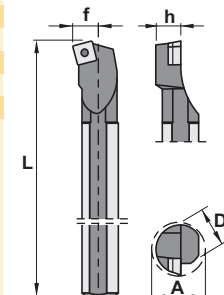


For more information see page: A.43,44

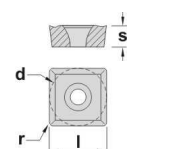
SSKC 75°



| REF. | D | h | L | f | A | SC.. | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|---------|
| S16R SSKC R/L 09 | 16 | 7,5 | 200 | 11 | 20 | 09T3.. | 138 | 515 | - |
| S20S SSKC R/L 09 | 20 | 9,0 | 250 | 13 | 24 | 09T3.. | 140 | 515 | - |
| S25T SSKC R/L 09 | 25 | 11,5 | 300 | 17 | 31 | 09T3.. | 140 | 515 | - |
| S32U SSKC R/L 12 | 32 | 15,0 | 350 | 22 | 39 | 1204.. | 196 | 523 | 351 195 |
| S40V SSKC R/L 12 | 40 | 18,5 | 400 | 27 | 48 | 1204.. | 196 | 523 | 351 195 |
| S50W SSKC R/L 12 | 50 | 23,5 | 450 | 35 | 61 | 1204.. | 196 | 523 | 351 195 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



For more information see page: A.47,48

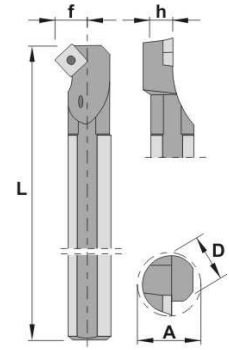
A-SSSC 45°



| REF. | D | h | L | f | A | SC.. | | |
|------------------|----|------|-----|----|----|--------|-----|-----|
| A16M SSSC R/L 09 | 16 | 7,5 | 150 | 11 | 20 | 09T3.. | 138 | 515 |
| A20Q SSSC R/L 09 | 20 | 9,0 | 180 | 13 | 24 | 09T3.. | 138 | 515 |
| A25R SSSC R/L 09 | 25 | 11,5 | 200 | 17 | 31 | 09T3.. | 140 | 515 |



Characteristics:
Boring bars with internal coolant.



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

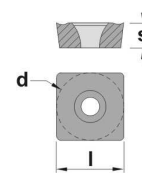
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|------|------|------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |



For more information see page: A.47,48

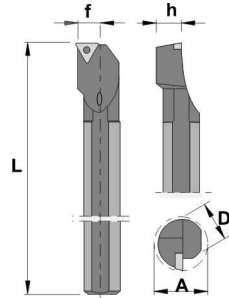
A-STFC 90°



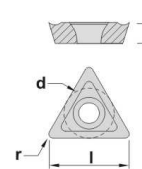
| REF. | D | h | L | f | A | TC.. | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| A10H STFC R/L 09 | 10 | 4,5 | 100 | 7 | 13 | 0902.. | 122 | 506 | - | - |
| A12K STFC R/L 11 | 12 | 5,5 | 125 | 9 | 16 | 1102.. | 125 | 507 | - | - |
| A16M STFC R/L 11 | 16 | 7,5 | 150 | 11 | 20 | 1102.. | 125 | 507 | - | - |
| A20Q STFC R/L 11 | 20 | 9,0 | 180 | 13 | 24 | 1102.. | 125 | 507 | - | - |
| A25R STFC R/L 16 | 25 | 11,5 | 200 | 17 | 31 | 16T3.. | 140 | 515 | - | - |
| A32S STFC R/L 16 | 32 | 15,0 | 250 | 22 | 39 | 16T3.. | 133 | 521 | 341 | 194 |
| A40T STFC R/L 16 | 40 | 18,5 | 300 | 27 | 48 | 16T3.. | 133 | 521 | 341 | 194 |



Characteristics:
Boring bars with internal coolant.



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



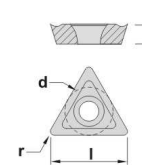
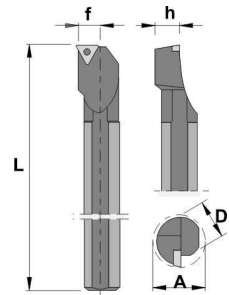
For more information see page: A.51,52

STFC 90°



| REF. | D | h | L | f | A | TC.. | | | | |
|------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S10M STFC R/L 09 | 10 | 4,5 | 150 | 7 | 13 | 0902.. | 122 | 506 | - | - |
| S12M STFC R/L 09 | 12 | 5,5 | 150 | 9 | 16 | 0902.. | 122 | 506 | - | - |
| S12M STFC R/L 11 | 12 | 5,5 | 150 | 9 | 16 | 1102.. | 125 | 507 | - | - |
| S16R STFC R/L 11 | 16 | 7,5 | 200 | 11 | 20 | 1102.. | 125 | 507 | - | - |
| S20S STFC R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 1102.. | 125 | 507 | - | - |
| S25T STFC R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 16T3.. | 140 | 515 | - | - |
| S32U STFC R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 16T3.. | 133 | 521 | 341 | 194 |
| S40V STFC R/L 16 | 40 | 18,5 | 400 | 27 | 48 | 16T3.. | 133 | 521 | 341 | 194 |

| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



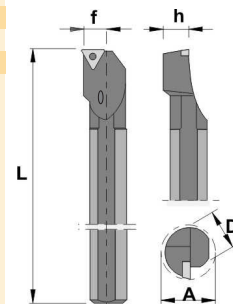
For more information see page: A.51,52

Inserts

H-STFC 90°



| REF. | D | h | L | f | A | TC.. | | |
|-------------------------|----|-----|-----|----|----|--------|-----|-----|
| H10M STFC R/L 09 | 10 | 4,5 | 150 | 7 | 13 | 0902.. | 122 | 506 |
| H12M STFC R/L 11 | 12 | 5,5 | 150 | 9 | 16 | 1102.. | 125 | 507 |
| H16R STFC R/L 11 | 16 | 7,5 | 200 | 11 | 20 | 1102.. | 138 | 515 |



Characteristics:
Boring bars with anti-vibration shank.

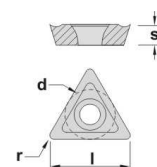
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



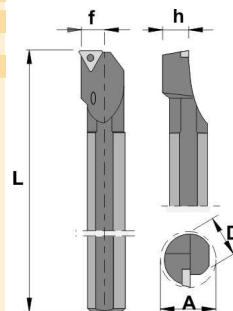
For more information see page: A.51,52

Parting & grooving

J-STFC 93°



| REF. | D | h | L | f | A | TC.. | | |
|-------------------------|----|-----|-----|----|----|--------|-----|-----|
| J10M STFC R/L 07 | 10 | 4,5 | 150 | 7 | 13 | 0902.. | 122 | 506 |
| J12M STFC R/L 07 | 12 | 5,5 | 150 | 9 | 16 | 1102.. | 125 | 507 |
| J16R STFC R/L 07 | 16 | 7,5 | 200 | 11 | 20 | 1102.. | 138 | 515 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.

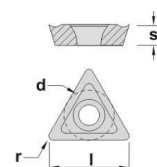
Threading

Drills

Cartridges



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



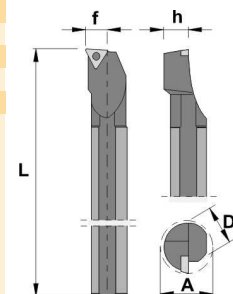
For more information see page: A.51,52

Brazed tools

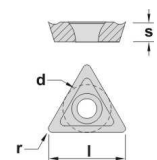
STUC 93°



| REF. | D | h | L | f | A | TC.. | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S12M STUC R/L 11 | 12 | 5,5 | 150 | 9 | 16 | 1102.. | 125 | 507 | - | - |
| S16R STUC R/L 16 | 16 | 7,5 | 200 | 11 | 20 | 16T3.. | 140 | 515 | - | - |
| S20S STUC R/L 16 | 20 | 9,0 | 250 | 13 | 24 | 16T3.. | 140 | 515 | - | - |
| S25T STUC R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 16T3.. | 140 | 515 | - | - |
| S32U STUC R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 16T3.. | 133 | 521 | 341 | 194 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

Boring heads

Arbors & adaptors

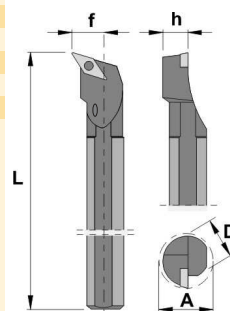
A-SVQC 107° 30'



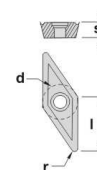
| REF. | D | h | L | f | A | VC.. | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| A16M SVQC R/L 11 | 16 | 7,5 | 150 | 11 | 20 | 1103.. | 125 | 507 | - | - |
| A20Q SVQC R/L 11 | 20 | 9,0 | 180 | 13 | 24 | 1103.. | 125 | 507 | - | - |
| A25R SVQC R/L 16 | 25 | 11,5 | 200 | 17 | 31 | 1604.. | 133 | 521 | 378 | 194 |
| A32S SVQC R/L 16 | 32 | 15,0 | 250 | 22 | 39 | 1604.. | 133 | 521 | 378 | 194 |
| A40T SVQC R/L 16 | 40 | 18,5 | 300 | 27 | 48 | 1604.. | 133 | 521 | 378 | 194 |



Characteristics:
Boring bars with internal coolant.



| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1303.. | 13,00 | 3,18 | 8,00 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

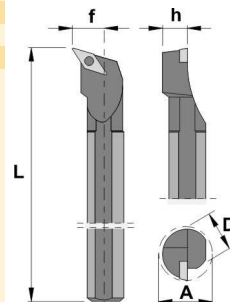


For more information see page: A.55,56

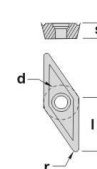
SVQC 107° 30'



| REF. | D | h | L | f | A | VC.. | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|---|---|
| S16R SVQC R/L 13 | 16 | 7,5 | 200 | 13 | 22 | 1303.. | 130 | 508 | - | - |
| S20S SVQC R/L 13 | 20 | 9,0 | 250 | 13 | 24 | 1303.. | 130 | 508 | - | - |
| S25T SVQC R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 140 | 515 | - | - |



| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1303.. | 13,00 | 3,18 | 8,00 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

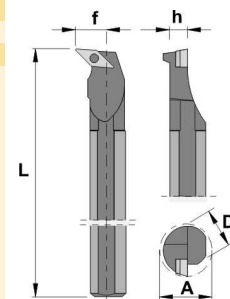


For more information see page: A.55,56

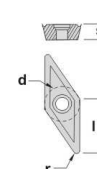
SVUB 93°



| REF. | D | h | L | f | A | VBMT | | | | |
|-------------------------|----|------|-----|----|----|--------|-----|-----|-----|-----|
| S25T SVUB R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 133 | 521 | 378 | 194 |
| S32U SVUB R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 1604.. | 133 | 521 | 378 | 194 |
| S40V SVUB R/L 16 | 40 | 18,5 | 400 | 27 | 48 | 1604.. | 133 | 521 | 378 | 194 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| VBMT 160408 | 16,50 | 4,76 | 9,52 |



For more information see page: A.55

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters


Solid carbide

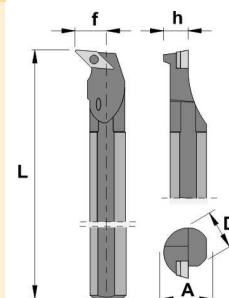
Boring heads

Arbors & adaptors

Inserts

A-SVUC 93°

| REF. | D | h | L | f | A | VC.. |  |
|-------------------------|----|------|-----|----|----|--------|---|
| A16M SVUC R/L 11 | 16 | 7,5 | 150 | 11 | 20 | 1103.. | 125 507 - - |
| A20Q SVUC R/L 11 | 20 | 9,0 | 180 | 13 | 24 | 1103.. | 125 507 - - |
| A25R SVUC R/L 16 | 25 | 11,5 | 200 | 17 | 31 | 1604.. | 133 521 378 194 |
| A32S SVUC R/L 16 | 32 | 15,0 | 250 | 22 | 39 | 1604.. | 133 521 378 194 |
| A40T SVUC R/L 16 | 40 | 18,5 | 300 | 27 | 48 | 1604.. | 133 521 378 194 |




Turning

Automatic lathes

Ceramic tools

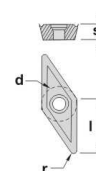
Parting & grooving

 **Characteristics:**
Boring bars with internal coolant.

Threading



| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

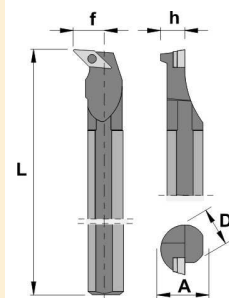


For more information see page: A.55,56

Drills

SVUC 93°

| REF. | D | h | L | f | A | VC.. |  |
|-------------------------|----|------|-----|----|----|--------|---|
| S25T SVUC R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 1604.. | 140 515 - - |
| S32U SVUC R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 1604.. | 133 521 378 194 |
| S40V SVUC R/L 16 | 40 | 18,5 | 400 | 27 | 48 | 1604.. | 133 521 378 194 |



Cartridges

Brazed tools

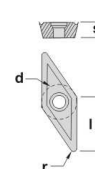
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |



For more information see page: A.55,56

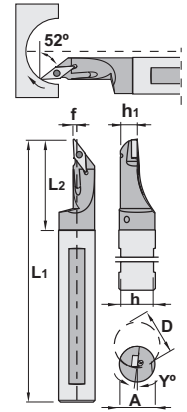
A-SVJC 52°



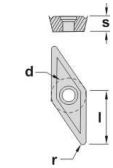
| REF. | D | h | h1 | L1 | L2 | A | f | Y° | VC.. | | |
|-------------------------|----|----|------|-----|----|----|---|----|--------|-----|-----|
| A16M SVJC R/L 11 | 16 | 15 | 7,5 | 150 | 30 | 22 | 2 | 6 | 1103.. | 125 | 507 |
| A20Q SVJC R/L 11 | 20 | 18 | 9,0 | 180 | 38 | 25 | 2 | 5 | 1103.. | 125 | 507 |
| A25R SVJC R/L 16 | 25 | 23 | 11,5 | 200 | 44 | 28 | 2 | 4 | 1604.. | 140 | 515 |



Characteristics:
Boring bars with internal coolant.

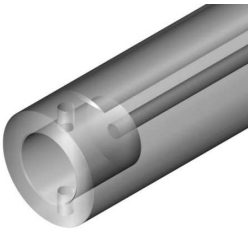


| REF. | l | s | d |
|--------------------|-------|------|------|
| VC.. 1303.. | 13,00 | 3,18 | 8,00 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |

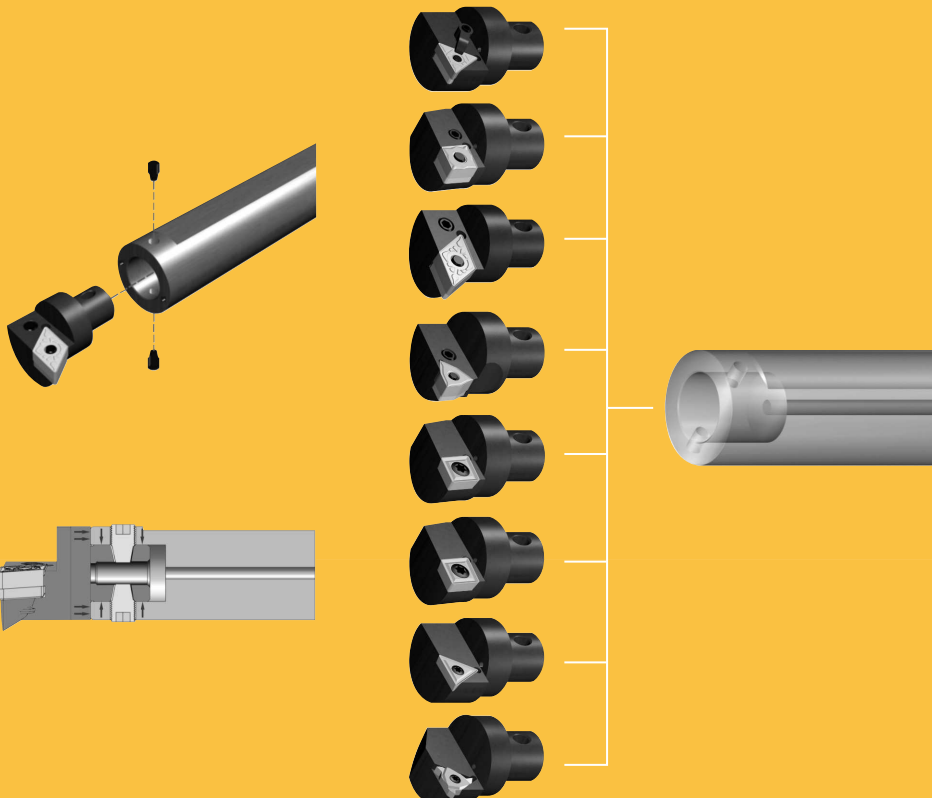
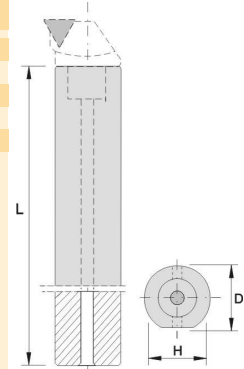


For more information see page: A.55,56

JX



| REF. | D | L | H |
|-------------|----|-----|----|
| J20X | 20 | 225 | 19 |
| J25X | 25 | 270 | 24 |
| J32X | 32 | 320 | 31 |
| J40X | 40 | 370 | 38 |
| J50X | 50 | 510 | 48 |
| J60X | 60 | 610 | 58 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

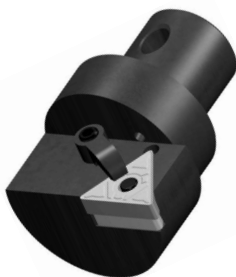
Boring heads

Arbors & adaptors

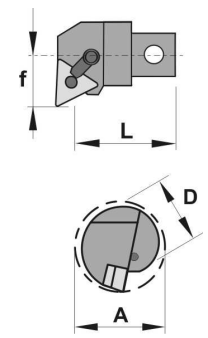


Inserts

MTUN 93°



| REF. | D | L | f | A | TN.. | | | | | |
|--------------------|----|----|----|----|--------|-----|-----|----------|-----|---------|
| A32X MTUN R/L 16-K | 32 | 30 | 22 | 40 | 1604.. | 221 | 503 | 336 | 165 | 434 502 |
| A40X MTUN R/L 16-K | 40 | 30 | 17 | 50 | 1604.. | 221 | 503 | 336 | 165 | 434 502 |
| A50X MTUN R/L 16-K | 50 | 30 | 35 | 63 | 1604.. | 221 | 503 | 336 | 165 | 434 502 |
| A50X MTUN R/L 22 | 50 | 40 | 35 | 63 | 2204.. | 202 | 505 | ITSN-433 | 484 | 461 - |
| A60X MTUN R/L 22 | 60 | 40 | 43 | 80 | 2204.. | 202 | 505 | ITSN-433 | 484 | 461 - |



Turning

Automatic lathes

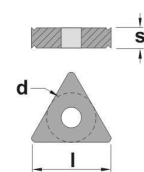


Characteristics:
Boring bars with internal coolant and anti-vibration shank.

Ceramic tools



| REF. | l | s | d |
|-------------|-------|------|-------|
| TN.. 1604.. | 16,50 | 4,76 | 9,52 |
| TN.. 2204.. | 22,00 | 4,76 | 12,70 |



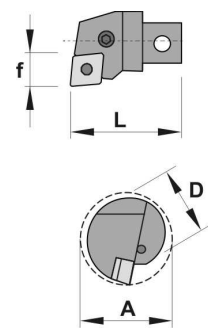
For more information see page: A.52,53,54

Parting & grooving

PCLN 95°



| REF. | D | L | f | A | CN.. | | | | | |
|------------------|----|----|----|----|--------|-----|-----|-----|-----|---------|
| A25X PCLN R/L 12 | 25 | 25 | 17 | 32 | 1204.. | 832 | 171 | 525 | - | - |
| A32X PCLN R/L 12 | 32 | 30 | 22 | 40 | 1204.. | 842 | 173 | 503 | 302 | 412 002 |
| A40X PCLN R/L 12 | 40 | 30 | 27 | 50 | 1204.. | 812 | 163 | 503 | 302 | 412 002 |
| A50X PCLN R/L 12 | 50 | 30 | 35 | 63 | 1204.. | 812 | 163 | 503 | 302 | 412 002 |
| A50X PCLN R/L 16 | 50 | 40 | 35 | 63 | 1606.. | 816 | 170 | 503 | 366 | 415 005 |
| A60X PCLN R/L 16 | 60 | 40 | 43 | 80 | 1606.. | 816 | 170 | 503 | 366 | 415 005 |

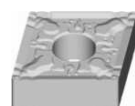


Characteristics:
Boring bars with internal coolant and anti-vibration shank.

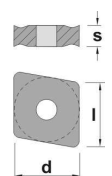
Threading

Drills

Cartridges



| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |



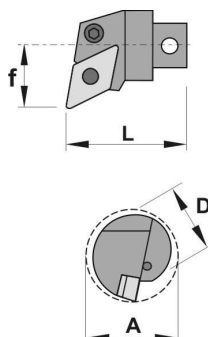
For more information see page: A.39,40

Brazed tools

PDUN 93°



| REF. | D | L | f | A | DN.. | | | | | |
|------------------|----|----|----|----|--------|-----|-----|-----|-----|------------------|
| A32X PDUN R/L 15 | 32 | 30 | 22 | 40 | 1506.. | 845 | 173 | 503 | 305 | 412 002 IDSN-432 |
| A40X PDUN R/L 15 | 40 | 30 | 27 | 50 | 1506.. | 845 | 172 | 503 | 305 | 412 002 IDSN-432 |
| A50X PDUN R/L 15 | 50 | 40 | 35 | 63 | 1506.. | 845 | 172 | 503 | 305 | 412 002 IDSN-432 |
| A60X PDUN R/L 15 | 60 | 40 | 43 | 80 | 1506.. | 845 | 172 | 503 | 305 | 412 002 IDSN-432 |

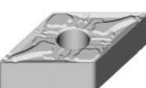


Characteristics:
Boring bars with internal coolant and anti-vibration shank.

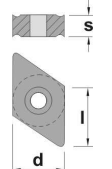
Milling cutters

Solid carbide

Boring heads



| REF. | l | s | d |
|-------------|-------|------|-------|
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1506.. | 15,50 | 6,35 | 12,70 |



For more information see page: A.41,42,43

Arbors & adaptors

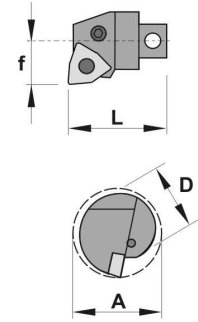
PWLN 95°



| REF. | D | L | f | A | WN.. | [Icons] | | | | | |
|------------------|----|----|----|----|--------|---------|-----|-----|-----|-----|-----|
| A32X PWLN R/L 08 | 32 | 30 | 22 | 40 | 0804.. | 842 | 173 | 503 | 308 | 412 | 002 |
| A40X PWLN R/L 08 | 40 | 30 | 27 | 50 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| A50X PWLN R/L 08 | 50 | 40 | 35 | 63 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |
| A60X PWLN R/L 08 | 60 | 40 | 43 | 80 | 0804.. | 812 | 163 | 503 | 308 | 412 | 002 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

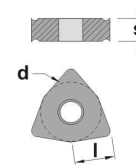
Milling cutters

Solid carbide

Boring heads

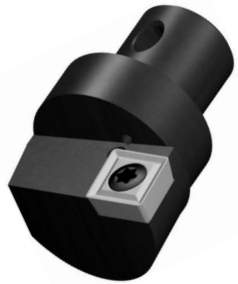
Arbors & adaptors

| REF. | l | s | d |
|-------------|------|------|-------|
| WN.. 0804.. | 8,14 | 4,76 | 12,70 |



For more information see page: A.57,58

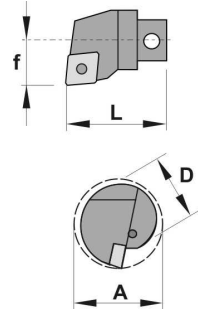
SCLC 95°



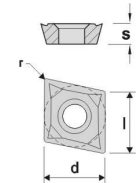
| REF. | D | L | f | A | CC.. | [Icons] | | | |
|------------------|----|----|----|----|--------|---------|-----|-----|-----|
| A20X SCLC R/L 09 | 20 | 25 | 13 | 25 | 09T3.. | 138 | 515 | - | - |
| A25X SCLC R/L 09 | 25 | 25 | 17 | 32 | 09T3.. | 138 | 515 | - | - |
| A32X SCLC R/L 12 | 32 | 30 | 22 | 40 | 1204.. | 196 | 523 | 361 | 195 |
| A40X SCLC R/L 12 | 40 | 30 | 27 | 50 | 1204.. | 196 | 523 | 361 | 195 |
| A50X SCLC R/L 12 | 50 | 40 | 35 | 63 | 1204.. | 196 | 523 | 361 | 195 |
| A60X SCLC R/L 12 | 60 | 40 | 43 | 80 | 1204.. | 196 | 523 | 361 | 195 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



For more information see page: A.38

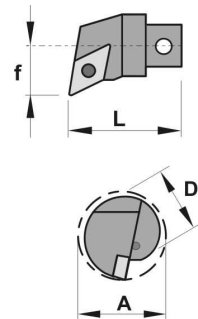
SDUC 93°



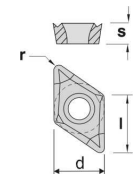
| REF. | D | L | f | A | DC.. | [Icons] | | | |
|------------------|----|----|----|----|--------|---------|-----|-----|-----|
| A20X SDUC R/L 11 | 20 | 25 | 13 | 25 | 11T3.. | 140 | 515 | - | - |
| A25X SDUC R/L 11 | 25 | 25 | 17 | 32 | 11T3.. | 140 | 515 | - | - |
| A32X SDUC R/L 11 | 32 | 30 | 22 | 40 | 11T3.. | 133 | 521 | 371 | 194 |
| A40X SDUC R/L 11 | 40 | 30 | 27 | 50 | 11T3.. | 133 | 521 | 371 | 194 |
| A50X SDUC R/L 11 | 50 | 40 | 35 | 63 | 11T3.. | 133 | 521 | 371 | 194 |
| A60X SDUC R/L 11 | 60 | 40 | 43 | 80 | 11T3.. | 133 | 521 | 371 | 194 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.



| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



For more information see page: A.41

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

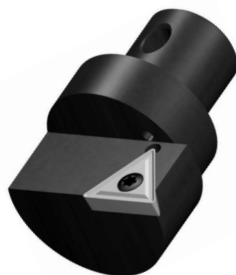
Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors

STFC 90°

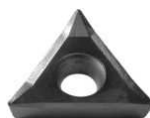
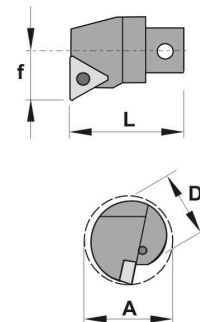


| REF. | D | L | f | A | TC.. | | | | |
|-------------------------|----|----|----|----|--------|-----|-----|-----|-----|
| A20X STFC R/L 16 | 20 | 25 | 13 | 25 | 16T3.. | 140 | 515 | - | - |
| A25X STFC R/L 16 | 25 | 25 | 17 | 32 | 16T3.. | 140 | 515 | - | - |
| A32X STFC R/L 16 | 32 | 30 | 22 | 40 | 16T3.. | 133 | 521 | 341 | 194 |
| A40X STFC R/L 16 | 40 | 30 | 27 | 50 | 16T3.. | 133 | 521 | 341 | 194 |
| A50X STFC R/L 16 | 50 | 40 | 35 | 63 | 16T3.. | 133 | 521 | 341 | 194 |
| A60X STFC R/L 16 | 60 | 40 | 43 | 80 | 16T3.. | 133 | 521 | 341 | 194 |



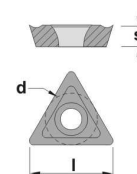
Characteristics:

Boring bars with internal coolant and anti-vibration shank.



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

For more information see page: A.51,52



SXFN 90°

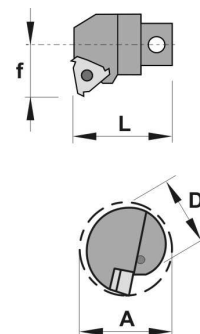


| REF. | D | L | f | A | NR/L | | | | | |
|-------------------------|----|----|------|------|-----------|------|-----|-----|-----|-----|
| A20X SXFN R/L 16 | 20 | 25 | 13,4 | 18 | 16 NR/L.. | SA3T | 530 | YE3 | YI3 | SY3 |
| A25X SXFN R/L 16 | 25 | 25 | 16,3 | 22,6 | 16 NR/L.. | SA3 | 530 | YE3 | YI3 | SY3 |
| A32X SXFN R/L 16 | 32 | 30 | 19,6 | 19,6 | 16 NR/L.. | SA3 | 530 | YE3 | YI3 | SY3 |
| A25X SXFN R/L 22 | 25 | 25 | 17,2 | 32 | 22 NR/L.. | SA4 | 520 | YE4 | YI4 | SY4 |
| A32X SXFN R/L 22 | 32 | 32 | 21,5 | 40 | 22 NR/L.. | SA4 | 520 | YE4 | YI4 | SY4 |
| A40X SXFN R/L 22 | 40 | 32 | 25,8 | 50 | 22 NR/L.. | SA4 | 520 | YE4 | YI4 | SY4 |
| A50X SXFN R/L 22 | 50 | 40 | 31,4 | 63 | 22 NR/L.. | SA4 | 520 | YE4 | YI4 | SY4 |
| A60X SXFN R/L 22 | 60 | 40 | 36,4 | 80 | 22 NR/L.. | SA4 | 520 | YE4 | YI4 | SY4 |



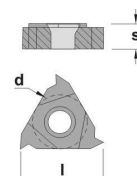
Characteristics:

Boring bars with internal coolant and anti-vibration shank.



| REF. | l | s | d |
|------------------|-------|------|-------|
| 16 NR/L.. | 16,50 | 3,18 | 9,52 |
| 22 NR/L.. | 22,00 | 4,76 | 12,70 |

For more information see page: A.60





Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

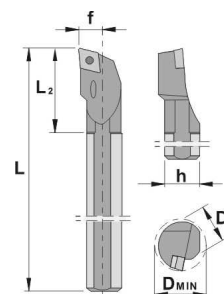
Arbors &
adaptors

Inserts

KIT SCLC 95°



| REF. | D | L | L ₂ | f | D _{MIN} | h | CC.. | |
|--------------------|----|-----|----------------|---|------------------|----|--------|---------|
| A0608H SCLC R/L 06 | 8 | 100 | 25 | 4 | 8 | 7 | 0602.. | 155 507 |
| A0810J SCLC R/L 06 | 10 | 110 | 32 | 6 | 12 | 9 | 0602.. | 155 507 |
| A1012K SCLC R/L 06 | 12 | 125 | 38 | 7 | 14 | 11 | 0602.. | 125 507 |
| A1216M SCLC R/L 06 | 16 | 150 | 50 | 9 | 18 | 15 | 0602.. | 125 507 |



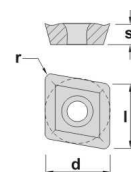
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |



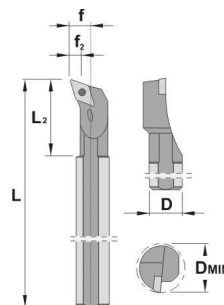
For more information see page: A.38

Parting & grooving

KIT SDQC 107° 30'



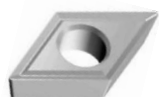
| REF. | D | L | L ₂ | f | f ₂ | D _{MIN} | DC.. | |
|--------------------|----|-----|----------------|----|----------------|------------------|--------|---------|
| A0810J SDQC R/L 07 | 10 | 110 | 32 | 7 | 3 | 12,5 | 0702.. | 125 507 |
| A1012K SDQC R/L 07 | 12 | 125 | 38 | 9 | 3 | 15,5 | 0702.. | 125 507 |
| A1216M SDQC R/L 07 | 16 | 150 | 50 | 11 | 3 | 19,5 | 0702.. | 125 507 |



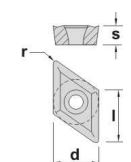
Threading

Drills

Cartridges



| REF. | l | s | d |
|-------------|------|------|------|
| DC.. 0702.. | 9,52 | 2,38 | 6,35 |



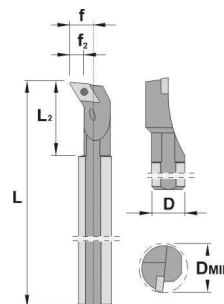
For more information see page: A.41

Brazed tools

KIT SDUC 93°



| REF. | D | L | L ₂ | f | f ₂ | D _{MIN} | DC.. | |
|--------------------|----|-----|----------------|----|----------------|------------------|--------|---------|
| A0810J SDUC R/L 07 | 10 | 110 | 32 | 7 | 3 | 12,5 | 0702.. | 155 507 |
| A1012K SDUC R/L 07 | 12 | 125 | 38 | 9 | 5 | 15,5 | 0702.. | 125 507 |
| A1216M SDUC R/L 07 | 16 | 150 | 50 | 11 | 5 | 19,5 | 0702.. | 125 507 |

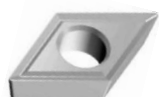


Milling cutters

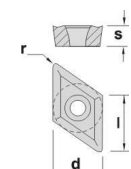
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|------|------|------|
| DC.. 0702.. | 9,52 | 2,38 | 6,35 |

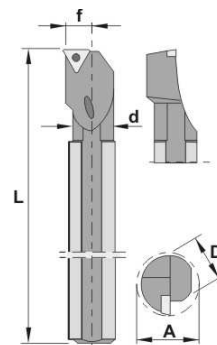


For more information see page: A.41

KIT STFC 90°



| REF. | D | d | L | f | A | h | TC.. |  |  |
|---------------------------|----|----|-----|----|------|----|--------|---|---|
| A0810J STFC R/L 11 | 10 | 8 | 110 | 7 | 12,5 | 9 | 1102.. | 155 | 507 |
| A1012K STFC R/L 11 | 12 | 10 | 125 | 9 | 15,5 | 11 | 1102.. | 125 | 507 |
| A1216M STFC R/L 11 | 16 | 12 | 150 | 11 | 19,5 | 15 | 1102.. | 125 | 507 |



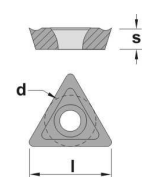
Inserts

Turning

Automatic lathes



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |



Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

For more information see page: A.51,52

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

KIT MT-12



| REF. | L | d | e | d1 | | |
|--------------------|-----|----|------|-----------|-----|-----|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 - 4,2 | 157 | 525 |

| REF. | L | d | B | r | DMIN |
|--------------------|----|---|-----|-----|------|
| CTI 0402 AR | 15 | 4 | 0,8 | 0,2 | 4,2 |
| CTI 0402 BR | 15 | 4 | 0,8 | 0,2 | 4,2 |
| CTI 0400 CR | 15 | 4 | 0,8 | - | M5 |
| CTI 0410 DR | 15 | 4 | 1 | - | 4,2 |

KIT MT-16



| REF. | L | d | e | d1 | | |
|--------------------|-----|----|-----|-----|-----|-----|
| 00.30.16.06 | 120 | 16 | 2,8 | 8,2 | 156 | 503 |

| REF. | L | d | B | r | DMIN |
|--------------------|----|---|-----|-----|------|
| CTI 0602 AR | 20 | 6 | 1,8 | 0,2 | 6,2 |
| CTI 0602 BR | 20 | 6 | 1,8 | 0,2 | 6,2 |
| CTI 0600 CR | 20 | 6 | 1,8 | - | M8 |
| CTI 0615 DR | 20 | 6 | 1,5 | - | 6,2 |

KIT MT

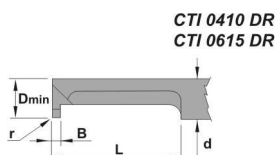
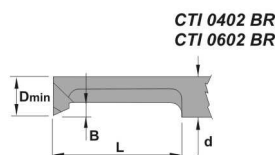
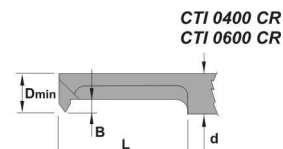
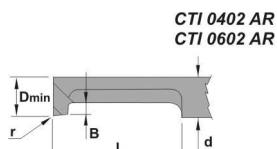


| REF. | L | d | e | d1 | | |
|--------------------|-----|----|------|-----------|-----|-----|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 - 4,2 | 157 | 525 |
| 00.30.16.06 | 120 | 16 | 2,80 | 8,2 | 156 | 503 |

| REF. | L | d | B | r | DMIN |
|--------------------|----|---|-----|-----|------|
| CTI 0402 AR | 15 | 4 | 0,8 | 0,2 | 4,2 |
| CTI 0402 BR | 15 | 4 | 0,8 | 0,2 | 4,2 |
| CTI 0400 CR | 15 | 4 | 0,8 | - | M5 |
| CTI 0410 DR | 15 | 4 | 1 | - | 4,2 |
| CTI 0602 AR | 20 | 6 | 1,8 | 0,2 | 6,2 |
| CTI 0602 BR | 20 | 6 | 1,8 | 0,2 | 6,2 |
| CTI 0600 CR | 20 | 6 | 1,8 | - | M8 |
| CTI 0615 DR | 20 | 6 | 1,5 | - | 6,2 |



00.30.12.04
00.30.16.06



Nominal cutting speed and feed values for boring bars

| Material P | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force $K_{t,0.4}$ |
|--------------------|-----|----------------------|----------------------|------|-----------|-------------|-------------|-------------|------------------------------------|
| | | | P25K | P40K | CK30 | TIC15 | TIC20 | TIC30 | |
| | | | 0.3-0.6-1.2 | | 0.1 - 0.3 | | 0.1-0.4-0.8 | | |
| Unalloyed steel | 125 | C=0.15% | 150 115 80 | | 350 280 | 480 345 250 | 440 300 205 | 330 230 110 | 1900 |
| | 150 | C=0.35% | 145 105 70 | | 270 230 | 440 315 230 | 400 275 190 | 300 210 150 | 2100 |
| | 200 | C=0.60% | 115 90 65 | | 240 190 | 385 275 200 | 350 240 165 | 260 185 130 | 2250 |
| Low alloyed steel | 180 | Annealed | 90 70 45 | | 300 260 | 380 265 195 | 320 220 170 | 200 140 100 | 2100 |
| | 275 | Hardened | 65 45 30 | | 220 140 | 260 180 130 | 215 150 115 | 140 100 70 | 2600 |
| | 300 | Hardened | 60 40 25 | | 230 180 | 240 165 120 | 200 135 105 | 125 90 60 | 2700 |
| | 350 | Hardened | 50 35 20 | | 220 140 | 210 145 105 | 170 120 90 | 110 75 55 | 2850 |
| High alloyed steel | 200 | Annealed | 80 60 45 | | 200 160 | 350 230 170 | 280 185 135 | 175 115 80 | 2600 |
| | 325 | Hardened | 40 25 20 | | 200 160 | 170 110 | 120 80 60 | 85 55 40 | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Steel castings | 180 | Unalloyed | 60 50 35 | | 300 260 | 260 185 145 | 230 160 120 | 135 105 75 | 2000 |
| | 200 | Low alloyed | 50 45 30 | | 230 180 | 230 160 120 | 190 125 85 | 120 90 60 | 2500 |
| | 225 | High alloyed | 40 30 20 | | 220 140 | 190 130 95 | 170 115 80 | 95 70 55 | 2700 |

| Material M | HB | Condition | Cutting speed m/min. | | | | | | | Specific cutting force $K_{t,0.4}$ | |
|--------------------------|------|-------------------------------|----------------------|------|---------|-------------|-------------|-------|-------------|------------------------------------|-------------------------|
| | | | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | | TIC35 |
| | | | 0.1-0.3 | | 0.1-0.3 | | 0.1-0.4-0.8 | | 0.1-0.3 | | 0.2-0.4-0.6 0.2-0.4-0.6 |
| Stainless steel annealed | 180 | Austenitic Ni > 8%, Cr 12-25% | 205 170 | | 240 200 | 180 150 120 | 600 100 | | 190 160 130 | 190 160 130 | 2450 |
| | | Austenitic/Ferritic | | | 160 130 | 180 150 120 | 400 100 | | 190 160 100 | 190 160 130 | |
| | | Austenitic/Ferritic, Low S | | | 160 130 | 180 150 120 | 400 100 | | 140 110 | 160 130 100 | |
| Heat resistant alloys | 200 | Annealed | | | | | 50 20 | | 40 20 | 40 20 | 3000 |
| | 280 | Aged | | | | | 50 20 | | 35 15 | 35 15 | 3050 |
| | 250 | Annealed | | | | | 40 15 | | 25 6 | 25 8 | 3500 |
| | 350 | Aged | | | | | 35 20 | | 15 4 | 15 4 | 4150 |
| | 320 | Cast | | | | | 25 10 | | 15 4 | 15 4 | 4150 |
| Titanium alloys | 400 | Ti | | | | | 140 80 | | | 80 130 | 1530 |
| | 950 | Cast a, almost a and a+b | | | | | 45 25 | | | 15 35 | 1675 |
| | 1050 | Aged cast a+b | | | | | 45 25 | | | 15 35 | 1690 |

| Material K | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force $K_{t,0.4}$ |
|-------------------------|-----|--------------------------|----------------------|---------------|-------------|-------------|---------|---------------|------------------------------------|
| | | | K15K | TIC17 | CK30 | TIC15 | TIC20 | Z10R | |
| | | | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | | 0.2-0.5 | | |
| Hardened steel | 350 | Hardened steel | 27 16 10 | 180 150 110 | | 175 145 100 | | | 4500 |
| | 250 | Manganese steel 12% | 65 40 16 | 120 90 60 | | 120 85 50 | | | 3600 |
| Malleable cast iron | 130 | Ferritic | 105 75 45 | 250 180 100 | | 225 150 90 | | | 1100 |
| | 230 | Pearlitic | 80 60 30 | 160 100 60 | | 155 95 55 | | | 1100 |
| Cast iron | 180 | Low tensile strength | 135 95 60 | 180 120 80 | 300 200 | 165 110 70 | | | 1100 |
| | 260 | High tensile strength | 95 65 40 | 140 105 60 | 250 180 | 120 90 55 | | | 1500 |
| Nodular SG iron | 160 | Ferritic | 115 80 45 | 220 180 100 | 250 180 | | | | 1100 |
| | 250 | Pearlitic | 80 50 30 | 150 100 50 | 180 120 | | | | 1800 |
| Chilled cast iron | 400 | | 17 11 | 17 11 | | | | | 3000 |
| Aluminium alloys | 60 | Non heat treatable | 1750 1280 800 | 1750 1280 800 | | | | 1750 1280 800 | 500 |
| | 100 | Heat treatable | 510 370 250 | 510 370 250 | | | | 510 370 250 | 800 |
| Aluminium alloys (Cast) | 75 | Non heat treatable | 460 285 175 | 460 285 175 | | | | 460 285 175 | 750 |
| | 90 | Heat treatable | 300 180 110 | 300 180 110 | | | | 300 180 110 | 900 |
| Bronze - Brass alloys | 110 | Lead alloys, Pb > 1% | 610 430 295 | 610 430 295 | | | | 610 430 295 | 700 |
| | 90 | Brass and bronze | 310 250 195 | 310 250 195 | | | | 310 250 195 | 750 |
| | 100 | Inc. electrolytic copper | 225 160 115 | 225 160 115 | | | | 225 160 115 | 1750 |
| Other materials | | Hard plastics | 380 240 | 380 240 | | | | 380 240 | |
| | | Fibre | 190 120 | 190 120 | | | | 190 120 | |
| | | Hard rubber | 225 160 | 225 160 | | | | 225 160 | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Code key
Système de codification
Kodifizierungs-System **D02**

Applications
Applications
Anwendungen **D03**

Microturn
Microturn
Microturn **D04**

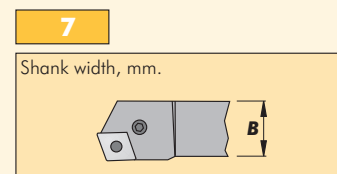
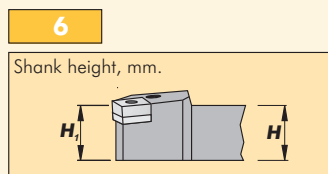
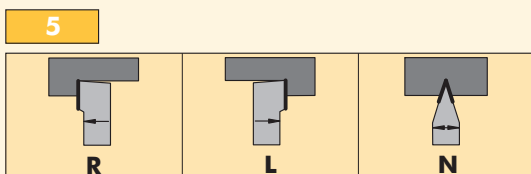
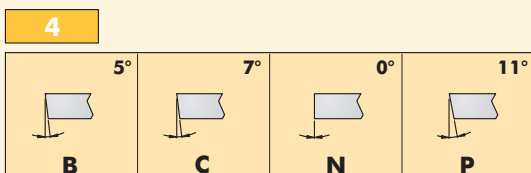
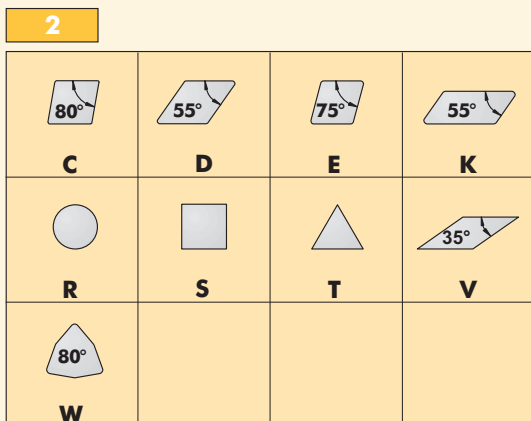
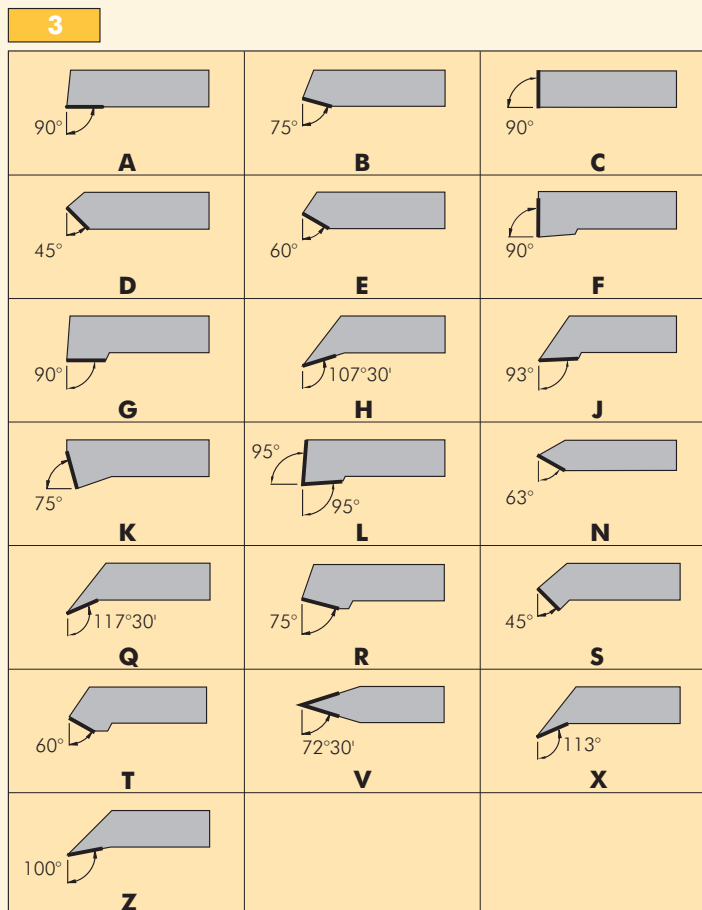
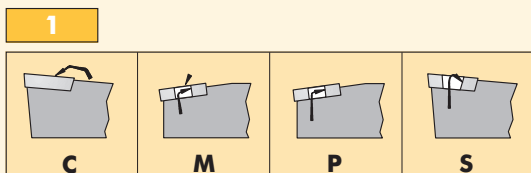
Center screw toolholders
Porte-outils avec vis centrale
Klemmhalter mit Zentralschrauben-Klemmung **D08**

Other applications
Autres applications
Andere Anwendungen **D11**

Cutting data
Conditions de coupe
Schnittbedingungen **D12**

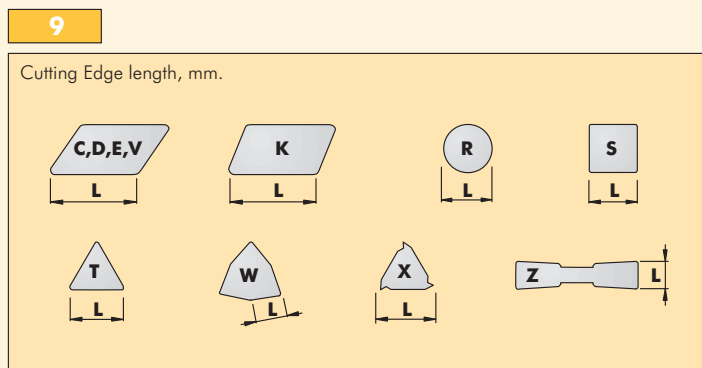
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

S C A C R 12 12 M 09
1 2 3 4 5 6 7 8 9



8

| | | |
|-------------------------|--------------|------------------|
| <p>Tool length, mm.</p> | D 60 | P 170 |
| | E 70 | R 200 |
| | F 80 | S 250 |
| | H 100 | T 300 |
| | K 125 | U 350 |
| | L 140 | V 400 |
| | M 150 | X Special |



Microturn - Microturn - Microturn

STHE



Page D.04

MT

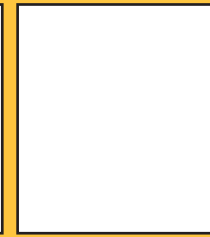


Page D.06

608.00
611.00
614.00
616.00



Page D.07

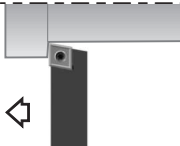


Inserts

Turning

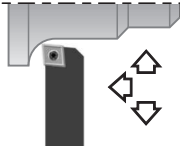
Center screw toolholders - Porte-outils avec vis centrale - Klemmhalter mit Zentralschrauben-Klemmung

SCAC 90°



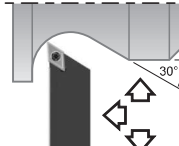
Page D.08 CC.. 0602..
CC.. 09T3..

SCLC 95°



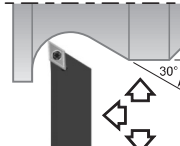
Page D.08 CC.. 0602..
CC.. 09T3..

SDAC 90°



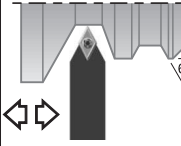
Page D.08 DC.. 0702..
DC.. 11T3..

SDJC 93°



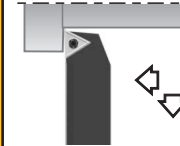
Page D.09 DC.. 0702..
DC.. 11T3..

SDNC 63°



Page D.09 DC.. 0702..
DC.. 11T3..

STJC 93°

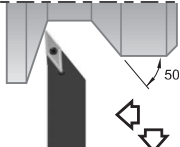


Page D.09 TC.. 1102..

Automatic lathes

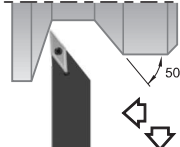
Ceramic tools

SVAC 90°



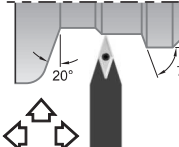
Page D.10 VC.. 1103..
VC.. 1604..

SVJC 93°

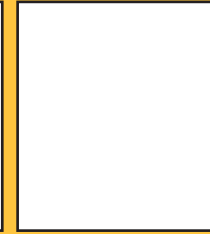


Page D.10 VC.. 1103..
VC.. 1604..

SVVC 72° 30°



Page D.10 VC.. 1103..

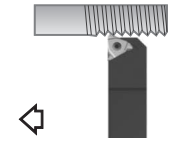


Parting & grooving

Threading


Other applications - Autres applications - Andere Anwendungen

SXAN 90°

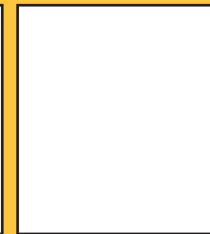


Threading
Page D.11 08 ER/L..
11 ER/L..
16 ER/L..

CZCB



MRCN 1,6
MRCN 2,2
MRCN 3,0
Parting and grooving
Page D.11



Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

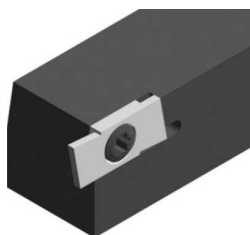
Milling cutters

Solid carbide

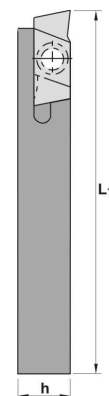
Boring heads

Arbors & adaptors

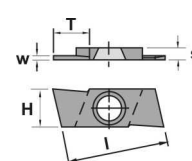
STHE



| REF. | h | h1 | B | L | f | Gl.. | | |
|-----------------------|----|----|----|-----|----|------|-----|-----|
| STHER/L0808M07 | 8 | 8 | 8 | 150 | 8 | Gl.. | 130 | 508 |
| STHER/L1010M07 | 10 | 10 | 10 | 150 | 10 | Gl.. | 130 | 508 |
| STHER/L1212M07 | 12 | 12 | 12 | 150 | 12 | Gl.. | 130 | 508 |
| STHER/L1616M07 | 16 | 16 | 16 | 150 | 16 | Gl.. | 130 | 508 |



| REF. | l | s | H |
|-------------|-------|------|------|
| Gl.. | 17,00 | 2,00 | 7,00 |



For more information see page: A.72



KIT STHE

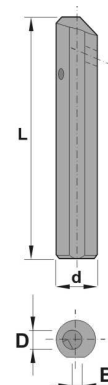
| REF. | Holder | Inserts | | | | | | | | | | |
|--------------------|--------------|---------|---------|---------|---------|----------|----------|---------|---------|--------|--------|--|
| KIT STHER08 | STHER0808M07 | GISG09R | GISG11R | GISG13R | GISG16R | GISG185R | GIGP20RN | GIGW55R | GIGW60R | GIST3R | GISC3R | |
| KIT STHEL08 | STHEL0808M07 | GISG09L | GISG11L | GISG13L | GISG16L | GISG185L | GIGP20LN | GIGW55L | GIGW60L | GIST3L | GISC3L | |
| KIT STHER10 | STHER1010M07 | GISG09R | GISG11R | GISG13R | GISG16R | GISG185R | GIGP20RN | GIGW55R | GIGW60R | GIST3R | GISC3R | |
| KIT STHEL10 | STHEL1010M07 | GISG09L | GISG11L | GISG13L | GISG16L | GISG185L | GIGP20LN | GIGW55L | GIGW60L | GIST3L | GISC3L | |
| KIT STHER12 | STHER1212M07 | GISG09R | GISG11R | GISG13R | GISG16R | GISG185R | GIGP20RN | GIGW55R | GIGW60R | GIST3R | GISC3R | |
| KIT STHEL12 | STHEL1212M07 | GISG09L | GISG11L | GISG13L | GISG16L | GISG185L | GIGP20LN | GIGW55L | GIGW60L | GIST3L | GISC3L | |
| KIT STHER16 | STHER1616M07 | GISG09R | GISG11R | GISG13R | GISG16R | GISG185R | GIGP20RN | GIGW55R | GIGW60R | GIST3R | GISC3R | |
| KIT STHEL16 | STHEL1616M07 | GISG09L | GISG11L | GISG13L | GISG16L | GISG185L | GIGP20LN | GIGW55L | GIGW60L | GIST3L | GISC3L | |



00.30



| REF. | L | d | B | D | CTI |  |  |
|--------------------|-----|----|------|-----------|------|---|---|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 / 4,2 | 04.. | 157 | 525 |
| 00.30.16.06 | 120 | 16 | 2,80 | 8,2 | 06.. | 156 | 503 |



Inserts

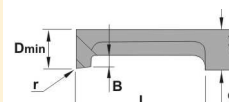
Turning

Automatic lathes

AR



| REF. | L | d | B | Dmin | r |
|--------------------|----|---|-----|------|-----|
| CTI 0402 AR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 AR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Turning tool

Ceramic tools

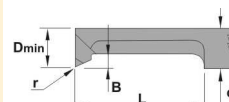
Parting & grooving

Threading

BR



| REF. | L | d | B | Dmin | r |
|--------------------|----|---|-----|------|-----|
| CTI 0402 BR | 15 | 4 | 0,8 | 4,2 | 0,2 |
| CTI 0602 BR | 20 | 6 | 1,8 | 6,2 | 0,2 |



Copying tool

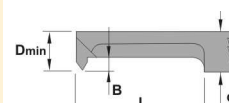
Drills

Cartridges

CR



| REF. | L | d | B | Dmin | r |
|--------------------|----|---|-----|------|---|
| CTI 0400 CR | 15 | 4 | 0,8 | M5 | - |
| CTI 0600 CR | 20 | 6 | 1,8 | M8 | - |



Threading tool

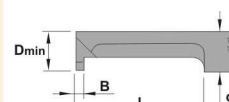
Brazed tools

Milling cutters

DR



| REF. | L | d | B | Dmin | r |
|--------------------|----|---|-----|------|---|
| CTI 0410 DR | 15 | 4 | 1,0 | 4,2 | - |
| CTI 0615 DR | 20 | 6 | 1,8 | 6,2 | - |



Grooving tool

Solid carbide



Boring heads

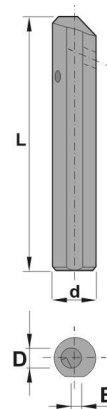
Arbors & adaptors

Inserts

KIT MT12



| REF. | L | d | B | D | r |  |  |
|--------------------|-----|----|------|-----------|-----|---|---|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 / 4,2 | - | 157 | 525 |
| CTI 0402 AR | 15 | 4 | 0,8 | 4,2 | 0,2 | | |
| CTI 0402 BR | 15 | 4 | 0,8 | 4,2 | 0,2 | | |
| CTI 0404 CR | 15 | 4 | 0,8 | M5 | - | | |
| CTI 0410 DR | 15 | 4 | 1,0 | 4,2 | - | | |



Turning



Automatic lathes

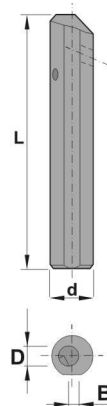
Ceramic tools

Parting & grooving

KIT MT16



| REF. | L | d | B | D | r |  |  |
|--------------------|-----|----|-----|-----|-----|---|---|
| 00.30.16.06 | 120 | 16 | 2,8 | 8,2 | - | 156 | 503 |
| CTI 0602 AR | 20 | 6 | 1,8 | 6,2 | 0,2 | | |
| CTI 0602 BR | 20 | 6 | 1,8 | 6,2 | 0,2 | | |
| CTI 0600 CR | 20 | 6 | 1,8 | M8 | - | | |
| CTI 0615 DR | 20 | 6 | 1,8 | 6,2 | - | | |



Threading



Drills

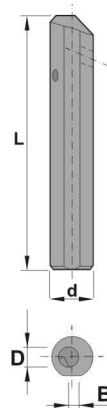
Cartridges

Brazed tools

KIT MT



| REF. | L | d | B | D | r |  |  |
|--------------------|-----|----|------|-----------|-----|---|---|
| 00.30.12.04 | 100 | 12 | 2,35 | 2,5 / 4,2 | - | 157 | 525 |
| 00.30.16.06 | 120 | 16 | 2,80 | 8,2 | - | 156 | 503 |
| CTI 0402 AR | 15 | 4 | 0,8 | 4,2 | 0,2 | | |
| CTI 0602 AR | 20 | 6 | 1,8 | 6,2 | 0,2 | | |
| CTI 0402 BR | 15 | 4 | 0,8 | 4,2 | 0,2 | | |
| CTI 0602 BR | 20 | 6 | 1,8 | 6,2 | 0,2 | | |
| CTI 0400 CR | 15 | 4 | 0,8 | M5 | - | | |
| CTI 0600 CR | 20 | 6 | 1,8 | M8 | - | | |
| CTI 0410 DR | 15 | 4 | 1,0 | 4,2 | - | | |
| CTI 0615 DR | 20 | 6 | 1,8 | 6,2 | - | | |



Milling cutters

Solid carbide

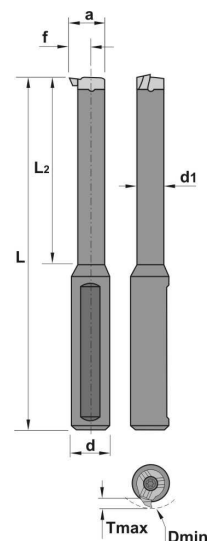
Boring heads

Arbors & adaptors

608.00
611.00
614.00
616.00



| REF. | Dmin | d | d1 | L | L2 | α | f | Tmax | R/LS.. | | |
|---------------|------|----|----|-----|----|----------|------|------|--------|-----|-----|
| 608.0012.2 HM | 8 | 12 | 6 | 90 | 30 | 7,8 | 4,8 | 1,0 | R/LS08 | 706 | 508 |
| 611.0012.2 HM | 11 | 12 | 8 | 110 | 42 | 10,7 | 6,7 | 2,3 | R/LS11 | 735 | 530 |
| 614.0012.2 HM | 14 | 12 | - | 110 | 45 | 13,8 | 9,0 | 4,0 | R/LS14 | 734 | 515 |
| 616.0012.2 HM | 16 | 12 | 11 | 130 | 56 | 15,7 | 10,2 | 4,3 | R/LS16 | 745 | 520 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

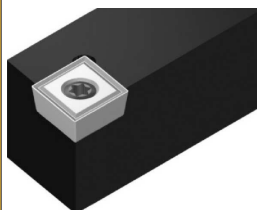
KIT 608...616

| REF. | Holder | Inserts | | | | |
|--------------------|---------------|------------|------------|------------|------------|--------------|
| KIT 6080012 | 608.0012.2 HM | RS008.0090 | RS008.0110 | RS008.0130 | RS008.0160 | RS08.0815.01 |
| KIT 6110012 | 611.0012.2 HM | RS011.0090 | RS011.0110 | RS011.0130 | RS011.0160 | RS11.0815.01 |
| KIT 6140012 | 614.0012.2 HM | RS014.0090 | RS014.0110 | RS014.0130 | RS014.0160 | RS14.0815.01 |
| KIT 6160012 | 616.0012.2 HM | RS016.0090 | RS016.0110 | RS016.0130 | RS016.0160 | RS16.0815.01 |

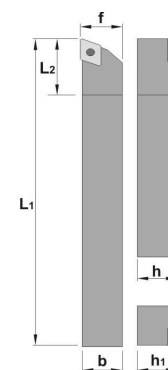


Inserts

SCAC 90°



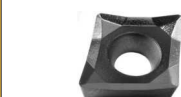
| REF. | h=h1 | b | L1 | L2 | f | CC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| SCAC R/L 0808 M06 | 8 | 8 | 150 | 8 | 8 | 0602.. | 125 | 507 |
| SCAC R/L 1010 M06 | 10 | 10 | 150 | 10 | 10 | 0602.. | 125 | 507 |
| SCAC R/L 1212 M06 | 12 | 12 | 150 | 12 | 12 | 0602.. | 125 | 507 |
| SCAC R/L 1616 M06 | 16 | 16 | 150 | 16 | 16 | 0602.. | 125 | 507 |
| SCAC R/L 1212 M09 | 12 | 12 | 150 | 12 | 12 | 09T3.. | 140 | 515 |
| SCAC R/L 1616 M09 | 16 | 16 | 150 | 16 | 16 | 09T3.. | 140 | 515 |



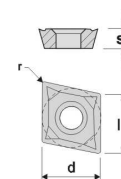
Turning

Automatic lathes

Ceramic tools



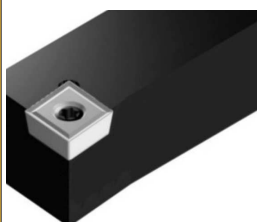
| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



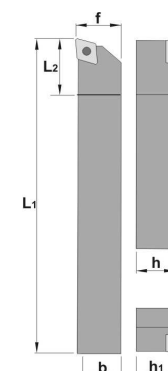
For more information see page: A.38

Parting & grooving

SCLC 95°



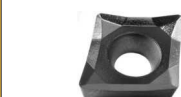
| REF. | h=h1 | b | L1 | L2 | f | CC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| SCLC R/L 0808 M06 | 8 | 8 | 150 | 8 | 8 | 0602.. | 125 | 507 |
| SCLC R/L 1010 M06 | 10 | 10 | 150 | 10 | 10 | 0602.. | 125 | 507 |
| SCLC R/L 1212 M06 | 12 | 12 | 150 | 12 | 12 | 0602.. | 125 | 507 |
| SCLC R/L 1616 M06 | 16 | 16 | 150 | 16 | 16 | 0602.. | 125 | 507 |
| SCLC R/L 1212 M09 | 12 | 12 | 150 | 12 | 12 | 09T3.. | 140 | 515 |
| SCLC R/L 1616 M09 | 16 | 16 | 150 | 16 | 16 | 09T3.. | 140 | 515 |



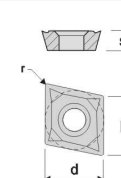
Threading

Drills

Cartridges



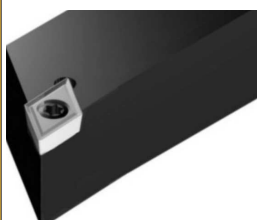
| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



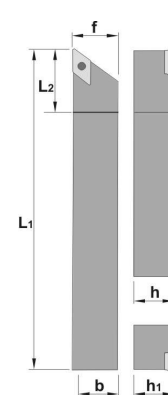
For more information see page: A.38

Brazed tools

SDAC 90°



| REF. | h=h1 | b | L1 | L2 | f | DC.. | | |
|-------------------|------|----|-----|------|----|--------|-----|-----|
| SDAC R/L 0808 M07 | 8 | 8 | 150 | 12,7 | 8 | 0702.. | 125 | 507 |
| SDAC R/L 1010 M07 | 10 | 10 | 150 | 15,0 | 10 | 0702.. | 125 | 507 |
| SDAC R/L 1212 M07 | 12 | 12 | 150 | 15,0 | 12 | 0702.. | 125 | 507 |
| SDAC R/L 1616 M07 | 16 | 16 | 150 | 16,0 | 16 | 0702.. | 125 | 507 |
| SDAC R/L 1212 M11 | 12 | 12 | 150 | 18,0 | 12 | 11T3.. | 140 | 515 |
| SDAC R/L 1616 M11 | 16 | 16 | 150 | 20,0 | 16 | 11T3.. | 140 | 515 |

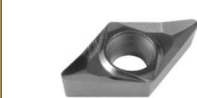


Milling cutters

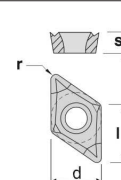
Solid carbide

Boring heads

Arbors & adaptors

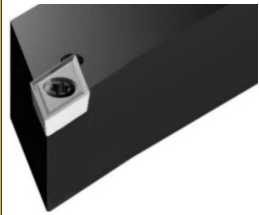


| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |



For more information see page: A.41

SDJC 93°



| REF. | h=h1 | b | L1 | L2 | f | DC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| SDJC R/L 0808 M07 | 8 | 8 | 150 | 8 | 8 | 0702.. | 125 | 507 |
| SDJC R/L 1010 M07 | 10 | 10 | 150 | 10 | 10 | 0702.. | 125 | 507 |
| SDJC R/L 1212 M07 | 12 | 12 | 150 | 12 | 12 | 0702.. | 125 | 507 |
| SDJC R/L 1616 M07 | 16 | 16 | 150 | 16 | 16 | 0702.. | 125 | 507 |
| SDJC R/L 1212 M11 | 12 | 12 | 150 | 12 | 12 | 11T3.. | 140 | 515 |
| SDJC R/L 1616 M11 | 16 | 16 | 150 | 16 | 16 | 11T3.. | 140 | 515 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

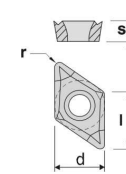
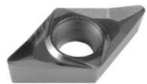
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

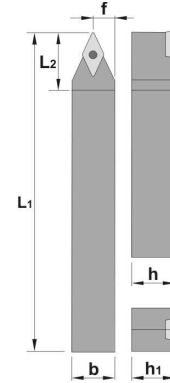


For more information see page: A.41

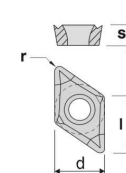
SDNC 63°



| REF. | h=h1 | b | L1 | L2 | f | DC.. | | |
|-----------------|------|----|-----|----|-----|--------|-----|-----|
| SDNC N 1010 M07 | 10 | 10 | 150 | 15 | 5,2 | 0702.. | 125 | 507 |
| SDNC N 1212 M11 | 12 | 12 | 150 | 21 | 6,2 | 11T3.. | 140 | 515 |
| SDNC N 1616 M11 | 16 | 16 | 150 | 21 | 8,6 | 11T3.. | 140 | 515 |

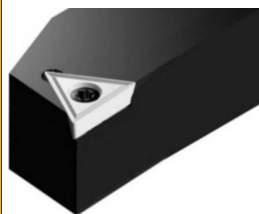


| REF. | l | s | d |
|-------------|-------|------|------|
| DC.. 0702.. | 7,75 | 2,38 | 6,35 |
| DC.. 11T3.. | 11,60 | 3,97 | 9,52 |

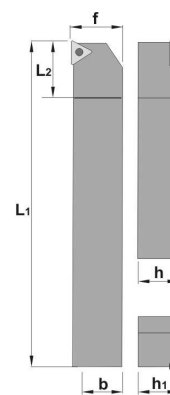


For more information see page: A.41

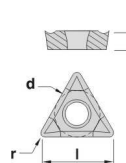
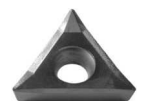
STJC 93°



| REF. | h=h1 | b | L1 | L2 | f | TC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| STJC R/L 1010 M11 | 10 | 10 | 150 | 16 | 10 | 1102.. | 125 | 507 |
| STJC R/L 1212 M11 | 12 | 12 | 150 | 16 | 12 | 1102.. | 125 | 507 |
| STJC R/L 1616 M11 | 16 | 16 | 150 | 16 | 16 | 1102.. | 125 | 507 |



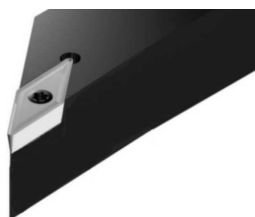
| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |



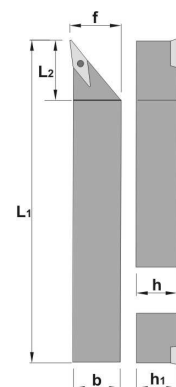
For more information see page: A.51,52

Inserts

SVAC 90°



| REF. | h=h1 | b | L1 | L2 | f | VC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| SVAC R/L 0808 M11 | 8 | 8 | 150 | 26 | 8 | 1103.. | 125 | 507 |
| SVAC R/L 1010 M11 | 10 | 10 | 150 | 26 | 10 | 1103.. | 125 | 507 |
| SVAC R/L 1212 M11 | 12 | 12 | 150 | 26 | 12 | 1103.. | 125 | 507 |
| SVAC R/L 1616 M11 | 16 | 16 | 150 | 26 | 16 | 1103.. | 125 | 507 |
| SVAC R/L 1212 M16 | 12 | 12 | 150 | 40 | 12 | 1604.. | 140 | 515 |
| SVAC R/L 1616 M16 | 16 | 16 | 150 | 40 | 16 | 1604.. | 140 | 515 |



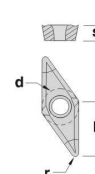
Turning

Automatic lathes

Ceramic tools



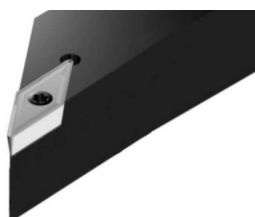
| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |



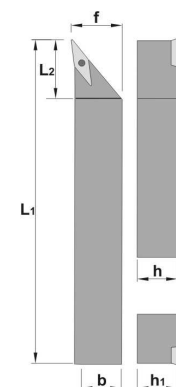
For more information see page: A.55,56

Parting & grooving

SVJC 93°



| REF. | h=h1 | b | L1 | L2 | f | VC.. | | |
|-------------------|------|----|-----|----|----|--------|-----|-----|
| SVJC R/L 0808 M11 | 8 | 8 | 150 | 26 | 8 | 1103.. | 125 | 507 |
| SVJC R/L 1010 M11 | 10 | 10 | 150 | 26 | 10 | 1103.. | 125 | 507 |
| SVJC R/L 1212 M11 | 12 | 12 | 150 | 26 | 12 | 1103.. | 125 | 507 |
| SVJC R/L 1616 M11 | 16 | 16 | 150 | 26 | 16 | 1103.. | 125 | 507 |
| SVJC R/L 1212 M16 | 12 | 12 | 150 | 40 | 12 | 1604.. | 140 | 515 |
| SVJC R/L 1616 M16 | 16 | 16 | 150 | 40 | 16 | 1604.. | 140 | 515 |



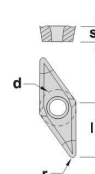
Threading

Drills

Cartridges



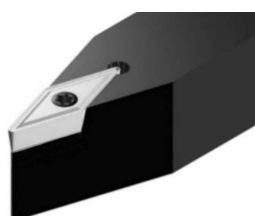
| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |



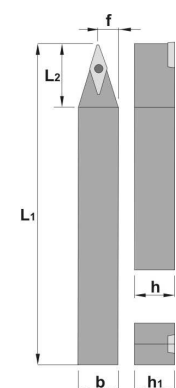
For more information see page: A.55,56

Brazed tools

SVVC 72° 30'



| REF. | h=h1 | b | L1 | L2 | f | VC.. | | |
|-----------------|------|----|-----|----|-----|--------|-----|-----|
| SVVC N 0808 M11 | 8 | 8 | 150 | 21 | 4,3 | 1103.. | 125 | 507 |
| SVVC N 1010 M11 | 10 | 10 | 150 | 21 | 5,3 | 1103.. | 125 | 507 |
| SVVC N 1212 M11 | 12 | 12 | 150 | 21 | 6,3 | 1103.. | 125 | 507 |
| SVVC N 1616 M11 | 16 | 16 | 150 | 21 | 8,3 | 1103.. | 125 | 507 |



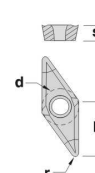
Milling cutters

Solid carbide

Boring heads



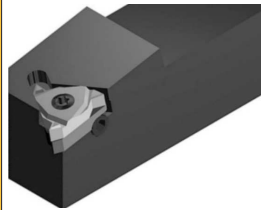
| REF. | l | s | d |
|-------------|-------|------|------|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |



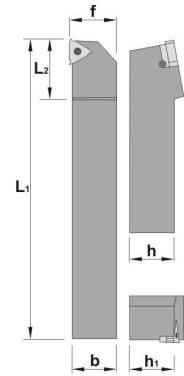
For more information see page: A.55,56

Arbors & adaptors

SXAN 90°



| REF. | h=h1 | b | L1 | L2 | f | ER/L.. | | | | | |
|--------------------------|------|----|-----|----|----|--------|-----|-----|-----|-----|-----|
| SXAN R/L 0808 M08 | 8 | 8 | 150 | 20 | 8 | 08 | 125 | 507 | - | - | - |
| SXAN R/L 1010 M08 | 10 | 10 | 150 | 20 | 10 | 08 | 125 | 507 | - | - | - |
| SXAN R/L 1212 M11 | 12 | 12 | 150 | 20 | 12 | 11 | 125 | 507 | - | - | - |
| SXAN R/L 1616 M16 | 16 | 16 | 150 | 20 | 16 | 16 | 133 | 515 | 436 | 435 | 203 |

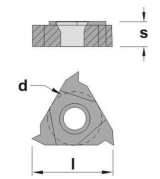


Inserts

Turning

Automatic lathes

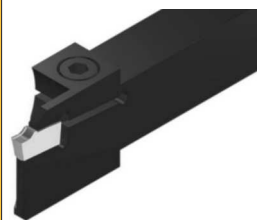
| REF. | l | d |
|------------------|-------|------|
| 08 ER/L.. | 8,00 | 4,76 |
| 11 ER/L.. | 11,00 | 6,35 |
| 16 ER/L.. | 16,50 | 9,52 |



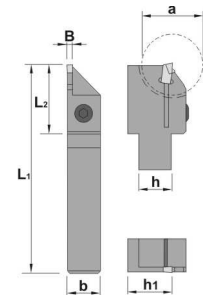
For more information see page: A.59

Ceramic tools

CZCB



| REF. | h | b | L1 | L2 | h1 | B | α | MRCN | | |
|--------------------------|----|----|-----|----|----|-----|----|------|-----|-----|
| CZCB R/L 1010 J01 | 10 | 10 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1010 J02 | 10 | 10 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1212 J01 | 12 | 12 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1212 J02 | 12 | 12 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1612 J02 | 16 | 12 | 110 | 29 | 21 | 2,2 | 32 | 2,2 | 199 | 505 |
| CZCB R/L 1612 J03 | 16 | 12 | 110 | 29 | 21 | 3,0 | 32 | 3,0 | 199 | 505 |
| CZCB R/L 2016 K03 | 20 | 16 | 125 | 35 | 30 | 3,0 | 42 | 3,0 | 109 | 505 |
| CZCB R/L 2016 K04 | 20 | 16 | 125 | 35 | 30 | 4,0 | 42 | 4,0 | 109 | 505 |
| CZCB R/L 2016 K05 | 20 | 16 | 125 | 35 | 30 | 5,0 | 42 | 5,0 | 109 | 505 |
| CZCB R/L 2016 K06 | 20 | 16 | 125 | 35 | 30 | 6,0 | 42 | 6,0 | 109 | 505 |
| CZCB R/L 2520 M03 | 25 | 20 | 150 | 50 | 30 | 3,0 | 80 | 3,0 | 109 | 505 |
| CZCB R/L 2520 M04 | 25 | 20 | 150 | 50 | 30 | 4,0 | 80 | 4,0 | 109 | 505 |
| CZCB R/L 2520 M05 | 25 | 20 | 150 | 50 | 30 | 5,0 | 80 | 5,0 | 109 | 505 |
| CZCB R/L 2520 M06 | 25 | 20 | 150 | 50 | 30 | 6,0 | 80 | 6,0 | 109 | 505 |

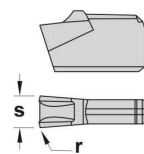
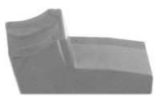


Parting & grooving

Threading

Drills

| REF. | s | r |
|-----------------|-----|------|
| MRCN 1,6 | 1,6 | 0,15 |
| MRCN 2,2 | 2,2 | 0,20 |
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |
| MRCN 5,0 | 5,0 | 0,30 |
| MRCN 6,0 | 6,0 | 0,40 |



For more information see page: A.67

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

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Solid carbide

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Arbors & adaptors

Nominal cutting speed and feed values for automatic lathes

| Material P | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force K _{c,0.4} |
|--------------------|-----|----------------------|----------------------|------|-----------|-------------|-------------|-------------|---|
| | | | P25K | P40K | CK30 | TIC15 | TIC20 | TIC30 | |
| | | | 0.3-0.6-1.2 | | 0.1 - 0.3 | | 0.1-0.4-0.8 | | |
| Unalloyed steel | 125 | C=0.15% | 150 115 80 | | 350 280 | 480 345 250 | 440 300 205 | 330 230 110 | 1900 |
| | 150 | C=0.35% | 145 105 70 | | 270 230 | 440 315 230 | 400 275 190 | 300 210 150 | 2100 |
| | 200 | C=0.60% | 115 90 65 | | 240 190 | 385 275 200 | 350 240 165 | 260 185 130 | 2250 |
| Low alloyed steel | 180 | Annealed | 90 70 45 | | 300 260 | 380 265 195 | 320 220 170 | 200 140 100 | 2100 |
| | 275 | Hardened | 65 45 30 | | 220 140 | 260 180 130 | 215 150 115 | 140 100 70 | 2600 |
| | 300 | Hardened | 60 40 25 | | 230 180 | 240 165 120 | 200 135 105 | 125 90 60 | 2700 |
| | 350 | Hardened | 50 35 20 | | 220 140 | 210 145 105 | 170 120 90 | 110 75 55 | 2850 |
| High alloyed steel | 200 | Annealed | 80 60 45 | | 200 160 | 350 230 170 | 280 185 135 | 175 115 80 | 2600 |
| | 325 | Hardened | 40 25 20 | | 200 160 | 170 110 | 120 80 60 | 85 55 40 | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 110 95 75 | | 270 130 | 295 240 190 | 275 210 165 | 225 180 145 | 2300 |
| Steel castings | 180 | Unalloyed | 60 50 35 | | 300 260 | 260 185 145 | 230 160 120 | 135 105 75 | 2000 |
| | 200 | Low alloyed | 50 45 30 | | 230 180 | 230 160 120 | 190 125 85 | 120 90 60 | 2500 |
| | 225 | High alloyed | 40 30 20 | | 220 140 | 190 130 95 | 170 115 80 | 95 70 55 | 2700 |

| Material M | HB | Condition | Cutting speed m/min. | | | | | | | Specific cutting force K _{c,0.4} | |
|--------------------------|------|-------------------------------|----------------------|------|---------|-------------|-------------|-------|-------------|---|-------------|
| | | | P25K | P40K | CK30 | TIC15 | TIC17 | TIC20 | TIC30 | | TIC35 |
| | | | 0.1-0.3 | | 0.1-0.3 | | 0.1-0.4-0.8 | | 0.2-0.4-0.6 | | 0.2-0.4-0.6 |
| Stainless steel annealed | 180 | Austenitic Ni > 8%, Cr 12-25% | 205 170 | | 240 200 | 180 150 120 | 600 100 | | 190 160 130 | 190 160 130 | 2450 |
| | | Austenitic/Ferritic | | | 160 130 | 180 150 120 | 400 100 | | 190 160 100 | 190 160 130 | |
| | | Austenitic/Ferritic, Low S | | | 160 130 | 180 150 120 | 400 100 | | 140 110 | 160 130 100 | |
| Heat resistant alloys | 200 | Annealed | | | | | 50 20 | | 40 20 | 40 20 | 3000 |
| | 280 | Aged | | | | | 50 20 | | 35 15 | 35 15 | 3050 |
| | 250 | Annealed | | | | | 40 15 | | 25 6 | 25 8 | 3500 |
| | 350 | Aged | | | | | 35 20 | | 15 4 | 15 4 | 4150 |
| 320 | Cast | | | | | 25 10 | | 15 4 | 15 4 | 4150 | |
| Titanium alloys | 400 | Ti | | | | | 140 80 | | | 80 130 | 1530 |
| | 950 | Cast a, almost a and a+b | | | | | 45 25 | | | 15 35 | 1675 |
| | 1050 | Aged cast a+b | | | | | 45 25 | | | 15 35 | 1690 |

| Material K | HB | Condition | Cutting speed m/min. | | | | | | Specific cutting force K _{c,0.4} |
|-------------------------|-----|--------------------------|----------------------|---------------|-------------|-------------|---------|---------------|---|
| | | | K15K | TIC17 | CK30 | TIC15 | TIC20 | Z10R | |
| | | | 0.2-0.5-1.0 | | 0.2-0.5-1.0 | | 0.2-0.5 | | |
| Hardened steel | 350 | Hardened steel | 27 16 10 | 180 150 110 | | 175 145 100 | | | 4500 |
| | 250 | Manganese steel 12% | 65 40 16 | 120 90 60 | | 120 85 50 | | | 3600 |
| Malleable cast iron | 130 | Ferritic | 105 75 45 | 250 180 100 | | 225 150 90 | | | 1100 |
| | 230 | Pearlitic | 80 60 30 | 160 100 60 | | 155 95 55 | | | 1100 |
| Cast iron | 180 | Low tensile strength | 135 95 60 | 180 120 80 | 300 200 | 165 110 70 | | | 1100 |
| | 260 | High tensile strength | 95 65 40 | 140 105 60 | 250 180 | 120 90 55 | | | 1500 |
| Nodular SG iron | 160 | Ferritic | 115 80 45 | 220 180 100 | 250 180 | | | | 1100 |
| | 250 | Pearlitic | 80 50 30 | 150 100 50 | 180 120 | | | | 1800 |
| Chilled cast iron | 400 | | 17 11 | 17 11 | | | | | 3000 |
| Aluminium alloys | 60 | Non heat treatable | 1750 1280 800 | 1750 1280 800 | | | | 1750 1280 800 | 500 |
| | 100 | Heat treatable | 510 370 250 | 510 370 250 | | | | 510 370 250 | 800 |
| Aluminium alloys (Cast) | 75 | Non heat treatable | 460 285 175 | 460 285 175 | | | | 460 285 175 | 750 |
| | 90 | Heat treatable | 300 180 110 | 300 180 110 | | | | 300 180 110 | 900 |
| Bronze - Brass alloys | 110 | Lead alloys, Pb > 1% | 610 430 295 | 610 430 295 | | | | 610 430 295 | 700 |
| | 90 | Brass and bronze | 310 250 195 | 310 250 195 | | | | 310 250 195 | 750 |
| | 100 | Inc. electrolytic copper | 225 160 115 | 225 160 115 | | | | 225 160 115 | 1750 |
| Other materials | | Hard plastics | 380 240 | 380 240 | | | | 380 240 | |
| | | Fibre | 190 120 | 190 120 | | | | 190 120 | |
| | | Hard rubber | 225 160 | 225 160 | | | | 225 160 | |

Technical information
Information technique
Technische Auskunft

E02

Applications
Applications
Anwendungen

E03

Toolholders
Porte-outils
Klemmhalter

E04

Boring bars
Barres d'alésage
Bohrstangen

E10

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

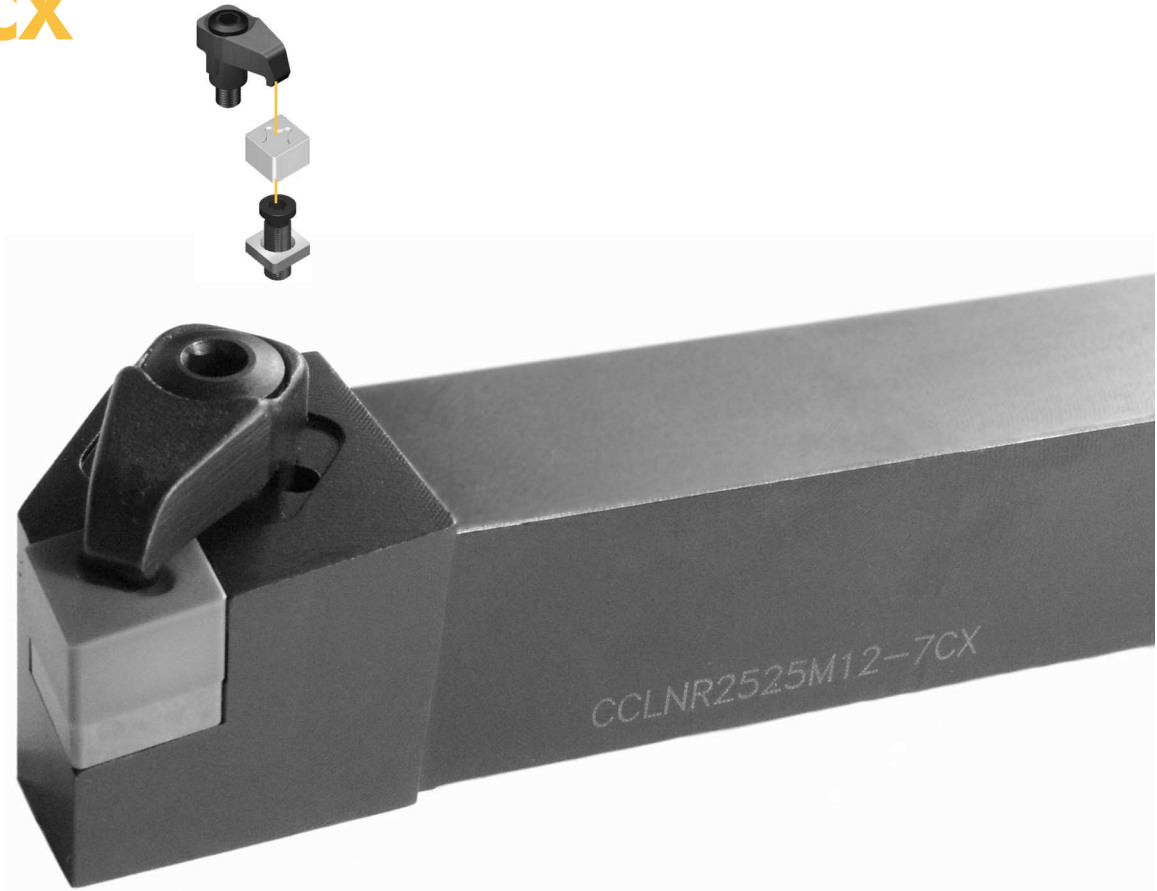
Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors

CX

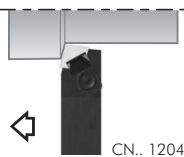


CD



Toolholders - Porte-outils - Klemmhalter

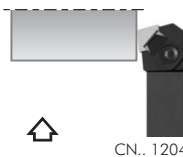
CCBN 75°



Page E.04

CN.. 1204..
CN.. 1207..
CN.. 1607..

CCKN 75°



Page E.04

CN.. 1204..
CN.. 1207..
CN.. 1607..

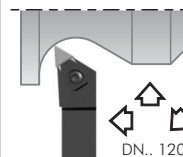
CCLN 95°



Page E.04

CN.. 1204..
CN.. 1207..
CN.. 1607..

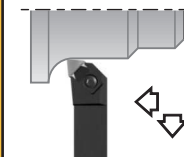
CDJN 93°



Page E.05

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DN.. 1207..
DN.. 1607..

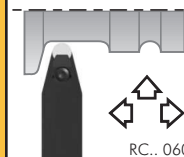
CELN 97° 30'



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EN.. 1307..

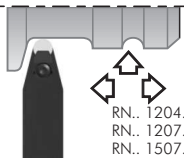
CRDC



Page E.05

RC.. 0607..
RC.. 1907..

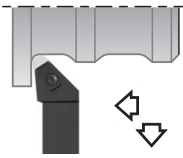
CRDN



Page E.06

RN.. 1204..
RN.. 1207..
RN.. 1507..
RN.. 1907..
RN.. 2507..

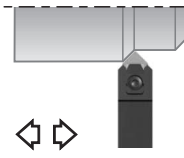
CRSN



Page E.06

RN.. 1204..
RN.. 1207..

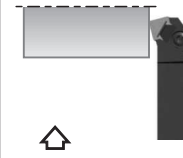
CSDN 45°



Page E.06

SN.. 120..
SN.. 1507..

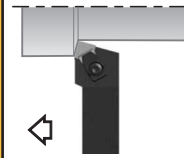
CSKN 75°



Page E.07

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SN.. 1507..

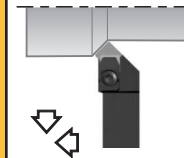
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Page E.07

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SN.. 1507..

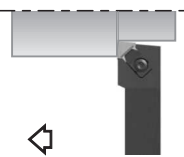
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Page E.07

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SN.. 1507..

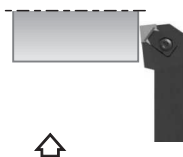
CSXN 85°



Page E.08

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SN.. 1507..

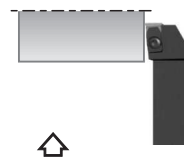
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Page E.08

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SN.. 1507..

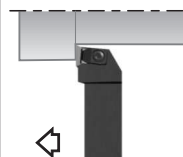
CTFN 90°



Page E.08

TN.. 1604..
TN.. 1607..

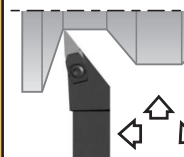
CTGN 90°



Page E.09

TN.. 1604..
TN.. 1607..

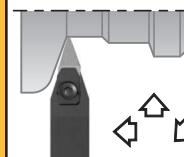
CVJN 93°



Page E.09

VN.. 1604..
VN.. 1607..

CVVN 62° 30'

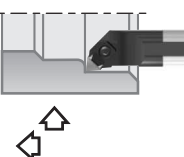


Page E.09

VN.. 1604..
VN.. 1607..

Boring bars - Barres d'alésage - Bohrstangen

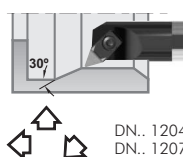
CCLN 95°



Page E.10

CN.. 1204..
CN.. 1207..

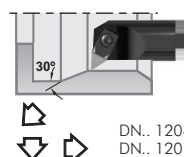
CDQN 107° 30'



Page E.10

DN.. 1204..
DN.. 1207..
DN.. 1504..
DN.. 1507..

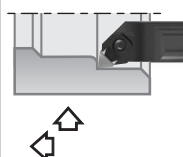
CDUN 93°



Page E.10

DN.. 1204..
DN.. 1207..
DN.. 1504..
DN.. 1507..

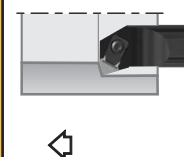
CELN 97° 30'



Page E.11

EN.. 1307..

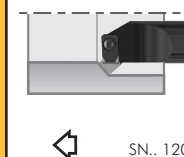
CSKN 75°



Page E.11

SN.. 1204..
SN.. 1207..

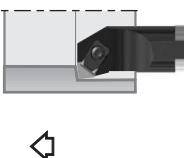
CSSN 45°



Page E.11

SN.. 1204..
SN.. 1207..
SN.. 1507..

CSYN 85°



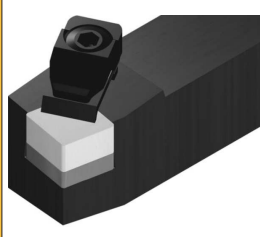
Page E.12

SN.. 1204..
SN.. 1207..

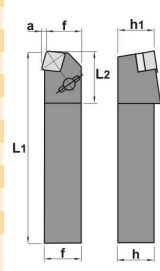
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

CCBN 75°



| REF. | h=h1 | b | L1 | L2 | f | α | CN.. | [Icons] | | | | | |
|-----------------------|------|----|-----|----|----|------|--------|----------|-----|-----|-----|-----|-----|
| CCBN R/L 2525 M12-4CD | 25 | 25 | 150 | 32 | 22 | 3,10 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCBN R/L 2525 M12-7CD | 25 | 25 | 150 | 32 | 22 | 3,10 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCBN R/L 3225 P12-4CD | 32 | 25 | 170 | 32 | 22 | 3,10 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCBN R/L 3225 P12-7CD | 32 | 25 | 170 | 32 | 22 | 3,10 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCBN R/L 2525 M16-CD | 25 | 25 | 150 | 35 | 27 | 3,82 | 1607.. | ICSN-533 | 472 | 944 | 247 | - | 504 |
| CCBN R/L 3225 P16-CD | 32 | 25 | 170 | 35 | 27 | 3,82 | 1607.. | ICSN-533 | 472 | 944 | 247 | - | 504 |
| CCBN R/L 2525 M12-4CX | 25 | 25 | 150 | 32 | 22 | 3,10 | 1204.. | ICSN-454 | 470 | - | - | 271 | 504 |
| CCBN R/L 2525 M12-7CX | 25 | 25 | 150 | 32 | 22 | 3,10 | 1207.. | ICSN-434 | 470 | - | - | 271 | 504 |
| CCBN R/L 3225 P12-4CX | 32 | 25 | 170 | 32 | 22 | 3,10 | 1204.. | ICSN-454 | 470 | - | - | 271 | 504 |
| CCBN R/L 3225 P12-7CX | 32 | 25 | 170 | 32 | 22 | 3,10 | 1207.. | ICSN-434 | 470 | - | - | 271 | 504 |
| CCBN R/L 2525 M16-CX | 25 | 25 | 150 | 35 | 27 | 3,82 | 1607.. | ICSN-533 | 472 | - | - | 245 | 504 |
| CCBN R/L 3225 P16-CX | 32 | 25 | 170 | 35 | 27 | 3,82 | 1607.. | ICSN-533 | 472 | - | - | 245 | 504 |



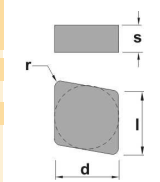
Turning

Automatic lathes

Ceramic tools



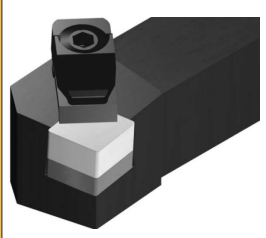
| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1207.. | 12,90 | 7,94 | 12,70 |
| CN.. 1607.. | 16,10 | 7,94 | 15,88 |



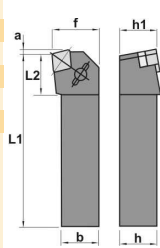
For more information see page: A.76

Parting & grooving

CCKN 75°



| REF. | h=h1 | b | L1 | L2 | f | α | CN.. | [Icons] | | | | | |
|-----------------------|------|----|-----|----|----|------|--------|----------|-----|-----|-----|-----|-----|
| CCKN R/L 2525 M12-4CD | 25 | 25 | 150 | 29 | 32 | 3,10 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCKN R/L 2525 M12-7CD | 25 | 25 | 150 | 29 | 32 | 3,10 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCKN R/L 3225 P12-4CD | 32 | 25 | 170 | 29 | 32 | 3,10 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCKN R/L 3225 P12-7CD | 32 | 25 | 170 | 29 | 32 | 3,10 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCKN R/L 2525 M12-4CX | 25 | 25 | 150 | 29 | 32 | 3,10 | 1204.. | ICSN-454 | 470 | - | - | 271 | 504 |
| CCKN R/L 2525 M12-7CX | 25 | 25 | 150 | 29 | 32 | 3,10 | 1207.. | ICSN-434 | 470 | - | - | 271 | 504 |
| CCKN R/L 3225 P12-4CX | 32 | 25 | 170 | 29 | 32 | 3,10 | 1204.. | ICSN-454 | 470 | - | - | 271 | 504 |
| CCKN R/L 3225 P12-7CX | 32 | 25 | 170 | 29 | 32 | 3,10 | 1207.. | ICSN-434 | 470 | - | - | 271 | 504 |



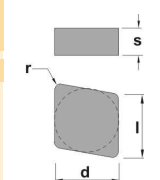
Threading

Drills

Cartridges



| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1207.. | 12,90 | 7,94 | 12,70 |

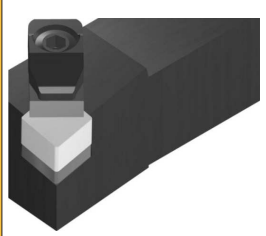


For more information see page: A.76

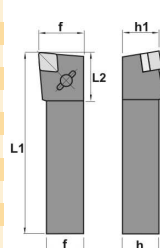
Brazed tools

Milling cutters

CCLN 95°



| REF. | h=h1 | b | L1 | L2 | f | CN.. | [Icons] | | | | | |
|-----------------------|------|----|-----|----|----|--------|----------|-----|-----|-----|-----|-----|
| CCLN R/L 2525 M12-4CD | 25 | 25 | 150 | 35 | 32 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCLN R/L 2525 M12-7CD | 25 | 25 | 150 | 35 | 32 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCLN R/L 3225 P12-4CD | 32 | 25 | 170 | 35 | 32 | 1204.. | ICSN-454 | 470 | 944 | 247 | - | 504 |
| CCLN R/L 3225 P12-7CD | 32 | 25 | 170 | 35 | 32 | 1207.. | ICSN-434 | 470 | 944 | 247 | - | 504 |
| CCLN R/L 2525 M16-CD | 25 | 25 | 150 | 35 | 32 | 1607.. | ICSN-533 | 472 | 944 | 247 | - | 504 |
| CCLN R/L 3225 P16-CD | 32 | 25 | 170 | 35 | 32 | 1607.. | ICSN-533 | 472 | 944 | 247 | - | 504 |
| CCLN R/L 2525 M12-4CX | 25 | 25 | 150 | 35 | 32 | 1204.. | ICSN-454 | 470 | - | - | 245 | 504 |
| CCLN R/L 2525 M12-7CX | 25 | 25 | 150 | 35 | 32 | 1207.. | ICSN-434 | 470 | - | - | 245 | 504 |
| CCLN R/L 3225 P12-4CX | 32 | 25 | 170 | 35 | 32 | 1204.. | ICSN-454 | 470 | - | - | 245 | 504 |
| CCLN R/L 3225 P12-7CX | 32 | 25 | 170 | 35 | 32 | 1207.. | ICSN-434 | 470 | - | - | 245 | 504 |
| CCLN R/L 2525 M16-CX | 25 | 25 | 150 | 35 | 32 | 1607.. | ICSN-533 | 472 | - | - | 252 | 504 |
| CCLN R/L 3225 P16-CX | 32 | 25 | 170 | 35 | 32 | 1607.. | ICSN-533 | 472 | - | - | 252 | 504 |



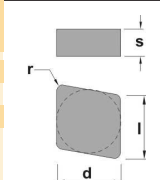
Solid carbide

Boring heads

Arbors & adaptors

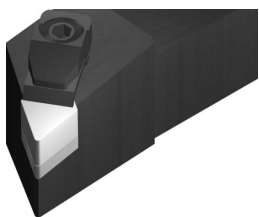


| REF. | l | s | d |
|-------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1207.. | 12,90 | 7,94 | 12,70 |
| CN.. 1607.. | 16,10 | 7,94 | 15,88 |

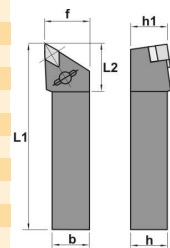


For more information see page: A.76

CDJN 93°



| REF. | h=h1 | b | L1 | L2 | f | DN.. | Icons | | | | | |
|------------------------------|------|----|-----|----|----|--------|----------|-----|-----|-----|-----|-----|
| CDJN R/L 2525 M12-4CD | 25 | 25 | 150 | 38 | 32 | 1204.. | IDSN-354 | 465 | 946 | 243 | - | 504 |
| CDJN R/L 2525 M12-7CD | 25 | 25 | 150 | 38 | 32 | 1207.. | IDSN-334 | 465 | 946 | 243 | - | 504 |
| CDJN R/L 3225 P12-4CD | 32 | 25 | 170 | 38 | 32 | 1204.. | IDSN-354 | 465 | 946 | 243 | - | 504 |
| CDJN R/L 3225 P12-7CD | 32 | 25 | 170 | 38 | 32 | 1207.. | IDSN-334 | 465 | 946 | 243 | - | 504 |
| CDJN R/L 2525 M15-CD | 25 | 25 | 150 | 38 | 32 | 1507.. | IDSN-432 | 470 | 946 | 247 | - | 504 |
| CDJN R/L 3225 P15-CD | 32 | 25 | 170 | 38 | 32 | 1507.. | IDSN-432 | 470 | 946 | 247 | - | 504 |
| CDJN R/L 2525 M12-4CX | 25 | 25 | 150 | 38 | 32 | 1204.. | IDSN-354 | 465 | - | - | 245 | 504 |
| CDJN R/L 2525 M12-7CX | 25 | 25 | 150 | 38 | 32 | 1207.. | IDSN-334 | 465 | - | - | 245 | 504 |
| CDJN R/L 3225 P12-4CX | 32 | 25 | 170 | 38 | 32 | 1204.. | IDSN-354 | 465 | - | - | 245 | 504 |
| CDJN R/L 3225 P12-7CX | 32 | 25 | 170 | 38 | 32 | 1207.. | IDSN-334 | 465 | - | - | 245 | 504 |
| CDJN R/L 2525 M15-CX | 25 | 25 | 150 | 38 | 32 | 1507.. | IDSN-432 | 470 | - | - | 252 | 504 |
| CDJN R/L 3225 P15-CX | 32 | 25 | 170 | 38 | 32 | 1507.. | IDSN-432 | 470 | - | - | 252 | 504 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

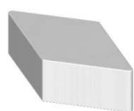
Brazed tools

Milling cutters

Solid carbide

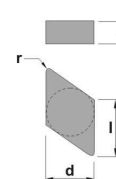
Boring heads

Arbors & adaptors

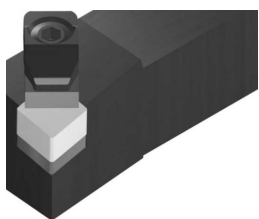


| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1204.. | 12,20 | 4,76 | 10,00 |
| DN.. 1207.. | 12,20 | 7,94 | 10,00 |
| DN.. 1507.. | 15,50 | 7,94 | 12,70 |

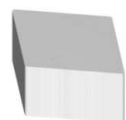
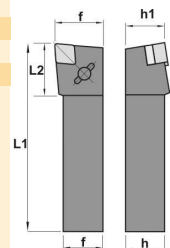
For more information see page: A.76



CELN 97° 30'

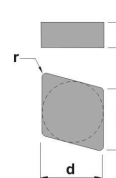


| REF. | h=h1 | b | L1 | L2 | f | EN.. | Icons | | | | | |
|-----------------------------|------|----|-----|----|----|--------|----------|-----|-----|-----|-----|-----|
| CELN R/L 2020 K13-CD | 20 | 20 | 125 | 32 | 25 | 1307.. | IESN-432 | 471 | 944 | 243 | - | 504 |
| CELN R/L 2525 M13-CD | 25 | 25 | 150 | 32 | 32 | 1307.. | IESN-432 | 470 | 944 | 243 | - | 504 |
| CELN R/L 3225 P13-CD | 32 | 25 | 170 | 32 | 32 | 1307.. | IESN-432 | 470 | 944 | 243 | - | 504 |
| CELN R/L 2020 K13-CX | 20 | 20 | 125 | 32 | 25 | 1307.. | IESN-432 | 471 | - | - | 245 | 504 |
| CELN R/L 2525 M13-CX | 25 | 25 | 150 | 32 | 32 | 1307.. | IESN-432 | 470 | - | - | 245 | 504 |
| CELN R/L 3225 P13-CX | 32 | 25 | 170 | 32 | 32 | 1307.. | IESN-432 | 470 | - | - | 245 | 504 |

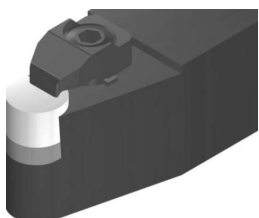


| REF. | l | s | d |
|--------------------|-------|------|-------|
| EN.. 1307.. | 13,12 | 7,94 | 12,70 |

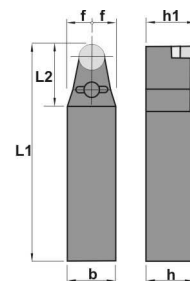
For more information see page: A.77



CRDC

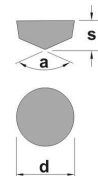


| REF. | h=h1 | b | L1 | L2 | f | RCGX | Icons | | | | |
|---------------------------|------|----|-----|----|------|--------|-------|----------|-----|-----|-----|
| CRDC N 2525 M06-CD | 25 | 25 | 150 | 20 | 12,5 | 0607.. | 300 | 492 | 241 | 475 | 525 |
| CRDC N 2525 M09-CD | 25 | 25 | 150 | 20 | 12,5 | 0907.. | 387 | 125 | 229 | - | 503 |
| CRDC N 3225 P09-CD | 32 | 25 | 170 | 20 | 12,5 | 0907.. | 387 | 125 | 229 | - | 503 |
| CRDC N 2525 M12-CD | 25 | 25 | 150 | 25 | 12,5 | 1207.. | 388 | 130 | 229 | - | 503 |
| CRDC N 3225 P12-CD | 32 | 25 | 170 | 25 | 12,5 | 1207.. | 388 | 130 | 229 | - | 503 |
| CRDC N 2525 M15-CD | 25 | 25 | 150 | 30 | 12,5 | 1510.. | 389 | 130 (x2) | 244 | - | 504 |
| CRDC N 3225 P15-CD | 32 | 25 | 170 | 30 | 12,5 | 1510.. | 389 | 130 (x2) | 244 | - | 504 |
| CRDC N 3225 P19-CD | 32 | 25 | 170 | 42 | 12,5 | 1910.. | 390 | 130 (x2) | 244 | - | 504 |
| CRDC N 3232 P19-CD | 32 | 32 | 170 | 42 | 16,0 | 1910.. | 390 | 130 (x2) | 244 | - | 504 |
| CRDC N 3232 P25-CD | 32 | 32 | 170 | 45 | 16,0 | 2512.. | 335 | 130 (x2) | 247 | - | 504 |



| REF. | a | s | d |
|--------------------|------|-------|-------|
| RCGX 0607.. | 120° | 7,94 | 6,35 |
| RCGX 0907.. | 120° | 7,94 | 9,52 |
| RCGX 1207.. | 120° | 7,94 | 12,70 |
| RCGX 1510.. | 120° | 10,00 | 15,87 |
| RCGX 1910.. | 120° | 10,00 | 19,05 |
| RCGX 2512.. | 140° | 12,00 | 25,40 |

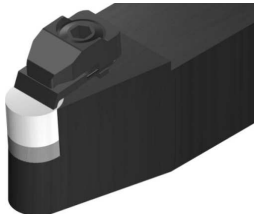
For more information...: A.77



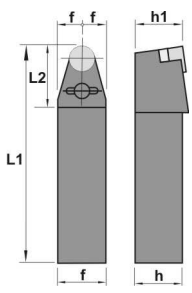
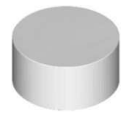


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

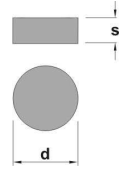
CRDN



| REF. | h=h1 | b | L1 | L2 | f | RNGN | | | | | |
|----------------------------|------|----|-----|----|------|--------|---------|-----|-----|-----|-----|
| CRDN N 2525 M12-4CD | 25 | 25 | 150 | 32 | 12,5 | 1204.. | IRSN-45 | 470 | 243 | 944 | 504 |
| CRDN N 2525 M12-7CD | 25 | 25 | 150 | 32 | 12,5 | 1207.. | IRSN-43 | 470 | 243 | 944 | 504 |
| CRDN N 3225 P12-4CD | 32 | 25 | 170 | 32 | 12,5 | 1204.. | IRSN-45 | 470 | 243 | 944 | 504 |
| CRDN N 3225 P12-7CD | 32 | 25 | 170 | 32 | 12,5 | 1207.. | IRSN-43 | 470 | 243 | 944 | 504 |
| CRDN N 2525 M15-7CD | 25 | 25 | 150 | 32 | 12,5 | 1507.. | IRSN-53 | 472 | 247 | 944 | 504 |
| CRDN N 3225 P15-7CD | 32 | 25 | 170 | 32 | 12,5 | 1507.. | IRSN-53 | 472 | 247 | 944 | 504 |
| CRDN N 3225 P19-7CD | 32 | 25 | 170 | 32 | 12,5 | 1907.. | 399 | 478 | 247 | 944 | 504 |
| CRDN N 3232 P25-7CD | 32 | 32 | 170 | 32 | 16,0 | 2507.. | 396 | 498 | 247 | 944 | 504 |

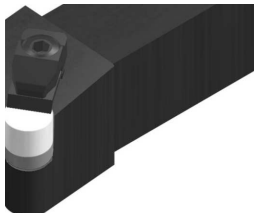



| REF. | l | s | d |
|--------------------|---|------|-------|
| RNGN 1204.. | - | 4,76 | 12,70 |
| RNGN 1207.. | - | 7,94 | 12,70 |
| RNGN 1507.. | - | 7,94 | 15,88 |
| RNGN 1907.. | - | 7,94 | 19,05 |
| RNGN 2507.. | - | 7,94 | 25,40 |

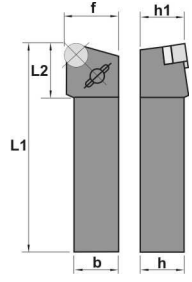
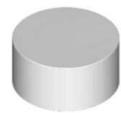


For more information see page: A.78

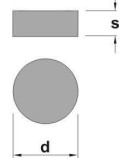
CRSN



| REF. | h=h1 | b | L1 | L2 | f | RNGN | | | | | |
|------------------------------|------|----|-----|----|----|--------|---------|-----|-----|-----|-----|
| CRSN R/L 2525 M12-4CD | 25 | 25 | 150 | 28 | 32 | 1204.. | IRSN-45 | 470 | 243 | 944 | 504 |
| CRSN R/L 2525 M12-7CD | 25 | 25 | 150 | 28 | 32 | 1207.. | IRSN-43 | 470 | 243 | 944 | 504 |
| CRSN R/L 3225 P12-4CD | 32 | 25 | 170 | 28 | 32 | 1204.. | IRSN-45 | 470 | 243 | 944 | 504 |
| CRSN R/L 3225 P12-7CD | 32 | 25 | 170 | 28 | 32 | 1207.. | IRSN-43 | 470 | 243 | 944 | 504 |

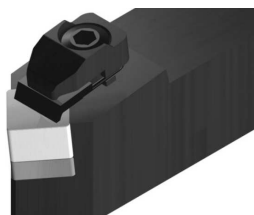



| REF. | l | s | d |
|--------------------|---|------|-------|
| RNGN 1204.. | - | 4,76 | 12,70 |
| RNGN 1207.. | - | 7,94 | 12,70 |

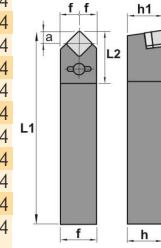



For more information see page: A.78

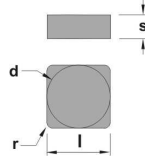
CSDN 45°



| REF. | h=h1 | b | L1 | L2 | f | a | SN.. | | | | | | |
|----------------------------|------|----|-----|----|------|-------|--------|----------|-----|-----|-----|-----|-----|
| CSDN N 2525 M12-4CD | 25 | 25 | 150 | 35 | 12,5 | 8,32 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSDN N 2525 M12-7CD | 25 | 25 | 150 | 35 | 12,5 | 8,32 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSDN N 3225 P12-4CD | 32 | 25 | 170 | 35 | 12,5 | 8,32 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSDN N 3225 P12-7CD | 32 | 25 | 170 | 35 | 12,5 | 8,32 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSDN N 2525 M15-CD | 25 | 25 | 150 | 38 | 12,5 | 10,23 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSDN N 3225 P15-CD | 32 | 25 | 170 | 38 | 12,5 | 10,23 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSDN N 2525 M12-4CX | 25 | 25 | 150 | 35 | 12,5 | 8,32 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSDN N 2525 M12-7CX | 25 | 25 | 150 | 35 | 12,5 | 8,32 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSDN N 3225 P12-4CX | 32 | 25 | 170 | 35 | 12,5 | 8,32 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSDN N 3225 P12-7CX | 32 | 25 | 170 | 35 | 12,5 | 8,32 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSDN N 2525 M15-CX | 25 | 25 | 150 | 38 | 12,5 | 10,23 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |
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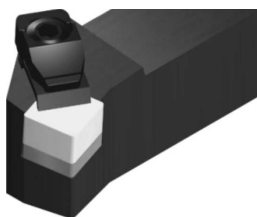



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |

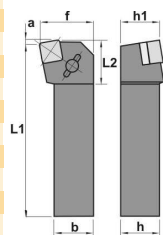


For more information see page: A.78

CSKN 75°



| REF. | h=h1 | b | L1 | L2 | f | a | SN.. | ISSN | | | | | |
|------------------------------|------|----|-----|----|----|------|--------|----------|-----|-----|-----|-----|-----|
| CSKN R/L 2525 M12-4CD | 25 | 25 | 150 | 27 | 32 | 3,06 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSKN R/L 2525 M12-7CD | 25 | 25 | 150 | 27 | 32 | 3,06 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSKN R/L 3225 P12-4CD | 32 | 25 | 170 | 27 | 32 | 3,06 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSKN R/L 3225 P12-7CD | 32 | 25 | 170 | 27 | 32 | 3,06 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSKN R/L 2525 M15-CD | 25 | 25 | 150 | 28 | 32 | 3,77 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSKN R/L 3225 P15-CD | 32 | 25 | 170 | 28 | 32 | 3,77 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSKN R/L 2525 M12-4CX | 25 | 25 | 150 | 27 | 32 | 3,06 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSKN R/L 2525 M12-7CX | 25 | 25 | 150 | 27 | 32 | 3,06 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSKN R/L 3225 P12-4CX | 32 | 25 | 170 | 27 | 32 | 3,06 | 1207.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSKN R/L 3225 P12-7CX | 32 | 25 | 170 | 27 | 32 | 3,06 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSKN R/L 2525 M15-CX | 25 | 25 | 150 | 28 | 32 | 3,77 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |
| CSKN R/L 3225 P15-CX | 32 | 25 | 170 | 28 | 32 | 3,77 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |
| CSKN R/L 4040 P15-CX | 40 | 40 | 170 | 28 | 50 | 3,77 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

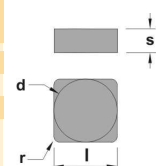
Solid carbide

Boring heads

Arbors & adaptors

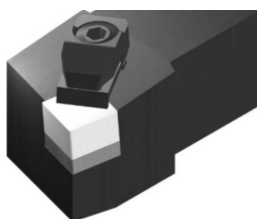


| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |

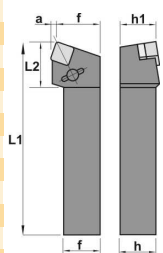


For more information see page: A.78

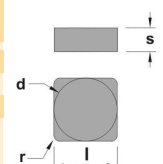
CSRN 75°



| REF. | h=h1 | b | L1 | L2 | f | a | SN.. | ISSN | | | | | |
|------------------------------|------|----|-----|----|----|------|--------|----------|-----|-----|-----|-----|-----|
| CSRN R/L 2525 M12-4CD | 25 | 25 | 150 | 32 | 27 | 3,06 | 1204.. | ISSN-454 | 470 | 944 | 247 | - | 504 |
| CSRN R/L 2525 M12-7CD | 25 | 25 | 150 | 32 | 27 | 3,06 | 1207.. | ISSN-434 | 470 | 944 | 247 | - | 504 |
| CSRN R/L 3225 P12-4CD | 32 | 25 | 170 | 32 | 27 | 3,06 | 1204.. | ISSN-454 | 470 | 944 | 247 | - | 504 |
| CSRN R/L 3225 P12-7CD | 32 | 25 | 170 | 32 | 27 | 3,06 | 1207.. | ISSN-434 | 470 | 944 | 247 | - | 504 |
| CSRN R/L 2525 M15-CD | 25 | 25 | 150 | 34 | 27 | 3,77 | 1507.. | ISSN-534 | 472 | 944 | 247 | - | 504 |
| CSRN R/L 3225 P15-CD | 32 | 25 | 170 | 34 | 27 | 3,77 | 1507.. | ISSN-534 | 472 | 944 | 247 | - | 504 |
| CSRN R/L 3232 P19-CD | 32 | 32 | 170 | 34 | 35 | 4,50 | 1907.. | 359 | 478 | 944 | 247 | - | 504 |
| CSRN R/L 4040 P19-CD | 40 | 40 | 170 | 34 | 43 | 4,50 | 1907.. | 359 | 478 | 944 | 247 | - | 504 |
| CSRN R/L 2525 M12-4CX | 25 | 25 | 150 | 32 | 27 | 3,06 | 1204.. | ISSN-454 | 470 | - | - | 245 | 504 |
| CSRN R/L 2525 M12-7CX | 25 | 25 | 150 | 32 | 27 | 3,06 | 1207.. | ISSN-434 | 470 | - | - | 245 | 504 |
| CSRN R/L 3225 P12-4CX | 32 | 25 | 170 | 32 | 27 | 3,06 | 1204.. | ISSN-454 | 470 | - | - | 245 | 504 |
| CSRN R/L 3225 P12-7CX | 32 | 25 | 170 | 32 | 27 | 3,06 | 1207.. | ISSN-434 | 470 | - | - | 245 | 504 |
| CSRN R/L 2525 M15-CX | 25 | 25 | 150 | 34 | 27 | 3,77 | 1507.. | ISSN-534 | 472 | - | - | 245 | 504 |
| CSRN R/L 3225 P15-CX | 32 | 25 | 170 | 34 | 27 | 3,77 | 1507.. | ISSN-534 | 472 | - | - | 245 | 504 |

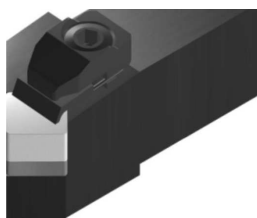


| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |

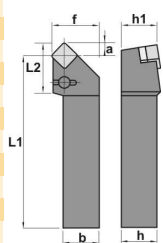


For more information see page: A.78

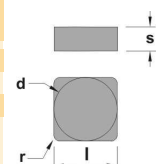
CSSN 45°



| REF. | h=h1 | b | L1 | L2 | f | a | SN.. | ISSN | | | | | |
|------------------------------|------|----|-----|----|----|-------|--------|----------|-----|-----|-----|-----|-----|
| CSSN R/L 2525 M12-4CD | 25 | 25 | 150 | 35 | 32 | 8,32 | 1204.. | ISSN-454 | 470 | 944 | 247 | - | 504 |
| CSSN R/L 2525 M12-7CD | 25 | 25 | 150 | 35 | 32 | 8,32 | 1207.. | ISSN-434 | 470 | 944 | 247 | - | 504 |
| CSSN R/L 3225 P12-4CD | 32 | 25 | 170 | 35 | 32 | 8,32 | 1204.. | ISSN-454 | 470 | 944 | 247 | - | 504 |
| CSSN R/L 3225 P12-7CD | 32 | 25 | 170 | 35 | 32 | 8,32 | 1207.. | ISSN-434 | 470 | 944 | 247 | - | 504 |
| CSSN R/L 2525 M15-CD | 25 | 25 | 150 | 37 | 32 | 10,23 | 1507.. | ISSN-534 | 472 | 944 | 247 | - | 504 |
| CSSN R/L 3225 P15-CD | 32 | 25 | 170 | 37 | 32 | 10,23 | 1507.. | ISSN-534 | 472 | 944 | 247 | - | 504 |
| CSSN R/L 3232 P19-CD | 32 | 32 | 170 | 37 | 32 | 12,50 | 1907.. | 359 | 478 | 944 | 247 | - | 504 |
| CSSN R/L 4040 P19-CD | 40 | 40 | 170 | 37 | 32 | 12,50 | 1907.. | 359 | 478 | 944 | 247 | - | 504 |
| CSSN R/L 2525 M12-4CX | 25 | 25 | 150 | 35 | 32 | 8,32 | 1204.. | ISSN-454 | 470 | - | - | 245 | 504 |
| CSSN R/L 2525 M12-7CX | 25 | 25 | 150 | 35 | 32 | 8,32 | 1207.. | ISSN-434 | 470 | - | - | 245 | 504 |
| CSSN R/L 3225 P12-4CX | 32 | 25 | 170 | 35 | 32 | 8,32 | 1204.. | ISSN-454 | 470 | - | - | 245 | 504 |
| CSSN R/L 3225 P12-7CX | 32 | 25 | 170 | 35 | 32 | 8,32 | 1207.. | ISSN-434 | 470 | - | - | 245 | 504 |
| CSSN R/L 2525 M15-CX | 25 | 25 | 150 | 37 | 32 | 10,23 | 1507.. | ISSN-534 | 472 | - | - | 245 | 504 |
| CSSN R/L 3225 P15-CX | 32 | 25 | 170 | 37 | 32 | 10,23 | 1507.. | ISSN-534 | 472 | - | - | 245 | 504 |



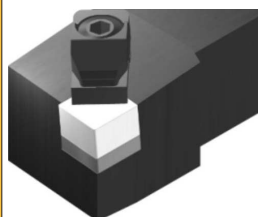
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |



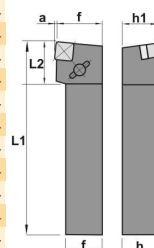
For more information see page: A.78

Inserts

CSXN 85°



| REF. | h=h1 b | | L1 | L2 | f | α | SN.. | ISSN-452 470 944 247 - 504 | | | | | |
|------------------------------|--------|----|-----|----|----|------|--------|----------------------------|-----|-----|-----|-----|-----|
| CSXN R/L 2525 M12-4CD | 25 | 25 | 150 | 30 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSXN R/L 2525 M12-7CD | 25 | 25 | 150 | 30 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSXN R/L 3225 P12-4CD | 32 | 25 | 170 | 30 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSXN R/L 3225 P12-7CD | 32 | 25 | 170 | 30 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSXN R/L 2525 M15-CD | 25 | 25 | 150 | 33 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSXN R/L 3225 P15-CD | 32 | 25 | 170 | 33 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSXN R/L 2525 M12-4CX | 25 | 32 | 150 | 30 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSXN R/L 2525 M12-7CX | 25 | 40 | 150 | 30 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSXN R/L 3225 P12-4CX | 32 | 25 | 170 | 30 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSXN R/L 3225 P12-7CX | 32 | 25 | 170 | 30 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSXN R/L 2525 M15-CX | 25 | 25 | 150 | 33 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |
| CSXN R/L 3225 P15-CX | 32 | 25 | 170 | 33 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |



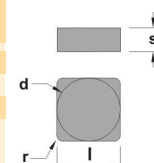
Turning

Automatic lathes

Ceramic tools



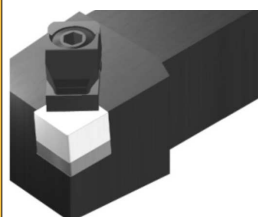
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |



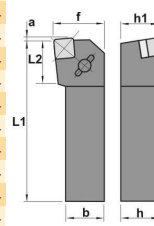
For more information see page: A.78

Parting & grooving

CSYN 85°



| REF. | h=h1 b | | L1 | L2 | f | α | SN.. | ISSN-452 470 944 247 - 504 | | | | | |
|------------------------------|--------|----|-----|----|----|------|--------|----------------------------|-----|-----|-----|-----|-----|
| CSYN R/L 2525 M12-4CD | 25 | 25 | 150 | 27 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSYN R/L 2525 M12-7CD | 25 | 25 | 150 | 27 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSYN R/L 3225 P12-4CD | 32 | 25 | 170 | 27 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| CSYN R/L 3225 P12-7CD | 32 | 25 | 170 | 27 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| CSYN R/L 2525 M15-CD | 25 | 25 | 150 | 27 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSYN R/L 3225 P15-CD | 32 | 25 | 170 | 27 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | 944 | 247 | - | 504 |
| CSYN R/L 2525 M12-4CX | 25 | 32 | 150 | 27 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSYN R/L 2525 M12-7CX | 25 | 40 | 150 | 27 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSYN R/L 3225 P12-4CX | 32 | 25 | 170 | 27 | 32 | 1,03 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| CSYN R/L 3225 P12-7CX | 32 | 25 | 170 | 27 | 32 | 1,03 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |
| CSYN R/L 2525 M15-CX | 25 | 25 | 150 | 27 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |
| CSYN R/L 3225 P15-CX | 32 | 25 | 170 | 27 | 32 | 1,38 | 1507.. | ISSN-533 | 472 | - | - | 245 | 504 |



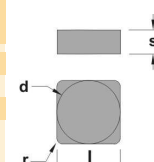
Threading

Drills

Cartridges



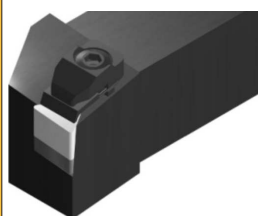
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |



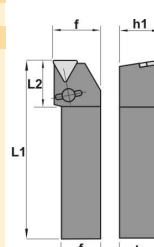
For more information see page: A.78

Brazed tools

CTFN 90°



| REF. | h=h1 b | | L1 | L2 | f | TNGN | ITSN-342 465 946 243 504 | | | | |
|------------------------------|--------|----|-----|----|----|--------|--------------------------|-----|-----|-----|-----|
| CTFN R/L 2525 M16-4CD | 25 | 25 | 150 | 29 | 32 | 1604.. | ITSN-342 | 465 | 946 | 243 | 504 |
| CTFN R/L 2525 M16-7CD | 25 | 25 | 150 | 29 | 32 | 1607.. | ITSN-322 | 465 | 946 | 243 | 504 |
| CTFN R/L 3225 P16-4CD | 32 | 25 | 170 | 29 | 32 | 1604.. | ITSN-342 | 465 | 946 | 243 | 504 |
| CTFN R/L 3225 P16-7CD | 32 | 25 | 170 | 29 | 32 | 1607.. | ITSN-322 | 465 | 946 | 243 | 504 |



Milling cutters

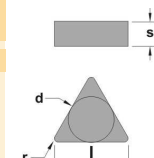
Solid carbide

Boring heads

Arbors & adaptors

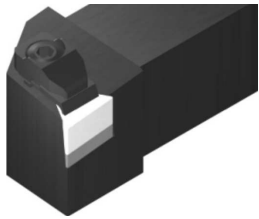


| REF. | l | s | d |
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| TNGN 1607.. | 16,50 | 7,94 | 9,52 |

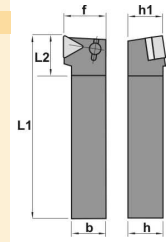


For more information see page: A.79

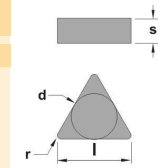
CTGN 90°



| REF. | h=h1 | b | L1 | L2 | f | TNGN | | | | | |
|------------------------------|------|----|-----|----|----|--------|----------|-----|-----|-----|-----|
| CTGN R/L 2525 M16-4CD | 25 | 25 | 150 | 20 | 32 | 1604.. | ITSN-342 | 465 | 946 | 243 | 504 |
| CTGN R/L 2525 M16-7CD | 25 | 25 | 150 | 20 | 32 | 1607.. | ITSN-322 | 465 | 946 | 243 | 504 |
| CTGN R/L 3225 P16-4CD | 32 | 25 | 170 | 20 | 32 | 1604.. | ITSN-342 | 465 | 946 | 243 | 504 |
| CTGN R/L 3225 P16-7CD | 32 | 25 | 170 | 20 | 32 | 1607.. | ITSN-322 | 465 | 946 | 243 | 504 |

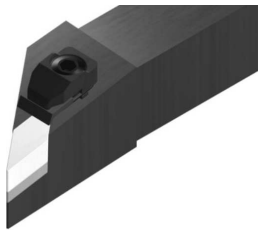


| REF. | l | s | d |
|--------------------|-------|------|------|
| TNGN 1604.. | 16,50 | 4,76 | 9,52 |
| TNGN 1607.. | 16,50 | 7,94 | 9,52 |

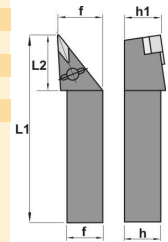


For more information see page: A.79

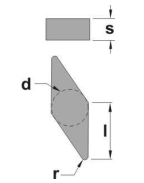
CVJN 93°



| REF. | h=h1 | b | L1 | L2 | f | VN.. | | | | | |
|------------------------------|------|----|-----|----|----|--------|----------|-----|-----|-----|---------|
| CVJN R/L 2525 M16-4CD | 25 | 25 | 150 | 41 | 32 | 1604.. | IVSN-342 | 465 | 946 | 247 | - 504 |
| CVJN R/L 2525 M16-7CD | 25 | 25 | 150 | 41 | 32 | 1607.. | IVSN-322 | 465 | 946 | 247 | - 504 |
| CVJN R/L 3225 P16-4CD | 32 | 25 | 170 | 41 | 32 | 1604.. | IVSN-342 | 465 | 946 | 247 | - 504 |
| CVJN R/L 3225 P16-7CD | 32 | 25 | 170 | 41 | 32 | 1607.. | IVSN-322 | 465 | 946 | 247 | - 504 |
| CVJN R/L 2525 M16-4CX | 25 | 25 | 150 | 41 | 32 | 1604.. | IVSN-342 | 465 | - | - | 248 504 |
| CVJN R/L 2525 M16-7CX | 25 | 25 | 150 | 41 | 32 | 1607.. | IVSN-322 | 465 | - | - | 248 504 |
| CVJN R/L 3225 P16-4CX | 32 | 25 | 170 | 41 | 32 | 1604.. | IVSN-342 | 465 | - | - | 248 504 |
| CVJN R/L 3225 P16-7CX | 32 | 25 | 170 | 41 | 32 | 1607.. | IVSN-322 | 465 | - | - | 248 504 |

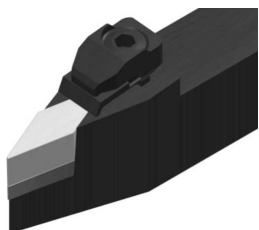


| REF. | l | s | d |
|--------------------|-------|------|------|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |
| VN.. 1607.. | 16,50 | 7,94 | 9,52 |

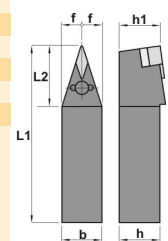


For more information see page: A.79

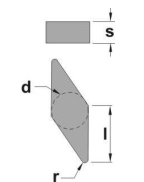
CVVN 62° 30'



| REF. | h=h1 | b | L1 | L2 | f | VN.. | | | | | |
|----------------------------|------|----|-----|----|------|--------|----------|-----|-----|-----|---------|
| CVVN N 2525 M16-4CD | 25 | 25 | 150 | 45 | 12,5 | 1604.. | IVSN-342 | 465 | 946 | 247 | - 504 |
| CVVN N 2525 M16-7CD | 25 | 25 | 150 | 45 | 12,5 | 1607.. | IVSN-322 | 465 | 946 | 247 | - 504 |
| CVVN N 3225 P16-4CD | 32 | 25 | 170 | 45 | 12,5 | 1604.. | IVSN-342 | 465 | 946 | 247 | - 504 |
| CVVN N 3225 P16-7CD | 32 | 25 | 170 | 45 | 12,5 | 1607.. | IVSN-322 | 465 | 946 | 247 | - 504 |
| CVVN N 2525 M16-4CX | 25 | 25 | 150 | 45 | 12,5 | 1604.. | IVSN-342 | 465 | - | - | 248 504 |
| CVVN N 2525 M16-7CX | 25 | 25 | 150 | 45 | 12,5 | 1607.. | IVSN-322 | 465 | - | - | 248 504 |
| CVVN N 3225 P16-4CX | 32 | 25 | 170 | 45 | 12,5 | 1604.. | IVSN-342 | 465 | - | - | 248 504 |
| CVVN N 3225 P16-7CX | 32 | 25 | 170 | 45 | 12,5 | 1607.. | IVSN-322 | 465 | - | - | 248 504 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| VN.. 1604.. | 16,50 | 4,76 | 9,52 |
| VN.. 1607.. | 16,50 | 7,94 | 9,52 |



For more information see page: A.79

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

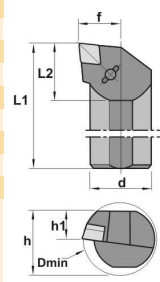


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

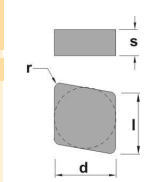


CCLN 95°

| REF. | d | h1 | L1 | L2 | f | h | Dmin | CN.. |
|-----------------------------|----|------|-----|----|----|----|------|--------|
| S32S CCLN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CCLN R/L 12-4CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1204.. |
| S40T CCLN R/L 12-7CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1207.. |
| S50U CCLN R/L 12-4CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1204.. |
| S50U CCLN R/L 12-7CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1207.. |
| S32S CCLN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CCLN R/L 12-4CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1204.. |
| S40T CCLN R/L 12-7CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1207.. |
| S50U CCLN R/L 12-4CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1204.. |
| S50U CCLN R/L 12-7CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1207.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1207.. | 12,90 | 7,94 | 12,70 |

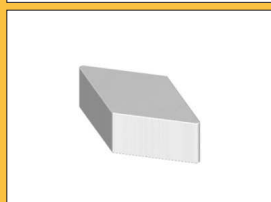
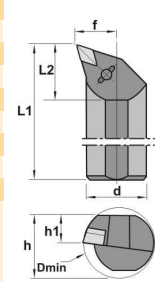


For more information see page: A.76

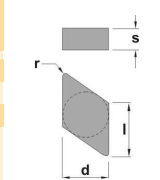


CDQN 107° 30'

| REF. | d | h1 | L1 | L2 | f | h | Dmin | DN.. |
|-----------------------------|----|------|-----|----|----|----|------|--------|
| S32S CDQN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 50 | 1207.. |
| S40T CDQN R/L 12-4CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1204.. |
| S40T CDQN R/L 12-7CD | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1207.. |
| S50U CDQN R/L 15-4CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1504.. |
| S50U CDQN R/L 15-7CD | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1507.. |
| S32S CDQN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 50 | 1207.. |
| S40T CDQN R/L 12-4CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1204.. |
| S40T CDQN R/L 12-7CX | 40 | 18,5 | 300 | 35 | 27 | 37 | 70 | 1207.. |
| S50U CDQN R/L 15-4CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1504.. |
| S50U CDQN R/L 15-7CX | 50 | 23,5 | 350 | 38 | 32 | 47 | 70 | 1507.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1204.. | 12,20 | 4,76 | 10,00 |
| DN.. 1207.. | 12,20 | 7,94 | 10,00 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1507.. | 15,50 | 7,94 | 12,70 |

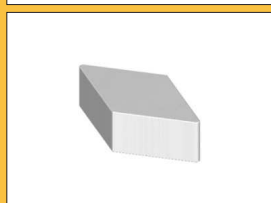
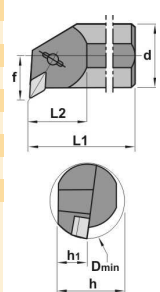


For more information see page: A.76

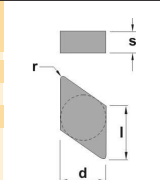


CDUN 93°

| REF. | d | h1 | L1 | L2 | f | h | Dmin | DN.. |
|-----------------------------|----|------|-----|----|----|----|------|--------|
| S32S CDUN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CDUN R/L 12-4CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1204.. |
| S40T CDUN R/L 12-7CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1207.. |
| S50U CDUN R/L 15-4CD | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1504.. |
| S50U CDUN R/L 15-7CD | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1507.. |
| S32S CDUN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CDUN R/L 12-4CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1204.. |
| S40T CDUN R/L 12-7CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1207.. |
| S50U CDUN R/L 15-4CX | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1504.. |
| S50U CDUN R/L 15-7CX | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1507.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| DN.. 1204.. | 12,20 | 4,76 | 10,00 |
| DN.. 1207.. | 12,20 | 7,94 | 10,00 |
| DN.. 1504.. | 15,50 | 4,76 | 12,70 |
| DN.. 1507.. | 15,50 | 7,94 | 12,70 |

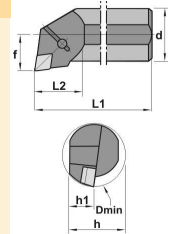


For more information see page: A.76

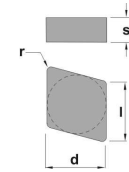
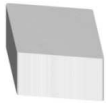
CELN 97° 30'



| REF. | d | h1 | L1 | L2 | f | h | Dmin | EN.. |
|----------------------------|----|------|-----|----|----|----|------|--------|
| S40T CELN R/L 13-CD | 40 | 18,5 | 300 | 32 | 27 | 37 | 50 | 1307.. |
| S50U CELN R/L 13-CD | 50 | 23,5 | 350 | 32 | 35 | 47 | 63 | 1307.. |
| S40T CELN R/L 13-CX | 40 | 18,5 | 300 | 32 | 27 | 37 | 50 | 1307.. |
| S50U CELN R/L 13-CX | 50 | 23,5 | 350 | 32 | 35 | 47 | 63 | 1307.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| EN.. 1307.. | 13,12 | 7,94 | 12,70 |

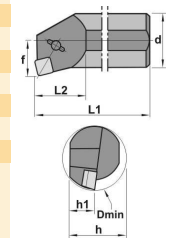


For more information see page: A.77

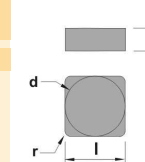
CSKN 75°



| REF. | d | h1 | L1 | L2 | f | h | Dmin | SN.. |
|-----------------------------|----|------|-----|----|----|----|------|--------|
| S32S CSKN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CSKN R/L 12-4CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1204.. |
| S40T CSKN R/L 12-7CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1207.. |
| S50U CSKN R/L 12-4CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1204.. |
| S50U CSKN R/L 12-7CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1207.. |
| S32S CSKN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CSKN R/L 12-4CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1204.. |
| S40T CSKN R/L 12-7CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1207.. |
| S50U CSKN R/L 12-4CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1204.. |
| S50U CSKN R/L 12-7CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1207.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |

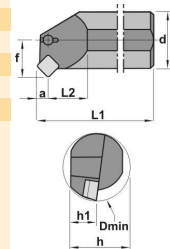


For more information see page: A.78

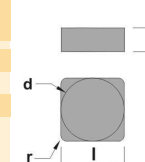
CSSN 45°



| REF. | d | h1 | L1 | L2 | f | h | Dmin | SN.. |
|-----------------------------|----|------|-----|----|----|----|------|--------|
| S32S CSSN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CSSN R/L 12-4CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1204.. |
| S40T CSSN R/L 12-7CD | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1207.. |
| S50U CSSN R/L 15-7CD | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1507.. |
| S32S CSSN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. |
| S40T CSSN R/L 12-4CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1204.. |
| S40T CSSN R/L 12-7CX | 40 | 18,5 | 300 | 50 | 27 | 37 | 70 | 1207.. |
| S50U CSSN R/L 15-7CX | 50 | 23,5 | 350 | 50 | 32 | 47 | 70 | 1507.. |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |
| SN.. 1507.. | 15,87 | 7,94 | 15,87 |



For more information see page: A.78

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

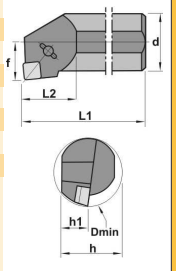


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

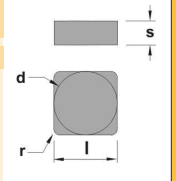
CSYN 85°



| REF. | d | h1 | L1 | L2 | f | h | Dmin | SN.. | Icons | | | | | |
|-----------------------------|----|------|-----|----|----|----|------|--------|----------|-----|-----|-----|-----|-----|
| S32S CSYN R/L 12-7CD | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. | - | - | 944 | 247 | - | 504 |
| S40T CSYN R/L 12-4CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1204.. | ISSN-452 | 471 | 944 | 247 | - | 504 |
| S40T CSYN R/L 12-7CD | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1207.. | ISSN-432 | 471 | 944 | 247 | - | 504 |
| S50U CSYN R/L 12-4CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1204.. | ISSN-452 | 470 | 944 | 247 | - | 504 |
| S50U CSYN R/L 12-7CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1207.. | ISSN-432 | 470 | 944 | 247 | - | 504 |
| S32S CSYN R/L 12-7CX | 32 | 15,0 | 250 | 40 | 22 | 30 | 40 | 1207.. | - | - | - | - | 245 | 504 |
| S40T CSYN R/L 12-4CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1204.. | ISSN-452 | 471 | - | - | 245 | 504 |
| S40T CSYN R/L 12-7CX | 40 | 18,5 | 300 | 67 | 27 | 37 | 70 | 1207.. | ISSN-432 | 471 | - | - | 245 | 504 |
| S50U CSYN R/L 12-4CX | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1204.. | ISSN-452 | 470 | - | - | 245 | 504 |
| S50U CSYN R/L 12-7CD | 50 | 23,5 | 350 | 67 | 35 | 47 | 70 | 1207.. | ISSN-432 | 470 | - | - | 245 | 504 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SN.. 1204.. | 12,70 | 4,76 | 12,70 |
| SN.. 1207.. | 12,70 | 7,94 | 12,70 |



For more information see page: A.78

Applications
Applications
Anwendungen

F02

Toolholders
Porte-outils
Klemmhalter

F03

Boring bars
Barres d'alésage
Bohrstangen

F07

Tool blocks
Blocs porte-lames
Trägerwerkzeuge

F08

Blades
Lames
Stechschwerter

F08

Top Notch Tools
Outils Notch
Notch-Werkzeuge

F10


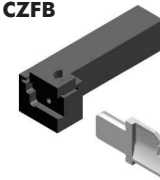
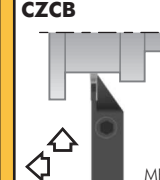
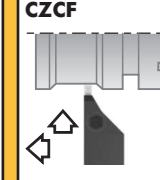
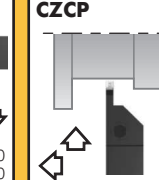
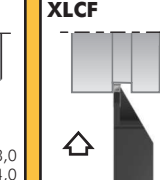
Cutting cata
Conditions de coupe
Schnittbedingungen

F12

Toolholders - Porte-outils - Klemmhalter

Inserts

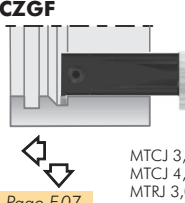
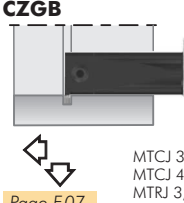
Turning

| | | | | | |
|--|--|---|--|---|---|
| <p>CZGB</p>  <p>Page F.03 MTE 03/04 MRCN 03/04</p> | <p>CZFB</p>  <p>Page F.03 MTE 03/04 MRCN 03/04</p> | <p>CZCB</p>  <p>Page F.05 MRCN 1,6 ... MRCN 6,0</p> | <p>CZCF</p>  <p>Page F.05 MTC 3,0 MTC 4,0 MTR 3,0 MTR 3,8</p> | <p>CZCP</p>  <p>Page F.05 MTC 3,0 MTC 4,0 MTR 3,0 MTR 3,8</p> | <p>XLCF</p>  <p>Page F.06 PTNT 02 PTNT 03 PTNT 04</p> |
|--|--|---|--|---|---|

Automatic lathes

Boring bars - Barres d'alésage - Bohrstangen

Ceramic tools



| | | | | | |
|---|---|--|--|--|--|
| <p>CZGF</p>  <p>Page F.07 MTCJ 3,0 MTCJ 4,0 MTRJ 3,0 MTRJ 3,8</p> | <p>CZGB</p>  <p>Page F.07 MTCJ 3,0 MTCJ 4,0 MTRJ 3,0 MTRJ 3,8</p> | | | | |
|---|---|--|--|--|--|

Parting & grooving

Tool blocks - Blocs porte-lames - Trägerwerkzeuge

Threading

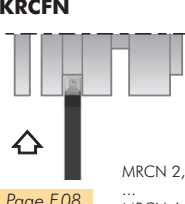
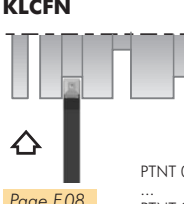
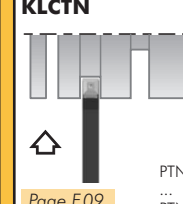
Drills

| | | | | | |
|--|--|--|--|--|--|
| <p>KPTS</p>  <p>Page F.08</p> | <p>DPTS</p>  <p>Page F.08</p> | | | | |
|--|--|--|--|--|--|

Blades- Lames - Stechschwerter

Cartridges

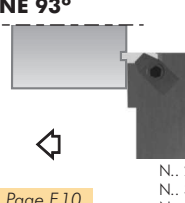
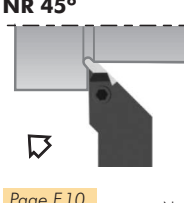
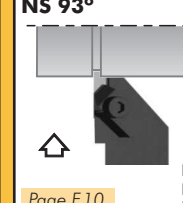
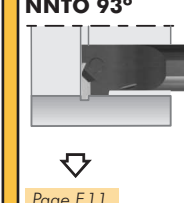
Brazed tools

| | | | | | |
|--|--|--|--|--|--|
| <p>KRCFN</p>  <p>Page F.08 MRCN 2,2 ... MRCN 6,0</p> | <p>KLCFN</p>  <p>Page F.08 PTNT 02 ... PTNT 09</p> | <p>KLCTN</p>  <p>Page F.09 PTNT 02 ... PTNT 06</p> | | | |
|--|--|--|--|--|--|

Top Notch Tools - Outils Notch - Notch-Werkzeuge

Milling cutters

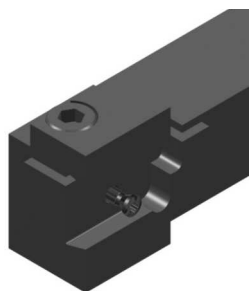
Solid carbide

| | | | | | |
|---|---|---|--|--|--|
| <p>NE 93°</p>  <p>Page F.10 N.. 2 N.. 3 N.. 4</p> | <p>NR 45°</p>  <p>Page F.10 N.. 3</p> | <p>NS 93°</p>  <p>Page F.10 N.. 2 N.. 3 N.. 4</p> | <p>NNTO 93°</p>  <p>Page F.11 N.. 2 N.. 3 N.. 4</p> | | |
|---|---|---|--|--|--|

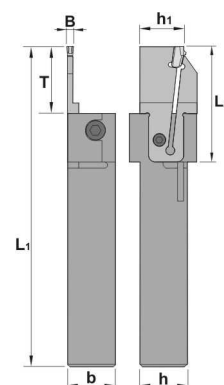
Boring heads

Arbors & adaptors

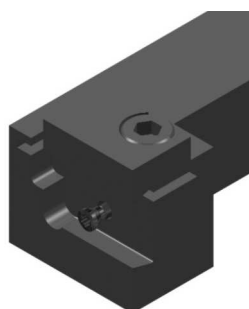
CZGB



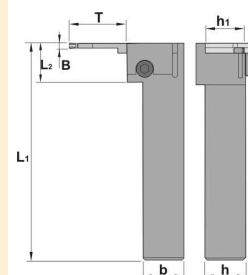
| REF. | h | b | L1 | L2 | h1 | B | T | | |
|--------------------------|----|----|-----|----|----|-----|-------|-----|-----|
| CZGB R/L 2020 M34 | 20 | 20 | 150 | 53 | 20 | 3-4 | 25-30 | 466 | 505 |
| CZGB R/L 2525 M34 | 25 | 25 | 150 | 53 | 25 | 3-4 | 25-30 | 466 | 505 |
| CZGB R/L 3232 P34 | 32 | 32 | 170 | 53 | 32 | 3-4 | 25-30 | 466 | 505 |



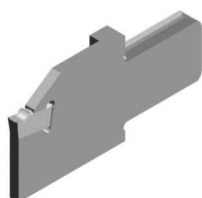
CZFB



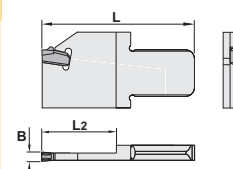
| REF. | h | b | L1 | L2 | h1 | B | T | | |
|--------------------------|----|----|-----|----|----|-----|-------|-----|-----|
| CZFB R/L 2525 M34 | 25 | 25 | 150 | 25 | 25 | 3-4 | 25-30 | 466 | 505 |
| CZFB R/L 3232 P34 | 32 | 32 | 170 | 25 | 32 | 3-4 | 25-30 | 466 | 505 |



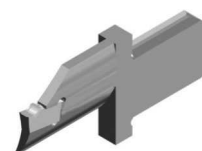
CZXB 00



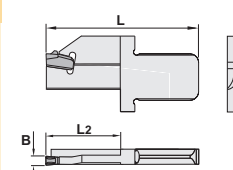
| REF. | L | L2 | B | Insert size |
|-----------------------|----|----|---|-------------|
| CZXB R/L 00X03 | 53 | 25 | 3 | MRCN 03 |
| CZXB R/L 00X04 | 53 | 25 | 4 | MRCN 04 |



CZXB 40-50



| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 4050X03 | 53 | 20 | 3 | 40-50 | MTE 03 |
| CZXB R/L 4050X04 | 53 | 20 | 4 | 40-50 | MTE 04 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

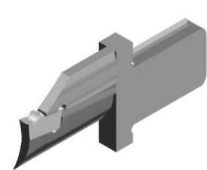
Solid carbide

Boring heads

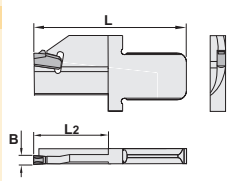
Arbors & adaptors

Inserts

CZXB 50-65



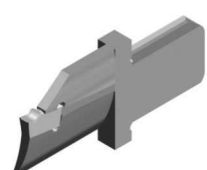
| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 5065X03 | 53 | 20 | 3 | 50-65 | MTE 03 |
| CZXB R/L 5065X04 | 53 | 20 | 4 | 50-65 | MTE 04 |



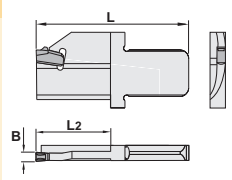
Turning

Automatic lathes

CZXB 65-92



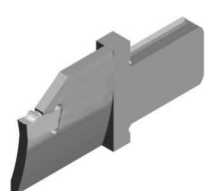
| REF. | L | L2 | B | Ø Range | Insert size |
|-------------------------|----|----|---|---------|-------------|
| CZXB R/L 6592X03 | 53 | 20 | 3 | 65-92 | MTE 03 |
| CZXB R/L 6592X04 | 53 | 20 | 4 | 65-92 | MTE 04 |



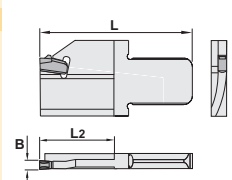
Ceramic tools

Parting & grooving

CZXB 90-122



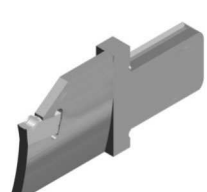
| REF. | L | L2 | B | Ø Range | Insert size |
|--------------------------|----|----|---|---------|-------------|
| CZXB R/L 90122X03 | 53 | 25 | 3 | 90-122 | MTE 03 |
| CZXB R/L 90122X04 | 53 | 25 | 4 | 90-122 | MTE 04 |



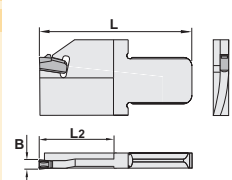
Threading

Drills

CZXB 120-160



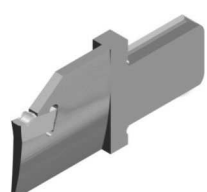
| REF. | L | L2 | B | Ø Range | Insert size |
|---------------------------|----|----|---|---------|-------------|
| CZXB R/L 120160X03 | 53 | 25 | 3 | 120-160 | MTE 03 |
| CZXB R/L 120160X04 | 53 | 25 | 4 | 120-160 | MTE 04 |



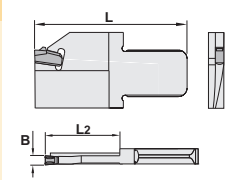
Cartridges

Brazed tools

CZXB 150-500



| REF. | L | L2 | B | Ø Range | Insert size |
|---------------------------|----|----|---|---------|-------------|
| CZXB R/L 150500X03 | 53 | 25 | 3 | 150-500 | MTE 03 |
| CZXB R/L 150500X04 | 53 | 25 | 4 | 150-500 | MTE 04 |



Milling cutters

Solid carbide

Boring heads

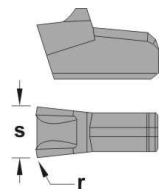


MTE



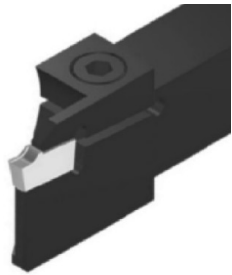
MRCN

| REF. | s | r |
|--------------------|-----|------|
| MTE/MRCN 03 | 3,0 | 0,20 |
| MTE/MRCN 04 | 4,0 | 0,20 |

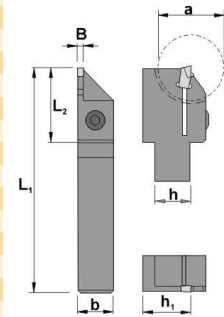


Arbors & adaptors

CZCB

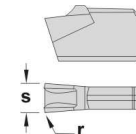


| REF. | h | b | L1 | L2 | h1 | B | α | MRCN | | |
|-------------------|----|----|-----|----|----|-----|----|------|-----|-----|
| CZCB R/L 1010 J01 | 10 | 10 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1010 J02 | 10 | 10 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1212 J01 | 12 | 12 | 110 | 25 | 21 | 1,6 | 22 | 1,6 | 107 | 504 |
| CZCB R/L 1212 J02 | 12 | 12 | 110 | 25 | 21 | 2,2 | 22 | 2,2 | 107 | 504 |
| CZCB R/L 1612 J02 | 16 | 12 | 110 | 29 | 21 | 2,2 | 32 | 2,2 | 199 | 505 |
| CZCB R/L 1612 J03 | 16 | 12 | 110 | 29 | 21 | 3,0 | 32 | 3,0 | 199 | 505 |
| CZCB R/L 2016 K03 | 20 | 16 | 125 | 35 | 30 | 3,0 | 42 | 3,0 | 109 | 505 |
| CZCB R/L 2016 K04 | 20 | 16 | 125 | 35 | 30 | 4,0 | 42 | 4,0 | 109 | 505 |
| CZCB R/L 2016 K05 | 20 | 16 | 125 | 35 | 30 | 5,0 | 42 | 5,0 | 109 | 505 |
| CZCB R/L 2016 K06 | 20 | 16 | 125 | 35 | 30 | 6,0 | 42 | 6,0 | 109 | 505 |
| CZCB R/L 2520 M03 | 25 | 20 | 150 | 50 | 30 | 3,0 | 60 | 3,0 | 109 | 505 |
| CZCB R/L 2520 M04 | 25 | 20 | 150 | 50 | 30 | 4,0 | 60 | 4,0 | 109 | 505 |
| CZCB R/L 2520 M05 | 25 | 20 | 150 | 50 | 30 | 5,0 | 60 | 5,0 | 109 | 505 |
| CZCB R/L 2520 M06 | 25 | 20 | 150 | 50 | 30 | 6,0 | 60 | 6,0 | 109 | 505 |

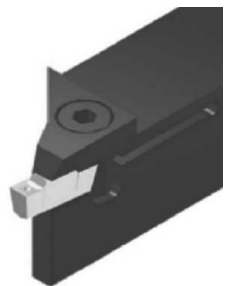


| REF. | s | r |
|----------|-----|------|
| MRCN 1,6 | 1,6 | 0,15 |
| MRCN 2,2 | 2,2 | 0,20 |
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |
| MRCN 5,0 | 5,0 | 0,30 |
| MRCN 6,0 | 6,0 | 0,40 |

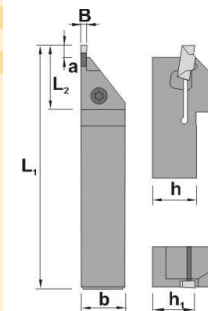
For more information see page: A.67



CZCF

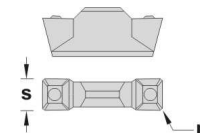


| REF. | h | b | L1 | L2 | B | α | MT. | | |
|-------------------|----|----|-----|----|-----|-----|---------|-----|-----|
| CZCF R/L 1616 H34 | 16 | 16 | 100 | 24 | 3-4 | 4,5 | 3,0-4,0 | 199 | 505 |
| CZCF R/L 2020 K34 | 20 | 20 | 125 | 24 | 3-4 | 4,5 | 3,0-4,0 | 109 | 505 |
| CZCF R/L 2525 M34 | 25 | 25 | 150 | 24 | 3-4 | 4,5 | 3,0-4,0 | 109 | 505 |

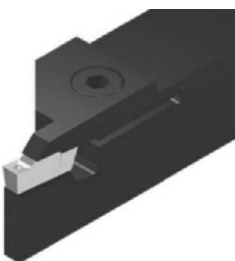


| REF. | s | r |
|----------|-----|------|
| MT.. 3,0 | 3,0 | 0,15 |
| MT.. 4,0 | 4,0 | 0,20 |
| MT.. 3,0 | 3,0 | 1,50 |
| MT.. 3,8 | 3,8 | 1,90 |

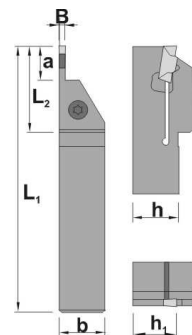
For more information see page: A.67



CZCP

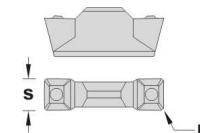


| REF. | h | b | L1 | L2 | B | α | MT. | | |
|-------------------|----|----|-----|----|-----|----|---------|-----|-----|
| CZCP R/L 1616 H34 | 16 | 16 | 100 | 30 | 3-4 | 12 | 3,0-4,0 | 199 | 505 |
| CZCP R/L 2020 K34 | 20 | 20 | 125 | 30 | 3-4 | 12 | 3,0-4,0 | 109 | 505 |
| CZCP R/L 2525 M34 | 25 | 25 | 150 | 30 | 3-4 | 12 | 3,0-4,0 | 109 | 505 |



| REF. | s | r |
|----------|-----|------|
| MT.. 3,0 | 3,0 | 0,15 |
| MT.. 4,0 | 4,0 | 0,20 |
| MT.. 3,0 | 3,0 | 1,50 |
| MT.. 3,8 | 3,8 | 1,90 |

For more information see page: A.67



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

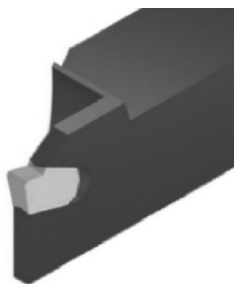
Milling cutters

Solid carbide

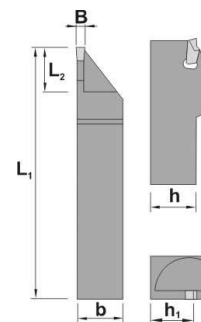
Boring heads

Arbors & adaptors

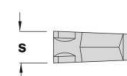
XLCF



| REF. | h=h1 | b | L1 | L2 | B | PTNT |  |
|--------------------------|------|----|-----|----|---|------|---|
| XLCF R/L 1010 J02 | 10 | 10 | 110 | 18 | 2 | 02 | 532 |
| XLCF R/L 1210 J02 | 12 | 10 | 110 | 18 | 2 | 02 | 532 |
| XLCF R/L 1212 J02 | 12 | 12 | 110 | 18 | 2 | 02 | 532 |
| XLCF R/L 1612 J03 | 16 | 12 | 110 | 20 | 3 | 03 | 532 |
| XLCF R/L 1612 J04 | 16 | 12 | 110 | 20 | 4 | 04 | 532 |
| XLCF R/L 2012 K03 | 20 | 12 | 125 | 20 | 3 | 03 | 532 |
| XLCF R/L 2012 K04 | 20 | 12 | 125 | 20 | 4 | 04 | 532 |
| XLCF R/L 2020 K03 | 20 | 20 | 125 | 20 | 3 | 03 | 532 |
| XLCF R/L 2020 K04 | 20 | 20 | 125 | 20 | 4 | 04 | 532 |
| XLCF R/L 2525 M03 | 25 | 25 | 150 | 20 | 3 | 03 | 532 |
| XLCF R/L 2525 M04 | 25 | 25 | 150 | 20 | 4 | 04 | 532 |



| REF. | s |
|----------------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |

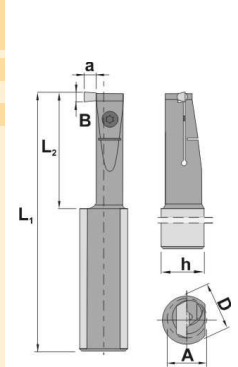


For more information see page: A.68

CZGF



| REF. | D | A | h | L1 | L2 | B | α | MT.. | | | | |
|-------------------------|----|------|----|-----|----|-----|----------|---------|-----|-----|-----|-----|
| S20R CZGF R/L 34 | 20 | 16,5 | 18 | 200 | 40 | 3-4 | 5 | 3,0-4,0 | 150 | 520 | - | - |
| S25R CZGF R/L 34 | 25 | 25,0 | 23 | 200 | 50 | 3-4 | 5 | 3,0-4,0 | - | - | 179 | 504 |
| S32S CZGF R/L 34 | 32 | 30,0 | 30 | 250 | 60 | 3-4 | 5 | 3,0-4,0 | - | - | 179 | 504 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

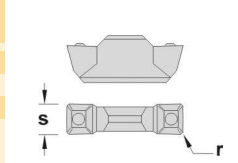
Milling cutters

Solid carbide

Boring heads

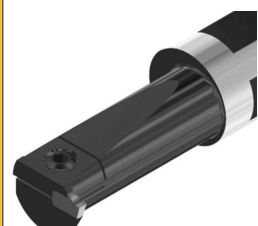
Arbors & adaptors

| REF. | s | r |
|-----------------|-----|------|
| MT.. 3,0 | 3,0 | 0,15 |
| MT.. 4,0 | 4,0 | 0,20 |
| MT.. 3,0 | 3,0 | 1,50 |
| MT.. 3,8 | 3,8 | 1,90 |

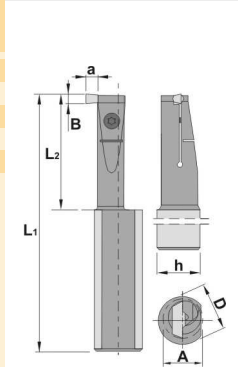


For more information see page: A.67,68

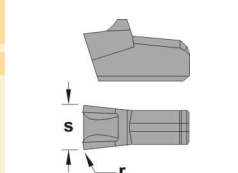
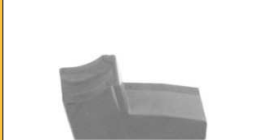
CZGB



| REF. | D | A | h | L1 | B | α | MCRN | | | | |
|-------------------------|----|----|----|-----|---|----------|------|-----|-----|-----|-----|
| S16M CZGB R/L 03 | 16 | 16 | 15 | 150 | 3 | 4 | 3,0 | 150 | 520 | - | - |
| S20R CZGB R/L 03 | 20 | 20 | 18 | 200 | 3 | 6 | 3,0 | 150 | 520 | - | - |
| S25S CZGB R/L 03 | 25 | 25 | 23 | 250 | 3 | 8 | 3,0 | - | - | 179 | 504 |
| S20R CZGB R/L 04 | 20 | 20 | 18 | 200 | 4 | 6 | 4,0 | - | - | 179 | 504 |
| S25S CZGB R/L 04 | 25 | 25 | 23 | 250 | 4 | 8 | 4,0 | - | - | 179 | 504 |



| REF. | s | r |
|-----------------|-----|------|
| MRCN 3,0 | 3,0 | 0,20 |
| MRCN 4,0 | 4,0 | 0,20 |



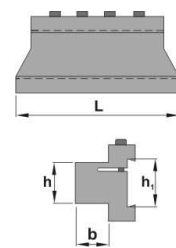
For more information see page: A.67

Inserts

KPTS



| REF. | h ₁ | L | h | b | | |
|-----------|----------------|-----|----|----|-----|-----|
| KPTS 1916 | 19 | 76 | 16 | 16 | 100 | 504 |
| KPTS 2616 | 26 | 87 | 16 | 16 | 101 | 505 |
| KPTS 2620 | 26 | 87 | 20 | 20 | 101 | 505 |
| KPTS 2625 | 26 | 87 | 25 | 25 | 101 | 505 |
| KPTS 3220 | 32 | 100 | 20 | 20 | 101 | 505 |
| KPTS 3225 | 32 | 110 | 25 | 25 | 101 | 505 |
| KPTS 3232 | 32 | 120 | 32 | 32 | 101 | 505 |
| KPTS 5250 | 52 | 135 | 50 | 50 | 102 | 506 |



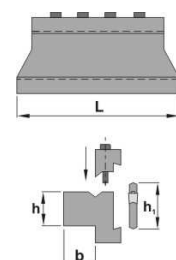
Turning

Automatic lathes

DPTS



| REF. | h ₁ | L | h | b | | | |
|-----------|----------------|-----|----|----|-----|-----|-----|
| DPTS 1916 | 19 | 76 | 16 | 16 | 100 | 292 | 504 |
| DPTS 2620 | 26 | 87 | 20 | 20 | 101 | 295 | 505 |
| DPTS 2625 | 26 | 87 | 25 | 25 | 101 | 295 | 505 |
| DPTS 3220 | 32 | 100 | 20 | 20 | 101 | 296 | 505 |
| DPTS 3225 | 32 | 110 | 25 | 25 | 101 | 297 | 505 |
| DPTS 3232 | 32 | 120 | 32 | 32 | 101 | 298 | 505 |
| DPTS 5250 | 52 | 135 | 50 | 50 | 102 | 299 | 506 |



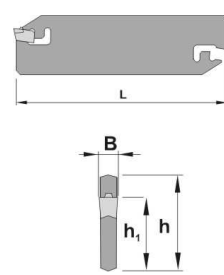
Ceramic tools

Parting & grooving

KRCFN

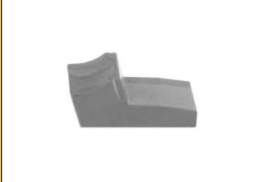


| REF. | h | L | h ₁ | B | MRCN | |
|-----------------|----|-----|----------------|-----|------|-----|
| KRCF N 1901 X02 | 19 | 86 | 15,4 | 2,2 | 2,2 | 533 |
| KRCF N 2601 J02 | 26 | 110 | 21,4 | 2,2 | 2,2 | 533 |
| KRCF N 2602 J03 | 26 | 110 | 21,4 | 3,0 | 3,0 | 533 |
| KRCF N 2603 J04 | 26 | 110 | 21,4 | 4,0 | 4,0 | 533 |
| KRCF N 2604 J05 | 26 | 110 | 21,4 | 5,0 | 5,0 | 533 |
| KRCF N 2605 J06 | 26 | 110 | 21,4 | 6,0 | 6,0 | 533 |
| KRCF N 3202 M03 | 32 | 150 | 25,0 | 3,0 | 3,0 | 533 |
| KRCF N 3203 M04 | 32 | 150 | 25,0 | 4,0 | 4,0 | 533 |
| KRCF N 3204 M05 | 32 | 150 | 25,0 | 5,0 | 5,0 | 533 |
| KRCF N 3205 M06 | 32 | 150 | 25,0 | 6,0 | 6,0 | 533 |

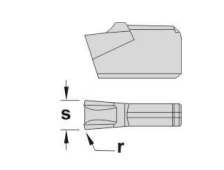


Threading

Drills



| REF. | s | r |
|----------|-----|-----|
| MRCN 2,2 | 2,2 | 0,2 |
| MRCN 3,0 | 3,0 | 0,2 |
| MRCN 4,0 | 4,0 | 0,2 |
| MRCN 5,0 | 5,0 | 0,3 |
| MRCN 6,0 | 6,0 | 0,4 |



For more information see page: A.67

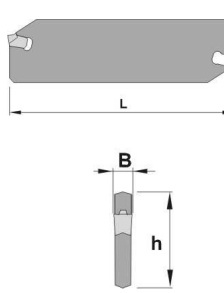
Cartridges

Brazed tools

KLCFN



| REF. | h | L | B | PTNT | |
|-----------------|----|-----|-----|------|-----|
| KLCF N 1901 X02 | 19 | 86 | 2,1 | 02 | 532 |
| KLCF N 2601 J02 | 26 | 110 | 2,1 | 02 | 532 |
| KLCF N 2602 J03 | 26 | 110 | 3,1 | 03 | 532 |
| KLCF N 2603 J04 | 26 | 110 | 4,1 | 04 | 532 |
| KLCF N 2604 J05 | 26 | 110 | 5,1 | 05 | 532 |
| KLCF N 2605 J06 | 26 | 110 | 6,1 | 06 | 532 |
| KLCF N 3201 M02 | 32 | 150 | 2,1 | 02 | 532 |
| KLCF N 3202 M03 | 32 | 150 | 3,1 | 03 | 532 |
| KLCF N 3203 M04 | 32 | 150 | 4,1 | 04 | 532 |
| KLCF N 3204 M05 | 32 | 150 | 5,1 | 05 | 532 |
| KLCF N 3205 M06 | 32 | 150 | 6,1 | 06 | 532 |
| KLCF N 3207 M08 | 32 | 150 | 8,1 | 08 | 532 |
| KLCF N 3208 M09 | 32 | 150 | 9,1 | 09 | 532 |
| KLCF N 5207 X08 | 53 | 190 | 8,1 | 08 | 532 |
| KLCF N 5208 X09 | 53 | 190 | 9,1 | 09 | 532 |
| KLCF N 5307 X08 | 53 | 260 | 8,1 | 08 | 532 |
| KLCF N 5308 X09 | 53 | 260 | 9,1 | 09 | 532 |



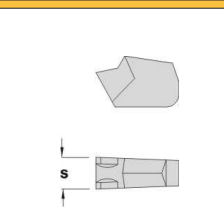
Milling cutters

Solid carbide

Boring heads



| REF. | s |
|---------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |
| PTNT 08 | 8,10 |
| PTNT 09 | 9,10 |



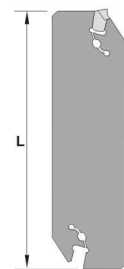
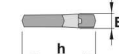
For more information see page: A.68

Arbors & adaptors

KLCTN



| REF. | h | L | B | PTNT | |
|-----------------|----|-----|-----|------|-----|
| KLCT N 1901 X02 | 19 | 86 | 2,1 | 02 | 532 |
| KLCT N 2601 J02 | 26 | 110 | 2,1 | 02 | 532 |
| KLCT N 2602 J03 | 26 | 110 | 3,1 | 03 | 532 |
| KLCT N 2603 J04 | 26 | 110 | 4,1 | 04 | 532 |
| KLCT N 2604 J05 | 26 | 110 | 5,1 | 05 | 532 |
| KLCT N 2605 J06 | 26 | 110 | 6,1 | 06 | 532 |
| KLCT N 3201 M02 | 32 | 150 | 2,1 | 02 | 532 |
| KLCT N 3202 M03 | 32 | 150 | 3,1 | 03 | 532 |
| KLCT N 3203 M04 | 32 | 150 | 4,1 | 04 | 532 |
| KLCT N 3204 M05 | 32 | 150 | 5,1 | 05 | 532 |
| KLCT N 3205 M06 | 32 | 150 | 6,1 | 06 | 532 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

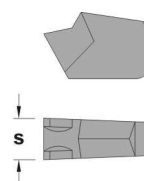
Solid carbide

Boring heads

Arbors & adaptors



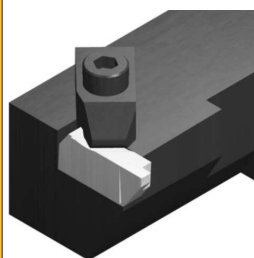
| REF. | s |
|---------|------|
| PTNT 02 | 2,10 |
| PTNT 03 | 3,10 |
| PTNT 04 | 4,10 |
| PTNT 05 | 5,10 |
| PTNT 06 | 6,10 |



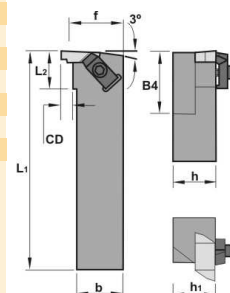
For more information see page: A.68

Inserts

NE 93°



| REF. | h-h1 | b | L1 | L2 | f | N.. | | | |
|-----------------|------|----|-----|-------|----|-----|-------|-------|-----|
| NE R/L 1616 H02 | 16 | 16 | 100 | 25,40 | 20 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2020 K02 | 20 | 20 | 125 | 25,40 | 25 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2525 M02 | 25 | 25 | 150 | 25,40 | 32 | 2 | TF-75 | TF-74 | 474 |
| NE R/L 2525 M03 | 25 | 25 | 150 | 50,80 | 32 | 3 | TF-73 | TF-72 | 475 |
| NE R/L 3225 P03 | 32 | 25 | 170 | 50,80 | 32 | 3 | TF-73 | TF-72 | 475 |
| NE R/L 2525 M04 | 25 | 25 | 150 | 50,80 | 35 | 4 | TF-73 | TF-72 | 475 |
| NE R/L 3225 P04 | 32 | 25 | 170 | 50,80 | 35 | 4 | TF-73 | TF-72 | 475 |
| NE R/L 3232 P04 | 32 | 32 | 170 | 50,80 | 40 | 4 | TF-73 | TF-72 | 475 |



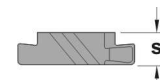
Turning

Automatic lathes

Ceramic tools



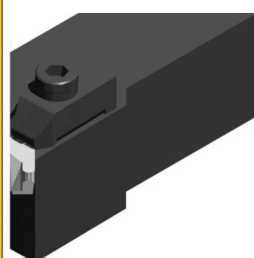
| REF. | D | A | T |
|-------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |



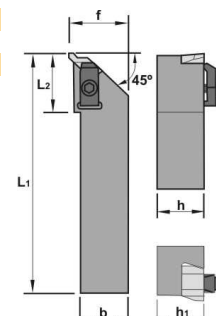
For more information see page: A.68,69

Parting & grooving

NR 45°



| REF. | h-h1 | b | L1 | L2 | f | N.. | | | |
|-----------------|------|----|-----|----|----|-----|-------|-------|-----|
| NR R/L 2020 K03 | 20 | 20 | 125 | 32 | 25 | 3 | TF-73 | TF-72 | 475 |
| NR R/L 2525 M03 | 25 | 25 | 150 | 32 | 32 | 3 | TF-73 | TF-72 | 475 |
| NR R/L 3225 P03 | 32 | 25 | 170 | 32 | 32 | 3 | TF-73 | TF-72 | 475 |



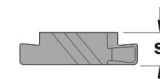
Threading

Drills

Cartridges



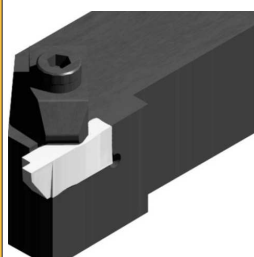
| REF. | D | A | T |
|-------|------|------|------|
| N.. 3 | 9,53 | 8,74 | 4,95 |



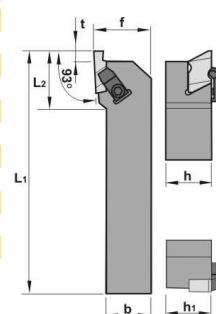
For more information see page: A.68,69

Brazed tools

NS 93°



| REF. | h-h1 | b | L1 | L2 | f | N.. | | | | | |
|-----------------|------|----|-----|------|----|-----|-------|-------|-----|-----|-----|
| NS R/L 1010 E02 | 10 | 10 | 70 | 6,35 | 14 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 1212 F02 | 12 | 12 | 80 | 6,35 | 16 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 1616 H02 | 16 | 16 | 100 | 6,35 | 20 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2020 K02 | 20 | 20 | 125 | 6,35 | 25 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2525 M02 | 25 | 25 | 150 | 6,35 | 32 | 2 | TF-74 | TF-75 | - | - | 474 |
| NS R/L 2020 K03 | 20 | 20 | 125 | 9,65 | 25 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 2525 M03 | 25 | 25 | 150 | 9,65 | 32 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 3225 P03 | 32 | 25 | 170 | 9,65 | 32 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 3232 P03 | 32 | 32 | 170 | 9,65 | 40 | 3 | TF-72 | TF-73 | - | - | 474 |
| NS R/L 2525 M04 | 25 | 25 | 150 | 9,65 | 32 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |
| NS R/L 3225 P04 | 32 | 25 | 170 | 9,65 | 32 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |
| NS R/L 3232 P04 | 32 | 32 | 170 | 9,65 | 40 | 4 | TF-72 | TF-73 | 321 | 185 | 475 |



Milling cutters

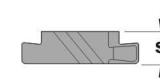
Solid carbide

Boring heads

Arbors & adaptors

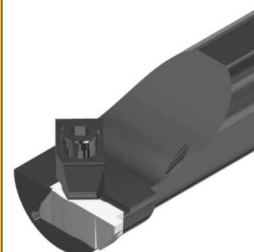





| REF. | D | A | T |
|-------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |

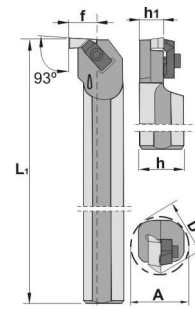


For more information see page: A.68,69

NNTO 93°



| REF. | D | h | h1 | L1 | f | A | N.. |  |  |  |
|-------------------------|----|----|------|-----|----|------|-----|---|---|---|
| A12M-NNTO R/L 02 | 12 | 11 | 5,5 | 150 | 11 | 18,5 | 2 | TF-147 | TF-146 | 474 |
| A16M-NNTO R/L 02 | 16 | 15 | 7,5 | 150 | 11 | 22,0 | 2 | TF-75 | TF-74 | 474 |
| A20Q-NNTO R/L 02 | 20 | 18 | 9,0 | 180 | 13 | 26,0 | 2 | TF-75 | TF-74 | 474 |
| A25R-NNTO R/L 02 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | 2 | TF-75 | TF-74 | 474 |
| A25R-NNTO R/L 03 | 25 | 23 | 11,5 | 200 | 17 | 34,0 | 3 | TF-73 | TF-72 | 475 |
| A32S-NNTO R/L 03 | 32 | 30 | 15,0 | 250 | 22 | 44,0 | 3 | TF-73 | TF-72 | 475 |
| A40T-NNTO R/L 03 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | 3 | TF-73 | TF-72 | 475 |
| A40T-NNTO R/L 04 | 40 | 37 | 18,5 | 300 | 27 | 54,0 | 4 | TF-73 | TF-72 | 475 |
| A50U-NNTO R/L 04 | 50 | 47 | 23,5 | 350 | 35 | 70,0 | 4 | TF-73 | TF-72 | 475 |



Inserts

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Automatic lathes

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Milling cutters

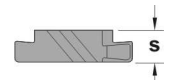
Solid carbide

Boring heads

Arbors & adaptors



| REF. | D | A | T |
|--------------|------|-------|------|
| N.. 2 | 4,76 | 5,56 | 3,81 |
| N.. 3 | 9,53 | 8,74 | 4,95 |
| N.. 4 | 9,53 | 11,51 | 6,48 |



For more information see page: A.68,69

Inserts

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Arbors & adaptors

Nominal cutting speed for parting

| Material | HB | Condition | Basic qualities | | | Specific cutting force N/mm ² |
|--|------|--|----------------------|---------|--------|--|
| | | | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | |
| Unalloyed steel P | 125 | C=0.15% | 200-150 | 160-120 | | 1900 |
| | 150 | C=0.35% | 190-140 | 150-110 | | 2100 |
| | 200 | C=0.60% | 170-120 | 130-90 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180-130 | 140-100 | | 2100 |
| | 275 | Hardened | 160-110 | 120-80 | | 2600 |
| | 300 | Hardened | 150-100 | 110-70 | | 2700 |
| | 350 | Hardened | 140-90 | 90-60 | | 2850 |
| High alloyed steel | 200 | Annealed | 110-90 | 70-60 | | 2600 |
| | 325 | Hardened | 70-50 | 45-30 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170-120 | 130-90 | | 2300 |
| Steel | 180 | Unalloyed | 130-90 | 100-60 | | 2000 |
| | 200 | Low alloyed | 115-75 | 90-50 | | 2500 |
| | 225 | High alloyed | 100-60 | 80-40 | | 2700 |
| Stainless steel annealed M | 180 | | 170-120 | 130-90 | 100-60 | 2450 |
| Heat resistant alloys | 200 | Annealed | | | 50-30 | 3000 |
| | 280 | Aged | | | 40-20 | 3050 |
| | 250 | Annealed | Ni or Co base | 30-20 | 3500 | |
| | 350 | Aged | | 20-10 | 4150 | |
| | 320 | Cast | | 20-10 | 4150 | |
| Titanium alloys | 400 | Ti | | | | 1520 |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | | | 1675 |
| | 1050 | Aged cast $\alpha + \beta$ | | | | 1690 |
| Hardened steel K | 220 | Hardened steel | | | | 4500 |
| | 250 | Manganese steel 12% | | | | |
| Malleable cast iron | 130 | Ferritic | 140-110 | | 100-80 | 1100 |
| | 230 | Pearlitic | 100-70 | | 70-50 | 1100 |
| Cast iron | 180 | Low tensile strength | 110-85 | | 80-60 | 1100 |
| | 260 | High tensile strength | 100-70 | | 70-50 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100-70 | | 70-50 | 1100 |
| | 250 | Pearlitic | 85-60 | | 60-40 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 1000 | 750 |
| | 90 | Heat treatable | 750 | 750 | 650 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 1750 |

Nominal cutting speed for grooving

| Material | HB | Condition | External | | | Internal / Axial | | | Specific cutting force N/mm ² |
|--|------|--|----------------------|---------|--------|------------------|--------|--------|---|
| | | | TIC30 | P25K | K15K | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | | | | |
| Unalloyed steel P | 125 | C=0.15% | 200-150 | 160-120 | | 140-105 | 110-85 | | 1900 |
| | 150 | C=0.35% | 190-140 | 150-110 | | 135-100 | 105-80 | | 2100 |
| | 200 | C=0.60% | 170-120 | 130-90 | | 120-85 | 90-60 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180-130 | 140-100 | | 125-90 | 100-70 | | 2100 |
| | 275 | Hardened | 160-110 | 120-80 | | 110-80 | 85-55 | | 2600 |
| | 300 | Hardened | 150-100 | 110-70 | | 105-70 | 80-50 | | 2700 |
| | 350 | Hardened | 140-90 | 90-60 | | 100-60 | 60-45 | | 2850 |
| High alloyed steel | 200 | Annealed | 110-90 | 70-60 | | 80-60 | 50-45 | | 2600 |
| | 325 | Hardened | 70-50 | 45-30 | | 80-35 | 32-20 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170-120 | 130-90 | | 120-85 | 90-60 | | 2300 |
| Steel | 180 | Unalloyed | 130-90 | 100-60 | | 90-60 | 70-45 | | 2000 |
| | 200 | Low alloyed | 115-75 | 90-50 | | 80-50 | 60-35 | | 2500 |
| | 225 | High alloyed | 100-60 | 80-40 | | 70-45 | 55-30 | | 2700 |
| Stainless steel annealed M | 180 | | 170-120 | 130-90 | 100-60 | 120-85 | 90-60 | 70-45 | 2450 |
| Heat resistant alloys | 200 | Annealed | | | 50-30 | | | 50-30 | 3000 |
| | 280 | Aged | | | 40-20 | | | 40-20 | 3050 |
| | 250 | Annealed | | | 30-20 | | | 30-20 | 3500 |
| | 350 | Aged | | | 20-10 | | | 20-10 | 4150 |
| | 320 | Cast | | | 20-10 | | | 20-10 | 4150 |
| Titanium alloys | 400 | Ti | | | 175 | | | | 1520 |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | | 72 | | | | 1675 |
| | 1050 | Aged cast $\alpha + \beta$ | | | 65 | | | | 1690 |
| Hardened steel K | 220 | Hardened steel | | | | | | | 4500 |
| | 250 | Manganese steel 12% | | | | | | | |
| Malleable cast iron | 130 | Ferritic | 140-110 | | 100-80 | 100-80 | | 100-80 | 1100 |
| | 230 | Pearlitic | 100-70 | | 70-50 | 70-50 | | 70-50 | 1100 |
| Cast iron | 180 | Low tensile strength | 110-85 | | 80-60 | 80-60 | | 80-60 | 1100 |
| | 260 | High tensile strength | 100-70 | | 70-50 | 70-50 | | 70-50 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100-70 | | 70-50 | 70-50 | | 70-50 | 1100 |
| | 250 | Pearlitic | 85-60 | | 60-40 | 60-45 | | 60-40 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 1050 | 1050 | 700 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 350 | 350 | 300 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 1000 | 1050 | 1050 | 700 | 750 |
| | 90 | Heat treatable | 750 | 750 | 650 | 525 | 525 | 460 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 210 | 210 | 210 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 140 | 140 | 140 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 105 | 105 | 105 | 1750 |

Inserts

Turning

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toolsParting &
grooving

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cuttersSolid
carbideBoring
headsArbors &
adaptors

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Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Nominal cutting speed for profiling

| Material | HB | Condition | Basic qualities | | | Specific cutting force N/mm ² |
|--|------|--|----------------------|------|------|---|
| | | | TIC30 | P25K | K15K | |
| | | | Cutting speed m/min. | | | |
| Unalloyed steel P | 125 | C=0.15% | 200 | 160 | | 1900 |
| | 150 | C=0.35% | 190 | 150 | | 2100 |
| | 200 | C=0.60% | 170 | 130 | | 2250 |
| Low alloyed steel | 180 | Annealed | 180 | 140 | | 2100 |
| | 275 | Hardened | 160 | 120 | | 2600 |
| | 300 | Hardened | 150 | 110 | | 2700 |
| | 350 | Hardened | 140 | 90 | | 2850 |
| High alloyed steel | 200 | Annealed | 130 | 100 | | 2600 |
| | 325 | Hardened | 100 | 60 | | 3900 |
| Stainless steel | 200 | Martensitic/Ferritic | 170 | 130 | | 2300 |
| Steel | 180 | Unalloyed | 130 | 100 | | 2000 |
| | 200 | Low alloyed | 115 | 90 | | 2500 |
| | 225 | High alloyed | 100 | 70 | | 2700 |
| Stainless steel annealed M | 180 | | 170 | 120 | 100 | 2450 |
| Heat resistant alloys | 200 | Annealed | | 60 | 3000 | |
| | 280 | Aged | | | | 50 |
| | 250 | Annealed | Ni or Co base | 30 | 3500 | |
| | 350 | Aged | | 20 | 4150 | |
| | 320 | Cast | | 20 | 4150 | |
| Titanium alloys | 400 | Ti | | 175 | 1520 | |
| | 950 | Cast α , almost α and $\alpha + \beta$ | | 72 | 1675 | |
| | 1050 | Aged cast $\alpha + \beta$ | | 65 | 1690 | |
| Hardened steel K | 220 | Hardened steel | | | | 4500 |
| | 250 | Manganese steel 12% | | | | |
| Malleable cast iron | 130 | Ferritic | 140 | | 100 | 1100 |
| | 230 | Pearlitic | 110 | | 70 | 1100 |
| Cast iron | 180 | Low tensile strength | 110 | | 100 | 1100 |
| | 260 | High tensile strength | 100 | | 70 | 1500 |
| Nodular SG iron | 160 | Ferritic | 100 | | 100 | 1100 |
| | 250 | Pearlitic | 85 | | 70 | 1800 |
| Aluminium alloys | 60 | Non heat treatable | 1500 | 1500 | 1000 | 500 |
| | 100 | Heat treatable | 500 | 500 | 420 | 800 |
| Aluminium alloys (cast) | 75 | Non heat treatable | 1500 | 1500 | 450 | 750 |
| | 90 | Heat treatable | 750 | 750 | 300 | 900 |
| Bronze-Brass alloys | 110 | Lead alloys, Pb > 1% | 300 | 300 | 300 | 700 |
| | 90 | Brass, red brass | 200 | 200 | 200 | 750 |
| | 100 | Bronze and lead-free copper | 150 | 150 | 150 | 1750 |

Applications
Applications
Anwendungen

G02

External threading
Filetage extérieur
Außen-Gewindedrehen

G03

Internal threading
Filetage intérieur
Innen-Gewindedrehen

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External threading - Filetage extérieur - Außen-Gewindedrehen

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Turning

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STAN 90°



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CTAN 90°



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CTXN 90°



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CXAP 90°



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Internal threading - Filetage intérieur - Innen-Gewindedrehen

Parting & grooving

Threading

SXFN 90°



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STXN 90°



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Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

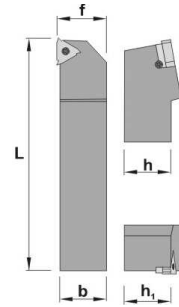
Boring heads

Arbors & adaptors

SXAN 90°



| REF. | h-h1 | b | L | f | ER/L | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|
| SXAN R/L 0808 M08 | 8 | 8 | 150 | 8 | 08 | 125 | 507 | - | - | - |
| SXAN R/L 1010 M08 | 10 | 10 | 150 | 10 | 08 | 125 | 507 | - | - | - |
| SXAN R/L 1212 M11 | 12 | 12 | 150 | 12 | 11 | 125 | 507 | - | - | - |
| SXAN R/L 1616 H16 | 16 | 16 | 100 | 16 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXAN R/L 1616 M16 | 16 | 16 | 150 | 16 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXAN R/L 2020 K16 | 20 | 20 | 125 | 20 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXAN R/L 2525 M16 | 25 | 25 | 150 | 25 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXAN R/L 3232 P16 | 32 | 32 | 170 | 32 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXAN R/L 2525 M22 | 25 | 25 | 150 | 25 | 22 | 141 | 515 | 343 | 346 | 204 |
| SXAN R/L 3232 P22 | 32 | 32 | 170 | 32 | 22 | 141 | 515 | 343 | 346 | 204 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

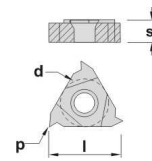
Milling cutters

Solid carbide

Boring heads

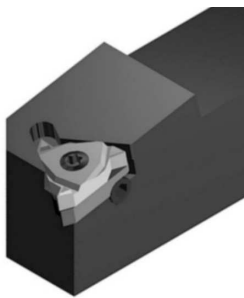
Arbors & adaptors

| REF. | l | d |
|------------------|-------|-------|
| 08 ER/L.. | 8,00 | 4,76 |
| 11 ER/L.. | 11,00 | 6,35 |
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |

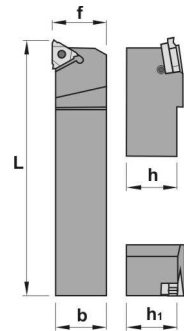


For more information see page: A.59

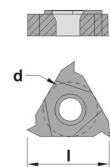
STAN 90°



| REF. | h-h1 | b | L | f | ER/L | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|
| STAN R/L 1616 H16 | 16 | 16 | 100 | 16 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STAN R/L 2020 K16 | 20 | 20 | 125 | 20 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STAN R/L 2525 M16 | 25 | 25 | 150 | 25 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STAN R/L 3232 P16 | 32 | 32 | 170 | 32 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STAN R/L 2525 M22 | 25 | 25 | 150 | 25 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STAN R/L 3232 P22 | 32 | 32 | 170 | 32 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STAN R/L 4040 R22 | 40 | 40 | 200 | 40 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STAN R/L 3232 P27 | 32 | 32 | 170 | 32 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |
| STAN R/L 4040 R27 | 40 | 40 | 200 | 40 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |
| STAN R/L 5050 S27 | 50 | 50 | 250 | 50 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |

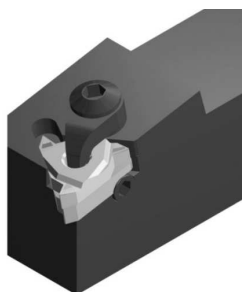


| REF. | l | d |
|------------------|-------|-------|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |

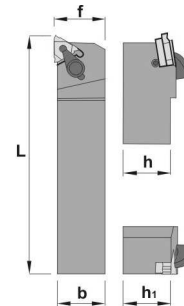


For more information see page: A.59

CTAN 90°

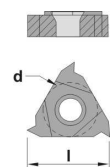


| REF. | h-h1 | b | L | f | ER/L | | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|-----|
| CTAN R/L 2020 K16 | 20 | 20 | 125 | 20 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTAN R/L 2525 M16 | 25 | 25 | 150 | 25 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTAN R/L 3232 P16 | 32 | 32 | 170 | 32 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTAN R/L 2525 M22 | 25 | 25 | 150 | 25 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTAN R/L 3232 P22 | 32 | 32 | 170 | 32 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTAN R/L 4040 R22 | 40 | 40 | 200 | 40 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTAN R/L 3232 P27 | 32 | 32 | 170 | 32 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |
| CTAN R/L 4040 R27 | 40 | 40 | 200 | 40 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |
| CTAN R/L 5050 S27 | 50 | 50 | 250 | 50 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |



Optional

| REF. | l | d |
|------------------|-------|-------|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |

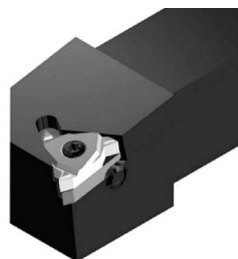


For more information see page: A.59

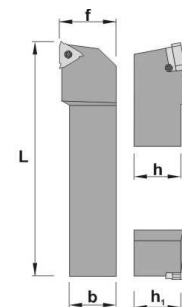


Inserts

SXGN 90°



| REF. | h-h1 | b | L | f | ER/L | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|
| SXGN R/L 1212 F16 | 12 | 12 | 80 | 16 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXGN R/L 1616 H16 | 16 | 16 | 100 | 20 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXGN R/L 2020 K16 | 20 | 20 | 125 | 25 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXGN R/L 2525 M16 | 25 | 25 | 150 | 32 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXGN R/L 3232 P16 | 32 | 32 | 170 | 40 | 16 | 133 | 515 | 436 | 435 | 203 |
| SXGN R/L 2525 M22 | 25 | 25 | 150 | 32 | 22 | 141 | 515 | 343 | 346 | 204 |
| SXGN R/L 3232 P22 | 32 | 32 | 170 | 40 | 22 | 141 | 515 | 343 | 346 | 204 |



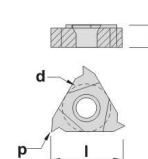
Turning

Automatic lathes

Ceramic tools



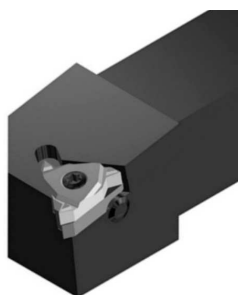
| REF. | l | d |
|------------------|-------|-------|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |



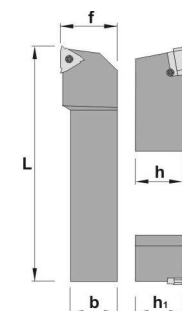
For more information see page: A.59

Parting & grooving

STXN 90°



| REF. | h-h1 | b | L | f | ER/L | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|
| STXN R/L 1212 F16 | 12 | 12 | 80 | 16 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STXN R/L 1616 H16 | 16 | 16 | 100 | 20 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STXN R/L 2020 K16 | 20 | 20 | 125 | 25 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STXN R/L 2525 M16 | 25 | 25 | 150 | 25 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STXN R/L 3232 P16 | 32 | 32 | 170 | 40 | 16 | SA3 | 530 | YE3 | YI3 | SY3 |
| STXN R/L 2525 M22 | 25 | 25 | 150 | 32 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STXN R/L 3232 P22 | 32 | 32 | 170 | 40 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STXN R/L 4040 R22 | 40 | 40 | 200 | 50 | 22 | SA4 | 520 | YE4 | YI4 | SY4 |
| STXN R/L 2525 M27 | 25 | 25 | 150 | 32 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |
| STXN R/L 3232 P27 | 32 | 32 | 170 | 40 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |
| STXN R/L 4040 R27 | 40 | 40 | 200 | 50 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |
| STXN R/L 5050 S27 | 50 | 50 | 250 | 60 | 27 | SA5 | 552 | YE5 | YI5 | SY5 |



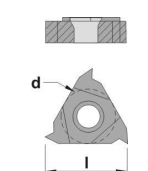
Threading

Drills

Cartridges



| REF. | l | d |
|------------------|-------|-------|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |



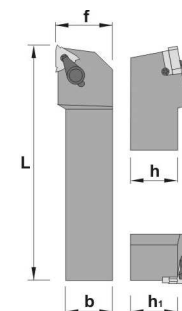
For more information see page: A.59

Brazed tools

CTXN 90°



| REF. | h-h1 | b | L | f | ER/L | | | | | | |
|--------------------------|------|----|-----|----|------|-----|-----|-----|-----|-----|-----|
| CTXN R/L 1212 F16 | 12 | 12 | 80 | 16 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTXN R/L 1616 H16 | 16 | 16 | 100 | 20 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTXN R/L 2020 K16 | 20 | 20 | 125 | 25 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTXN R/L 2525 M16 | 25 | 25 | 150 | 32 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTXN R/L 3232 P16 | 32 | 32 | 170 | 40 | 16 | 214 | 515 | YE3 | YI3 | SY3 | SA3 |
| CTXN R/L 2525 M22 | 25 | 25 | 150 | 32 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTXN R/L 3232 P22 | 32 | 32 | 170 | 40 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTXN R/L 4040 R22 | 40 | 40 | 200 | 50 | 22 | 215 | 515 | YE4 | YI4 | SY4 | SA4 |
| CTXN R/L 2525 M27 | 25 | 25 | 150 | 32 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |
| CTXN R/L 3232 P27 | 32 | 32 | 170 | 40 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |
| CTXN R/L 4040 R27 | 40 | 40 | 200 | 50 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |
| CTXN R/L 5050 S27 | 50 | 50 | 250 | 60 | 27 | 217 | 552 | YE5 | YI5 | SY5 | SA5 |



Optional

Milling cutters

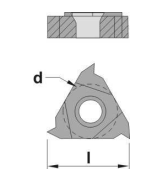
Solid carbide

Boring heads

Arbors & adaptors

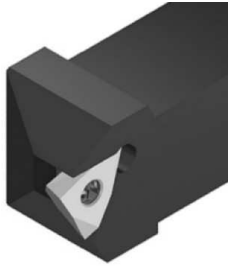


| REF. | l | d |
|------------------|-------|-------|
| 16 ER/L.. | 16,00 | 9,52 |
| 22 ER/L.. | 22,00 | 12,70 |
| 27 ER/L.. | 27,50 | 15,88 |

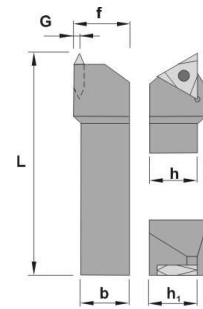


For more information see page: A.59

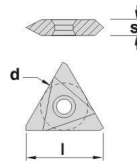
STCN 90°



| REF. | h-h1 | b | L | f | G | T..MC | | | | | |
|-------------------|------|----|-----|----|------|--------|-----|-----|-----|-----|-----|
| STCN R/L 1212 F16 | 12 | 12 | 80 | 16 | 1,59 | 1603.. | 166 | 211 | 198 | 503 | 502 |
| STCN R/L 1616 H16 | 16 | 16 | 100 | 19 | 1,59 | 1603.. | 166 | 211 | 198 | 503 | 502 |
| STCN R/L 2020 K16 | 20 | 20 | 125 | 22 | 1,59 | 1603.. | 166 | 211 | 198 | 503 | 502 |
| STCN R/L 2525 M16 | 25 | 25 | 150 | 32 | 1,59 | 1603.. | 166 | 211 | 198 | 503 | 502 |
| STCN R/L 3232 P16 | 32 | 32 | 170 | 38 | 1,59 | 1603.. | 166 | 211 | 198 | 503 | 502 |
| STCN R/L 2020 K22 | 20 | 20 | 125 | 22 | 2,38 | 2204.. | 166 | 211 | 197 | 503 | 525 |
| STCN R/L 2525 M22 | 25 | 25 | 150 | 32 | 2,38 | 2204.. | 166 | 211 | 197 | 503 | 525 |
| STCN R/L 3225 P22 | 32 | 25 | 170 | 32 | 2,38 | 2204.. | 166 | 211 | 197 | 503 | 525 |
| STCN R/L 3232 P22 | 32 | 32 | 170 | 38 | 2,38 | 2204.. | 166 | 211 | 197 | 503 | 525 |
| STCN R/L 2525 M27 | 25 | 25 | 150 | 32 | 2,38 | 2706.. | 166 | 211 | 491 | 503 | 503 |
| STCN R/L 3232 P27 | 32 | 32 | 170 | 38 | 2,38 | 2706.. | 166 | 211 | 491 | 503 | 503 |

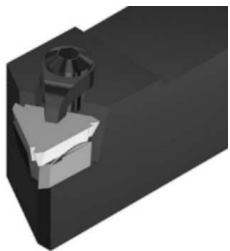


| REF. | l | s | d |
|--------------|-------|------|-------|
| T..MC 1603.. | 16,50 | 3,18 | 9,52 |
| T..MC 2204.. | 22,00 | 4,76 | 12,70 |
| T..MC 2706.. | 27,00 | 6,35 | 15,80 |

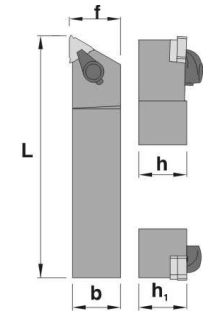


For more information see page: A.65

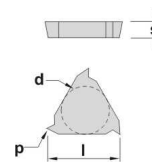
CXAP 90°



| REF. | h-h1 | b | L | f | R/L | | | | |
|-------------------|------|----|-----|----|---------|-----|-----|-----|---------|
| CXAP R/L 2016 K16 | 20 | 16 | 125 | 17 | 166-3.. | 229 | 503 | 318 | R/L 403 |
| CXAP R/L 2020 K16 | 20 | 20 | 125 | 21 | 166-3.. | 229 | 503 | 318 | R/L 403 |
| CXAP R/L 2525 M16 | 25 | 25 | 150 | 26 | 166-3.. | 229 | 503 | 318 | R/L 403 |
| CXAP R/L 3225 P16 | 32 | 25 | 170 | 26 | 166-3.. | 229 | 503 | 318 | R/L 403 |
| CXAP R/L 3232 P16 | 32 | 32 | 170 | 33 | 166-3.. | 229 | 503 | 318 | R/L 403 |
| CXAP R/L 2525 M22 | 25 | 25 | 150 | 26 | 166-4.. | 231 | 504 | 330 | R/L 403 |
| CXAP R/L 3225 P22 | 32 | 25 | 170 | 26 | 166-4.. | 231 | 504 | 330 | R/L 403 |
| CXAP R/L 3232 P22 | 32 | 32 | 170 | 33 | 166-4.. | 231 | 504 | 330 | R/L 403 |



| REF. | l | s | d |
|--------------|-------|------|-------|
| R/L 166G-3.. | 16,50 | 3,18 | 9,52 |
| R/L 166G-4.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.65,66

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

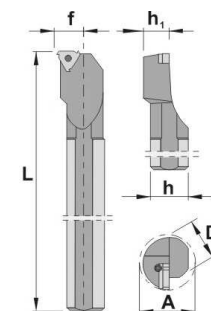


Inserts

SXFN 90°



| REF. | D | h | L | f | A | NR/L | | | | | |
|------------------|----|----|-----|------|----|------|-----|-----|-----|-----|-----|
| S10K SXFN R/L 11 | 10 | 9 | 125 | 7,3 | 13 | 11 | 125 | 507 | - | - | - |
| S16M SXFN R/L 11 | 16 | 15 | 150 | 8,9 | 16 | 11 | 125 | 507 | - | - | - |
| S16M SXFN R/L 16 | 16 | 15 | 150 | 11,5 | 20 | 16 | 137 | 530 | - | - | - |
| S20Q SXFN R/L 16 | 20 | 18 | 180 | 13,4 | 24 | 16 | 447 | 515 | 435 | 436 | 203 |
| S25S SXFN R/L 16 | 25 | 23 | 250 | 16,3 | 29 | 16 | 131 | 515 | 435 | 436 | 203 |
| S32T SXFN R/L 16 | 32 | 30 | 300 | 19,6 | 36 | 16 | 131 | 515 | 435 | 436 | 203 |
| S40T SXFN R/L 16 | 40 | 37 | 300 | 23,8 | 44 | 16 | 131 | 515 | 435 | 436 | 203 |
| S20Q SXFN R/L 22 | 20 | 18 | 180 | 15,6 | 27 | 22 | 141 | 515 | - | - | - |
| S25S SXFN R/L 22 | 25 | 23 | 250 | 17,2 | 32 | 22 | 141 | 515 | 346 | 343 | 204 |
| S32T SXFN R/L 22 | 32 | 30 | 300 | 21,5 | 39 | 22 | 141 | 515 | 346 | 343 | 204 |
| S40T SXFN R/L 22 | 40 | 37 | 300 | 25,8 | 47 | 22 | 141 | 515 | 346 | 343 | 204 |



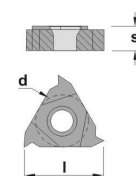
Turning

Automatic lathes

Ceramic tools



| REF. | l | d |
|-----------|-------|-------|
| 11 NR/L.. | 11,00 | 6,35 |
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |



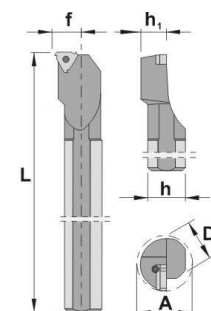
For more information see page: A.60

Parting & grooving

H-SXFN 90°



| REF. | D | h | L | f | A | NR/L | | |
|------------------|----|-----|-----|------|----|------|-----|-----|
| H10K SXFN R/L 11 | 10 | 4,5 | 125 | 7,3 | 13 | 11 | 125 | 507 |
| H16M SXFN R/L 11 | 16 | 7,5 | 150 | 8,9 | 16 | 11 | 125 | 507 |
| H16M SXFN R/L 16 | 16 | 7,5 | 200 | 11,5 | 20 | 16 | 137 | 530 |



Characteristics:
Boring bars with anti-vibration shank.

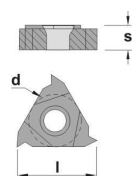
Threading

Drills

Cartridges



| REF. | l | d |
|-----------|-------|------|
| 11 NR/L.. | 11,00 | 6,35 |
| 16 NR/L.. | 16,00 | 9,52 |



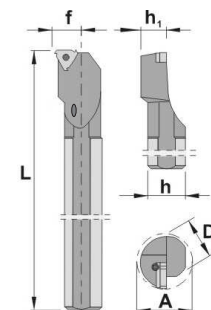
For more information see page: A.60

Brazed tools

J-SXFN 90°



| REF. | D | h | L | f | A | NR/L | | |
|------------------|----|-----|-----|------|----|------|-----|-----|
| J10K SXFN R/L 11 | 10 | 4,5 | 125 | 7,3 | 13 | 11 | 125 | 507 |
| J16M SXFN R/L 11 | 16 | 7,5 | 150 | 8,9 | 16 | 11 | 125 | 507 |
| J16M SXFN R/L 16 | 16 | 7,5 | 150 | 11,5 | 20 | 16 | 137 | 530 |



Characteristics:
Boring bars with internal coolant and anti-vibration shank.

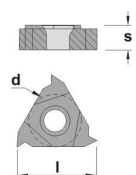
Milling cutters

Solid carbide

Boring heads



| REF. | l | d |
|-----------|-------|------|
| 11 NR/L.. | 11,00 | 6,35 |
| 16 NR/L.. | 16,00 | 9,52 |



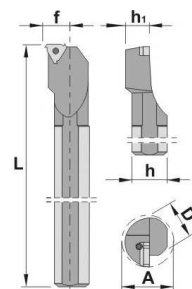
For more information see page: A.60

Arbors & adaptors

STXN 90°



| REF. | D | h | h1 | L | f | A | NR/L | |
|-------------------------|----|----|------|-----|------|----|------|---------------------|
| S16M STXN R/L 16 | 16 | 15 | 7,5 | 150 | 11,5 | 20 | 16 | SN3 530 - - - |
| S20Q STXN R/L 16 | 20 | 18 | 9,0 | 180 | 13,4 | 24 | 16 | SN3 530 YI3 YE3 SY3 |
| S25R STXN R/L 16 | 25 | 23 | 11,5 | 200 | 16,3 | 29 | 16 | SA3 530 YI3 YE3 SY3 |
| S32S STXN R/L 16 | 32 | 30 | 15,0 | 250 | 19,6 | 36 | 16 | SA3 530 YI3 YE3 SY3 |
| S40T STXN R/L 16 | 40 | 37 | 18,5 | 300 | 23,8 | 44 | 16 | SA3 530 YI3 YE3 SY3 |
| S20Q STXN R/L 22 | 20 | 18 | 9,0 | 180 | 15,6 | 27 | 22 | SN4 520 - - - |
| S25R STXN R/L 22 | 25 | 23 | 11,5 | 200 | 17,2 | 32 | 22 | SA4 520 YI4 YE4 SY4 |
| S32S STXN R/L 22 | 32 | 30 | 15,0 | 250 | 21,5 | 39 | 22 | SA4 520 YI4 YE4 SY4 |
| S40T STXN R/L 22 | 40 | 37 | 18,5 | 300 | 25,8 | 47 | 22 | SA4 520 YI4 YE4 SY4 |
| S32S STXN R/L 27 | 32 | 30 | 15,0 | 250 | 22,4 | 40 | 27 | SA5 552 YI5 YE5 SY5 |
| S40T STXN R/L 27 | 40 | 37 | 18,5 | 300 | 26,4 | 48 | 27 | SA5 552 YI5 YE5 SY5 |
| S50U STXN R/L 27 | 50 | 47 | 23,5 | 350 | 31,4 | 58 | 27 | SA5 552 YI5 YE5 SY5 |
| S60V STXN R/L 27 | 60 | 57 | 28,5 | 400 | 36,4 | 69 | 27 | SA5 552 YI5 YE5 SY5 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

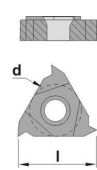
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | d |
|------------------|-------|-------|
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |
| 27 NR/L.. | 27,00 | 15,87 |

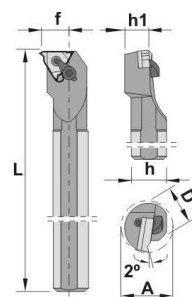


For more information see page: A.60

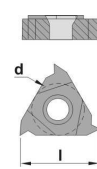
CTXN 90°



| REF. | D | h | h1 | L | f | A | NR/L | |
|-------------------------|----|----|------|-----|------|------|------|-------------------------|
| S20Q CTXN R/L 16 | 20 | 18 | 9,0 | 180 | 13,0 | 18,0 | 16 | 214 515 YI3 YE3 SY3 SN3 |
| S25R CTXN R/L 16 | 25 | 23 | 11,5 | 200 | 17,0 | 22,6 | 16 | 214 515 YI3 YE3 SY3 SA3 |
| S32S CTXN R/L 16 | 32 | 30 | 15,0 | 250 | 22,0 | 29,0 | 16 | 214 515 YI3 YE3 SY3 SA3 |
| S40T CTXN R/L 16 | 40 | 37 | 18,5 | 300 | 27,0 | 36,0 | 16 | 214 515 YI3 YE3 SY3 SA3 |
| S25R CTXN R/L 22 | 25 | 23 | 11,5 | 200 | 17,0 | 22,6 | 22 | 215 515 YI4 YE4 SY4 SA4 |
| S32S CTXN R/L 22 | 32 | 30 | 15,0 | 250 | 22,0 | 29,0 | 22 | 215 515 YI4 YE4 SY4 SA4 |
| S40T CTXN R/L 22 | 40 | 37 | 18,5 | 300 | 27,0 | 36,0 | 22 | 215 515 YI4 YE4 SY4 SA4 |
| S32S CTXN R/L 27 | 32 | 30 | 15,0 | 250 | 22,4 | 40,0 | 27 | 217 552 YI5 YE5 SY5 SA5 |
| S40T CTXN R/L 27 | 40 | 37 | 18,5 | 300 | 26,4 | 48,0 | 27 | 217 552 YI5 YE5 SY5 SA5 |
| S50U CTXN R/L 27 | 50 | 47 | 23,5 | 350 | 31,4 | 58,0 | 27 | 217 552 YI5 YE5 SY5 SA5 |
| S60V CTXN R/L 27 | 60 | 58 | 29,0 | 400 | 36,4 | 69,0 | 27 | 217 552 YI5 YE5 SY5 SA5 |



| REF. | l | d |
|------------------|-------|-------|
| 16 NR/L.. | 16,00 | 9,52 |
| 22 NR/L.. | 22,00 | 12,70 |
| 27 NR/L.. | 27,00 | 15,87 |

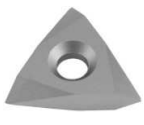
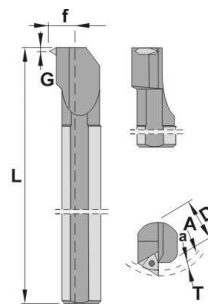


For more information see page: A.60

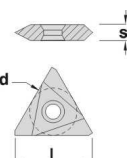
STGN 90°



| REF. | D | L | f | A | α | T | G | TNMC | |
|-------------------------|----|-----|------|------|----|-----|------|--------|-----------------|
| S32U STGN R/L 16 | 32 | 350 | 21,0 | 50,4 | 45 | 2,7 | 1,59 | 1603.. | 198 211 166 502 |
| S40V STGN R/L 16 | 40 | 400 | 25,0 | 60,4 | 55 | 2,7 | 1,59 | 1603.. | 193 211 166 502 |
| S32U STGN R/L 22 | 32 | 350 | 21,0 | 78,2 | 70 | 4,1 | 2,38 | 2204.. | 197 211 166 525 |
| S40V STGN R/L 22 | 40 | 400 | 25,0 | 78,2 | 70 | 4,1 | 2,38 | 2204.. | 197 211 166 525 |
| S50W STGN R/L 22 | 50 | 450 | 36,5 | 78,2 | 70 | 4,1 | 2,38 | 2204.. | 197 211 166 525 |
| S40V STGN R/L 27 | 40 | 400 | 25,0 | 60,4 | 55 | 6,0 | 3,18 | 2704.. | 491 211 166 503 |
| S50W STGN R/L 27 | 50 | 450 | 36,5 | 78,2 | 70 | 6,0 | 3,18 | 2704.. | 491 211 166 503 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| TNMC 1603.. | 16,50 | 3,18 | 9,52 |
| TNMC 2204.. | 22,00 | 4,76 | 12,70 |
| TNMC 2704.. | 27,00 | 4,76 | 15,88 |



For more information see page: A.65

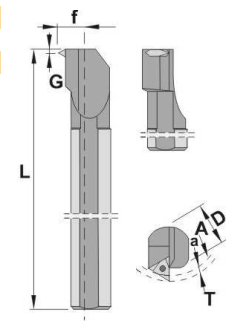


Inserts

STGP 90°



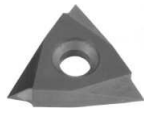
| REF. | D | L | f | A | α | T | G | TPMC | | | | | |
|-------------------------|----|-----|------|------|----------|-----|------|--------|-----|-----|-----|-----|--|
| S25T STGP R/L 16 | 25 | 300 | 17,5 | 50,4 | 45 | 2,7 | 1,59 | 1603.. | 198 | 211 | 166 | 502 | |
| S32U STGP R/L 16 | 32 | 350 | 20,5 | 50,4 | 45 | 2,7 | 1,59 | 1603.. | 198 | 211 | 166 | 502 | |
| S40V STGP R/L 22 | 40 | 400 | 25,0 | 78,2 | 70 | 4,1 | 2,38 | 2204.. | 197 | 211 | 166 | 525 | |
| S50W STGP R/L 22 | 50 | 450 | 36,5 | 78,2 | 70 | 4,1 | 2,38 | 2204.. | 197 | 211 | 166 | 525 | |



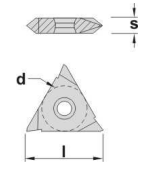
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|--------------------|-------|------|-------|
| TPMC 1603.. | 16,50 | 3,18 | 9,52 |
| TPMC 2204.. | 22,00 | 4,76 | 12,70 |



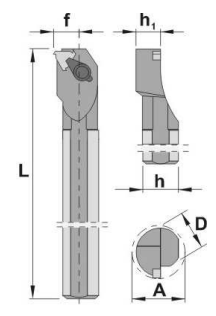
For more information see page: A.65

Parting & grooving

CXFP 90°



| REF. | D | h-h1 | L | f | A | R/L | | |
|-------------------------|----|------|-----|----|----|---------|-----|-----|
| S16R CXFP R/L 11 | 16 | 7,5 | 200 | 11 | 20 | 166-2.. | 207 | 525 |
| S20S CXFP R/L 11 | 20 | 9,0 | 250 | 13 | 24 | 166-2.. | 207 | 525 |
| S20S CXFP R/L 16 | 20 | 9,0 | 250 | 13 | 24 | 166-3.. | 209 | 503 |
| S25T CXFP R/L 16 | 25 | 11,5 | 300 | 17 | 31 | 166-3.. | 209 | 503 |
| S32U CXFP R/L 16 | 32 | 15,0 | 350 | 22 | 39 | 166-3.. | 229 | 503 |
| S40V CXFP R/L 22 | 40 | 18,5 | 400 | 27 | 38 | 166-4.. | 231 | 504 |



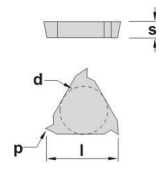
Threading

Drills

Cartridges



| REF. | l | s | d |
|---------------------|-------|------|-------|
| R/L 166L-2.. | 11,00 | 3,18 | 6,35 |
| R/L 166L-3.. | 16,50 | 3,18 | 9,52 |
| R/L 166L-4.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.66

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Cutting data

| Material | Cutting speed m/min. (Ft/min) Tool grade | | |
|--|---|----------------------|----------------------|
| | P25K | K15K | TIC25 |
| Low and medium carbon steel | 120-80 (390-260) | | 250-210 (820-690) |
| High carbon steel | 110-70 (360-230) | | 210-150 (690-490) |
| Alloyed tool steel and heat-treatment steels | 100-70 (360-230) | | 180-140 (590-460) |
| Stainless steels | 100-70 (360-230) | 90-70 (295-230) | 140-110 (460-360) |
| Cast-iron HB 180-250 | | 90-70 (295-230) | |
| Non-Ferrous metals | | 180-120 (590-390) | |

| N° of passes | | |
|--------------|------|--------------|
| P mm | TPI | N° of passes |
| 0,50 | 48,0 | 4 - 6 |
| 0,75 | 32,0 | 4 - 7 |
| 1,00 | 24,0 | 4 - 8 |
| 1,25 | 20,0 | 5 - 9 |
| 1,50 | 16,0 | 6 - 10 |
| 1,75 | 14,0 | 7 - 12 |
| 2,00 | 12,0 | 7 - 12 |
| 2,50 | 10,0 | 8 - 14 |
| 3,00 | 8,0 | 10 - 18 |
| 3,50 | 7,0 | 11 - 18 |
| 4,00 | 6,0 | 11 - 18 |
| 4,50 | 5,5 | 11 - 19 |
| 5,00 | 5,0 | 12 - 20 |
| 5,50 | 4,5 | 12 - 20 |
| 6,00 | 4,0 | 12 - 20 |
| 8,00 | 3,0 | 15 - 24 |

General recommendations :

- Threading speeds should normally be a minimum of 80% to 90% of turning speeds being used to machine the same component. (Assuming grades are compatible).
- Check helix angle and number of passes shown in charts before starting.
- Ensure centre height is correct.
- When there is a problem consult the following recommendations and change only one variable at time. This will help to be sure of the original problem.
- Do not use flank infeed on work hardening materials.

Component problems

| | Problem | Cause and remedy |
|---|--|--|
| Pitch error (on CNC machines) | <ul style="list-style-type: none"> ★ Starting too close to workpiece ★ Saddle speed towards chuck is excessive | <ul style="list-style-type: none"> ☆ Start cycle further back from workpiece. ☆ Reduce speed by 10% until correct. |
| Thread torn on one side only | <ul style="list-style-type: none"> ★ Incorrect helix angle in toolholder. | <ul style="list-style-type: none"> ☆ Check helix chart. ☆ Reassemble with correct anvil. ☆ Check centre height. |
| Thread torn on both sides | <ul style="list-style-type: none"> ★ Running too slow. ★ Built up edge. | <ul style="list-style-type: none"> ☆ Increase cutting speed. ☆ Check center height. ☆ Use coated grade. ☆ Compare thread speed with turning speed. |
| Long dangerous swarf | <ul style="list-style-type: none"> ★ Incorrect chipbreaker geometry. ★ Incorrect method of infeed. | <ul style="list-style-type: none"> ☆ Use Kimu (TD) chipbreaker. ☆ Use different infeed method. |
| Vibration chatter marks on both flanks | <ul style="list-style-type: none"> ★ Poor stability. ★ Excessive overhang. | <ul style="list-style-type: none"> ☆ Renew anvil to support insert. ☆ Check tool clamping. ☆ Reduce tool overhang. ☆ Check rigidity of setup. |
| Shallow threads Problem with gauging | <ul style="list-style-type: none"> ★ Insert not cresting. ★ Incorrect effective diameter. | <ul style="list-style-type: none"> ☆ Check machined diameters. ☆ Excessive tool wear or chipped on nose see remedies above. |

Inserts

Turning

Automatic lathes

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Brazen tools

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Inserts

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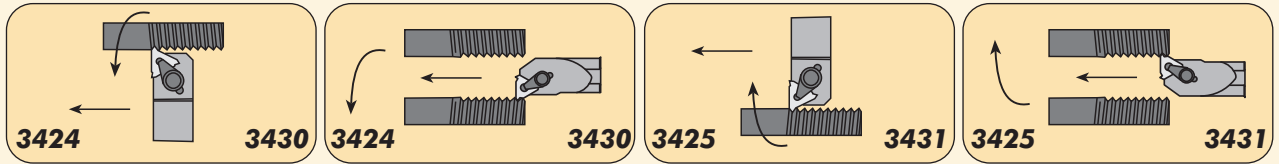
Arbors & adaptors

Helix chart

Feed direction towards the chuck

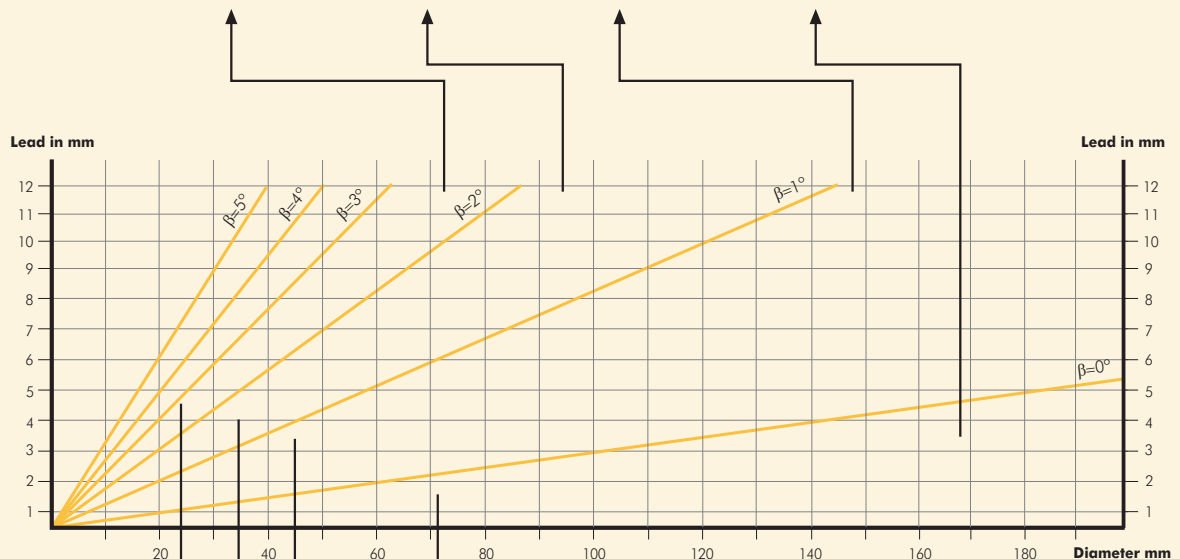
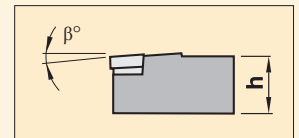
RH Thread - RH Tool

LH Thread - LH Tool



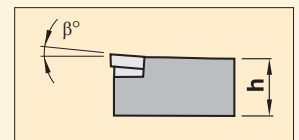
Anvil to give correct helix

| Insert size | +3° | +2° | +1° | +0° |
|-------------|--------|--------|--------|------|
| 16R | 3424+3 | 3424+2 | 3424+1 | 3424 |
| 16L | 3425+3 | 3425+2 | 3425+1 | 3425 |
| 22R | 3430+3 | 3430+2 | 3430+1 | 3430 |
| 22L | 3431+3 | 3431+2 | 3431+1 | 3431 |



Anvil to give correct helix

| Insert size | -3° | -2° | -1° | 0° |
|-------------|--------|--------|--------|------|
| 16R | 3424-3 | 3424-2 | 3424-1 | 3424 |
| 16L | 3425-3 | 3425-2 | 3425-1 | 3425 |
| 22R | 3430-3 | 3430-2 | 3430-1 | 3430 |
| 22L | 3431-3 | 3431-2 | 3431-1 | 3431 |



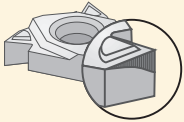

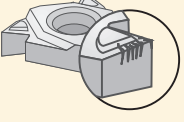
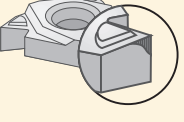
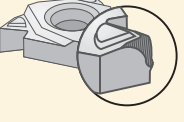
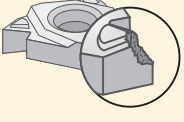
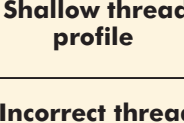
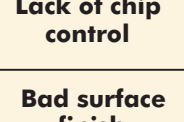

Feed direction away from the chuck

RH Thread - RH chuck

LH Thread - LH Tool



Threading insert wear and tool life

| | Problem | Cause and Remedy |
|---|--|---|
|  | <ul style="list-style-type: none"> ★ Cutting speed too high. ★ Lack of coolant. ★ Infeed per pass too small - too many passes ★ Incorrect grade. | <ul style="list-style-type: none"> ☆ Reduce the cutting speed. ☆ Increase the coolant supply. ☆ Increase the depth of infeed for the smallest infeed depths - reduce the number of passes. ☆ Select a more wear resistant grade. |
|  | <ul style="list-style-type: none"> ★ Instability of workholding and/or tool set-up. | <ul style="list-style-type: none"> ☆ Check rigidity of operation. ☆ Select a tougher grade. |
|  | <ul style="list-style-type: none"> ★ Intermittent coolant supply. | <ul style="list-style-type: none"> ☆ Position coolant flow and/or increase coolant supply. |
|  | <ul style="list-style-type: none"> ★ Incorrect method of infeed. ★ Incorrect angle of inclination. | <ul style="list-style-type: none"> ☆ In case of flank infeed use modified flank infeed. Decrease infeed angle 3-5°. ☆ Correct the angle on inclination according to the diagram. |
|  | <ul style="list-style-type: none"> ★ Infeed per pass too big - too few passes. ★ Lack of coolant. ★ Cutting speed too high. ★ Incorrect grade. ★ Excessive stock removal from crest. | <ul style="list-style-type: none"> ☆ Decrease the depth of infeed for the biggest depths. - Increase the number of passes. ☆ Increase coolant supply. ☆ Reduce the cutting speed. ☆ Select a harder grade. ☆ Check the volume of the material above the crest. |
|  | <ul style="list-style-type: none"> ★ Instability. ★ Lack of chip control. ★ Excessive plastic deformation. ★ Intermittent or inadequate coolant supply ★ Incorrect preparation of the operation | <ul style="list-style-type: none"> ☆ Check rigidity of operation. ☆ Select a tougher grade. Select modified flank infeed. ☆ Machine with same infeed per pass. ☆ Direct coolant flow and/or increase coolant supply. ☆ Check dimension of blank. |
|  | <ul style="list-style-type: none"> ★ Wrong centre height. ★ Insert not cresting. ★ Excessive tool wear. | <ul style="list-style-type: none"> ☆ Adjust cutting edge height. ☆ Check dimension of blank. ☆ Change insert earlier. |
|  | <ul style="list-style-type: none"> ★ Incorrect tool setting. | <ul style="list-style-type: none"> ☆ Correct tool setting. |
|  | <ul style="list-style-type: none"> ★ Incorrect depth of infeed per pass ★ Radial infeed. | <ul style="list-style-type: none"> ☆ Adjust cutting edge height. ☆ Check dimension of blank. ☆ Change insert earlier. |
| | <ul style="list-style-type: none"> ★ Cutting speed too low. ★ Incorrect angle of inclination. ★ Flank infeed. | <ul style="list-style-type: none"> ☆ Increase the cutting speed. ☆ Correct the angle of inclination according to diagram. ☆ Use modified flank infeed or radial infeed. |

Inserts

Turning

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Ceramic tools

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Boring heads

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Inserts

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Automatic lathes

Ceramic tools

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Threading

Drills

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Brazed tools

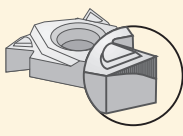
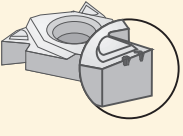
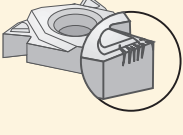
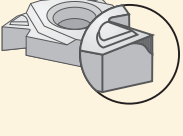
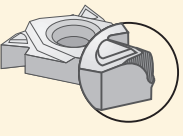
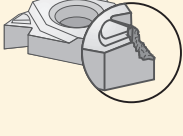
Milling cutters

Solid carbide

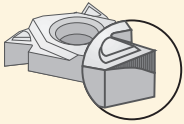
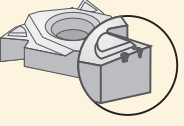
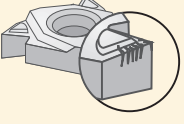
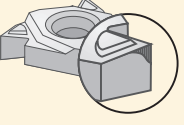
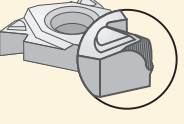
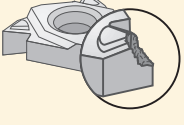
Boring heads

Arbors & adaptors

Usure et longueur de vie de la plaquette de filetage

| | Problème | Causes et solutions |
|---|--|--|
|  | Usure rapide en dépouille | <ul style="list-style-type: none"> ☆ Réduire la vitesse de coupe. ☆ Augmenter le débit de l'arrosage. ☆ Augmenter la profondeur de la pénétration en diminuant le nombre de passes. ☆ Choisir une nuance plus résistante à l'usure. |
| | <ul style="list-style-type: none"> ★ Vitesse de coupe trop élevée. ★ Manque d'arrosage. ★ Pénétration par passe trop faible - trop de passes. ★ Nuance incorrecte. | |
|  | Ecaillage de l'arête | <ul style="list-style-type: none"> ☆ Contrôler la rigidité de l'opération. ☆ Choisir une nuance plus tenace. |
| | <ul style="list-style-type: none"> ★ Rigidité insuffisante de la pièce à usiner et/ou de la machine. | |
|  | Fissuration thermique | <ul style="list-style-type: none"> ☆ Contrôler le débit de l'arrosage et/ou l'appliquer de façon plus abondante. |
| | <ul style="list-style-type: none"> ★ Arrosage irrégulier. | |
|  | Usure en dépouille irrégulière | <ul style="list-style-type: none"> ☆ Dans le cas de pénétration oblique, utiliser une pénétration oblique modifiée, diminuer l'angle de plongée 3-5°. ☆ Corriger l'angle d'inclinaison d'accord avec le diagramme ci-joint. |
| | <ul style="list-style-type: none"> ★ Méthode de pénétration pas correcte. ★ Angle d'inclinaison pas correcte. | |
|  | Déformation plastique excessive | <ul style="list-style-type: none"> ☆ Diminuer la profondeur de pénétration en augmentant le nombre de passes. ☆ Augmenter le débit d'arrosage. ☆ Réduire la vitesse de coupe. ☆ Choisir une nuance plus dure. ☆ Contrôler le matériel sur la pointe. |
| | <ul style="list-style-type: none"> ★ Pénétration par passe trop forte - trop peu de passes. ★ Arrosage insuffisant. ★ Vitesse de coupe trop élevée. ★ Nuance incorrecte. ★ La pointe de la plaquette enlève trop de matériel. | |
|  | Rupture | <ul style="list-style-type: none"> ☆ Contrôler la rigidité de l'opération. ☆ Choisir une nuance plus dure. Utiliser une pénétration oblique modifiée. ☆ Usiner avec la même pénétration par passe. ☆ Contrôler le débit de l'arrosage et/ou augmenter l'arrosage. ☆ Contrôler les dimensions de la plaquette. |
| | <ul style="list-style-type: none"> ★ Instabilité. ★ Manque de contrôle des copeaux. ★ Déformation plastique excessive. ★ Arrosage irrégulier ou insuffisant. ★ Préparation incorrecte de l'opération. | |
| | Profil de filet superficiel | <ul style="list-style-type: none"> ☆ Régler la hauteur de centre de l'outil. ☆ Contrôler les dimensions de la plaquette. ☆ Changer la plaquette plus tôt. |
| | <ul style="list-style-type: none"> ★ Hauteur de centre incorrecte. ★ La plaquette ne taille pas. ★ Usure excessive de l'arête. | |
| | Profil de filet incorrect | <ul style="list-style-type: none"> ☆ Régler la fixation de l'outil. |
| | <ul style="list-style-type: none"> ★ Fixation de l'outil incorrecte. | |
| | Manque de contrôle des copeaux | <ul style="list-style-type: none"> ☆ Ajuster la hauteur de l'arête de coupe. ☆ Contrôler les dimensions de la pièce. ☆ Changer la plaquette plus tôt. |
| | <ul style="list-style-type: none"> ★ Profondeur de pénétration par passe incorrecte. ★ Pénétration radiale. | |
| | Mauvais état de surface | <ul style="list-style-type: none"> ☆ Augmenter la vitesse de coupe. ☆ Corriger l'angle d'inclinaison selon le diagramme. ☆ Utiliser une pénétration oblique modifiée ou bien une pénétration radiale. |
| | <ul style="list-style-type: none"> ★ Vitesse de coupe insuffisante. ★ Angle d'inclinaison incorrect. ★ Pénétration oblique. | |

Verschleiß und Standzeit der Wendepatte zum Gewindedrehen

| | Problem | Ursache und Maßnahmen |
|---|--|---|
| Schneller Freiflächenverschleiß  | <ul style="list-style-type: none"> ★ Zu hohe Schnittgeschwindigkeit. ★ Mangel an Kühlmittel. ★ Zustellungstiefe pro Durchgang zu niedrig – zu viele Durchgänge. ★ Nicht korrekte Plattensorte. | <ul style="list-style-type: none"> ☆ Schnittgeschwindigkeit reduzieren. ☆ Kühlmittelzufuhr erhöhen. ☆ Für kleine Zustellungen, die Zustellungstiefe erhöhen - Anzahl Durchgänge reduzieren. ☆ Eine Sorte mit höherem Widerstand gegen Verschleißfestigkeit wählen. |
| Absplittern der Schneidkante  | <ul style="list-style-type: none"> ★ Instabilität des Werkstückes und/oder des Werkzeuges. | <ul style="list-style-type: none"> ☆ Stabilität der Operation kontrollieren. ☆ Eine härtere Sorte wählen. |
| Kammerisse  | <ul style="list-style-type: none"> ★ Unterbrochene Kühlmittelzufuhr. | <ul style="list-style-type: none"> ☆ Kühlmittel kontrollieren und/oder Zufuhr erhöhen. |
| Ungleichmäßiger Freiflächenverschleiß  | <ul style="list-style-type: none"> ★ Falsche Methode der Flankenstellung. ★ Falscher Neigungswinkel der Wendepatte. | <ul style="list-style-type: none"> ☆ Zustellmethode ändern. Zustellwinkel 3-5° vermindern. ☆ Neigungswinkel gemäß Diagramm ändern. |
| Übermäßige plastische Verformung  | <ul style="list-style-type: none"> ★ Zustellungstiefe pro Durchgang zu groß - zu wenige Durchgänge. ★ Mangel an Kühlmittel. ★ Zu hohe Schnittgeschwindigkeit. ★ Nicht korrekte Plattensorte. ★ Zuviel Materialabnahme an der Wendepattenspitze. | <ul style="list-style-type: none"> ☆ Zustellungstiefe reduzieren - Anzahl der Durchgänge erhöhen. ☆ Kühlmittelzufuhr erhöhen. ☆ Schnittgeschwindigkeit reduzieren. ☆ Eine härtere Sorte wählen. ☆ Materialmenge an der Wendeplattenspitze kontrollieren. |
| Plattenbruch  | <ul style="list-style-type: none"> ★ Instabilität. ★ Unkontrollierte Späne. ★ Übermäßige plastische Verformung. ★ Unterbrochene oder ungeeignete Kühlmittelzufuhr. ★ Falsche Hartmetallsorte. | <ul style="list-style-type: none"> ☆ Stabilität der Operation kontrollieren. ☆ Eine härtere Sorte wählen. Modifizierte Flankenstellung wählen. ☆ Bearbeiten mit derselben Zustellung per Steigung. ☆ Kühlmittelzufuhr kontrollieren und/oder Zufuhr erhöhen. ☆ Die Abmessung der Wendepatte kontrollieren. |
| Zu kleines Gewindeprofil | <ul style="list-style-type: none"> ★ Falsche Spitzenhöhe. ★ Plattenbruch. ★ Übermäßiger Verschleiß. | <ul style="list-style-type: none"> ☆ Schneidkantenhöhe einstellen. ☆ Die Abmessung der Wendepatte kontrollieren. ☆ Wendepatte früher wechseln. |
| Mangelhaftes Gewindeprofil | <ul style="list-style-type: none"> ★ Falsche Werkzeug/Wendepattenkombination. | <ul style="list-style-type: none"> ☆ Richtige Werkzeug/Wendepattenkombination wählen. |
| Schlechte Spankontrolle | <ul style="list-style-type: none"> ★ Falsche Tiefe der Zustellung per Steigung. ★ Radiale Zustellung. | <ul style="list-style-type: none"> ☆ Schneidkantenhöhe einstellen. ☆ Die Abmessung der Wendepatte kontrollieren. ☆ Wendepatte früher wechseln. |
| Schlechte Oberflächengüte | <ul style="list-style-type: none"> ★ Zu niedrige Schnittgeschwindigkeit. ★ Nicht korrekter Neigungswinkel. ★ Flankenstellung. | <ul style="list-style-type: none"> ☆ Schnittgeschwindigkeit erhöhen. ☆ Neigungswinkel gemäß Diagramm korrigieren. ☆ Modifizierte Flankenstellung oder radiale Zustellung verwenden. |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Drills
Forets
Bohrer

H02

Trepanning drills
Forets pour trépannage
Kernbohrer

H05

Technical information
Information technique
Technische Auskunft

H06

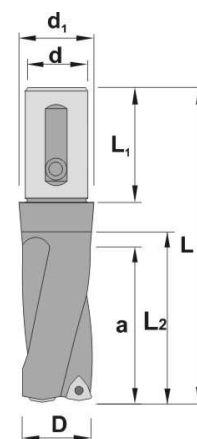
Cutting data
Conditions de coupe
Schnittbedingungen

H08



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| REF. | D | L | L1 | L2 | α | d | d1 | WCMX | | |
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| 215.018 | 18 | 108 | 55 | 40 | 36 | 25 | 40 | 0302.. | 129 | 507 |
| 215.018,5 | 18,5 | 113 | 55 | 41 | 37 | 25 | 40 | 0302.. | 129 | 507 |
| 215.019 | 19 | 113 | 55 | 42 | 38 | 25 | 40 | 0302.. | 129 | 507 |
| 215.020 | 20 | 113 | 55 | 44 | 40 | 25 | 40 | 0302.. | 129 | 507 |
| 215.022 | 22 | 123 | 55 | 48 | 44 | 25 | 40 | 0402.. | 125 | 507 |
| 215.024 | 24 | 123 | 55 | 52 | 48 | 25 | 40 | 0402.. | 125 | 507 |
| 215.025 | 25 | 123 | 55 | 54 | 50 | 25 | 40 | 0402.. | 125 | 507 |
| 215.026 | 26 | 133 | 55 | 56 | 52 | 32 | 40 | 0503.. | 103 | 509 |
| 215.027 | 27 | 133 | 55 | 58 | 54 | 32 | 40 | 0503.. | 103 | 509 |
| 215.028 | 28 | 133 | 55 | 60 | 56 | 32 | 40 | 0503.. | 103 | 509 |
| 215.029 | 29 | 133 | 55 | 62 | 58 | 32 | 40 | 0503.. | 103 | 509 |
| 215.030 | 30 | 133 | 55 | 64 | 60 | 32 | 40 | 0503.. | 103 | 509 |
| 215.031 | 31 | 153 | 60 | 66 | 62 | 40 | 50 | 06T3.. | 137 | 530 |
| 215.032 | 32 | 153 | 60 | 68 | 64 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.034 | 34 | 153 | 60 | 73 | 68 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.035 | 35 | 153 | 60 | 75 | 70 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.038 | 38 | 163 | 60 | 80 | 76 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.039 | 39 | 163 | 60 | 82 | 78 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.040 | 40 | 163 | 60 | 84 | 80 | 40 | 50 | 06T3.. | 137 | 503 |
| 215.042 | 42 | 193 | 65 | 89 | 84 | 40 | 60 | 0804.. | 104 | 515 |
| 215.043 | 43 | 193 | 65 | 91 | 86 | 40 | 60 | 0804.. | 104 | 515 |
| 215.045 | 45 | 193 | 65 | 95 | 90 | 40 | 60 | 0804.. | 104 | 515 |
| 215.048 | 48 | 193 | 65 | 101 | 96 | 40 | 60 | 0804.. | 104 | 515 |
| 215.049 | 49 | 213 | 65 | 103 | 98 | 40 | 60 | 0804.. | 104 | 515 |
| 215.050 | 50 | 213 | 65 | 105 | 100 | 40 | 60 | 0804.. | 104 | 515 |
| 215.052 | 52 | 213 | 65 | 110 | 104 | 40 | 60 | 0804.. | 104 | 515 |
| 215.054 | 54 | 213 | 65 | 114 | 108 | 40 | 60 | 0804.. | 104 | 515 |
| 215.055 | 55 | 213 | 65 | 116 | 110 | 40 | 60 | 0804.. | 104 | 515 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

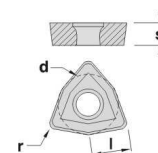
Solid carbide

Boring heads

Arbors & adaptors



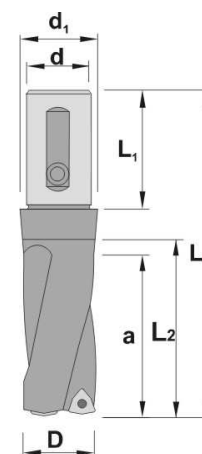
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|-------------|------|------|-------|
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| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |
| WCMX 0804.. | 8,14 | 4,76 | 12,70 |



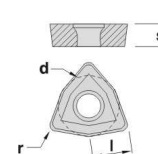
For more information see page: A.56

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| REF. | D | L | L1 | L2 | α | d | d1 | WCMX | | |
|-----------|------|-----|----|-----|----------|----|----|--------|-----|-----|
| 216.017,5 | 17,5 | 122 | 50 | 56 | 53 | 25 | 32 | 0302.. | 129 | 507 |
| 216.018 | 18 | 123 | 50 | 57 | 54 | 25 | 32 | 0302.. | 129 | 507 |
| 216.018,5 | 18,5 | 125 | 50 | 59 | 56 | 25 | 32 | 0302.. | 129 | 507 |
| 216.019 | 19 | 126 | 50 | 60 | 57 | 25 | 32 | 0302.. | 129 | 507 |
| 216.020 | 20 | 131 | 50 | 64 | 60 | 25 | 32 | 0302.. | 129 | 507 |
| 216.022 | 22 | 142 | 55 | 69 | 66 | 25 | 40 | 0402.. | 125 | 507 |
| 216.024 | 24 | 150 | 55 | 76 | 72 | 25 | 40 | 0402.. | 125 | 507 |
| 216.025 | 25 | 154 | 55 | 79 | 75 | 25 | 40 | 0402.. | 125 | 507 |
| 216.026 | 26 | 157 | 55 | 81 | 78 | 32 | 40 | 0503.. | 103 | 509 |
| 216.027 | 27 | 160 | 55 | 84 | 81 | 32 | 40 | 0503.. | 103 | 509 |
| 216.028 | 28 | 164 | 55 | 87 | 84 | 32 | 40 | 0503.. | 103 | 509 |
| 216.029 | 29 | 167 | 55 | 90 | 87 | 32 | 40 | 0503.. | 103 | 509 |
| 216.030 | 30 | 172 | 55 | 94 | 90 | 32 | 40 | 0503.. | 103 | 509 |
| 216.031 | 31 | 181 | 60 | 97 | 93 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.032 | 32 | 184 | 60 | 100 | 96 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.034 | 34 | 191 | 60 | 106 | 102 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.035 | 35 | 195 | 60 | 109 | 105 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.038 | 38 | 206 | 60 | 118 | 114 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.039 | 39 | 209 | 60 | 121 | 117 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.040 | 40 | 213 | 60 | 124 | 120 | 40 | 50 | 06T3.. | 137 | 530 |
| 216.042 | 42 | 225 | 65 | 130 | 126 | 40 | 60 | 0804.. | 104 | 515 |
| 216.043 | 43 | 229 | 65 | 133 | 129 | 40 | 60 | 0804.. | 104 | 515 |
| 216.045 | 45 | 237 | 65 | 140 | 135 | 40 | 60 | 0804.. | 104 | 515 |
| 216.048 | 48 | 248 | 65 | 149 | 144 | 40 | 60 | 0804.. | 104 | 515 |
| 216.049 | 49 | 251 | 65 | 152 | 147 | 40 | 60 | 0804.. | 104 | 515 |
| 216.050 | 50 | 255 | 65 | 155 | 150 | 40 | 60 | 0804.. | 104 | 515 |
| 216.052 | 52 | 262 | 65 | 161 | 156 | 40 | 60 | 0804.. | 104 | 515 |
| 216.054 | 54 | 269 | 65 | 167 | 162 | 40 | 60 | 0804.. | 104 | 515 |
| 216.055 | 55 | 274 | 65 | 171 | 165 | 40 | 60 | 0804.. | 104 | 515 |



| REF. | l | s | d |
|-------------|------|------|-------|
| WCMX 0302.. | 3,46 | 2,38 | 5,56 |
| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |
| WCMX 0804.. | 8,14 | 4,76 | 12,70 |

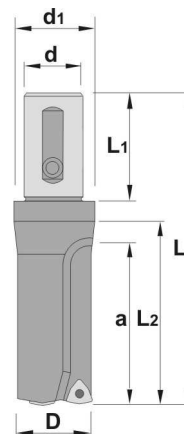


For more information see page: A.56

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| REF. | D | L | L1 | L2 | α | d | d1 | WCMX | | |
|-----------|------|-----|----|-----|-----|----|----|--------|-----|-----|
| 226.017,5 | 17,5 | 103 | 50 | 39 | 35 | 25 | 32 | 0302.. | 129 | 507 |
| 226.018 | 18 | 103 | 50 | 40 | 36 | 25 | 32 | 0302.. | 129 | 507 |
| 226.018,5 | 18,5 | 103 | 50 | 41 | 37 | 25 | 32 | 0302.. | 129 | 507 |
| 226.019 | 19 | 103 | 50 | 42 | 38 | 25 | 32 | 0302.. | 129 | 507 |
| 226.020 | 20 | 103 | 50 | 44 | 40 | 25 | 32 | 0302.. | 129 | 507 |
| 226.022 | 22 | 123 | 55 | 48 | 44 | 25 | 40 | 0402.. | 125 | 507 |
| 226.024 | 24 | 123 | 55 | 52 | 48 | 25 | 40 | 0402.. | 125 | 507 |
| 226.025 | 25 | 123 | 55 | 54 | 50 | 25 | 40 | 0402.. | 125 | 507 |
| 226.026 | 26 | 133 | 55 | 56 | 52 | 32 | 40 | 0503.. | 103 | 509 |
| 226.027 | 27 | 133 | 55 | 58 | 54 | 32 | 40 | 0503.. | 103 | 509 |
| 226.028 | 28 | 133 | 55 | 60 | 56 | 32 | 40 | 0503.. | 103 | 509 |
| 226.029 | 29 | 133 | 55 | 62 | 58 | 32 | 40 | 0503.. | 103 | 509 |
| 226.030 | 30 | 133 | 55 | 64 | 60 | 32 | 40 | 0503.. | 103 | 509 |
| 226.031 | 31 | 153 | 60 | 66 | 62 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.032 | 32 | 153 | 60 | 68 | 64 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.034 | 34 | 153 | 60 | 73 | 68 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.035 | 35 | 153 | 60 | 75 | 70 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.038 | 38 | 163 | 60 | 80 | 76 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.039 | 39 | 163 | 60 | 82 | 78 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.040 | 40 | 163 | 60 | 84 | 80 | 40 | 50 | 06T3.. | 137 | 530 |
| 226.042 | 42 | 193 | 65 | 89 | 84 | 40 | 60 | 0804.. | 104 | 515 |
| 226.043 | 43 | 193 | 65 | 91 | 86 | 40 | 60 | 0804.. | 104 | 515 |
| 226.045 | 45 | 193 | 65 | 95 | 90 | 40 | 60 | 0804.. | 104 | 515 |
| 226.048 | 48 | 193 | 65 | 101 | 96 | 40 | 60 | 0804.. | 104 | 515 |
| 226.049 | 49 | 213 | 65 | 103 | 98 | 40 | 60 | 0804.. | 104 | 515 |
| 226.050 | 50 | 213 | 65 | 105 | 100 | 40 | 60 | 0804.. | 104 | 515 |
| 226.052 | 52 | 213 | 65 | 110 | 104 | 40 | 60 | 0804.. | 104 | 515 |
| 226.054 | 54 | 213 | 65 | 114 | 108 | 40 | 60 | 0804.. | 104 | 515 |
| 226.055 | 55 | 213 | 65 | 116 | 110 | 40 | 60 | 0804.. | 104 | 515 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

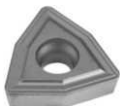
Brazed tools

Milling cutters

Solid carbide

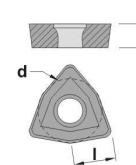
Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|------|------|-------|
| WCMX 0302.. | 3,46 | 2,38 | 5,56 |
| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |
| WCMX 0804.. | 8,14 | 4,76 | 12,70 |

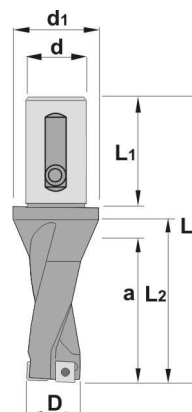
For more information see page: A.56



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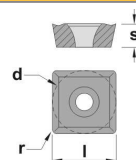


| REF. | D | L | L1 | L2 | α | d | d1 | SPMT | | |
|-----------|------|-----|----|-----|-----|----|----|--------|-----|-----|
| 232.015 | 15 | 120 | 55 | 56 | 45 | 25 | 40 | 0603.. | 125 | 507 |
| 232.016 | 16 | 121 | 55 | 56 | 48 | 25 | 40 | 0603.. | 125 | 507 |
| 232.017 | 17 | 127 | 55 | 54 | 51 | 25 | 40 | 0603.. | 125 | 507 |
| 232.017,5 | 17,5 | 127 | 55 | 56 | 53 | 25 | 40 | 0603.. | 125 | 507 |
| 232.018 | 18 | 128 | 55 | 57 | 54 | 25 | 40 | 0603.. | 125 | 507 |
| 232.018,5 | 18,5 | 130 | 55 | 59 | 56 | 25 | 40 | 0603.. | 125 | 507 |
| 232.019 | 19 | 131 | 55 | 60 | 57 | 25 | 40 | 0603.. | 125 | 507 |
| 232.020 | 20 | 136 | 55 | 64 | 60 | 25 | 40 | 0603.. | 125 | 507 |
| 232.022 | 22 | 142 | 55 | 69 | 66 | 25 | 40 | 0703.. | 125 | 507 |
| 232.024 | 24 | 150 | 55 | 76 | 72 | 25 | 40 | 0703.. | 125 | 507 |
| 232.025 | 25 | 154 | 55 | 79 | 75 | 25 | 40 | 0703.. | 125 | 507 |
| 232.026 | 26 | 162 | 55 | 81 | 78 | 32 | 50 | 0903.. | 103 | 530 |
| 232.027 | 27 | 165 | 55 | 84 | 81 | 32 | 50 | 0903.. | 103 | 530 |
| 232.028 | 28 | 169 | 55 | 87 | 84 | 32 | 50 | 0903.. | 103 | 530 |
| 232.029 | 29 | 172 | 55 | 90 | 87 | 32 | 50 | 0903.. | 103 | 530 |
| 232.030 | 30 | 177 | 55 | 94 | 90 | 32 | 50 | 0903.. | 103 | 530 |
| 232.031 | 31 | 186 | 65 | 97 | 93 | 40 | 60 | 0903.. | 103 | 530 |
| 232.032 | 32 | 189 | 65 | 100 | 96 | 40 | 60 | 0903.. | 103 | 530 |
| 232.034 | 34 | 196 | 65 | 106 | 102 | 40 | 60 | 0903.. | 103 | 530 |
| 232.035 | 35 | 200 | 65 | 109 | 105 | 40 | 60 | 1204.. | 150 | 520 |
| 232.038 | 38 | 211 | 65 | 118 | 114 | 40 | 60 | 1204.. | 150 | 520 |
| 232.039 | 39 | 214 | 65 | 121 | 117 | 40 | 60 | 1204.. | 150 | 520 |
| 232.040 | 40 | 218 | 65 | 124 | 120 | 40 | 60 | 1204.. | 150 | 520 |
| 232.042 | 42 | 225 | 65 | 130 | 126 | 40 | 60 | 1204.. | 150 | 520 |
| 232.043 | 43 | 229 | 65 | 133 | 129 | 40 | 60 | 1204.. | 150 | 520 |
| 232.045 | 45 | 237 | 65 | 140 | 135 | 40 | 60 | 1204.. | 150 | 520 |





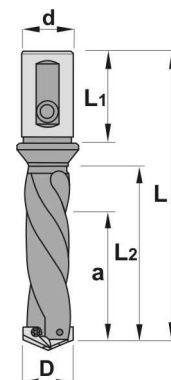
| REF. | l | s | d |
|-------------|-------|------|-------|
| SPMT 0603.. | 6,35 | 3,18 | 6,35 |
| SPMT 0703.. | 7,94 | 3,18 | 7,94 |
| SPMT 0903.. | 9,52 | 3,18 | 9,52 |
| SPMT 1204.. | 12,70 | 4,76 | 12,70 |

For more information see page: A.51



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| REF. | D | L | L1 | L2 | α | d | XPMT |  |  |
|------------------|-------------|-------|----|----|----------|----|----------|---|---|
| 258.009,5 | 9,50 ~ 11,0 | 120,0 | 42 | 50 | 35 | 20 | 095 ~110 | 440 | 506 |
| 258.011,5 | 11,5 ~ 12,7 | 125,0 | 42 | 55 | 40 | 20 | 115 ~127 | 441 | 506 |
| 258.013 | 13,0 ~ 17,5 | 140,0 | 42 | 65 | 53 | 20 | 130 ~175 | 155 | 507 |
| 258.015 | 15,5 ~ 17,5 | 140,0 | 42 | 75 | 53 | 20 | 150 ~175 | 155 | 507 |



Inserts

Turning

Automatic lathes

Ceramic tools

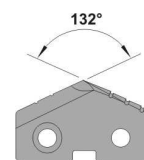
Parting & grooving

Threading

Drills



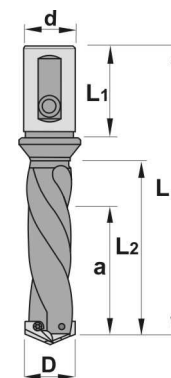
| REF. | s |
|----------------------------|-----|
| XPMT 095 ~ XPMT 110 | 2,4 |
| XPMT 115 ~ XPMT 127 | 2,4 |
| XPMT 130 ~ XPMT 175 | 3,2 |
| XPMT 150 ~ XPMT 175 | 3,2 |



For more information see page: A.58

259

| REF. | D | L | L1 | L2 | α | d | XPMT |  |  |
|------------------|-------------|-----|----|-----|----------|----|----------|---|---|
| 259.009,5 | 9,50 ~ 11,0 | 132 | 42 | 65 | 57 | 20 | 095 ~110 | 440 | 506 |
| 259.011,5 | 11,5 ~ 12,7 | 142 | 42 | 75 | 69 | 20 | 115 ~127 | 441 | 506 |
| 259.013 | 13,0 ~ 17,5 | 188 | 42 | 125 | 112 | 20 | 130 ~175 | 155 | 507 |
| 259.015 | 15,5 ~ 17,5 | 198 | 42 | 135 | 122 | 20 | 150 ~175 | 155 | 507 |



Cartridges

Brazed tools

Milling cutters

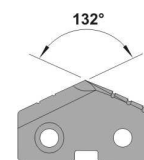
Solid carbide

Boring heads

Arbors & adaptors



| REF. | s |
|----------------------------|-----|
| XPMT 095 ~ XPMT 110 | 2,4 |
| XPMT 115 ~ XPMT 127 | 2,4 |
| XPMT 130 ~ XPMT 175 | 3,2 |
| XPMT 150 ~ XPMT 175 | 3,2 |

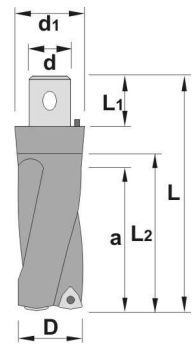


For more information see page: A.58

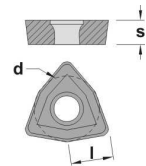
228



| REF. | D | L | L1 | L2 | a | d | d1 | WCMX | | |
|-----------|------|-----|----|-----|-----|----|----|--------|-----|-----|
| 228.017,5 | 17,5 | 92 | 20 | 56 | 53 | 20 | 32 | 0302.. | 129 | 507 |
| 228.018 | 18 | 93 | 20 | 57 | 54 | 20 | 32 | 0302.. | 129 | 507 |
| 228.018,5 | 18,5 | 95 | 20 | 59 | 56 | 20 | 32 | 0302.. | 129 | 507 |
| 228.019 | 19 | 96 | 20 | 60 | 57 | 20 | 32 | 0302.. | 129 | 507 |
| 228.020 | 20 | 101 | 20 | 64 | 60 | 20 | 32 | 0302.. | 129 | 507 |
| 228.022 | 22 | 112 | 25 | 69 | 66 | 24 | 42 | 0402.. | 125 | 507 |
| 228.024 | 24 | 120 | 25 | 76 | 72 | 24 | 42 | 0402.. | 125 | 507 |
| 228.025 | 25 | 124 | 25 | 79 | 75 | 24 | 42 | 0402.. | 125 | 507 |
| 228.026 | 26 | 132 | 30 | 81 | 78 | 28 | 50 | 0503.. | 103 | 509 |
| 228.027 | 27 | 135 | 30 | 84 | 81 | 28 | 50 | 0503.. | 103 | 509 |
| 228.028 | 28 | 139 | 30 | 87 | 84 | 28 | 50 | 0503.. | 103 | 509 |
| 228.029 | 29 | 142 | 30 | 90 | 87 | 28 | 50 | 0503.. | 103 | 509 |
| 228.030 | 30 | 147 | 30 | 94 | 90 | 28 | 50 | 0503.. | 103 | 509 |
| 228.031 | 31 | 161 | 40 | 97 | 93 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.032 | 32 | 164 | 40 | 100 | 96 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.034 | 34 | 171 | 40 | 106 | 102 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.035 | 35 | 175 | 40 | 109 | 105 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.038 | 38 | 186 | 40 | 118 | 114 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.039 | 39 | 189 | 40 | 121 | 117 | 36 | 68 | 06T3.. | 137 | 530 |
| 228.040 | 40 | 193 | 40 | 124 | 120 | 36 | 68 | 06T3.. | 137 | 530 |



| REF. | l | s | d |
|-------------|------|------|------|
| WCMX 0302.. | 3,46 | 2,38 | 5,56 |
| WCMX 0402.. | 3,99 | 2,38 | 6,35 |
| WCMX 0503.. | 5,07 | 3,18 | 7,94 |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |



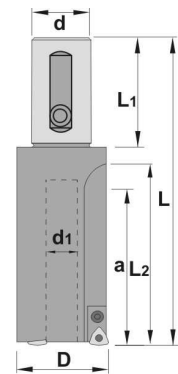
For more information see page: A.56

474

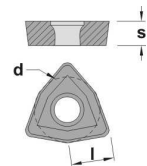
Trepanning drills
Forets por trépannage
Kernbohrer



| REF. | D | L | L1 | L2 | a | d | d1 | WCMX | | | | | | | | | |
|---------|-----|-----|----|-----|-----|----|----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 474.060 | 60 | 260 | 65 | 160 | 150 | 40 | 24 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.065 | 65 | 275 | 65 | 175 | 165 | 40 | 29 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.070 | 70 | 285 | 65 | 185 | 175 | 40 | 34 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.075 | 75 | 300 | 65 | 200 | 190 | 40 | 39 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.080 | 80 | 310 | 65 | 210 | 200 | 40 | 44 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.085 | 85 | 325 | 65 | 225 | 215 | 40 | 49 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.090 | 90 | 335 | 65 | 235 | 225 | 40 | 54 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.095 | 95 | 350 | 65 | 250 | 240 | 40 | 59 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |
| 474.100 | 100 | 360 | 65 | 260 | 250 | 40 | 64 | 06T3.. | 466 | 530 | 118 | 137 | 153 | 502 | 505 | 646 | 656 |



| REF. | l | s | d |
|-------------|------|------|------|
| WCMX 06T3.. | 6,14 | 3,97 | 9,52 |



For more information see page: A.56

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Drills for indexable inserts - Forets pour plaquettes amovibles - Bohrer für Wendeschneidplatten

Inserts



A concave surface is not normally recommended because there is the possibility that the tool turns away from the centre. Feed should be reduced to 1/3 of the recommended.

L'attaque sur une surface concave n'est pas recommandé car il y a la possibilité que la pièce à usiner se déplace du centre. L'avance devrait être réduite à 1/3 de celui que l'on recommande.

Eine konkave Oberfläche ist normalerweise nicht empfohlen, weil die Möglichkeit besteht, daß der Bohrer von der Mitte abgelenkt wird. Der Vorschub sollte auf 1/3 des empfohlenen Wertes vermindert werden.

Turning

Automatic lathes

Ceramic tools



The surface of the tool to be drilled on should be preferably even. If the angles exceed 2°, feed should be reduced to 1/3 of the recommended.

La surface de la pièce qui doit être percée devrait être de préférence plate. Si les angles surpassent 2°, l'avance devrait être réduite à 1/3 de celui que l'on recommande.

Die Anbohrfläche sollte wenn möglich eben sein. Wenn die Winkel mehr als 2° betragen, sollte man den Vorschub beim Anbohren auf 1/3 des empfohlenen Wertes vermindern.

Parting & grooving

Threading



If the starting surface is an uneven surface of the component, feed should be reduced so that the chip of the cutting edges can be avoided. The same can also happen at the wayout from the tool.

Si la surface à usiner est une surface irrégulière, l'avance devrait être réduite de façon que l'on puisse éviter la casse des arêtes de coupe. La même chose peut passer aussi à la sortie de l'outil.

Wenn man ab einer ungleichmäßigen Oberfläche beginnt, muß der Vorschub beim Anbohren reduziert werden, so daß ein Ausbröckeln der Schneidkante verhindert werden kann. Das gleiche kann auch beim Durchbohren passieren.

Drills

Cartridges



When working with a hole made beforehand, this should not be bigger than 1/4 of the final size, because the tool could turn away.

Quand on usine un trou qui a été percé préalablement, celui-ci ne devrait pas être plus grand que 1/4 de la dimension finale, parce que la pièce à usiner pourrait se déplacer.

Wenn man in einem Werkstück bohrt, die schon angebohrt ist, darf diese vorgebohrte Bohrung nicht größer als 1/4 des gewünschten Enddurchmesser sein, da der Bohrer sonst von der Mitte abgelenkt wird.

Brazed tools

Milling cutters



There is the possibility to drill sets of more than one piece.

Il existe la possibilité de percer des pièces empilées.

Es ist möglich, mehrere übereinanderliegende Werkstücke zu bohren.

Solid carbide

Boring heads



When the tool has a crossed hole, which is 1/4 bigger than the diameter of the drill, feed should be reduced when going through it.

Quand la pièce à usiner a un trou transversal qui est plus de 1/4 plus grand que le diamètre du foret, l'avance devrait être réduite lors du passage à travers de celui-ci.

Wenn das Werkstück eine Querbohrung von mehr als 1/4 des Bohrerdurchmessers hat, muß der Vorschub vermindert werden, wenn man durch dieser Bohrung bohrt.

Arbors & adaptors


Drilling with drill-holders with housing for cutting fluid supply

Percer avec attachement à adduction de liquide réfrigérant
Bohren mit Halter mit Kühlmittelgehäuse

When a drillholder with a housing supplier of cutting fluid is used, it has to have a fixed top so as to avoid that the housing turns around. If it is the case that the cutting fluid has some dirty rests, this could lock the rotary housing and, consequently, the supplier tube will roll up around it, which can cause a serious accident. If it is the case that the drillholder has not been used for a long time, check if it turns round in the housing before the spindle starts working.

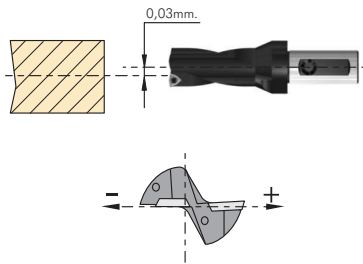
Quand on utilise un attachement à adduction de liquide réfrigérant, il doit avoir une butée à la partie supérieure pour empêcher la rotation du raccord tournant.

Dans le cas où le liquide réfrigérant a quelques particules de métal, cela pourrait bloquer le raccord tournant, et en conséquence, le tube distributeur du liquide réfrigérant s'enroulerait autour de celui-ci. Cela pourrait provoquer un grave accident.

Dans le cas où l'attachement n'a pas été utilisé depuis longtemps, vérifier qu'il tourne sans difficulté dans le raccord, avant de mettre la machine en route.

Wenn man einen Halter mit Kühlmittelgehäuse verwendet, muß eine Arretierung vorhanden sein, die das Rotieren des Gehäuses verhindert. Falls das Kühlmittel durch Spanpartikel schmutzig ist, könnte das Gehäuse blockieren und in diesem Fall würde das Gehäuse die Zuleitung mit sich ziehen, und ein ernsthafter Unfall könnte die Folge sein.

Wenn ein Halter mit Kühlmittelgehäuse längere Zeit nicht verwendet worden ist, muß vor Inbetriebnahme der Maschine geprüft werden, ob sich der Halter im Gehäuse leicht drehen läßt.


Fixed drills
Forets fixes

Nichtrotierende Bohrer

The axis of the tool should not be deviated from the centre of the piece more than 0,03 mm. so that the pointed tolerances are acquired.

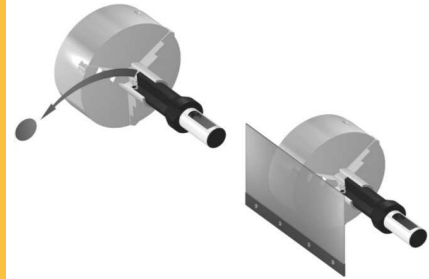
The tool should be assembled in a way that the face of the central insert goes parallel to the cross movement axis of the machine.

L'axe de l'outil ne devrait pas être dévié de plus de 0,03 mm. du centre de la pièce, pour pouvoir obtenir les tolérances prévues.

L'outil devrait être monté de manière que la face de la plaquette centrale soit parallèle à l'axe de mouvement transversal de la machine.

Die Werkzeugachse darf nicht mehr als 0,03 mm. von der Mitte des Werkstücks abgelenkt sein, damit man die angegebenen Toleranzen erreichen kann.

Der Bohrer muß so positioniert werden, daß die Schneidkante der Mittelplatte parallel zur X-Achse der Maschine liegt.


Drilling of through-holes
Perçage de trous traversants
Bohren von Durchgangsbohrungen

When through-holes are drilled a disk is produced after the drill has finished the hole. This disk is often thrown away at high speed through the dish claws and can cause injuries and accidents. In order to avoid this accident, a suitable safety has to be placed around the dish.

Quand on perce un trou traversant il se forme un disque lorsque le foret a débouché le trou. Ce disque est souvent éjecté à grande vitesse à travers des mors du mandrin, et peut occasionner des blessures et des dommages.

Pour éviter tout accident, il faut prévoir une protection adéquate autour du mandrin.

Wenn man Durchgangsbohrungen bohrt, entsteht beim Austritt des Bohrers aus dem Werkstück eine Scheibe, die oft mit hoher Geschwindigkeit aus dem Spannfutter geschleudert wird und Schaden und Verletzungen verursachen kann. Um dies zu verhindern, muß eine Schutzabdeckung um das Spannfutter vorhanden sein.

Inserts
Turning
Automatic lathes
Ceramic tools
Parting & grooving
Threading
Drills
Cartridges
Brazed tools
Milling cutters
Solid carbide
Boring heads
Arbors & adaptors

Inserts

Turning

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Boring heads

Arbors & adaptors

| Material | HB | Condition | D mm. | Feed mm./Rev. | Cutting speed m./min. |
|-------------------------------------|----------|--|-----------|---------------|-----------------------|
| Unalloyed steel P | 90-200 | Non-hardened 0,05-0,25%C | 17,5-25,4 | 0,04-0,08 | 100-250 |
| | | | 26,0-30,0 | 0,06-0,10 | |
| | | | 31,0-41,3 | 0,08-0,12 | |
| | | | 42,0-80,0 | 0,08-0,12 | |
| Unalloyed steel | 125-225 | Non-hardened 0,25-0,55%C | 17,5-25,4 | 0,04-0,12 | 100-250 |
| | 150-225 | Non-hardened 0,55-0,80%C | 26,0-30,0 | 0,09-0,19 | |
| | 180-225 | High carbon & carbon tool steel | 31,0-41,3 | 0,11-0,20 | |
| Low alloyed steel | 150-260 | Non-hardened | 17,5-25,4 | 0,08-0,12 | 90-250 |
| | | | 26,0-30,0 | 0,09-0,16 | |
| | | | 31,0-41,3 | 0,11-0,20 | |
| | | | 42,0-80,0 | 0,14-0,22 | |
| Low alloyed steel | 220-400 | Hardened | 17,5-25,4 | 0,06-0,10 | 80-220 |
| | | | 26,0-30,0 | 0,08-0,15 | |
| | | | 31,0-41,3 | 0,08-0,15 | |
| | | | 42,0-80,0 | 0,11-0,20 | |
| High alloyed steel | 150-250 | Annealed | 17,5-25,4 | 0,08-0,12 | 100-220 |
| | 150-250 | Annealed HSS | 26,0-30,0 | 0,09-0,18 | |
| | | | 31,0-41,3 | 0,11-0,22 | |
| | | | 42,0-80,0 | 0,14-0,25 | |
| High alloyed steel | 250-350 | Hardened tool steel | 17,5-25,4 | 0,08-0,12 | 90-200 |
| | 250-400 | Hardened steel | 26,0-30,0 | 0,09-0,15 | |
| | | | 31,0-41,3 | 0,11-0,17 | |
| | | | 42,0-80,0 | 0,12-0,20 | |
| Stainless steel | 150-270 | Ferritic, Martensitic 13-25%Cr | 17,5-25,4 | 0,04-0,12 | 90-190 |
| | | | 26,0-30,0 | 0,10-0,16 | |
| | | | 31,0-41,3 | 0,11-0,18 | |
| | | | 42,0-80,0 | 0,11-0,18 | |
| Steel castings | 150-270 | Unalloyed | 17,5-25,4 | 0,05-0,08 | 100-230 |
| | | | 26,0-30,0 | 0,06-0,10 | |
| | | | 31,0-41,3 | 0,09-0,15 | |
| | | | 42,0-80,0 | 0,11-0,18 | |
| Steel castings | 90-225 | Low alloyed (alloying elements < 5%) | 17,5-25,4 | 0,08-0,12 | 90-200 |
| | | | 26,0-30,0 | 0,09-0,15 | |
| | | | 31,0-41,3 | 0,12-0,20 | |
| | | | 42,0-80,0 | 0,14-0,22 | |
| Stainless steel M | 150-250 | Austenitic Ni > 8%, 18-25% Cr | 17,5-25,4 | 0,04-0,12 | 70-150 |
| | | | 26,0-30,0 | 0,10-0,16 | |
| | | | 31,0-41,3 | 0,11-0,18 | |
| | | | 42,0-80,0 | 0,11-0,18 | |
| Malleable cast iron K | 110-145 | Ferritic (short chipping) | 17,5-25,4 | 0,11-0,18 | 90-200 |
| | | | 26,0-30,0 | 0,14-0,22 | |
| | | | 31,0-41,3 | 0,17-0,27 | |
| | | | 42,0-80,0 | 0,18-0,30 | |
| Malleable cast iron | 150-270 | Pearlitic (long chipping) | 17,5-25,4 | 0,09-0,15 | 80-180 |
| | | | 26,0-30,0 | 0,11-0,19 | |
| | | | 31,0-41,3 | 0,12-0,20 | |
| | | | 42,0-80,0 | 0,14-0,22 | |
| Grey cast iron | 150-220 | Low tensile strength | 17,5-25,4 | 0,09-0,15 | 80-180 |
| | | | 26,0-30,0 | 0,14-0,22 | |
| | | | 31,0-41,3 | 0,15-0,25 | |
| | | | 42,0-80,0 | 0,18-0,30 | |
| Grey cast iron | 200-330 | High tensile strength | 17,5-25,4 | 0,09-0,15 | 70-150 |
| | | | 26,0-30,0 | 0,12-0,20 | |
| | | | 31,0-41,3 | 0,14-0,22 | |
| | | | 42,0-80,0 | 0,15-0,25 | |
| Nodular cast iron | 125-230 | Ferritic | 17,5-25,4 | 0,09-0,15 | 80-180 |
| | | | 26,0-30,0 | 0,14-0,22 | |
| | | | 31,0-41,3 | 0,15-0,25 | |
| | | | 42,0-80,0 | 0,17-0,28 | |
| Nodular cast iron | 200-300 | Pearlitic | 17,5-25,4 | 0,09-0,15 | 70-150 |
| | | | 26,0-30,0 | 0,12-0,20 | |
| | | | 31,0-41,3 | 0,14-0,22 | |
| | | | 42,0-80,0 | 0,15-0,30 | |
| Aluminium alloys | 75-150 | Wrought, solution treated & aged | 17,5-25,4 | 0,08-0,12 | 150-375 |
| | 40-100 | Cast | 26,0-30,0 | 0,11-0,17 | |
| | 70-125 | Cast, solution treated & aged | 31,0-41,3 | 0,17-0,27 | |
| | | | 42,0-80,0 | 0,17-0,27 | |
| Copper and copper alloys | 50 - 160 | Free cutting alloys (pb > 1%) Brass and leaded bronzes (pb < 1%) | 17,5-25,4 | 0,09-0,15 | 80-160 |
| | | | 26,0-30,0 | 0,09-0,15 | |
| | | | 31,0-41,3 | 0,15-0,25 | |
| | | | 42,0-80,0 | 0,15-0,25 | |

| Material | HB | Condition | D mm. | Cutting speed m/min | Feed mm/Rev |
|---------------------------------|---------|---------------------------------|--------|---------------------|-------------|
| Unalloyed steel P | 90-200 | Non-hardened 0,05-0,25%C | 60-100 | 150-250 | 0,08-0,12 |
| | 125-225 | Non-hardened 0,25-0,55%C | | 100-250 | 0,11-0,18 |
| | 150-225 | Non-hardened 0,55-0,80%C | | 100-250 | 0,11-0,18 |
| | 180-225 | High carbon & carbon tool steel | | 100-250 | 0,11-0,18 |
| Low alloyed steel | 150-260 | Non-hardened | 60-100 | 100-250 | 0,11-0,18 |
| | 220-400 | Hardened | 60-100 | 100-220 | 0,08-0,12 |
| High alloyed steel | 150-250 | Annealed | 60-100 | 100-220 | 0,11-0,19 |
| | 150-250 | Annealed HSS | | 100-220 | 0,11-0,19 |
| | 250-350 | Hardened tool steel | | 100-200 | 0,11-0,18 |
| | 250-400 | Hardened steel | | 100-200 | 0,11-0,17 |
| Stainless steel | 150-270 | Ferritic, Martensitic 13-25%Cr | 60-100 | 100-200 | 0,11-0,17 |
| Steel castings | 90-225 | Unalloyed | 60-100 | 100-200 | 0,12-0,20 |
| | 150-250 | Low alloyed (< 5%) | | 100-150 | 0,11-0,17 |

| | | | | | |
|---------------------------------|---------|----------------------------------|--------|---------|-----------|
| Stainless steel M | 150-270 | Austenitic Ni > 8%, 18-25% Cr | 60-100 | 100-230 | 0,09-0,15 |
|---------------------------------|---------|----------------------------------|--------|---------|-----------|

| | | | | | |
|-------------------------------------|---------|---|--------|---------|-----------|
| Malleable cast iron K | 110-145 | Ferritic (short chipping) | 60-100 | 100-200 | 0,17-0,27 |
| | 150-270 | Pearlitic (long chipping) | 60-100 | 90-180 | 0,12-0,20 |
| Grey cast iron | 150-220 | Low tensile strength | 60-100 | 90-180 | 0,15-0,25 |
| | 200-300 | High tensile strength | 60-100 | 90-150 | 0,14-0,22 |
| Nodular cast iron | 125-230 | Ferritic | 60-100 | 100-180 | 0,15-0,25 |
| | 200-300 | Pearlitic | 60-100 | 90-150 | 0,14-0,22 |
| Aluminium alloys | 75-150 | Wrought, solution treated & aged | 60-100 | 150-375 | 0,17-0,27 |
| | 40-100 | Cast | 60-100 | 150-375 | 0,17-0,27 |
| | 70-125 | Cast, solution treated & aged | 60-100 | 150-375 | 0,17-0,27 |
| Copper and copper alloys | 50-160 | Free cutting alloys (pb>1%) Brass and leaded bronzes (pb<1%) | 60-100 | 100-160 | 0,15-0,25 |

Inserts

Turning

Automatic
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toolsParting &
grooving

Threading

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Brazed
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cuttersSolid
carbideBoring
headsArbors &
adaptors



Code Key
Système de codification
Kodifizierungs-System

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Applications
Applications
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Top clamp cartridges
Cartouches avec bride supérieure
Kurzklemmhalter mit oberer Prtze

104

Lever lock cartridges
Cartouches avec levier
Kurzklemmhalter mit Kniehebel

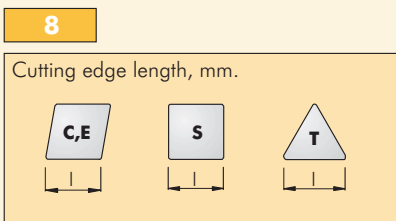
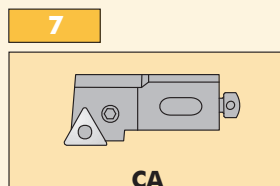
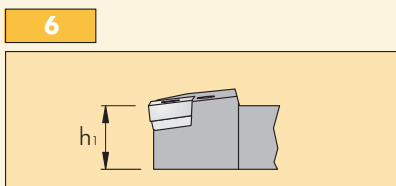
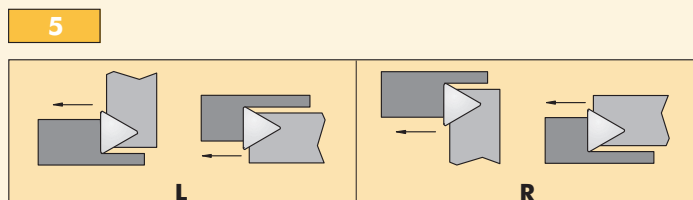
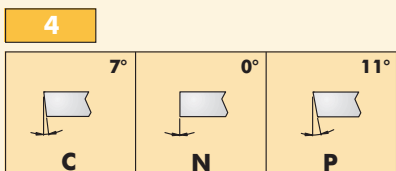
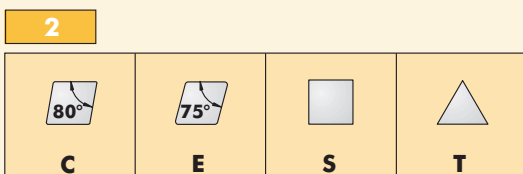
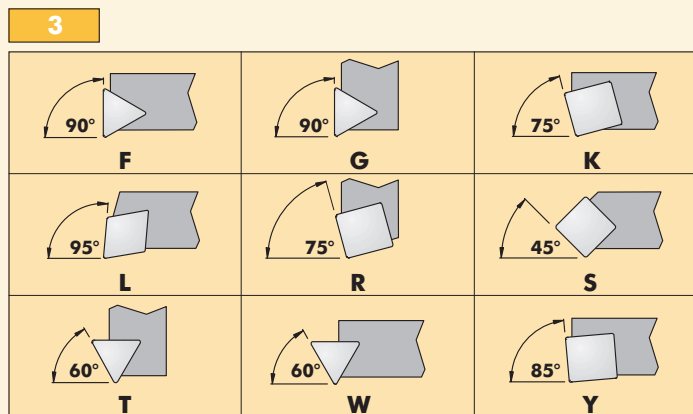
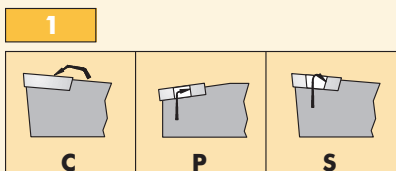
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Center screw cartridges
Cartouches avec vis centrale
Kurzklemmhalter mit Mittelschraube

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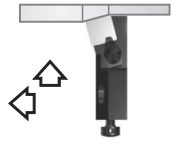
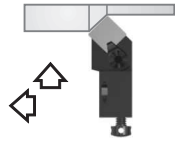
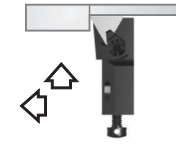
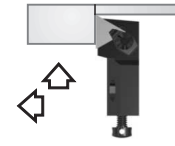
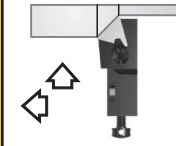
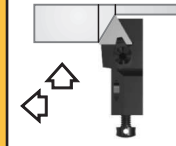
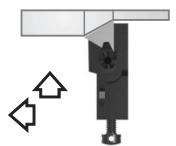
P C L N R 16 CA - 12

1 2 3 4 5 6 7 8

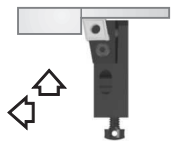
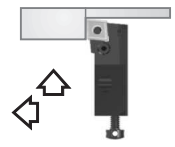
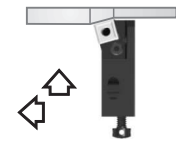
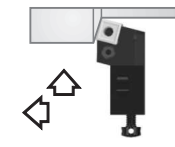
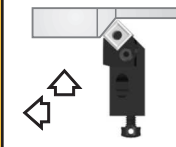
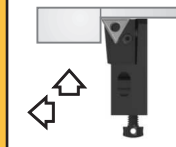
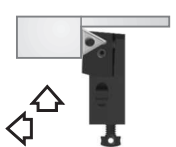
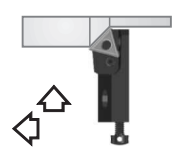
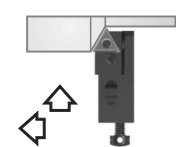
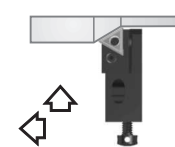


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

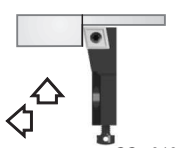
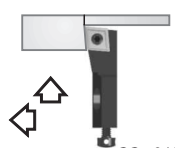
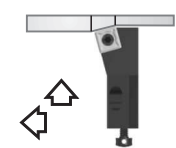
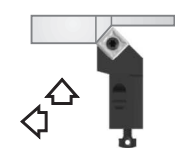
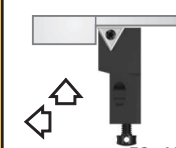
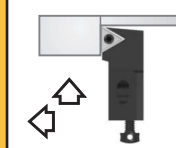
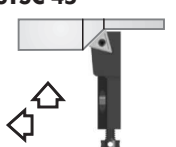
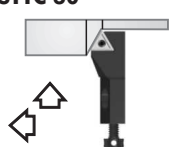
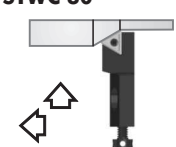
Top clamp cartridges - Cartouches avec bride supérieure - Kurzklammhalter mit oberer Pratzte

| | | | | | |
|---|---|---|---|--|---|
| <p>CSKP 75°</p>  <p>Page I.04 SP.. 0903.. SP.. 1203..</p> | <p>CSSP 45°</p>  <p>Page I.04 SP.. 0903.. SP.. 1203..</p> | <p>CTFP 90°</p>  <p>Page I.04 TP.. 1103.. TP.. 1603..</p> | <p>CTGP 90°</p>  <p>Page I.04 TP.. 1103.. TP.. 1603..</p> | <p>CTSP 45°</p>  <p>Page I.05 TP.. 1103.. TP.. 1603..</p> | <p>CTTP 60°</p>  <p>Page I.05 TP.. 1103.. TP.. 1603..</p> |
| <p>CTWP 30°</p>  <p>Page I.05 TP.. 1103.. TP.. 1603..</p> | | | | | |

Lever lock cartridges - Cartouches avec levier - Kurzklammhalter mit Kniehebel

| | | | | | |
|---|---|---|---|---|---|
| <p>PCFN 90°</p>  <p>Page I.06 CN.. 1204.. CN.. 1606..</p> | <p>PCLN 95°</p>  <p>Page I.06 CN.. 1204.. CN.. 1606..</p> | <p>PSKN 75°</p>  <p>Page I.06 SNM.. 1204.. SNM.. 1506..</p> | <p>PSRN 75°</p>  <p>Page I.06 SNM.. 1204..</p> | <p>PSSN 45°</p>  <p>Page I.07 SNM.. 1204..</p> | <p>PTFN 90°</p>  <p>Page I.07 TNM.. 1604.. TNM.. 2204..</p> |
| <p>PTGN 90°</p>  <p>Page I.07 TNM.. 1604.. TNM.. 2204..</p> | <p>PTSN 45°</p>  <p>Page I.07 TNM.. 1604.. TNM.. 2204..</p> | <p>PTTN 60°</p>  <p>Page I.08 TNM.. 1604.. TNM.. 2204..</p> | <p>PTWN 30°</p>  <p>Page I.08 TNM.. 1604.. TNM.. 2204..</p> | | |

Center screw cartridges - Cartouches avec vis centrale - Kurzklammhalter mit Mittelschraube

| | | | | | |
|---|---|---|---|--|---|
| <p>SCFC 90°</p>  <p>Page I.09 CC.. 0602.. CC.. 09T3.. CC.. 1204..</p> | <p>SCLC 95°</p>  <p>Page I.09 CC.. 0602.. CC.. 09T3.. CC.. 1204..</p> | <p>SSKC 75°</p>  <p>Page I.09 SC.. 09T3.. SC.. 1204..</p> | <p>SSSC 45°</p>  <p>Page I.09 SC.. 09T3.. SC.. 1204..</p> | <p>STFC 90°</p>  <p>Page I.10 TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STGC 90°</p>  <p>Page I.10 TC.. 1102.. TC.. 16T3..</p> |
| <p>STSC 45°</p>  <p>Page I.10 TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STTC 60°</p>  <p>Page I.10 TC.. 0902.. TC.. 1102.. TC.. 16T3..</p> | <p>STWC 30°</p>  <p>Page I.11 TC.. 1102.. TC.. 16T3..</p> | | | |

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

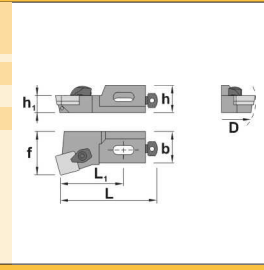
Arbors &
adaptors



Inserts



| REF. | D | h | h1 | L | L1 | f | b | SP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CKSP R/L 10CA-09 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | 0903.. |
| CKSP R/L 12CA-12 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1203.. |
| CKSP R/L 16CA-12 | 55 | 25 | 16 | 63 | 38 | 25 | 20 | 1203.. |

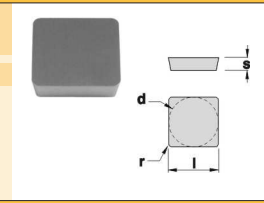


Turning

Automatic lathes

| REF. | REF. | l | s | d |
|-------------------------|---------|---------|-------------------------|-------------------------|
| CKSP R/L 10CA-09 | 234 525 | - | - | 118 154 502 286 192 504 |
| CKSP R/L 12CA-12 | 235 503 | - | - | 118 157 525 286 186 504 |
| CKSP R/L 16CA-12 | 235 503 | 314 402 | 119 157 525 288 190 505 | |

| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |

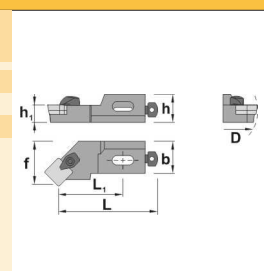


For more information see page: A.51

Ceramic tools



| REF. | D | h | h1 | L | L1 | f | b | SP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CSSP R/L 10CA-09 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | 0903.. |
| CSSP R/L 12CA-12 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1203.. |
| CSSP R/L 16CA-12 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | 1203.. |

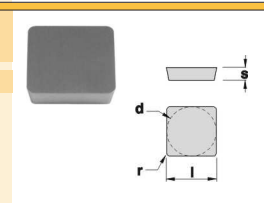


Parting & grooving

Threading

| REF. | REF. | l | s | d |
|-------------------------|---------|---------|-------------------------|-------------------------|
| CSSP R/L 10CA-09 | 234 525 | - | - | 118 154 502 286 192 504 |
| CSSP R/L 12CA-12 | 235 503 | - | - | 118 157 525 286 186 504 |
| CSSP R/L 16CA-12 | 235 503 | 314 402 | 119 157 525 288 190 505 | |

| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |

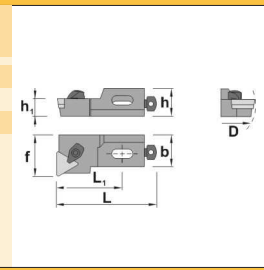


For more information see page: A.51

Drills



| REF. | D | h | h1 | L | L1 | f | b | TP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CTFP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | 1103.. |
| CTFP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1603.. |
| CTFP R/L 16CA-16 | 55 | 25 | 16 | 63 | 38 | 25 | 20 | 1603.. |

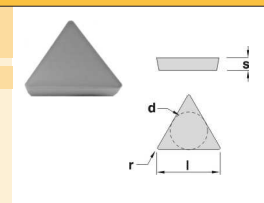


Cartridges

Brazed tools

| REF. | REF. | l | s | d |
|-------------------------|---------|---------|-------------------------|-------------------------|
| CTFP R/L 10CA-11 | 234 525 | - | - | 118 154 502 286 192 504 |
| CTFP R/L 12CA-16 | 235 503 | - | - | 118 157 525 286 186 504 |
| CTFP R/L 16CA-16 | 235 503 | 317 402 | 119 157 525 288 190 505 | |

| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |

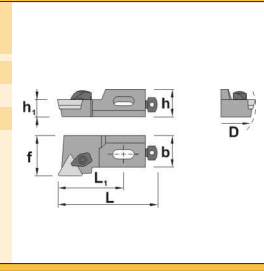


For more information see page: A.54,55

Milling cutters



| REF. | D | h | h1 | L | L1 | f | b | TP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CTGP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 14 | 11 | 1103.. |
| CTGP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1603.. |
| CTGP R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1603.. |

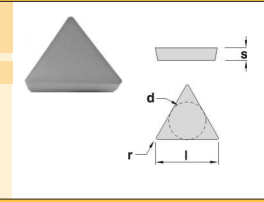


Solid carbide

Boring heads

| REF. | REF. | l | s | d |
|-------------------------|---------|---------|-------------------------|-------------------------|
| CTGP R/L 10CA-11 | 234 525 | - | - | 118 154 502 286 192 504 |
| CTGP R/L 12CA-16 | 235 503 | - | - | 118 157 525 286 186 504 |
| CTGP R/L 16CA-16 | 235 503 | 317 402 | 119 157 525 288 190 505 | |

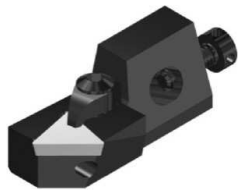
| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |



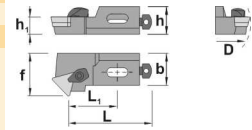
For more information see page: A.54,55

Arbors & adaptors

CTSP 45°



| REF. | D | h | h1 | L | L1 | f | b | TP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CTSP R/L 10CA-11 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | 1103.. |
| CTSP R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1603.. |
| CTSP R/L 16CA-16 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | 1603.. |



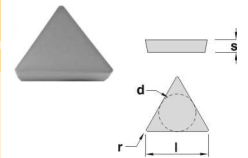
REF.



| | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CTSP R/L 10CA-11 | 234 | 525 | - | - | 118 | 154 | 502 | 286 | 192 | 504 |
| CTSP R/L 12CA-16 | 235 | 503 | - | - | 118 | 157 | 525 | 286 | 186 | 504 |
| CTSP R/L 16CA-16 | 235 | 503 | 317 | 402 | 119 | 157 | 525 | 288 | 190 | 505 |

REF.

| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |

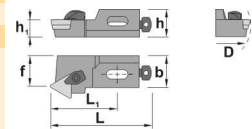


For more information see page: A.54,55

CTTP 60°



| REF. | D | h | h1 | L | L1 | f | b | TP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CTTP R/L 10CA-11 | 40 | 15 | 10 | 50 | 30 | 9 | 11 | 1103.. |
| CTTP R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 13 | 16 | 1603.. |
| CTTP R/L 16CA-16 | 55 | 25 | 16 | 63 | 38 | 15 | 20 | 1603.. |



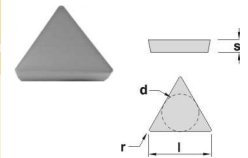
REF.



| | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CTTP R/L 10CA-11 | 234 | 525 | - | - | 118 | 154 | 502 | 286 | 192 | 504 |
| CTTP R/L 12CA-16 | 235 | 503 | - | - | 118 | 157 | 525 | 286 | 186 | 504 |
| CTTP R/L 16CA-16 | 235 | 503 | 317 | 402 | 119 | 157 | 525 | 288 | 190 | 505 |

REF.

| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |

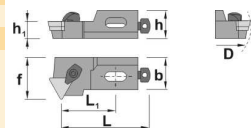


For more information see page: A.54,55

CTWP 30°



| REF. | D | h | h1 | L | L1 | f | b | TP.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| CTWP R/L 10CA-11 | 40 | 15 | 10 | 44 | 24 | 14 | 11 | 1103.. |
| CTWP R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1603.. |
| CTWP R/L 16CA-16 | 55 | 25 | 16 | 53 | 28 | 25 | 20 | 1603.. |



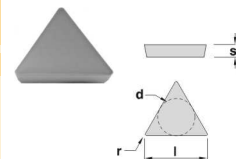
REF.



| | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CTWP R/L 10CA-11 | 234 | 525 | - | - | 118 | 154 | 502 | 286 | 192 | 504 |
| CTWP R/L 12CA-16 | 235 | 503 | - | - | 118 | 157 | 525 | 286 | 186 | 504 |
| CTWP R/L 16CA-16 | 235 | 503 | 317 | 402 | 119 | 157 | 525 | 288 | 190 | 505 |

REF.

| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |



For more information see page: A.54,55

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

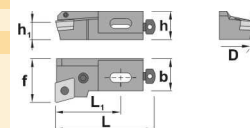


Inserts

PCFN 90°



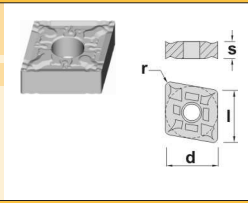
| REF. | D | h | h1 | L | L1 | f | b | CN.. |
|-------------------------|-----|----|----|-----|----|----|----|--------|
| PCFN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1204.. |
| PCFN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | 1606.. |
| PCFN R/L 25CA-16 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | 1606.. |



Turning

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PCFN R/L 16CA-12 | 842 | 173 | 503 | 302 | 412 | 119 | 157 | 002 | 525 | 288 | 190 | 505 |
| PCFN R/L 20CA-12 | 812 | 163 | 503 | 302 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |
| PCFN R/L 25CA-16 | 816 | 170 | 503 | 366 | 415 | 120 | 158 | 005 | 504 | 290 | 191 | 526 |

| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |



For more information see page: A.39,40

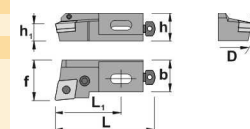
Automatic lathes

Ceramic tools

PCLN 95°



| REF. | D | h | h1 | L | L1 | f | b | CN.. |
|-------------------------|-----|----|----|-----|----|----|----|--------|
| PCLN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1204.. |
| PCLN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | 1204.. |
| PCLN R/L 25CA-16 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | 1606.. |

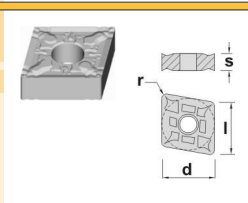


Parting & grooving

Threading

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PCLN R/L 16CA-12 | 842 | 173 | 503 | 302 | 412 | 119 | 157 | 002 | 525 | 288 | 190 | 505 |
| PCLN R/L 20CA-12 | 812 | 163 | 503 | 302 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |
| PCLN R/L 25CA-16 | 816 | 170 | 503 | 366 | 415 | 120 | 158 | 005 | 504 | 290 | 191 | 526 |

| REF. | l | s | d |
|--------------------|-------|------|-------|
| CN.. 1204.. | 12,90 | 4,76 | 12,70 |
| CN.. 1606.. | 16,10 | 6,35 | 15,88 |



For more information see page: A.39,40

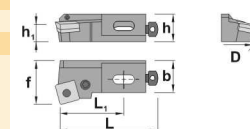
Drills

Cartridges

PSKN 75°



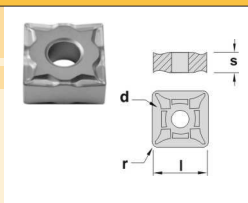
| REF. | D | h | h1 | L | L1 | f | b | SNM.. |
|-------------------------|-----|----|----|-----|----|----|----|--------|
| PSKN R/L 12CA-12 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1204.. |
| PSKN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1204.. |
| PSKN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | 1204.. |
| PSKN R/L 25CA-15 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | 1506.. |



Brazed tools

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PSKN R/L 12CA-12 | 832 | 171 | 525 | - | - | 118 | 157 | - | 525 | 286 | 186 | 504 |
| PSKN R/L 16CA-12 | 842 | 173 | 503 | 313 | 412 | 119 | 156 | 002 | 525 | 288 | 190 | 505 |
| PSKN R/L 20CA-12 | 812 | 163 | 503 | 313 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |
| PSKN R/L 25CA-15 | 816 | 170 | 503 | 355 | 415 | 120 | 158 | 005 | 504 | 290 | 191 | 526 |

| REF. | l | s | d |
|---------------------|-------|------|-------|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |
| SNM.. 1506.. | 15,88 | 6,35 | 15,88 |



For more information see page: A.49,50

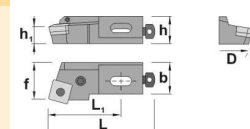
Milling cutters

Solid carbide

PSRN 75°



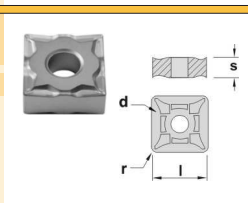
| REF. | D | h | h1 | L | L1 | f | b | SNM.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| PSRN R/L 16CA-12 | 60 | 25 | 16 | 63 | 38 | 25 | 25 | 1204.. |
| PSRN R/L 20CA-12 | 70 | 30 | 20 | 70 | 40 | 25 | 25 | 1204.. |



Boring heads

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PSRN R/L 16CA-12 | 842 | 173 | 503 | 313 | 412 | 119 | 157 | 002 | 525 | 288 | 190 | 505 |
| PSRN R/L 20CA-12 | 812 | 163 | 503 | 313 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |

| REF. | l | s | d |
|---------------------|-------|------|-------|
| SNM.. 1204.. | 12,70 | 4,76 | 12,70 |



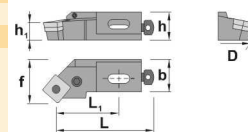
For more information see page: A.49,50

Arbors & adaptors

PSSN 45°



| REF. | D | h | h1 | L | L1 | f | b | SNM.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| PSSN R/L 12CA-12 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1204.. |
| PSSN R/L 16CA-12 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | 1204.. |
| PSSN R/L 20CA-12 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | 1204.. |



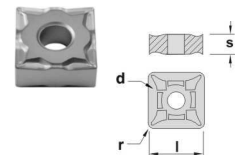
REF.



| | | | | | | |
|-------------------------|---|---|---|---------|---|-----------------|
| PSSN R/L 12CA-12 | 832 171 525 | - | - | 118 157 | - | 525 286 186 504 |
| PSSN R/L 16CA-12 | 842 173 503 313 412 119 157 002 525 288 190 505 | | | | | |
| PSSN R/L 20CA-12 | 812 163 503 313 412 119 156 002 503 288 190 505 | | | | | |

REF.

| l | s | d |
|---------------------|-------|------------|
| SNM.. 1204.. | 12,70 | 4,76 12,70 |

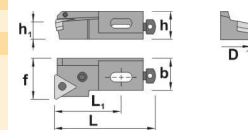


For more information see page: A.49,50

PTFN 90°



| REF. | D | h | h1 | L | L1 | f | b | TNM.. |
|-------------------------|-----|----|----|-----|----|----|----|--------|
| PTFN R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1604.. |
| PTFN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1604.. |
| PTFN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | 2204.. |
| PTFN R/L 25CA-22 | 100 | 35 | 25 | 100 | 50 | 32 | 25 | 2204.. |



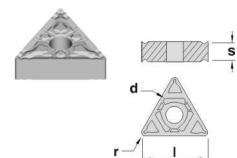
REF.



| | | | | | | |
|-------------------------|---|---|---|---------|---|-----------------|
| PTFN R/L 12CA-16 | 836 161 502 | - | - | 118 157 | - | 525 286 186 504 |
| PTFN R/L 16CA-16 | 809 162 525 336 409 119 157 009 525 288 190 505 | | | | | |
| PTFN R/L 20CA-22 | 812 163 503 323 412 119 156 002 503 288 190 505 | | | | | |
| PTFN R/L 25CA-22 | 812 163 503 323 412 120 158 002 504 290 191 526 | | | | | |

REF.

| l | s | d |
|---------------------|-------|------------|
| TNM.. 1604.. | 16,50 | 4,76 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 12,70 |

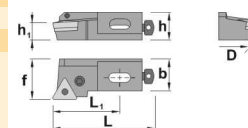


For more information see page: A.52,53,54

PTGN 90°



| REF. | D | h | h1 | L | L1 | f | b | TNM.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| PTGN R/L 12CA-16 | 50 | 20 | 12 | 55 | 35 | 20 | 16 | 1604.. |
| PTGN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 25 | 20 | 1604.. |
| PTGN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 25 | 20 | 2204.. |



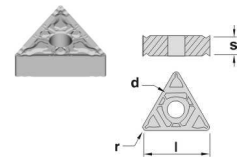
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| | | | | | | |
|-------------------------|---|---|---|---------|---|-----------------|
| PTGN R/L 12CA-16 | 836 161 502 | - | - | 118 157 | - | 525 286 186 504 |
| PTGN R/L 16CA-16 | 809 162 525 336 409 119 156 009 525 288 190 505 | | | | | |
| PTGN R/L 20CA-22 | 812 163 503 323 412 119 156 002 503 288 190 505 | | | | | |

REF.

| l | s | d |
|---------------------|-------|------------|
| TNM.. 1604.. | 16,50 | 4,76 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 12,70 |

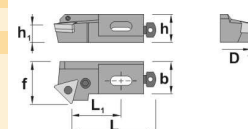


For more information see page: A.52,53,54

PTSN 45°



| REF. | D | h | h1 | L | L1 | f | b | TNM.. |
|-------------------------|-----|----|----|----|----|----|----|--------|
| PTSN R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1604.. |
| PTSN R/L 16CA-16 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | 1604.. |
| PTSN R/L 20CA-22 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | 2204.. |
| PTSN R/L 25CA-22 | 100 | 35 | 25 | 67 | 37 | 32 | 25 | 2204.. |



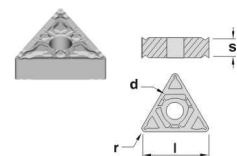
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| | | | | | | |
|-------------------------|---|---|---|---------|---|-----------------|
| PTSN R/L 12CA-16 | 836 161 502 | - | - | 118 157 | - | 525 286 186 504 |
| PTSN R/L 16CA-16 | 809 162 525 336 409 119 156 009 525 288 190 505 | | | | | |
| PTSN R/L 20CA-22 | 812 163 503 323 412 119 156 002 503 288 190 505 | | | | | |
| PTSN R/L 25CA-22 | 812 163 503 323 412 120 158 002 504 290 191 526 | | | | | |

REF.

| l | s | d |
|---------------------|-------|------------|
| TNM.. 1604.. | 16,50 | 4,76 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 12,70 |



For more information see page: A.52,53,54

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

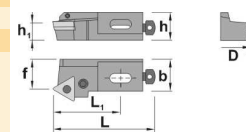


Inserts

PTTN 60°



| REF. | D | h | h1 | L | L1 | f | b | TNM.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| PTTN R/L 12CA-16 | 50 | 20 | 12 | 55 | 55 | 13 | 16 | 1604.. |
| PTTN R/L 16CA-16 | 60 | 25 | 16 | 63 | 38 | 15 | 20 | 1604.. |
| PTTN R/L 20CA-22 | 70 | 30 | 20 | 70 | 40 | 15 | 20 | 2204.. |

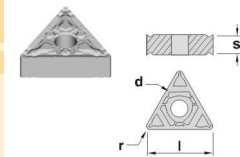


Turning

Automatic lathes

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PTTN R/L 12CA-16 | 836 | 161 | 502 | - | - | 118 | 157 | - | 525 | 286 | 186 | 504 |
| PTTN R/L 16CA-16 | 809 | 162 | 525 | 336 | 409 | 119 | 156 | 009 | 525 | 288 | 190 | 505 |
| PTTN R/L 20CA-22 | 812 | 163 | 503 | 323 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |

| REF. | l | s | d |
|---------------------|-------|------|-------|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |



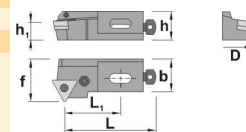
For more information see page: A.52,53,54

Ceramic tools

PTWN 30°



| REF. | D | h | h1 | L | L1 | f | b | TNM.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| PTWN R/L 12CA-16 | 50 | 20 | 12 | 47 | 27 | 20 | 16 | 1604.. |
| PTWN R/L 16CA-16 | 60 | 25 | 16 | 53 | 28 | 25 | 20 | 1604.. |
| PTWN R/L 20CA-22 | 70 | 30 | 20 | 60 | 30 | 25 | 20 | 2204.. |

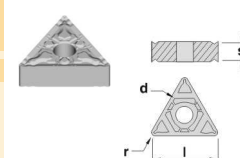


Parting & grooving

Threading

| REF. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PTWN R/L 12CA-16 | 836 | 161 | 502 | - | - | 118 | 157 | - | 525 | 286 | 186 | 504 |
| PTWN R/L 16CA-16 | 809 | 162 | 525 | 336 | 409 | 119 | 157 | 009 | 525 | 288 | 190 | 505 |
| PTWN R/L 20CA-22 | 812 | 163 | 503 | 323 | 412 | 119 | 156 | 002 | 503 | 288 | 190 | 505 |

| REF. | l | s | d |
|---------------------|-------|------|-------|
| TNM.. 1604.. | 16,50 | 4,76 | 9,52 |
| TNM.. 2204.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.52,53,54

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

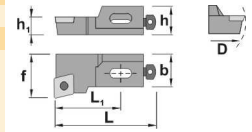
Boring heads

Arbors & adaptors

SCFC 90°



| REF. | D | h | h1 | L | L1 | f | b | CC.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| SCFC R/L 06CA-06 | 20 | 6 | 6 | 25 | 15 | 10 | 6 | 0602.. |
| SCFC R/L 08CA-06 | 25 | 8 | 8 | 27 | 16 | 12 | 7 | 0602.. |
| SCFC R/L 10CA-09 | 30 | 14 | 10 | 42 | 24 | 14 | 10 | 09T3.. |
| SCFC R/L 12CA-12 | 40 | 16 | 12 | 47 | 35 | 20 | 14 | 1204.. |



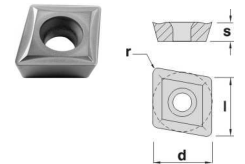
REF.



| | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| SCFC R/L 06CA-06 | 155 | 507 | 116 | 153 | 515 | 293 | 183 | 502 |
| SCFC R/L 08CA-06 | 155 | 507 | 116 | 153 | 515 | 294 | 184 | 525 |
| SCFC R/L 10CA-09 | 138 | 515 | 118 | 154 | 502 | 286 | 186 | 504 |
| SCFC R/L 12CA-12 | 150 | 520 | 118 | 157 | 525 | 286 | 186 | 504 |

REF.

| l | s | d | |
|--------------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

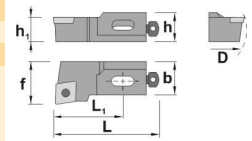


For more information see page: A.38

SCLC 95°



| REF. | D | h | h1 | L | L1 | f | b | CC.. |
|-------------------------|----|----|----|----|----|----|----|--------|
| SCLC R/L 06CA-06 | 20 | 6 | 6 | 25 | 15 | 10 | 6 | 0602.. |
| SCLC R/L 08CA-06 | 25 | 8 | 8 | 27 | 16 | 12 | 7 | 0602.. |
| SCLC R/L 10CA-09 | 30 | 14 | 10 | 44 | 24 | 14 | 10 | 09T3.. |
| SCLC R/L 12CA-12 | 40 | 16 | 12 | 47 | 35 | 20 | 14 | 1204.. |



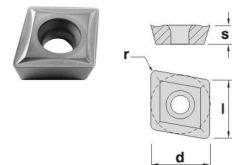
REF.



| | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| SCLC R/L 06CA-06 | 155 | 507 | 116 | 153 | 515 | 293 | 183 | 502 |
| SCLC R/L 08CA-06 | 155 | 507 | 116 | 153 | 515 | 294 | 184 | 525 |
| SCLC R/L 10CA-09 | 138 | 515 | 118 | 154 | 502 | 286 | 186 | 504 |
| SCLC R/L 12CA-12 | 150 | 520 | 118 | 157 | 525 | 286 | 186 | 504 |

REF.

| l | s | d | |
|--------------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

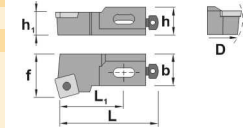


For more information see page: A.38

SSKC 75°



| REF. | D | h | h1 | L | L1 | f | b | SC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| SSKC R/L 10CA-09 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | 09T3.. |
| SSKC R/L 12CA-12 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | 1204.. |
| SSKC R/L 16CA-12 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | 1204.. |



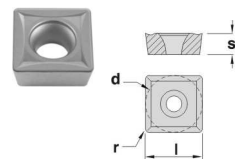
REF.



| | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| SSKC R/L 10CA-09 | 140 | 515 | 118 | 154 | 502 | 286 | 192 | 504 |
| SSKC R/L 12CA-12 | 150 | 520 | 118 | 157 | 525 | 286 | 186 | 504 |
| SSKC R/L 16CA-12 | 150 | 520 | 119 | 157 | 525 | 288 | 190 | 505 |

REF.

| l | s | d | |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

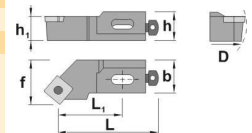


For more information see page: A.47,48

SSSC 45°



| REF. | D | h | h1 | L | L1 | f | b | SC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| SSSC R/L 10CA-09 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | 09T3.. |
| SSSC R/L 12CA-12 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | 1204.. |
| SSSC R/L 16CA-12 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | 1204.. |



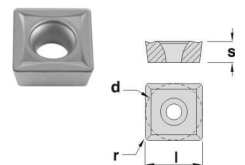
REF.



| | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| SSSC R/L 10CA-09 | 140 | 515 | 118 | 154 | 502 | 286 | 192 | 504 |
| SSSC R/L 12CA-12 | 150 | 520 | 118 | 157 | 525 | 286 | 186 | 504 |
| SSSC R/L 16CA-12 | 150 | 520 | 119 | 157 | 525 | 288 | 190 | 505 |

REF.

| l | s | d | |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |



For more information see page: A.47,48

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

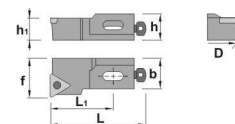


Inserts

STFC 90°



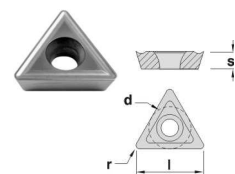
| REF. | D | h | h1 | L | L1 | f | b | TC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| STFC R/L 08CA-09 | 25 | 11 | 8 | 32 | 15 | 10 | 7,5 | 0902.. |
| STFC R/L 08CA-11 | 25 | 11 | 8 | 32 | 15 | 11 | 7,5 | 1102.. |
| STFC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | 1102.. |
| STFC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | 16T3.. |
| STFC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | 16T3.. |



Turning

| REF. | REF. | l | s | d |
|-------------------------|------|-----|-----|-----|
| STFC R/L 08CA-09 | 122 | 506 | 116 | 153 |
| STFC R/L 08CA-11 | 125 | 507 | 116 | 153 |
| STFC R/L 10CA-11 | 125 | 507 | 118 | 154 |
| STFC R/L 12CA-16 | 140 | 515 | 118 | 157 |
| STFC R/L 16CA-16 | 140 | 515 | 119 | 157 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 0902.. | 9,62 | 2,38 | 5,55 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

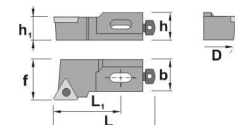
Automatic lathes

Ceramic tools

STGC 90°



| REF. | D | h | h1 | L | L1 | f | b | TC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| STGC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 14 | 10,0 | 1102.. |
| STGC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 20 | 14,0 | 16T3.. |
| STGC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 25 | 17,5 | 16T3.. |

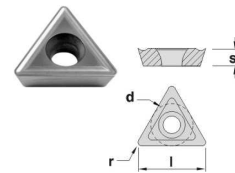


Parting & grooving

Threading

| REF. | REF. | l | s | d |
|-------------------------|------|-----|-----|-----|
| STGC R/L 10CA-11 | 125 | 507 | 118 | 154 |
| STGC R/L 12CA-16 | 140 | 515 | 118 | 157 |
| STGC R/L 16CA-16 | 140 | 515 | 119 | 157 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

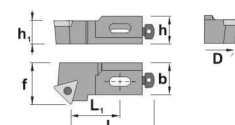
Drills

Cartridges

STSC 45°



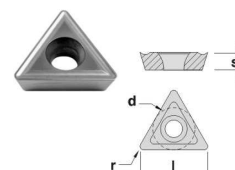
| REF. | D | h | h1 | L | L1 | f | b | TC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| STSC R/L 08CA-11 | 25 | 8 | 8 | 27 | 16 | 10 | 7,0 | 1102.. |
| STSC R/L 10CA-11 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | 1102.. |
| STSC R/L 12CA-16 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | 16T3.. |
| STSC R/L 16CA-16 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | 16T3.. |



Brazed tools

| REF. | REF. | l | s | d |
|-------------------------|------|-----|-----|-----|
| STSC R/L 08CA-11 | 125 | 507 | 116 | 153 |
| STSC R/L 10CA-11 | 125 | 507 | 118 | 154 |
| STSC R/L 12CA-16 | 140 | 515 | 118 | 157 |
| STSC R/L 16CA-16 | 140 | 515 | 119 | 157 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

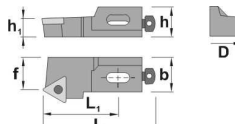
Milling cutters

Solid carbide

STTC 60°



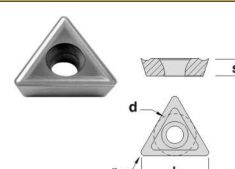
| REF. | D | h | h1 | L | L1 | f | b | TC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| STTC R/L 08CA-11 | 25 | 8 | 8 | 27 | 15 | 6 | 7,0 | 1102.. |
| STTC R/L 10CA-11 | 30 | 14 | 10 | 50 | 30 | 9 | 10,0 | 1102.. |
| STTC R/L 12CA-16 | 40 | 16 | 12 | 55 | 35 | 13 | 14,0 | 16T3.. |
| STTC R/L 16CA-16 | 50 | 20 | 16 | 63 | 38 | 15 | 17,5 | 16T3.. |



Boring heads

| REF. | REF. | l | s | d |
|-------------------------|------|-----|-----|-----|
| STTC R/L 08CA-11 | 125 | 507 | 116 | 153 |
| STTC R/L 10CA-11 | 125 | 507 | 118 | 154 |
| STTC R/L 12CA-16 | 140 | 515 | 118 | 157 |
| STTC R/L 16CA-16 | 140 | 515 | 119 | 157 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



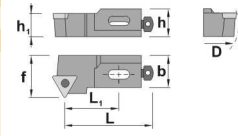
For more information see page: A.51,52

Arbors & adaptors

STWC 60°

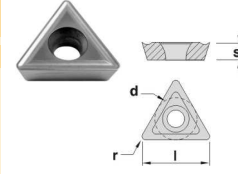


| REF. | D | h | h1 | L | L1 | f | b | TC.. |
|-------------------------|----|----|----|----|----|----|------|--------|
| STWC R/L 08CA-11 | 25 | 8 | 8 | 27 | 16 | 10 | 7,0 | 1102.. |
| STWC R/L 10CA-11 | 30 | 14 | 10 | 44 | 24 | 14 | 10,0 | 1102.. |
| STWC R/L 12CA-16 | 40 | 16 | 12 | 47 | 27 | 20 | 14,0 | 16T3.. |
| STWC R/L 16CA-16 | 50 | 20 | 16 | 53 | 28 | 25 | 17,5 | 16T3.. |



| REF. | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| STWC R/L 08CA-11 | 125 | 507 | 116 | 153 | 515 | 294 | 184 | 525 |
| STWC R/L 10CA-11 | 125 | 507 | 118 | 154 | 502 | 286 | 192 | 504 |
| STWC R/L 12CA-16 | 140 | 515 | 118 | 157 | 525 | 286 | 186 | 504 |
| STWC R/L 16CA-16 | 140 | 515 | 119 | 157 | 525 | 288 | 190 | 505 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Technical information
Information technique
Technische Auskunft

J02

Applications
Applications
Anwendungen

J03

Toolholders
Porte-outils
Drehmeissel

J04

Boring bars
Barres d'alésage
Innendrehmeissel

J07

Inserts

Uncoated inserts / Plaquettes non revêtues / Unbeschichtete Sorten

K15K

A finishing grade in the K10 range. This carbide grade is for use on cast iron, aluminium and heat-resistant alloys. This grade works well on cobalt based alloys and synthetic materials and is suitable for finishing on heat-resistant alloys.

Une nuance de finition dans la gamme K10. Cette nuance de carbure s'utilise pour la fonte, l'aluminium et les alliages résistants au chaud. Elle travaille bien dans les alliages avec base de cobalt et les matériaux synthétiques et est appropriée aussi pour la finition en alliages résistants au chaud.

Es ist eine Sorte zum Schlichten, im K10 Bereich. Diese Sorte ist für Guß, Aluminium und hitzebeständige Legierungen geeignet. Es hat gute Bearbeitungseigenschaften für Kobaltlegierungen und synthetische Materialien und ist für Schlichten in hitzebeständigen Legierungen besonders gut geeignet.

P25K

A general purpose uncoated grade in the P30 range. This tough, economical grade is for machining of carbon steels, alloys steels, tool steels and stainless steels. P25K provides toughness and resistance to deformation in roughing and semi-finishing operations.

Une nuance non revêtue d'usage général dans la gamme P30. Cette nuance dure est économique et prévue pour usiner l'acier au carbone, l'acier allié, l'acier à outils et l'acier inoxydable. P25K proportionne dureté et résistance à la déformation dans des opérations d'ébauche et semi-finition.

Eine allgemeine unbeschichtete Sorte im P30 Bereich. Diese zähe und wirtschaftliche Sorte ist zur Bearbeitung von Kohlenstoffstahl, legiertem Stahl, Werkzeugstahl und rostfreiem Stahl gut geeignet. P25K hat eine gute Zähigkeit und Verschleißfestigkeit für Schrupp- und mittlere Schlichtarbeiten.

Grinding / Affûtage / Schleifen

In order to obtain a satisfactory result, it is necessary to have a steady grinding table or holder which can be set to the required angle by means of a graduated scale and by non-vibrating small spindles.

Rough grinding is normally carried out using a silicon carbide grinding wheel. The finish grind or lapping must always be made using a diamond wheel.

Longer life of the cutting edge and less breakage justify the increased cost of correct grinding.

The grinding wheel must be kept clean to ensure that cutting capacity is maintained.

Whenever possible, always grind perpendicular to the cutting edge.

Pour obtenir un résultat satisfaisant, il est nécessaire d'avoir une table d'affûtage ou bien un porte-outils ferme qui puissent être placés à l'angle exigé au moyen d'une échelle graduée et par des petits axes non vibrants. L'affûtage d'ébauche se réalise normalement en utilisant une meule en carbure de silicium. L'affûtage de finition ou rodage doit se faire toujours en utilisant une meule en diamant.

Une vie plus longue de l'arête de coupe et moins casses justifient le haut coût d'un affûtage correcte.

La meule d'affûtage doit être maintenue propre pour garantir que la capacité de coupe est maintenue.

Dans la mesure du possible, affûtez toujours de façon perpendiculaire à l'arête de coupe.

Um ein erfolgreiches Ergebnis zu bekommen, braucht man stabile Auflagetische oder Halter, die man mit Hilfe eines Gradmessers im gewünschten Winkel einstellen kann, sowie schwingungsfreie Spindeln.

Zum Grobschleifen kann man eine Siliziumkarbidscheibe verwenden.

Aber zum Feinschleifen und Lappen muß man immer eine Diamantscheibe verwenden.

Längere Standzeit der Schneiden und wenige Kantenausbrüche gleichen die höheren Kosten von einem korrekten Schleifen aus.

Die Schleifscheibe muß man sauber halten, denn das beeinflusst wesentlich die Schneidleistung.

Wenn möglich, immer gegen die Schneidkante schleifen.

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

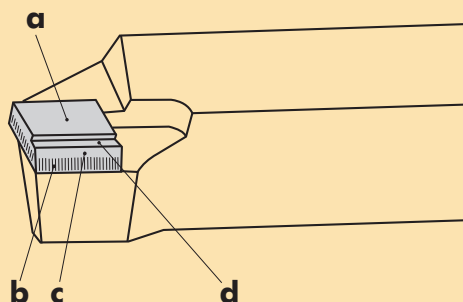
Milling cutters

Solid carbide

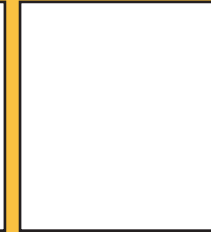
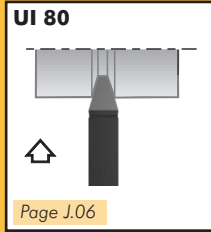
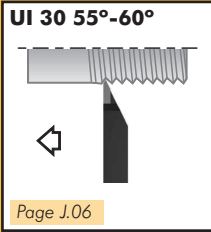
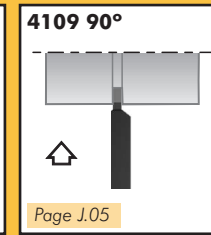
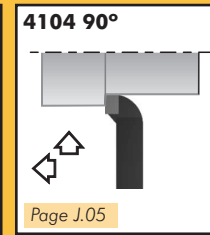
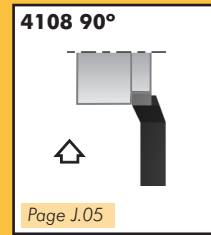
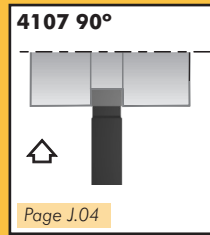
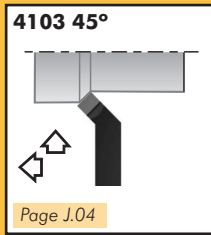
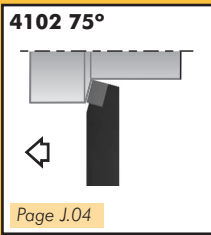
Boring heads

Arbors & adaptors

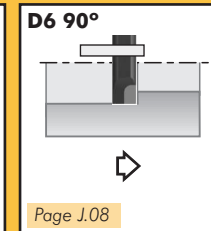
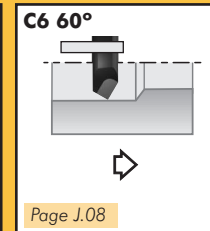
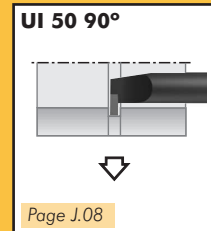
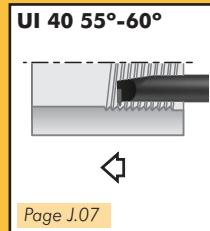
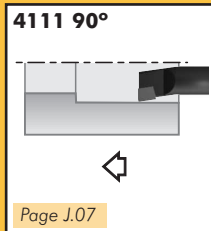
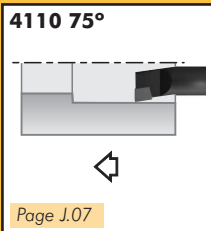
- a.- Top face / Face supérieure / Spanflächen
- b.- Secondary clearances / Dépouilles secondaires / Freiflächen
- c.- Lapped primary clearances / Dépouilles primaires affûtées / Läppfasen
- d.- Chipbreaker groove / Rainure du brise-copeaux / Spanleitstufe



Toolholders - Porte-outils - Drehmeissel



Boring bars - Barres d'alésage - Innendrehmeissel



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

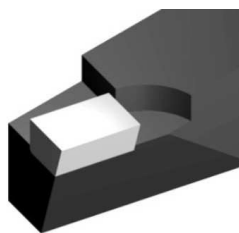
Solid carbide

Boring heads

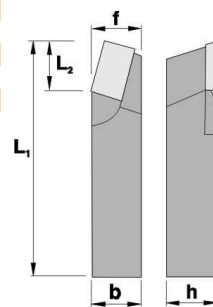
Arbors & adaptors

Inserts

4102 75°



| REF. | h | b | L | f | L ₂ | ABC | K3 | P6 |
|------------------|----|----|-----|----|----------------|-----|----|----|
| 4102 1616 R/L K3 | 16 | 16 | 110 | 10 | 11 | 12 | • | |
| 4102 1616 R/L P6 | 16 | 16 | 110 | 10 | 11 | 12 | | • |
| 4102 2020 R/L K3 | 20 | 20 | 125 | 12 | 15 | 16 | • | |
| 4102 2020 R/L P6 | 20 | 20 | 125 | 12 | 15 | 16 | | • |
| 4102 2525 R/L K3 | 25 | 25 | 140 | 15 | 18 | 20 | • | |
| 4102 2525 R/L P6 | 25 | 25 | 140 | 15 | 18 | 20 | | • |



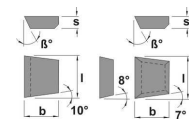
Turning

Automatic lathes

Ceramic tools



| REF. | l | b | s |
|--------|----|----|---|
| ABC 12 | 12 | 8 | 5 |
| ABC 16 | 16 | 10 | 6 |
| ABC 20 | 20 | 12 | 7 |



Only for:
-ABC 10
-ABC 20
-ABC 25

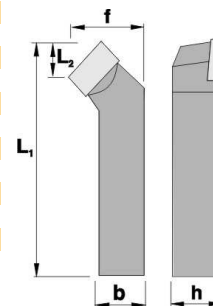
Only for:
-ABC 12
-ABC 16

Parting & grooving

4103 45°



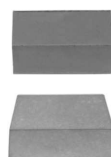
| REF. | h | b | L | f | L ₂ | ..C | K3 | P6 |
|------------------|----|----|-----|----|----------------|-----|----|----|
| 4103 1010 R/L K3 | 10 | 10 | 90 | 14 | 8 | 8 | ○ | |
| 4103 1010 R/L P6 | 10 | 10 | 90 | 14 | 8 | 8 | | ○ |
| 4103 1212 R/L K3 | 12 | 12 | 100 | 17 | 10 | 10 | ○ | |
| 4103 1212 R/L P6 | 12 | 12 | 100 | 17 | 10 | 10 | | • |
| 4103 1616 R/L K3 | 16 | 16 | 110 | 22 | 12 | 12 | • | |
| 4103 1616 R/L P6 | 16 | 16 | 110 | 22 | 12 | 12 | | • |
| 4103 2020 R/L K3 | 20 | 20 | 125 | 28 | 16 | 16 | • | |
| 4103 2020 R/L P6 | 20 | 20 | 125 | 28 | 16 | 16 | | • |
| 4103 2525 R/L K3 | 25 | 25 | 140 | 35 | 20 | 20 | • | |
| 4103 2525 R/L P6 | 25 | 25 | 140 | 35 | 20 | 20 | | • |
| 4103 3232 R/L K3 | 32 | 32 | 170 | 44 | 25 | 25 | • | |
| 4103 3232 R/L P6 | 32 | 32 | 170 | 44 | 25 | 25 | | • |



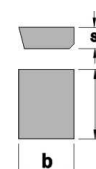
Threading

Drills

Cartridges

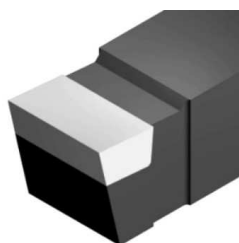


| REF. | l | b | s |
|--------|----|----|---|
| C 8 | 8 | 5 | 3 |
| ABC 10 | 10 | 6 | 4 |
| ABC 12 | 12 | 8 | 5 |
| ABC 16 | 16 | 10 | 6 |
| ABC 20 | 20 | 12 | 7 |
| ABC 25 | 25 | 16 | 8 |

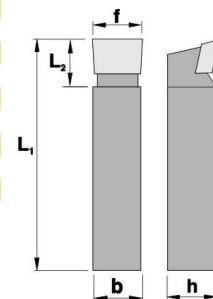


Brazed tools

4107 90°



| REF. | h | b | L | f | L ₂ | ABC | K3 | P6 |
|----------------|----|----|-----|----|----------------|-----|----|----|
| 4107 1010 N K3 | 10 | 10 | 90 | 10 | 10 | 10 | ○ | |
| 4107 1010 N P6 | 10 | 10 | 90 | 10 | 10 | 10 | | ○ |
| 4107 1212 N K3 | 12 | 12 | 100 | 12 | 12 | 12 | ○ | |
| 4107 1212 N P6 | 12 | 12 | 100 | 12 | 12 | 12 | | ○ |
| 4107 1616 N K3 | 16 | 16 | 110 | 16 | 16 | 16 | ○ | |
| 4107 1616 N P6 | 16 | 16 | 110 | 16 | 16 | 16 | | ○ |
| 4107 2020 N K3 | 20 | 20 | 125 | 20 | 20 | 20 | ○ | |
| 4107 2020 N P6 | 20 | 20 | 125 | 20 | 20 | 20 | | ○ |
| 4107 2525 N K3 | 25 | 25 | 140 | 25 | 25 | 25 | ○ | |
| 4107 2525 N P6 | 25 | 25 | 140 | 25 | 25 | 25 | | ○ |



Milling cutters

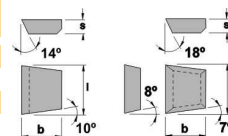
Solid carbide

Boring heads

Arbors & adaptors

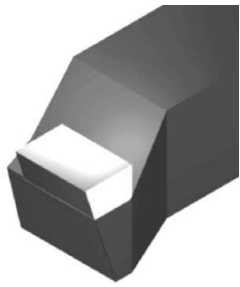


| REF. | l | b | s |
|--------|----|----|---|
| ABC 10 | 11 | 6 | 4 |
| ABC 12 | 13 | 8 | 5 |
| ABC 16 | 17 | 10 | 6 |
| ABC 20 | 21 | 12 | 7 |
| ABC 25 | 26 | 14 | 8 |

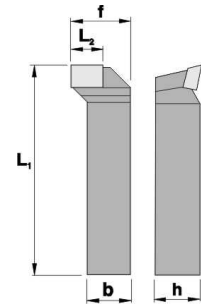


Only for ABC 12, ABC 16

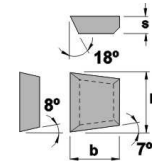
4108 90°



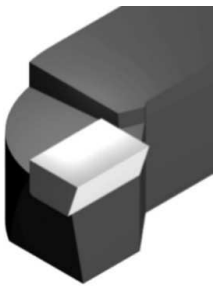
| REF. | h | b | L | f | L ₂ | ABC | K3 | P6 |
|------------------|----|----|-----|----|----------------|-----|----|----|
| 4108 1616 R/L K3 | 16 | 16 | 110 | 24 | 12 | 12 | ○ | |
| 4108 1616 R/L P6 | 16 | 16 | 110 | 24 | 12 | 12 | | ○ |
| 4108 2020 R/L K3 | 20 | 20 | 125 | 30 | 16 | 16 | ○ | |
| 4108 2020 R/L P6 | 20 | 20 | 125 | 30 | 16 | 16 | | ○ |



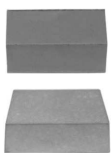
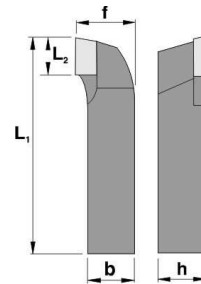
| REF. | l | b | s |
|--------|----|----|---|
| ABC 12 | 13 | 8 | 5 |
| ABC 16 | 17 | 10 | 6 |



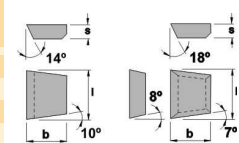
4104 90°



| REF. | h | b | L | f | L ₂ | ..C | K3 | P6 |
|------------------|----|----|-----|----|----------------|-----|----|----|
| 4104 1010 R/L K3 | 10 | 10 | 90 | 14 | 8 | 8 | ○ | |
| 4104 1010 R/L P6 | 10 | 10 | 90 | 14 | 8 | 8 | | ○ |
| 4104 1212 R/L K3 | 12 | 12 | 100 | 17 | 10 | 10 | ○ | |
| 4104 1212 R/L P6 | 12 | 12 | 100 | 17 | 10 | 10 | | ● |
| 4104 1616 R/L K3 | 16 | 16 | 110 | 22 | 12 | 12 | ● | |
| 4104 1616 R/L P6 | 16 | 16 | 110 | 22 | 12 | 12 | | ● |
| 4104 2020 R/L K3 | 20 | 20 | 125 | 28 | 16 | 16 | ● | |
| 4104 2020 R/L P6 | 20 | 20 | 125 | 28 | 16 | 16 | | ● |
| 4104 2525 R/L K3 | 25 | 25 | 140 | 35 | 20 | 20 | ● | |
| 4104 2525 R/L P6 | 25 | 25 | 140 | 35 | 20 | 20 | | ● |
| 4104 3232 R/L K3 | 32 | 32 | 170 | 44 | 25 | 25 | ● | |
| 4104 3232 R/L P6 | 32 | 32 | 170 | 44 | 25 | 25 | | ● |

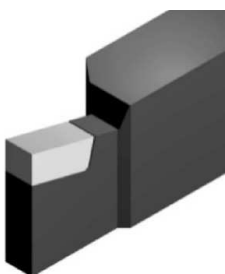


| REF. | l | b | s |
|--------|----|----|---|
| C 8 | 8 | 5 | 3 |
| ABC 10 | 11 | 6 | 4 |
| ABC 12 | 13 | 8 | 5 |
| ABC 16 | 17 | 10 | 6 |
| ABC 20 | 21 | 12 | 7 |
| ABC 25 | 26 | 16 | 8 |

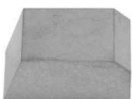
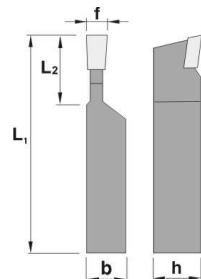


Only for ABC 12, ABC 16

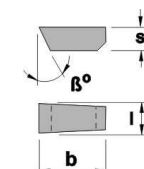
4109 90°



| REF. | h | b | L | f | L ₂ | D | K3 | P6 |
|------------------|----|----|-----|----|----------------|----|----|----|
| 4109 1208 R/L K3 | 12 | 8 | 100 | 3 | 12 | 3 | ○ | |
| 4109 1208 R/L P6 | 12 | 8 | 100 | 3 | 12 | 3 | | ● |
| 4109 1610 R/L K3 | 16 | 10 | 110 | 4 | 14 | 4 | ● | |
| 4109 1610 R/L P6 | 16 | 10 | 110 | 4 | 14 | 4 | | ● |
| 4109 2012 R/L K3 | 20 | 12 | 125 | 5 | 16 | 5 | ● | |
| 4109 2012 R/L P6 | 20 | 12 | 125 | 5 | 16 | 5 | | ● |
| 4109 2516 R/L K3 | 25 | 16 | 140 | 6 | 20 | 6 | ● | |
| 4109 2516 R/L P6 | 25 | 16 | 140 | 6 | 20 | 6 | | ● |
| 4109 3220 R/L K3 | 32 | 20 | 170 | 8 | 25 | 8 | ● | |
| 4109 3220 R/L P6 | 32 | 20 | 170 | 8 | 25 | 8 | | ● |
| 4109 4025 R/L K3 | 40 | 25 | 200 | 10 | 32 | 10 | ● | |
| 4109 4025 R/L P6 | 40 | 25 | 200 | 10 | 32 | 10 | | ● |



| REF. | l | b | s |
|------|----|----|----|
| D 3 | 3 | 8 | 3 |
| D 4 | 4 | 10 | 4 |
| D 5 | 5 | 12 | 5 |
| D 6 | 6 | 14 | 6 |
| D 8 | 8 | 16 | 8 |
| D 10 | 10 | 18 | 10 |



● Normally available for immediate delivery

○ Only available in a limited quantity

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

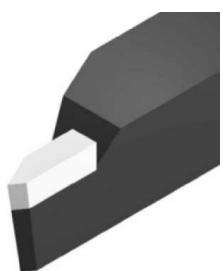
Solid carbide

Boring heads

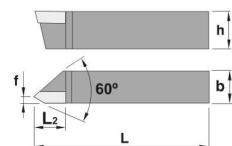
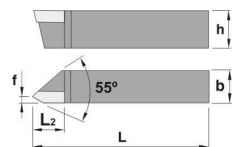
Arbors & adaptors

Inserts

UI 30<sup>55°
60°</sup>



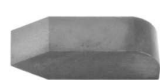
| REF. | h | b | L | f | L2 | FIL | K3 | P6 |
|----------------------------|----|----|-----|-----|----|-----|----|----|
| UI 30 55° 1212 R K3 | 12 | 12 | 100 | 1,8 | 12 | 3,5 | ○ | |
| UI 30 55° 1212 R P6 | 12 | 12 | 100 | 1,8 | 12 | 3,5 | | ○ |
| UI 30 55° 1616 R K3 | 16 | 16 | 110 | 2,0 | 14 | 4 | ○ | |
| UI 30 55° 1616 R P6 | 16 | 16 | 110 | 2,0 | 14 | 4 | | ● |
| UI 30 55° 2020 R K3 | 20 | 20 | 125 | 2,5 | 16 | 5 | ○ | |
| UI 30 55° 2020 R P6 | 20 | 20 | 125 | 2,5 | 16 | 5 | | ● |
| UI 30 55° 2525 R K3 | 25 | 25 | 140 | 3,0 | 18 | 6 | ○ | |
| UI 30 55° 2525 R P6 | 25 | 25 | 140 | 3,0 | 18 | 6 | | ● |
| UI 30 60° 1212 R K3 | 12 | 12 | 100 | 1,8 | 12 | 3,5 | ● | |
| UI 30 60° 1212 R P6 | 12 | 12 | 100 | 1,8 | 12 | 3,5 | | ● |
| UI 30 60° 1616 R K3 | 16 | 16 | 110 | 2,0 | 14 | 4 | ● | |
| UI 30 60° 1616 R P6 | 16 | 16 | 110 | 2,0 | 14 | 4 | | ● |
| UI 30 60° 2020 R K3 | 20 | 20 | 125 | 2,5 | 16 | 5 | ● | |
| UI 30 60° 2020 R P6 | 20 | 20 | 125 | 2,5 | 16 | 5 | | ● |
| UI 30 60° 2525 R K3 | 25 | 25 | 140 | 3,0 | 18 | 6 | ● | |
| UI 30 60° 2525 R P6 | 25 | 25 | 140 | 3,0 | 18 | 6 | | ● |



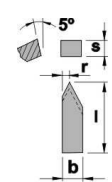
Turning

Automatic lathes

Ceramic tools

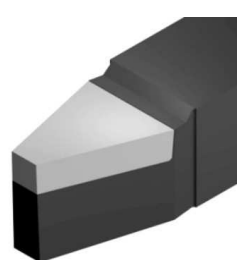


| REF. | l | b | s |
|----------------|----|-----|-----|
| FIL 3,5 | 12 | 1,0 | 3,5 |
| FIL 4 | 14 | 1,2 | 4,0 |
| FIL 5 | 16 | 1,5 | 5,0 |
| FIL 6 | 18 | 1,8 | 6,0 |

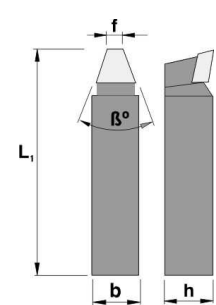


Parting & grooving

UI 80



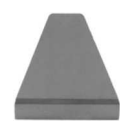
| REF. | h | b | L | f | β° | TR | K3 | P6 |
|--------------------------|----|----|-----|-----|-----|--------|----|----|
| UI 80 34° 2516 K3 | 25 | 16 | 170 | 4,2 | 34° | 16-3.. | ○ | |
| UI 80 36° 2516 K3 | 25 | 16 | 170 | 3,7 | 36° | 16-3.. | ○ | |
| UI 80 38° 2516 K3 | 25 | 16 | 170 | 3,1 | 38° | 16-3.. | ○ | |
| UI 80 34° 3220 K3 | 32 | 20 | 200 | 6,2 | 34° | 20-3.. | ○ | |
| UI 80 36° 3220 K3 | 32 | 20 | 200 | 5,5 | 36° | 20-3.. | ○ | |
| UI 80 38° 3220 K3 | 32 | 20 | 200 | 4,9 | 38° | 20-3.. | ○ | |



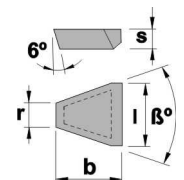
Threading

Drills

Cartridges



| REF. | l | b | s |
|-----------------|----|----|---|
| TR 16-34 | 21 | 16 | 6 |
| TR 16-36 | 21 | 16 | 6 |
| TR 16-38 | 21 | 16 | 6 |
| TR 20-34 | 25 | 20 | 6 |
| TR 20-36 | 25 | 20 | 6 |
| TR 20-38 | 25 | 20 | 6 |



Brazed tools

Milling cutters

Solid carbide

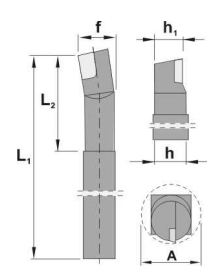
Boring heads

Arbors & adaptors

4110 75°



| REF. | h=b | h1 | L | b2 | L2 | f | A | ..C | K3 | P6 |
|----------------|-----|------|-----|-----|-----|----|----|-----|----|----|
| 4110 1010 R K3 | 10 | 8,0 | 150 | 3,8 | 50 | 14 | 18 | 7 | ○ | |
| 4110 1010 R P6 | 10 | 8,0 | 150 | 3,8 | 50 | 14 | 18 | 7 | | ○ |
| 4110 1212 R K3 | 12 | 9,6 | 180 | 4,8 | 63 | 17 | 21 | 8 | ○ | |
| 4110 1212 R P6 | 12 | 9,6 | 180 | 4,8 | 63 | 17 | 21 | 8 | | ○ |
| 4110 1616 R K3 | 16 | 12,8 | 210 | 5,7 | 80 | 22 | 27 | 10 | ○ | |
| 4110 1616 R P6 | 16 | 12,8 | 210 | 5,7 | 80 | 22 | 27 | 10 | | ○ |
| 4110 2020 R K3 | 20 | 16,0 | 250 | 7,6 | 100 | 28 | 34 | 12 | ○ | |
| 4110 2020 R P6 | 20 | 16,0 | 250 | 7,6 | 100 | 28 | 34 | 12 | | ○ |
| 4110 2525 R K3 | 25 | 20,0 | 300 | 9,5 | 125 | 35 | 43 | 16 | ○ | |
| 4110 2525 R P6 | 25 | 20,0 | 300 | 9,5 | 125 | 35 | 43 | 16 | | ○ |

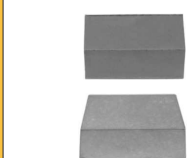


Inserts

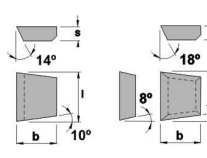
Turning

Automatic lathes

Ceramic tools



| REF. | l | b | s |
|--------|----|------|-----|
| C 7 | 6 | 4,0 | 2,5 |
| C 8 | 8 | 5,0 | 3,0 |
| ABC 10 | 11 | 6,0 | 4,0 |
| ABC 12 | 13 | 8,0 | 5,0 |
| ABC 16 | 17 | 10,0 | 6,0 |



Only for ABC 12, ABC 16

Parting & grooving

Threading

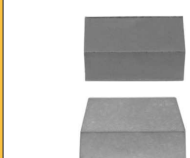
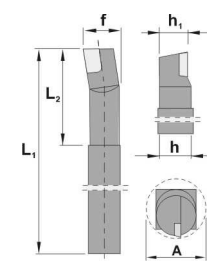
Drills

Cartridges

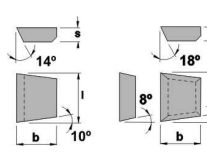
4111 90°



| REF. | h=b | h1 | L | b2 | L2 | f | A | ..C | K3 | P6 |
|----------------|-----|------|-----|------|-----|----|----|-----|----|----|
| 4111 0808 R K3 | 8 | 6,4 | 125 | 3,1 | 40 | 11 | 14 | 7 | ● | |
| 4111 0808 R P6 | 8 | 6,4 | 125 | 3,1 | 40 | 11 | 14 | 7 | | ● |
| 4111 1010 R K3 | 10 | 8,0 | 150 | 4,0 | 50 | 14 | 18 | 7 | ● | |
| 4111 1010 R P6 | 10 | 8,0 | 150 | 4,0 | 50 | 14 | 18 | 7 | | ● |
| 4111 1212 R K3 | 12 | 9,6 | 180 | 5,1 | 63 | 17 | 21 | 8 | ● | |
| 4111 1212 R P6 | 12 | 9,6 | 180 | 5,1 | 63 | 17 | 21 | 8 | | ● |
| 4111 1616 R K3 | 16 | 12,8 | 210 | 6,2 | 80 | 22 | 27 | 10 | ● | |
| 4111 1616 R P6 | 16 | 12,8 | 210 | 6,2 | 80 | 22 | 27 | 10 | | ● |
| 4111 2020 R K3 | 20 | 16,0 | 250 | 8,3 | 100 | 28 | 34 | 12 | ● | |
| 4111 2020 R P6 | 20 | 16,0 | 250 | 8,3 | 100 | 28 | 34 | 12 | | ● |
| 4111 2525 R K3 | 25 | 20,0 | 300 | 10,0 | 125 | 35 | 43 | 16 | ● | |
| 4111 2525 R P6 | 25 | 20,0 | 300 | 10,0 | 125 | 35 | 43 | 16 | | ● |
| 4111 3232 R K3 | 32 | 25,6 | 355 | 12,0 | 160 | 44 | 52 | 20 | ● | |
| 4111 3232 R P6 | 32 | 25,6 | 355 | 12,0 | 160 | 44 | 52 | 20 | | ● |



| REF. | l | b | s |
|--------|----|------|-----|
| C 6 | 6 | 4,0 | 2,5 |
| C 8 | 8 | 5,0 | 3,0 |
| ABC 10 | 11 | 6,0 | 4,0 |
| ABC 12 | 13 | 8,0 | 5,0 |
| ABC 16 | 17 | 10,0 | 6,0 |
| ABC 20 | 21 | 12,0 | 7,0 |



Only for ABC 12, ABC 16

Brazed tools

Milling cutters

Solid carbide

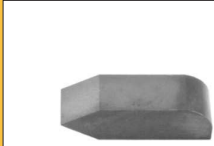
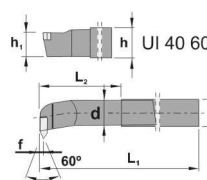
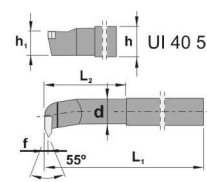
Boring heads

Arbors & adaptors

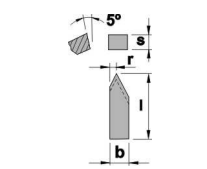
UI 40 55°/60°



| REF. | d | h=b | L | L2 | f | FIL | K3 | P6 |
|---------------------|----|-----|-----|----|-----|-----|----|----|
| UI 40 55° 1010 R K3 | 10 | 10 | 100 | 26 | 1,8 | 3,5 | ○ | |
| UI 40 55° 1010 R P6 | 10 | 10 | 100 | 26 | 1,8 | 3,5 | | ○ |
| UI 40 55° 1212 R K3 | 12 | 12 | 110 | 26 | 1,8 | 3,5 | ○ | |
| UI 40 55° 1212 R P6 | 12 | 12 | 110 | 26 | 1,8 | 3,5 | | ○ |
| UI 40 55° 1616 R K3 | 16 | 16 | 140 | 33 | 2,0 | 4 | ○ | |
| UI 40 55° 1616 R P6 | 16 | 16 | 140 | 33 | 2,0 | 4 | | ○ |
| UI 40 55° 2020 R K3 | 20 | 20 | 160 | 41 | 2,0 | 4 | ○ | |
| UI 40 55° 2020 R P6 | 20 | 20 | 160 | 41 | 2,0 | 4 | | ○ |
| UI 40 60° 1010 R K3 | 10 | 10 | 100 | 26 | 1,8 | 3,5 | ● | |
| UI 40 60° 1010 R P6 | 10 | 10 | 100 | 26 | 1,8 | 3,5 | | ● |
| UI 40 60° 1212 R K3 | 12 | 12 | 110 | 26 | 1,8 | 3,5 | ● | |
| UI 40 60° 1212 R P6 | 12 | 12 | 110 | 26 | 1,8 | 3,5 | | ● |
| UI 40 60° 1616 R K3 | 16 | 16 | 140 | 33 | 2,0 | 4 | ● | |
| UI 40 60° 1616 R P6 | 16 | 16 | 140 | 33 | 2,0 | 4 | | ● |
| UI 40 60° 2020 R K3 | 20 | 20 | 160 | 41 | 2,0 | 4 | ● | |
| UI 40 60° 2020 R P6 | 20 | 20 | 160 | 41 | 2,0 | 4 | | ● |
| UI 40 60° 2525 R K3 | 25 | 25 | 180 | 49 | 2,5 | 5 | ● | |
| UI 40 60° 2525 R P6 | 25 | 25 | 180 | 49 | 2,5 | 5 | | ● |



| REF. | l | b | s |
|---------|----|-----|-----|
| FIL 3,5 | 12 | 3,5 | 3,5 |
| FIL 4 | 14 | 4,0 | 4,0 |
| FIL 5 | 16 | 5,0 | 5,0 |



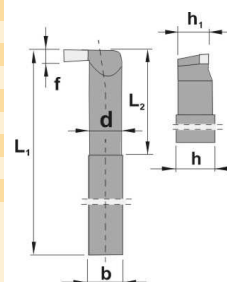
● Normally available for immediate delivery ○ Only available in a limited quantity

Inserts

UI 50 90°



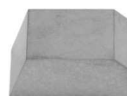
| REF. | d | h=b | L | L2 | f | D | K3 | P6 |
|---------------------|----|-----|-----|-----|---|---|----|----|
| UI 50 90° 1010 R K3 | 10 | 10 | 140 | 52 | 3 | 3 | • | |
| UI 50 90° 1010 R P6 | 10 | 10 | 140 | 52 | 3 | 3 | | • |
| UI 50 90° 1212 R K3 | 12 | 12 | 160 | 56 | 4 | 4 | • | |
| UI 50 90° 1212 R P6 | 12 | 12 | 160 | 56 | 4 | 4 | | • |
| UI 50 90° 1616 R K3 | 16 | 16 | 180 | 63 | 5 | 5 | • | |
| UI 50 90° 1616 R P6 | 16 | 16 | 180 | 63 | 5 | 5 | | • |
| UI 50 90° 2020 R K3 | 20 | 20 | 210 | 80 | 6 | 6 | • | |
| UI 50 90° 2020 R P6 | 20 | 20 | 210 | 80 | 6 | 6 | | • |
| UI 50 90° 2525 R K3 | 25 | 25 | 250 | 100 | 8 | 8 | • | |
| UI 50 90° 2525 R P6 | 25 | 25 | 250 | 100 | 8 | 8 | | • |



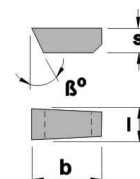
Turning

Automatic lathes

Ceramic tools

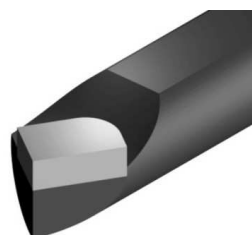


| REF. | l | b | s |
|------|---|----|---|
| D 3 | 3 | 8 | 3 |
| D 4 | 4 | 10 | 4 |
| D 5 | 5 | 12 | 5 |
| D 6 | 6 | 14 | 6 |
| D 8 | 8 | 16 | 8 |

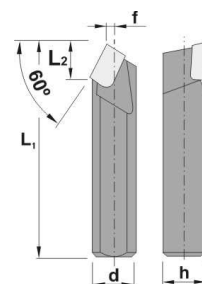


Parting & grooving

C6 60°



| REF. | d | h | L | L2 | f | C | K3 | P6 |
|--------|----|-----|----|-----|---|---|----|----|
| C 6-08 | 8 | 7,0 | 24 | 6,5 | 0 | 7 | | • |
| C 6-10 | 10 | 8,5 | 50 | 6,5 | 0 | 8 | | • |



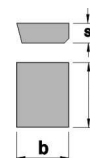
Threading

Drills

Cartridges

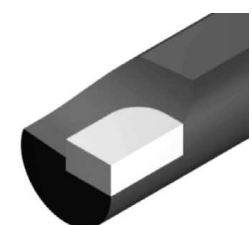


| REF. | l | b | s |
|------|---|---|-----|
| C 7 | 6 | 4 | 2,5 |
| C 8 | 8 | 5 | 3,0 |

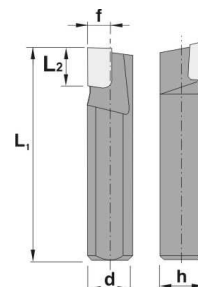


Brazed tools

D6 90°



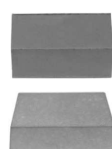
| REF. | d | h | L | L2 | f | ..C | K3 | P6 |
|--------|----|------|----|------|-----|-----|----|----|
| D 6-8 | 8 | 7,0 | 24 | 7,0 | 1,9 | 7 | | • |
| D 6-10 | 10 | 8,5 | 50 | 8,0 | 4,6 | 8 | | • |
| D 6-12 | 12 | 10,5 | 60 | 10,0 | 5,6 | 10 | | • |
| D 6-16 | 16 | 14,0 | 90 | 12,0 | 7,6 | 12 | | • |



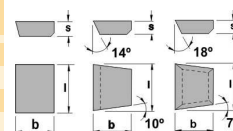
Solid carbide

Boring heads

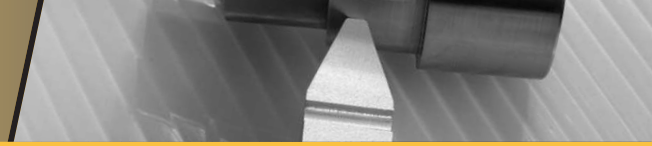
Arbors & adaptors



| REF. | l | b | s |
|--------|----|-----|-----|
| C 7 | 6 | 4,0 | 2,5 |
| C 8 | 8 | 5,0 | 3,0 |
| ABC 10 | 11 | 6,0 | 4,0 |
| ABC 12 | 13 | 8,0 | 5,0 |



Only for ABC 12, ABC 16



A large rectangular area with horizontal lines, intended for handwritten notes or a table of contents.

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Face milling cutters - Fraises à surfer - Planfräser

| | |
|---|-----|
| Technical information - Information technique - Technische Auskunft | K02 |
| Applications - Applications - Anwendungen | K03 |
| Face milling cutters - Fraises à surfer - Planfräser | K04 |
| Cutting data - Conditions de coupe - Schnittbedingungen | K11 |

Square shoulder cutters - Fraises à dresser - Eckfräser

| | |
|---|-----|
| Technical information - Information technique - Technische Auskunft | K12 |
| Applications - Applications - Anwendungen | K13 |
| Face square shoulder cutters - Fraises à surfer et à dresser - Plan-und Eckfräser | K14 |
| Cutting data - Conditions de coupe - Schnittbedingungen | K27 |

Slot cutters - Fraises disque - Scheibenfräser

| | |
|---|-----|
| Technical information - Information technique - Technische Auskunft | K29 |
| Applications - Applications - Anwendungen | K30 |
| Slot cutters - Fraises disque - Scheibenfräser | K31 |
| Cutting data - Conditions de coupe - Schnittbedingungen | K36 |

Porcupine cutters - Fraises hérisson - Igelfräser

| | |
|---|-----|
| Applications - Applications - Anwendungen | K37 |
| Porcupine cutters - Fraises hérisson - Igelfräser | K38 |
| Cutting data - Conditions de coupe - Schnittbedingungen | K41 |

**Specific applications and kits - Applications spécifiques et kits -
Spezifische Anwendungen und Kits**

| | |
|--|-----|
| Applications - Applications - Anwendungen | K42 |
| Specific applications and kits - Applications spécifiques et kits - Spezifische Anwendungen und Kits | K43 |

Profile milling - Fraisage de profils - Profilfräsen

| | |
|---|-----|
| Technical information - Information technique - Technische Auskunft | K56 |
| Applications - Applications - Anwendungen | K57 |
| Roughing ball nose - Fraises hémisphériques pour ébauche - Kugelbahnfräser zum Schruppen | K58 |
| Finishing ball nose - Fraises hémisphériques pour finition - Kugelbahnfräser zum Schlichten | K60 |
| Toroidal cutters - Fraises toroidales - Kopierfräser | K62 |
| High feed - Grande avance - Hoher Vorschub | K65 |
| Round inserts - Fraises avec plaquettes rondes - Fräser mit runden Wendeschneidplatten | K68 |
| Aluminium die cutting - Fraisage de moules en aluminium - Fräser für Aluminium-Legierungen | K72 |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

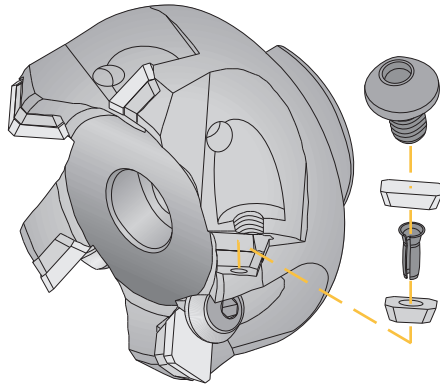
Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

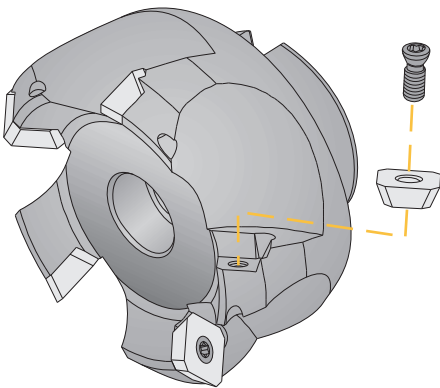


C Clamp / Fixation C / C-Klemmung

This classic positive insert clamping system allows the use of all models presenting this geometry, both with additional chipbreaker and sintered.

Ce système classique de fixation de plaquettes positives permet d'utiliser toutes les plaquettes de cette géométrie, que ce soit avec brise-copeaux additionnel que sintérisé.

Dieses klassische Klemmsystem von positiven Wendeschneidplatten erlaubt die Verwendung von allen Wendeplatten dieses Typs, in üblicher Sinterausführung sowohl als auch mit Spanbrecher.

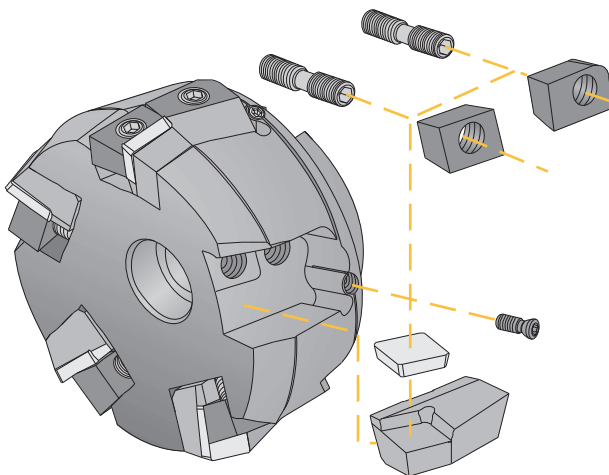


Screw clamping / Fixation par vis / Schraubenklemmung

Since the advent of the Torx screw it has been possible to hold with complete safety positive inserts with centre hole. Our range covers all the screw clamping permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.

Seit der Einführung der TORX-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmmöglichkeiten mit Schraube.

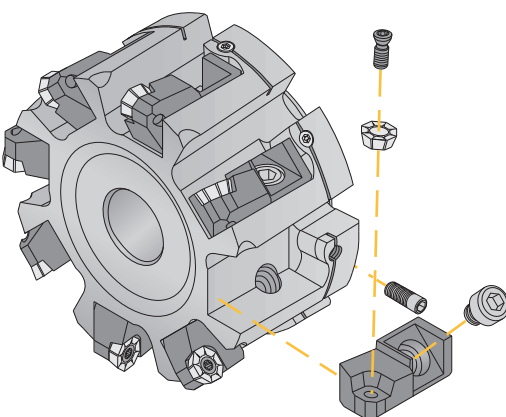


Wedge clamping / Fixation par coin / Spanneilklemmung

Heavy duty work require good fixation, for this purpose we have designed our wedge clamping system, one of the safest available.

Les travaux lourds ont besoin d'une bonne fixation, c'est pour cela que nous avons dessiné notre système de fixation par coin. Il est un des plus sûrs de tous ceux qui existent.

Schwere Zerspanungsarbeiten benötigen eine gute Klemmung; dafür haben wir unser Spanneil-Klemmsystem, das eines der sichersten ist.



Cartridge system / Système à cartouches / Kassetten-System

Cartridge system for heavy duty work with positive center hole inserts. The axial regulation screw allows a perfect adjustment for super-finishing applications.

Système à cartouches pour travaux lourds avec plaquettes positives à trou centrale. La vis de regulation axiale permet un réglage parfait pour les opérations de super-finition.

Kassetten-system für schwere Arbeit, mit positiven Wendeplatten mit Zentralloch. Die axiale Verstell-schraube erlaubt eine perfekte Einstellung für Super-Schlichtarbeiten.

Face milling cutters - Fraises à surfacer - Planfräser

| | | | | | |
|--|--|---|---|--|---|
| <p>131 75° General application 75°</p>  <p>Page K.04 SP.. 1203..</p> | <p>300-301 75° General application 75°</p>  <p>Page K.04 SP.. 1203.. SP.. 1504..</p> | <p>171 75° Deep cutting 75°</p>  <p>Page K.04 SN.. 1204..</p> | <p>631 45° Chamfering 45°</p>  <p>Page K.05 TPUN 1103.. TPUN 1603..</p> | <p>632 45° Chamfering 45°</p>  <p>Page K.05 TPUN 1603..</p> | <p>141 45° Facing and chamfering 45°</p>  <p>Page K.05 TPUN 1603..</p> |
| <p>239 45° Chamfering 45°</p>  <p>Page K.06 SPM.. 1204..</p> | <p>240 45° Chamfering 45°</p>  <p>Page K.06 SPM.. 1204..</p> | <p>241 45° Chamfering 45°</p>  <p>Page K.06 SPM.. 1204..</p> | <p>271 45° Facing and chamfering 45°</p>  <p>Page K.07 SC.. 1204..</p> | <p>191 45° First choice 45°</p>  <p>Page K.07 SEK.. 1203..</p> | <p>341-342 45° General application 45°</p>  <p>Page K.07 SEK.. 1203..</p> |
| <p>214 45° Facing and chamfering 45°</p>  <p>Page K.08 SE.. 1204..</p> | <p>291 45° Soft materials 45°</p>  <p>Page K.08 SE.. 1204..</p> | <p>293 45° Soft materials 45°</p>  <p>Page K.08 SE.. 1204..</p> | <p>294 45° Soft materials 45°</p>  <p>Page K.09 SE.. 1204..</p> | <p>292 42° Multipurpose milling 42°</p>  <p>Page K.09 ODM.. 0404..</p> | <p>295 42° Multipurpose milling 42°</p>  <p>Page K.09 ODM.. 0404..</p> |
| <p>296 42° Multipurpose milling 42°</p>  <p>Page K.10 ODM.. 0605..</p> | <p>297 42° Multipurpose milling 42°</p>  <p>Page K.10 ODM.. 0605..</p> | | | | |

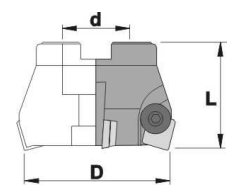
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors



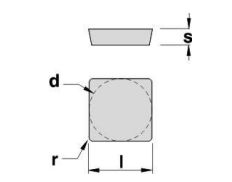
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors



| REF. | D | d | L | Z | SP.. | | | | | |
|--------------------|-----|----|----|---|--------|-----|-----|-----|-----|-----|
| 131.050.Z=3 | 50 | 22 | 40 | 3 | 1203.. | 206 | 504 | - | - | 910 |
| 131.050 | 50 | 22 | 40 | 4 | 1203.. | 206 | 504 | - | - | 910 |
| 131.063 | 63 | 27 | 50 | 4 | 1203.. | 206 | 504 | 312 | 103 | 912 |
| 131.080 | 80 | 27 | 50 | 5 | 1203.. | 206 | 504 | 312 | 103 | 912 |
| 131.100 | 100 | 32 | 50 | 6 | 1203.. | 206 | 504 | 312 | 103 | 917 |
| 131.125 | 125 | 40 | 63 | 6 | 1203.. | 206 | 504 | 312 | 103 | 920 |
| 131.160 | 160 | 40 | 63 | 7 | 1203.. | 206 | 504 | 312 | 103 | 952 |
| 131.200 | 200 | 60 | 63 | 8 | 1203.. | 206 | 504 | 312 | 103 | 956 |



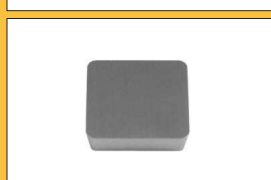
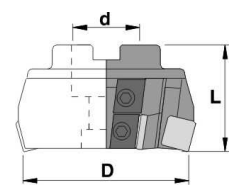
| REF. | l | s | d |
|--------------------|-------|------|-------|
| SPUN 1203.. | 12,70 | 3,18 | 12,70 |



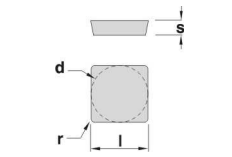
For more information see page: A.50,51



| REF. | D | d | L | Z | SP.. | | | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|-----|---------|
| 300.080 | 80 | 27 | 50 | 5 | 1203.. | 647 | 648 | 177 | 522 | 694 912 |
| 300.100 | 100 | 32 | 50 | 7 | 1203.. | 647 | 648 | 177 | 522 | 694 920 |
| 300.125 | 125 | 40 | 63 | 8 | 1203.. | 647 | 648 | 177 | 522 | 694 - |
| 300.160 | 160 | 40 | 63 | 10 | 1203.. | 647 | 648 | 177 | 522 | 694 952 |
| 300.200 | 200 | 60 | 63 | 12 | 1203.. | 647 | 648 | 177 | 522 | 694 956 |
| 300.250 | 250 | 60 | 63 | 16 | 1203.. | 647 | 648 | 177 | 522 | 694 956 |
| 300.315 | 315 | 60 | 63 | 20 | 1203.. | 647 | 648 | 177 | 522 | 694 956 |
| 300.400 | 400 | 60 | 63 | 26 | 1203.. | 647 | 648 | 177 | 522 | 694 956 |
| 300.500 | 500 | 60 | 63 | 34 | 1203.. | 647 | 648 | 177 | 522 | 694 956 |
| 301.100 | 100 | 32 | 50 | 7 | 1504.. | 639 | 640 | 177 | 522 | 615 917 |
| 301.125 | 125 | 40 | 63 | 8 | 1504.. | 639 | 640 | 177 | 522 | 615 - |
| 301.160 | 160 | 40 | 63 | 10 | 1504.. | 639 | 640 | 177 | 522 | 615 952 |
| 301.200 | 200 | 60 | 63 | 12 | 1504.. | 639 | 640 | 177 | 522 | 615 956 |
| 301.250 | 250 | 60 | 63 | 16 | 1504.. | 639 | 640 | 177 | 522 | 615 956 |
| 301.315 | 315 | 60 | 63 | 20 | 1504.. | 639 | 640 | 177 | 522 | 615 956 |
| 301.400 | 400 | 60 | 63 | 26 | 1504.. | 639 | 640 | 177 | 522 | 615 956 |
| 301.500 | 500 | 60 | 63 | 34 | 1504.. | 639 | 640 | 177 | 522 | 615 956 |



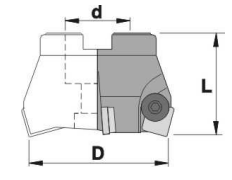
| REF. | l | s | d |
|-------------------|-------|------|-------|
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1504.. | 15,88 | 4,76 | 15,88 |



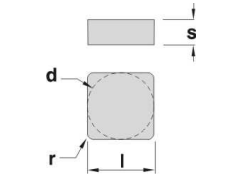
For more information see page: A.50,51



| REF. | D | d | L | Z | SNUN | | | | | |
|----------------|-----|----|----|---|--------|-----|-----|-----|-----|-----|
| 171.050 | 50 | 22 | 40 | 3 | 1204.. | 206 | 504 | - | - | 910 |
| 171.063 | 63 | 27 | 50 | 4 | 1204.. | 206 | 504 | 332 | 103 | 912 |
| 171.080 | 80 | 27 | 50 | 5 | 1204.. | 206 | 504 | 332 | 103 | 916 |
| 171.100 | 100 | 32 | 50 | 6 | 1204.. | 206 | 504 | 332 | 103 | 916 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SNUN 1204.. | 12,70 | 4,76 | 12,70 |

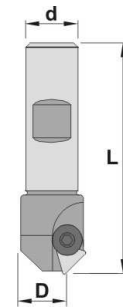


For more information see page: A.49,50

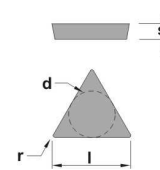
631 45°



| REF. | D | d | L | Z | TPUN | | |
|---------|----|----|----|---|--------|-----|-----|
| 631.016 | 16 | 12 | 80 | 1 | 1103.. | 205 | 503 |
| 631.020 | 20 | 20 | 85 | 1 | 1103.. | 205 | 503 |
| 631.032 | 32 | 20 | 90 | 2 | 1603.. | 206 | 504 |
| 631.040 | 40 | 20 | 90 | 3 | 1603.. | 206 | 504 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TPUN 1103.. | 11,00 | 3,18 | 6,35 |
| TPUN 1603.. | 16,50 | 3,18 | 9,52 |

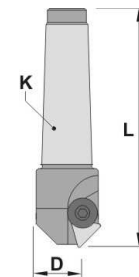


For more information see page: A.55

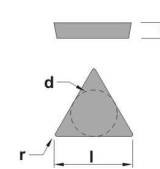
632 45°



| REF. | D | K | L | Z | TPUN | | |
|---------|----|-----|-----|---|--------|-----|-----|
| 632.032 | 32 | MK3 | 125 | 2 | 1603.. | 206 | 504 |
| 632.040 | 40 | MK3 | 125 | 3 | 1603.. | 206 | 504 |
| 632.050 | 50 | MK3 | 125 | 3 | 1603.. | 206 | 504 |

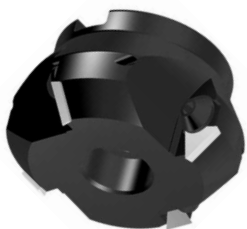


| REF. | l | s | d |
|-------------|-------|------|------|
| TPUN 1603.. | 16,50 | 3,18 | 9,52 |

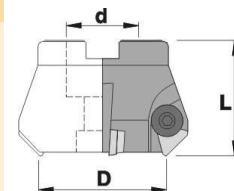


For more information see page: A.55

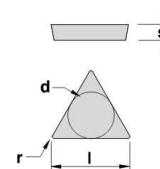
141 45°



| REF. | D | d | L | Z | TPUN | | | | | |
|---------|----|----|----|---|--------|-----|-----|-----|-----|-----|
| 141.040 | 40 | 27 | 40 | 3 | 1603.. | 206 | 504 | - | - | 912 |
| 141.050 | 50 | 27 | 40 | 4 | 1603.. | 206 | 504 | - | - | 912 |
| 141.063 | 63 | 27 | 50 | 4 | 1603.. | 206 | 504 | 316 | 103 | 912 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TPUN 1603.. | 16,50 | 3,18 | 9,52 |



For more information see page: A.55

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

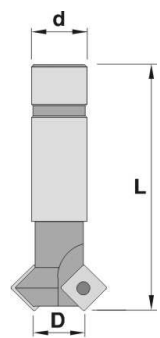


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

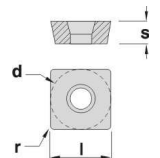
239 45°



| REF. | D | d | L | Z | SPM.. | | |
|----------------|------|----|-----|---|--------|-----|-----|
| 239.005 | 6,5 | 20 | 110 | 1 | 1204.. | 159 | 520 |
| 239.020 | 20,0 | 25 | 125 | 2 | 1204.. | 159 | 520 |



| REF. | l | s | d |
|---------------------|-------|------|-------|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |

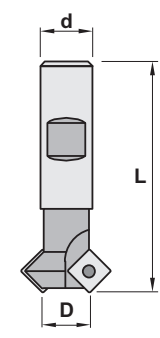


For more information see page: A.51

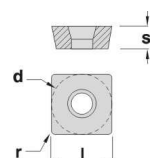
240 45°



| REF. | D | d | L | Z | SPM.. | | |
|----------------|------|----|-----|---|--------|-----|-----|
| 240.005 | 6,5 | 25 | 110 | 1 | 1204.. | 159 | 520 |
| 240.020 | 20,0 | 25 | 110 | 2 | 1204.. | 159 | 520 |



| REF. | l | s | d |
|---------------------|-------|------|-------|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |

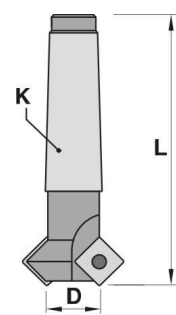


For more information see page: A.51

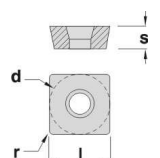
241 45°



| REF. | D | K | L | Z | SPM.. | | |
|----------------|------|-----|-----|---|--------|-----|-----|
| 241.005 | 6,5 | MK3 | 125 | 1 | 1204.. | 159 | 520 |
| 241.020 | 20,0 | MK3 | 125 | 2 | 1204.. | 159 | 520 |



| REF. | l | s | d |
|---------------------|-------|------|-------|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |

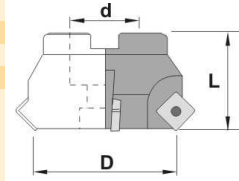


For more information see page: A.51

271 45°



| REF. | D | d | L | Z | SC.. | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|
| 271.040 | 40 | 16 | 40 | 4 | 1204.. | 150 | 522 | 108 |
| 271.050 | 50 | 22 | 40 | 4 | 1204.. | 150 | 522 | 910 |
| 271.063 | 63 | 27 | 50 | 5 | 1204.. | 150 | 522 | 912 |
| 271.080 | 80 | 32 | 50 | 6 | 1204.. | 150 | 522 | 916 |
| 271.100 | 100 | 40 | 50 | 7 | 1204.. | 150 | 522 | - |
| 271.125 | 125 | 40 | 63 | 8 | 1204.. | 150 | 522 | - |
| 271.160 | 160 | 40 | 63 | 9 | 1204.. | 150 | 522 | 952 |
| 271.200 | 200 | 60 | 63 | 11 | 1204.. | 150 | 522 | 956 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

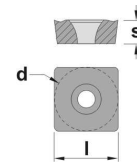
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|-------|
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

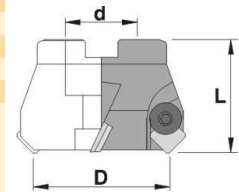


For more information see page: A.47,48

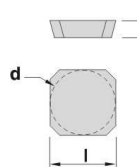
191 45°



| REF. | D | d | L | Z | SEKN | | | |
|---------|-----|----|----|----|--------|-----|-----|-------------|
| 191.050 | 50 | 22 | 40 | 4 | 1203.. | 226 | 504 | 352 103 910 |
| 191.063 | 63 | 22 | 50 | 5 | 1203.. | 226 | 504 | 352 103 910 |
| 191.080 | 80 | 27 | 50 | 6 | 1203.. | 226 | 504 | 352 103 912 |
| 191.100 | 100 | 32 | 50 | 6 | 1203.. | 226 | 504 | 352 103 916 |
| 191.125 | 125 | 40 | 63 | 7 | 1203.. | 226 | 504 | 352 103 - |
| 191.160 | 160 | 40 | 63 | 8 | 1203.. | 226 | 504 | 352 103 952 |
| 191.200 | 200 | 60 | 63 | 10 | 1203.. | 226 | 504 | 352 103 956 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| SEKN 1203.. | 12,70 | 3,18 | 12,70 |

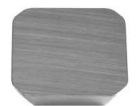
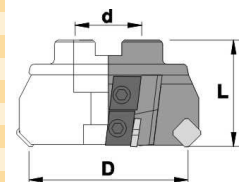


For more information see page: A.48

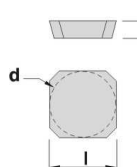
341-342 45°



| REF. | D | d | L | Z | SEK.. | | | | | | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|-----|--|
| 341.080 | 80 | 27 | 50 | 6 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | 912 | |
| 341.100 | 100 | 32 | 50 | 8 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | 917 | |
| 341.125 | 125 | 40 | 63 | 8 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | - | |
| 341.160 | 160 | 40 | 63 | 10 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | 952 | |
| 341.200 | 200 | 60 | 63 | 12 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | 956 | |
| 341.250 | 250 | 60 | 63 | 16 | 1203.. | 460 | 604 | 605 | 177 | 522 | 632 | 956 | |
| 342.080 | 80 | 27 | 50 | 6 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | 912 | |
| 342.100 | 100 | 32 | 50 | 8 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | 917 | |
| 342.125 | 125 | 40 | 63 | 8 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | - | |
| 342.160 | 160 | 40 | 63 | 10 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | 952 | |
| 342.200 | 200 | 60 | 63 | 12 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | 956 | |
| 342.250 | 250 | 60 | 63 | 16 | 1504.. | 460 | 608 | 609 | 177 | 522 | 692 | 956 | |



| REF. | l | s | d |
|--------------|-------|------|-------|
| SEK.. 1203.. | 12,70 | 3,18 | 12,70 |
| SEK.. 1504.. | 15,88 | 4,76 | 15,88 |



For more information see page: A.48,49

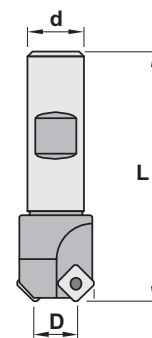


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

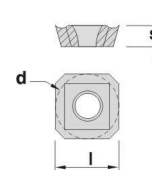
214 45°



| REF. | D | d | L | Z | SE.. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 214.032 | 32 | 32 | 125 | 2 | 1204.. | 159 | 520 |
| 214.040 | 40 | 32 | 125 | 3 | 1204.. | 159 | 520 |



| REF. | l | s | d |
|----------------------|-------|------|-------|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204AFTN | 12,70 | 4,76 | 12,70 |

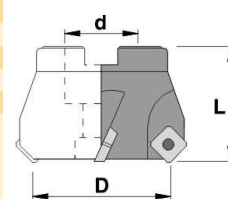


For more information see page: A.48,49

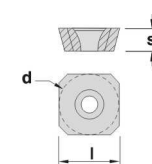
291 45°



| REF. | D | d | L | Z | SE.. | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|
| 291.050 | 50 | 22 | 40 | 4 | 1204.. | 159 | 522 | 910 |
| 291.063 | 63 | 22 | 50 | 5 | 1204.. | 159 | 522 | 910 |
| 291.080 | 80 | 27 | 50 | 6 | 1204.. | 159 | 522 | 912 |
| 291.100 | 100 | 32 | 50 | 6 | 1204.. | 159 | 522 | 917 |
| 291.125 | 125 | 40 | 63 | 7 | 1204.. | 159 | 522 | - |
| 291.160 | 160 | 40 | 63 | 8 | 1204.. | 159 | 522 | 952 |
| 291.200 | 200 | 60 | 63 | 10 | 1204.. | 159 | 522 | 956 |

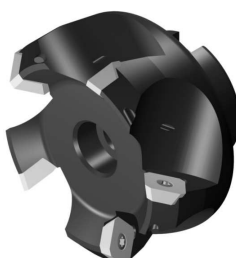


| REF. | l | s | d |
|----------------------|-------|------|-------|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204AFTN | 12,70 | 4,76 | 12,70 |

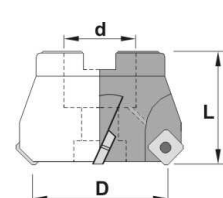


For more information see page: A.48,49

293 45°



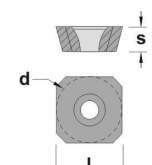
| REF. | D | d | L | Z | SE.. | | | |
|----------------|-----|----|----|---|--------|-----|-----|-----|
| 293.050 | 50 | 22 | 40 | 4 | 1204.. | 159 | 522 | 910 |
| 293.063 | 63 | 22 | 50 | 5 | 1204.. | 159 | 522 | 910 |
| 293.080 | 80 | 27 | 50 | 6 | 1204.. | 159 | 522 | 912 |
| 293.100 | 100 | 32 | 50 | 6 | 1204.. | 159 | 522 | 917 |
| 293.125 | 125 | 40 | 63 | 7 | 1204.. | 159 | 522 | - |



Internal coolant system



| REF. | l | s | d |
|----------------------|-------|------|-------|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204AFTN | 12,70 | 4,76 | 12,70 |

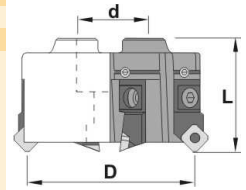


For more information see page: A.48,49

294 45°



| REF. | D | d | L | Z | SE.. | | | | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 294.160 | 160 | 40 | 63 | 10 | 1204.. | 159 | 522 | 674 | 187 | 460 | 952 |
| 294.200 | 200 | 60 | 63 | 12 | 1204.. | 159 | 522 | 674 | 187 | 460 | 956 |
| 294.250 | 250 | 60 | 63 | 16 | 1204.. | 159 | 522 | 674 | 187 | 460 | 956 |
| 294.315 | 315 | 60 | 63 | 20 | 1204.. | 159 | 522 | 674 | 187 | 460 | 956 |
| 294.400 | 400 | 60 | 63 | 22 | 1204.. | 159 | 522 | 674 | 187 | 460 | 956 |
| 294.500 | 500 | 60 | 63 | 28 | 1204.. | 159 | 522 | 674 | 187 | 460 | 956 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

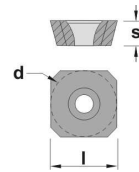
Solid carbide

Boring heads

Arbors & adaptors

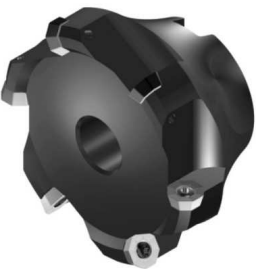


| REF. | l | s | d |
|---------------|-------|------|-------|
| SEH.. 1204.. | 12,70 | 4,76 | 12,70 |
| SEMT 1204AFTN | 12,70 | 4,76 | 12,70 |

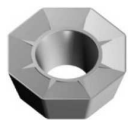
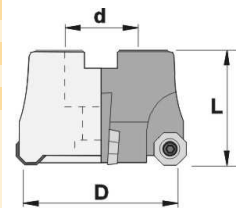


For more information see page: A.48,49

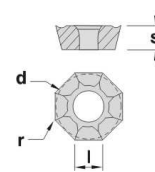
292 42°



| REF. | D | d | L | Z | ODM.. | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|
| 292.040 | 40 | 16 | 40 | 4 | 0404.. | 140 | 535 | 108 |
| 292.050 | 50 | 22 | 40 | 4 | 0404.. | 140 | 535 | 910 |
| 292.063 | 63 | 27 | 50 | 5 | 0404.. | 140 | 535 | 912 |
| 292.080 | 80 | 32 | 50 | 6 | 0404.. | 140 | 535 | 916 |
| 292.100 | 100 | 40 | 50 | 7 | 0404.. | 140 | 535 | - |
| 292.125 | 125 | 40 | 63 | 7 | 0404.. | 140 | 535 | - |
| 292.160 | 160 | 40 | 63 | 8 | 0404.. | 140 | 535 | 952 |
| 292.200 | 200 | 60 | 63 | 10 | 0404.. | 140 | 535 | 956 |

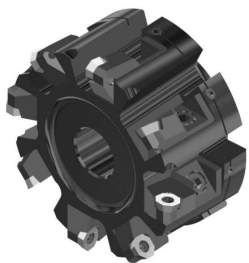


| REF. | l | s | d |
|--------------|-----|------|-------|
| ODM.. 0404.. | 4,0 | 4,76 | 12,70 |

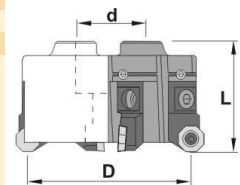


For more information see page: A.45

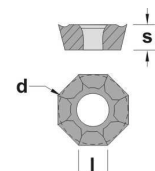
295 42°



| REF. | D | d | L | Z | ODM.. | | | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|-----|-----|
| 295.160 | 160 | 40 | 63 | 10 | 0404.. | 140 | 535 | 685 | 187 | 460 |
| 295.200 | 200 | 60 | 63 | 12 | 0404.. | 140 | 535 | 685 | 187 | 460 |
| 295.250 | 250 | 60 | 63 | 16 | 0404.. | 140 | 535 | 685 | 187 | 460 |
| 295.315 | 315 | 60 | 63 | 20 | 0404.. | 140 | 535 | 685 | 187 | 460 |
| 295.400 | 400 | 60 | 63 | 22 | 0404.. | 140 | 535 | 685 | 187 | 460 |
| 295.500 | 500 | 60 | 63 | 28 | 0404.. | 140 | 535 | 685 | 187 | 460 |



| REF. | l | s | d |
|--------------|------|------|-------|
| ODM.. 0404.. | 4,00 | 4,76 | 12,70 |

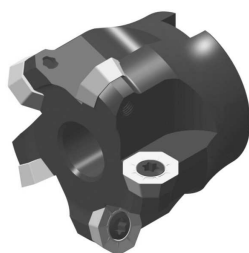


For more information see page: A.45

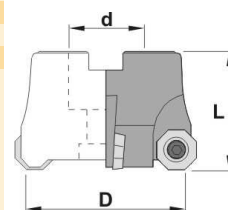


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

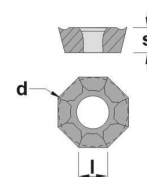
296 42°



| REF. | D | d | L | Z | ODM.. | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|
| 296.063 | 63 | 27 | 50 | - | 0605.. | 155 | 522 | 912 |
| 296.080 | 80 | 32 | 50 | - | 0605.. | 155 | 522 | 917 |
| 296.100 | 100 | 40 | 50 | - | 0605.. | 155 | 522 | - |
| 296.125 | 125 | 40 | 63 | 8 | 0605.. | 155 | 522 | - |
| 296.160 | 160 | 40 | 63 | 10 | 0605.. | 155 | 522 | 952 |
| 296.200 | 200 | 60 | 63 | 12 | 0605.. | 155 | 522 | 956 |

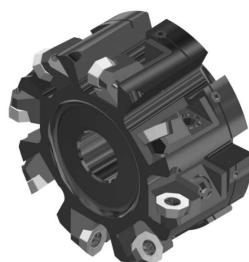


| REF. | l | s | d |
|---------------------|------|------|-------|
| ODM.. 0605.. | 6,00 | 5,55 | 16,00 |

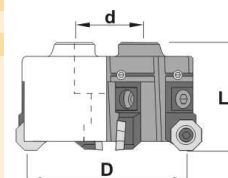


For more information see page: A.45

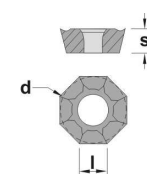
297 42°



| REF. | D | d | L | Z | ODM.. | | | | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 297.160 | 160 | 40 | 63 | 10 | 0605.. | 159 | 522 | 686 | 187 | 460 | 952 |
| 297.200 | 200 | 60 | 63 | 12 | 0605.. | 159 | 522 | 686 | 187 | 460 | 956 |
| 297.250 | 250 | 60 | 63 | 16 | 0605.. | 159 | 522 | 686 | 187 | 460 | 956 |
| 297.315 | 315 | 60 | 63 | 20 | 0605.. | 159 | 522 | 686 | 187 | 460 | 956 |
| 297.400 | 400 | 60 | 63 | 22 | 0605.. | 159 | 522 | 686 | 187 | 460 | 956 |
| 297.500 | 500 | 60 | 63 | 28 | 0605.. | 159 | 522 | 686 | 187 | 460 | 956 |



| REF. | l | s | d |
|---------------------|------|------|-------|
| ODM.. 0605.. | 6,00 | 5,55 | 16,00 |



For more information see page: A.45

Cutting data for face milling cutters

| Material | P | HB | Condition | Cutting speed m/min. | | | | |
|--------------------------|---------------------------|--|--|--------------------------------------|---------------------------|--|----------------------------------|-------------|
| | | | | TIC25 | TIC21 | TIC28 | P25K | P40K |
| | | | | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.4-0.2-0.1 |
| Unalloyed steel | 110 150 310 | C<0.25% C<0.80% C<1.40% | 250-300-390 | 250-350-450 | 140-160-180 | 180-250-310 | 100-130-160 | |
| | | | 155-180-255 | 100-120-165 | 120-140-150 | 120-145-205 | 65-85-100 | |
| | | | 135-165-210 | 75-110-135 | 80-90-100 | 95-130-170 | 50-75-85 | |
| Low alloyed steel | 125-225 220-450 | Hardened | 170-200-250 110-130-150 | 100-120-165 55-75-95 | 120-140-160 90-120-140 | 120-160-200 70-100-120 | 95-85-105 40-55-65 | |
| High alloyed steel | 150-250 250-300 | Hardened | 170-200-250 110-130-150 | 90-115-150 60-75-90 | 60-80-90 55-60-70 | 110-140-180 65-90-120 | 60-80-90 40-50-60 | |
| High alloyed steel | 150-250 250-350 | Rapid steel (HSS) Hardened Hardened tool steel | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155 70-95-120 | 50-60-75 30-40-50 | |
| Stainless steel | 150-270 | Ferritic, Martensitic | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | |
| Steel castings | 150 150-250 160-200 | Unalloyed Low alloyed High alloyed | 140-180-250 125-150-190 90-110-130 | 80-120-150 70-100-120 55-70-80 | 60-80-90 55-60-70 | 100-145-180 90-120-150 65-90-100 | 60-75-95 50-65-80 35-45-55 | |
| Stainless steel castings | 150-250 | Ferritic, martensitic | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | |

| Material | M | HB | Condition | Cutting speed m/min. | | | | |
|---------------------------------------|-------------------------------|-----------------------|-------------|----------------------|-------------|-------------------------|-------------|-------------|
| | | | | TIC25 | TIC21 | TIC28 | K15K | P25K |
| | | | | 0.4-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Stainless steel annealed | 150-220 | Austenitic | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 | |
| Steel castings | 200 | Stainless, austenitic | | 40-70 | 80-120-160 | | 50-60 | |
| Iron, nickel and cobalt base castings | 180-300 220-300 220-300 | | | 40-100 | 70-120-140 | 20-40 20-40 10-20 | | |
| Titanium alloys | 300-400 | | | | 40-80 | | | |

| Material | K | HB | Condition | Cutting speed m/min. | | | | |
|------------------------------------|--------------------|---|--------------------|----------------------|--------------------|-----------------------|---------------------------|-------------|
| | | | | TIC21 | TIC25 | TIC28 | K15K | P25K |
| | | | | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.4-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Tempered steel | HCR 50-65 | | | | | | 15-20-30 | |
| Stainless steel castings | 250 | Manganese steel 12-14% Mn | | | | 12-18-20 | | |
| Malleable cast iron | 110-145 200-230 | Short chipping Long chipping | 200-300 150-200 | | 180-330 | 65-80-95 50-65-80 | 100-125-150 90-115-135 | |
| Grey cast iron | 180 260 | Low tensile strength High tensile strength | 200-400 150-350 | | 130-240 110-200 | 70-95-120 50-70-90 | 85-120-155 70-90-115 | |
| Nodular cast iron | 160 250 | Ferritic Pearlitic | 100-250 100-180 | 100-130 90-110 | 70-140 60-120 | 50-65-80 45-60-70 | 70-90-115 65-80-100 | |
| Chilled cast iron | HCR 40-60 | | | | | | | |
| Aluminium alloys | 60-100 75-110 | Non cast Cast | | | | 500-2100 400-2000 | | |
| Aluminium with high contents of Si | | 10-14% Si 14-16% Si 16-18% Si | | | | 200-1000 110-200 | | |

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

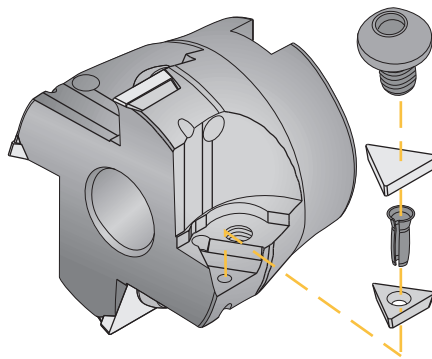
Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

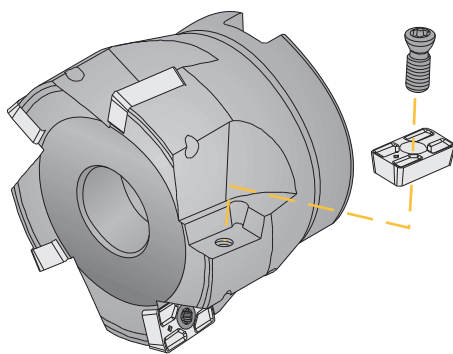


C Clamp / Fixation C / C-Klemmung

This classic positive insert clamping system allows the use of all models presenting this geometry, both with additional chipbreaker and sintered.

Ce système classique de fixation de plaquettes positives permet d'utiliser toutes les plaquettes de cette géométrie, que ce soit avec brise-copeaux additionnel que sintérisé.

Dieses klassische Klemmsystem von positiven Wendeschneidplatten erlaubt die Verwendung von allen Wendeplatten dieser Geometrie, sowohl mit zusätzlichem als auch mit gesintertem Spanbrecher.

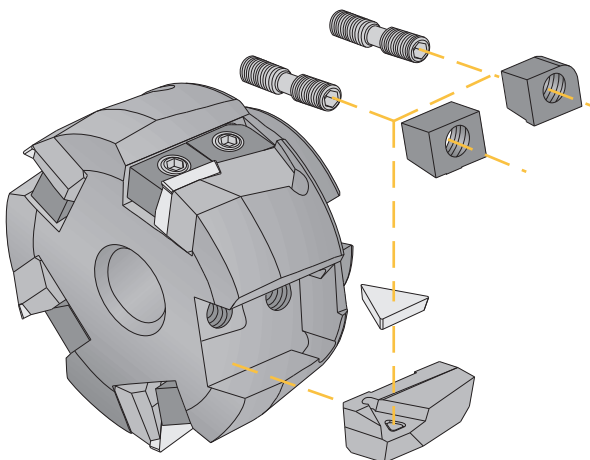


Screw clamping / Fixation par vis / Schraubenklemmung

Since the advent of the Torx screw it has been possible to hold with complete safety positive inserts with centre hole. Our range covers all the screw clamping permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.

Seit der Einführung der TORX-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch mit Sicherheit zu klemmen. Unser Programm bietet alle Klemm-Möglichkeiten mit Schraube.

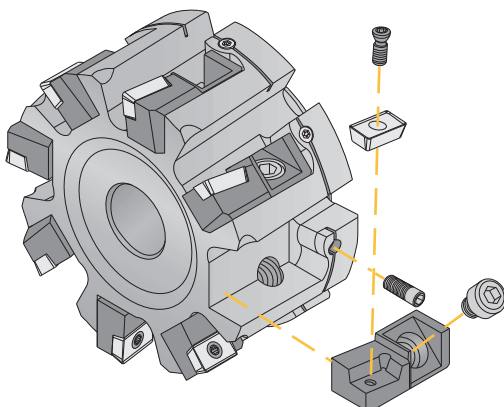


Wedge clamping / Fixation par coin / Spannkeilklemmung

Heavy duty work require good fixation, for this purpose we have designed our wedge clamping system, one of the safest available.

Les travaux lourds ont besoin d'une bonne fixation, c'est pour cela que nous avons dessiné notre système de fixation par coin. Il est un des plus sûrs de tous ceux qui existent.

Schwere Zerspanungsarbeiten benötigen eine gute Klemmung; dafür haben wir unser Spannkeil-Klemmsystem, das eines des sichersten ist.



Cartridge system / Système à cartouches / Kassetten-System

Cartridge system for heavy duty work with positive center hole inserts. The axial regulation screw allows a perfect adjustment for super-finishing applications.

Système à cartouches pour travaux lourds avec plaquettes positives à trou centrale. La vis de regulation axiale permet un réglage parfait pour les opérations de super-finition.

Kassettensystem für schwere Arbeit, mit positiven Wendeplatten mit Zentralloch. Die axiale Verstellerschraube erlaubt eine perfekte Einstellung für Super-Schlichtarbeiten.

Square shoulder cutters - Fraises à surfacer et à dresser - Plan-und Eckfräser

| | | | | | |
|--|--|--|--|--|---|
| <p>101-102 90° General application 90°</p>  <p>Page K.14 TP.. 1102.. TP.. 1103.. TP.. 1603..</p> | <p>111-112 90° General application 90°</p>  <p>Page K.14 TP.. 1103.. TP.. 1603..</p> | <p>119-120-121 90° General application 90°</p>  <p>Page K.14 TP.. 1103.. TP.. 1603.. TP.. 2204..</p> | <p>311-312 90° General application 90°</p>  <p>Page K.15 TP.. 1603.. TP.. 2204..</p> | <p>264 90° General application 90°</p>  <p>Page K.15 TC.. 16T3..</p> | <p>266 90° General application 90°</p>  <p>Page K.15 TC.. 16T3..</p> |
| <p>261 90° General application 90°</p>  <p>Page K.16 TC.. 16T3..</p> | <p>340 90° Square and facing 90°</p>  <p>Page K.16 SPM.. 1204..</p> | <p>152 90° Square and facing 90°</p>  <p>Page K.16 SDMT 12T3..</p> | <p>245 90° Square and facing 90°</p>  <p>Page K.17 SDMT 12T3..</p> | <p>280-281 90° General application 90°</p>  <p>Page K.17 CC.. 0602.. CC.. 09T3..</p> | <p>282-283 90° General application 90°</p>  <p>Page K.17 CC.. 0602.. CC.. 09T3..</p> |
| <p>284-285-286 90° General application 90°</p>  <p>Page K.18 CC.. 0602.. CC.. 0803.. CC.. 09T3..</p> | <p>334 90° General application 90°</p>  <p>Page K.18 CC.. 09T3..</p> | <p>337 90° General application 90°</p>  <p>Page K.18 CC.. 0602.. CC.. 09T3..</p> | <p>335 90° General application 90°</p>  <p>Page K.19 CC.. 0602.. CC.. 09T3..</p> | <p>336 95° General application 95°</p>  <p>Page K.19 CC.. 09T3..</p> | <p>304-314 Multi-function centre-cutting end mill</p>  <p>Page K.19 CCKT 0602.. CCKT 1204..</p> |
| <p>338 Multi-function centre-cutting end mill</p>  <p>Page K.20 CCKT 0602.. CCKT 1204..</p> | <p>104 90° First choice 90°</p>  <p>Page K.20 AP.. 1003..</p> | <p>109 90° First choice 90°</p>  <p>Page K.20 AP.. 1003..</p> | <p>110 90° First choice 90°</p>  <p>Page K.21 AP.. 1003..</p> | <p>124 90° First choice 90°</p>  <p>Page K.21 AP.. 1003..</p> | <p>105 90° First choice 90°</p>  <p>Page K.21 AP.. 1003..</p> |
| <p>118 90° First choice 90°</p>  <p>Page K.22 AP.. 1003..</p> | <p>114 90° First choice 90°</p>  <p>Page K.22 AP.. 1604..</p> | <p>113 90° First choice 90°</p>  <p>Page K.22 AP.. 1604..</p> | <p>115 90° First choice 90°</p>  <p>Page K.23 AP.. 1604..</p> | <p>262-263 90° Slot and side milling 90°</p>  <p>Page K.23 AP.. 1003.. AP.. 1604..</p> | <p>222 90° First choice 90°</p>  <p>Page K.23 AP.. 1604..</p> |
| <p>432 90° First choice 90°</p>  <p>Page K.24 AP.. 1604..</p> | <p>242 90° First choice 90°</p>  <p>Page K.24 AP.. 1604..</p> | <p>106 90° Soft materials 90°</p>  <p>Page K.24 AD.. 1503..</p> | <p>201 90° Soft materials 90°</p>  <p>Page K.25 AD.. 1503..</p> | <p>126 90° Soft materials 90°</p>  <p>Page K.25 AD.. 1503..</p> | <p>205-225 90° Milling and boring 90°</p>  <p>Page K.25 AD.. 1503..</p> |
| <p>231 90° Soft materials 90°</p>  <p>Page K.26 AD.. 1503..</p> | <p>223 90° Deep cutting 90°</p>  <p>Page K.26 AP.. 2004..</p> | <p>243 90° Deep cutting 90°</p>  <p>Page K.26 AP.. 2004..</p> | | | |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

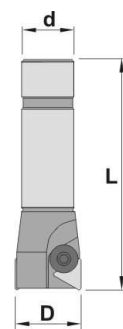


Inserts

101-102 90°



| REF. | D | d | L | Z | TP. | Icons | |
|----------------|----|----|-----|---|--------|-------|-----|
| 101.016 | 16 | 16 | 100 | 1 | 1102.. | 205 | 503 |
| 101.020 | 20 | 20 | 100 | 2 | 1103.. | 205 | 503 |
| 101.025 | 25 | 20 | 110 | 2 | 1103.. | 205 | 503 |
| 101.032 | 32 | 25 | 110 | 3 | 1103.. | 205 | 503 |
| 101.040 | 40 | 25 | 110 | 4 | 1103.. | 205 | 503 |
| 102.020 | 20 | 20 | 100 | 1 | 1603.. | 206 | 504 |
| 102.032 | 32 | 25 | 110 | 2 | 1603.. | 206 | 504 |
| 102.040 | 40 | 25 | - | 3 | 1603.. | 206 | 504 |



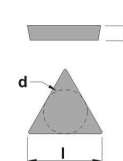
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1102.. | 11,00 | 2,38 | 6,35 |
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |



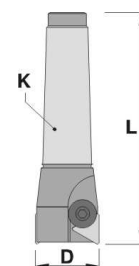
For more information see page: A.54,55

Parting & grooving

111-112 90°



| REF. | D | K | L | Z | TP. | Icons | |
|----------------|----|-----|-----|---|--------|-------|-----|
| 111.020 | 20 | MK3 | 125 | 2 | 1103.. | 205 | 503 |
| 111.025 | 25 | MK3 | 125 | 2 | 1103.. | 205 | 503 |
| 111.032 | 32 | MK3 | 125 | 3 | 1103.. | 205 | 503 |
| 111.040 | 40 | MK3 | 125 | 4 | 1103.. | 205 | 503 |
| 112.032 | 32 | MK3 | 125 | 2 | 1603.. | 206 | 504 |
| 112.040 | 40 | MK3 | 125 | 3 | 1603.. | 206 | 504 |



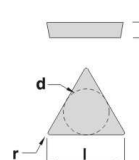
Threading

Drills

Cartridges



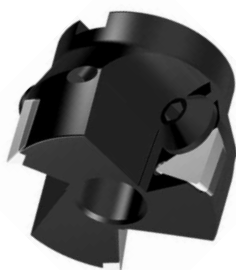
| REF. | l | s | d |
|-------------------|-------|------|------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |



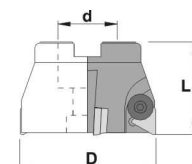
For more information see page: A.54,55

Brazed tools

119-120-121 90°



| REF. | D | d | L | Z | TP. | Icons | | | | |
|--------------------|-----|----|----|---|--------|-------|-----|-----|-----|-----|
| 119.040 | 40 | 16 | 40 | 4 | 1103.. | 205 | 503 | - | - | 108 |
| 119.050 | 50 | 22 | 40 | 4 | 1103.. | 205 | 503 | - | - | 910 |
| 120.040 | 40 | 16 | 40 | 3 | 1603.. | 206 | 504 | - | - | 108 |
| 120.050.Z=3 | 50 | 22 | 40 | 3 | 1603.. | 206 | 504 | - | - | 910 |
| 120.050 | 50 | 22 | 40 | 4 | 1603.. | 206 | 504 | - | - | 910 |
| 120.063 | 63 | 22 | 50 | 4 | 1603.. | 206 | 504 | 316 | 103 | 910 |
| 120.080 | 80 | 27 | 50 | 5 | 1603.. | 206 | 504 | 316 | 103 | 912 |
| 120.100 | 100 | 32 | 50 | 6 | 1603.. | 206 | 504 | 316 | 103 | 916 |
| 120.125 | 125 | 40 | 63 | 6 | 1603.. | 206 | 504 | 316 | 103 | - |
| 120.160 | 160 | 40 | 63 | 7 | 1603.. | 206 | 504 | 316 | 103 | 952 |
| 120.200 | 200 | 60 | 63 | 8 | 1603.. | 206 | 504 | 316 | 103 | 956 |
| 121.063 | 63 | 22 | 50 | 3 | 2204.. | 216 | 504 | 322 | 104 | 910 |
| 121.080 | 80 | 27 | 50 | 4 | 2204.. | 216 | 504 | 322 | 104 | 912 |
| 121.100 | 100 | 32 | 50 | 5 | 2204.. | 216 | 504 | 322 | 104 | 916 |
| 121.125 | 125 | 40 | 63 | 6 | 2204.. | 216 | 504 | 322 | 104 | - |
| 121.160 | 160 | 40 | 63 | 7 | 2204.. | 216 | 504 | 322 | 104 | 952 |
| 121.200 | 200 | 60 | 63 | 8 | 2204.. | 216 | 504 | 322 | 104 | 956 |



Milling cutters

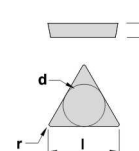
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------------|-------|------|-------|
| TP. 1103.. | 11,00 | 3,18 | 6,35 |
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

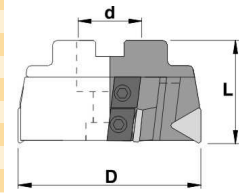


For more information see page: A.54,55

311-312 90°



| REF. | D | d | L | Z | TP.. | | | | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 311.050 | 50 | 16 | 50 | 5 | 1603.. | 631 | 633 | 181 | 535 | 652 | 108 |
| 311.063 | 63 | 22 | 50 | 6 | 1603.. | 631 | 633 | 181 | 535 | 652 | 910 |
| 311.080 | 80 | 27 | 50 | 5 | 1603.. | 602 | 603 | 177 | 522 | 616 | 912 |
| 311.100 | 100 | 32 | 50 | 7 | 1603.. | 602 | 603 | 177 | 522 | 616 | 916 |
| 311.125 | 125 | 40 | 63 | 7 | 1603.. | 602 | 603 | 177 | 522 | 616 | - |
| 311.160 | 160 | 40 | 63 | 9 | 1603.. | 602 | 603 | 177 | 522 | 616 | 952 |
| 311.200 | 200 | 60 | 63 | 11 | 1603.. | 602 | 603 | 177 | 522 | 616 | 956 |
| 311.250 | 250 | 60 | 63 | 15 | 1603.. | 602 | 603 | 177 | 522 | 616 | 956 |
| 312.080 | 80 | 27 | 50 | 5 | 2204.. | 634 | 635 | 177 | 522 | 622 | 912 |
| 312.100 | 100 | 32 | 50 | 7 | 2204.. | 634 | 635 | 177 | 522 | 622 | 916 |
| 312.125 | 125 | 40 | 63 | 7 | 2204.. | 634 | 635 | 177 | 522 | 622 | - |
| 312.160 | 160 | 40 | 63 | 9 | 2204.. | 634 | 635 | 177 | 522 | 622 | 952 |
| 312.200 | 200 | 60 | 63 | 11 | 2204.. | 634 | 635 | 177 | 522 | 622 | 956 |
| 312.250 | 250 | 60 | 63 | 15 | 2204.. | 634 | 635 | 177 | 522 | 622 | 956 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

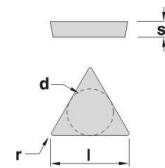
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|------------|-------|------|-------|
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |

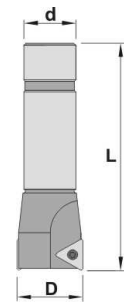


For more information see page: A.54,55

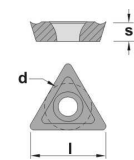
264 90°



| REF. | D | d | L | Z | TC.. | | |
|---------|----|----|-----|---|--------|-----|-----|
| 264.016 | 16 | 20 | 110 | 1 | 16T3.. | 138 | 515 |
| 264.020 | 20 | 20 | 110 | 1 | 16T3.. | 138 | 515 |
| 264.025 | 25 | 25 | 110 | 2 | 16T3.. | 140 | 515 |
| 264.032 | 32 | 32 | 125 | 2 | 16T3.. | 140 | 515 |
| 264.040 | 40 | 32 | 125 | 3 | 16T3.. | 140 | 515 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

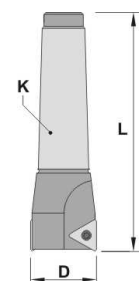


For more information see page: A.51,52

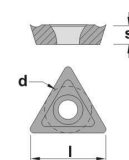
266 90°



| REF. | D | K | L | Z | TC.. | | |
|---------|----|-----|-----|---|--------|-----|-----|
| 266.025 | 25 | MK3 | 125 | 2 | 16T3.. | 140 | 515 |
| 266.032 | 32 | MK3 | 125 | 2 | 16T3.. | 140 | 515 |
| 266.040 | 40 | MK3 | 125 | 3 | 16T3.. | 140 | 515 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

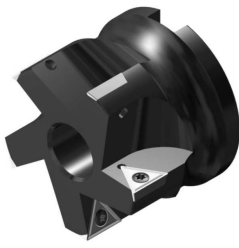
Milling cutters

Solid carbide

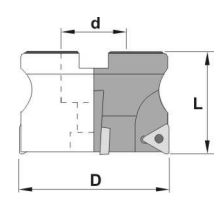
Boring heads

Arbors & adaptors

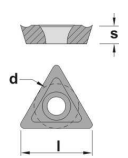
261 90°



| REF. | D | d | L | Z | TC.. | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|
| 261.040 | 40 | 16 | 40 | 3 | 16T3.. | 140 | 535 | 108 |
| 261.050 | 50 | 22 | 40 | 4 | 16T3.. | 140 | 535 | 910 |
| 261.063 | 63 | 27 | 50 | 5 | 16T3.. | 140 | 535 | 912 |
| 261.080 | 80 | 32 | 50 | 6 | 16T3.. | 140 | 535 | 916 |
| 261.100 | 100 | 40 | 50 | 7 | 16T3.. | 140 | 535 | 920 |
| 261.125 | 125 | 40 | 63 | 8 | 16T3.. | 140 | 535 | - |
| 261.160 | 160 | 40 | 63 | 10 | 16T3.. | 140 | 535 | 952 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

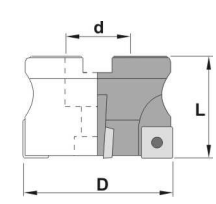


For more information see page: A.51,52

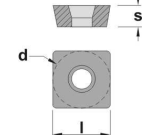
340 90°



| REF. | D | d | L | Z | SPM.. | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|
| 340.040 | 40 | 16 | 40 | 3 | 1204.. | 159 | 522 | 108 |
| 340.050 | 50 | 22 | 40 | 4 | 1204.. | 159 | 522 | 910 |
| 340.063 | 63 | 27 | 50 | 5 | 1204.. | 159 | 522 | 912 |
| 340.080 | 80 | 27 | 50 | 6 | 1204.. | 159 | 522 | 912 |
| 340.100 | 100 | 32 | 50 | 8 | 1204.. | 159 | 522 | 916 |
| 340.125 | 125 | 40 | 63 | 8 | 1204.. | 159 | 522 | - |
| 340.160 | 160 | 40 | 63 | 10 | 1204.. | 159 | 522 | 952 |
| 340.200 | 200 | 60 | 63 | 12 | 1204.. | 159 | 522 | 956 |
| 340.250 | 250 | 60 | 63 | 16 | 1204.. | 159 | 522 | 956 |

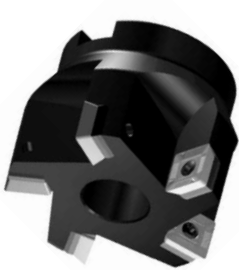


| REF. | l | s | d |
|---------------------|-------|------|-------|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |

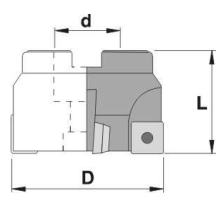


For more information see page: A.51

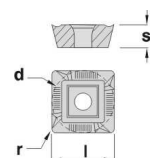
152 90°



| REF. | D | d | L | Z | SDMT | | | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|-----|-----|
| 152.040 | 40 | 16 | 40 | 3 | 12T3.. | 133 | 535 | - | - | 108 |
| 152.050 | 50 | 22 | 40 | 4 | 12T3.. | 133 | 535 | 350 | 194 | 910 |
| 152.063 | 63 | 27 | 50 | 5 | 12T3.. | 133 | 535 | 350 | 194 | 912 |
| 152.080 | 80 | 27 | 50 | 6 | 12T3.. | 133 | 535 | 350 | 194 | 912 |
| 152.100 | 100 | 32 | 50 | 7 | 12T3.. | 133 | 535 | 350 | 194 | 916 |
| 152.125 | 125 | 40 | 63 | 8 | 12T3.. | 133 | 535 | 350 | 194 | - |
| 152.160 | 160 | 40 | 63 | 10 | 12T3.. | 133 | 535 | 350 | 194 | 952 |
| 152.200 | 200 | 60 | 63 | 12 | 12T3.. | 133 | 535 | 350 | 194 | 956 |
| 152.250 | 250 | 60 | 63 | 16 | 12T3.. | 133 | 535 | 350 | 194 | 956 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| SDMT 12T3.. | 13,29 | 3,97 | 13,29 |

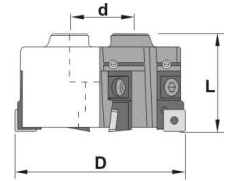


For more information see page: A.48

245 90°



| REF. | D | d | L | Z | SDMT | | | | | | |
|---------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 245.160 | 160 | 40 | 63 | 10 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |
| 245.200 | 200 | 60 | 63 | 12 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |
| 245.250 | 250 | 60 | 63 | 16 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |
| 245.315 | 315 | 60 | 63 | 20 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |
| 245.400 | 400 | 60 | 63 | 22 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |
| 245.500 | 500 | 60 | 63 | 28 | 12T3.. | 187 | 133 | 535 | 625 | 194 | 460 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

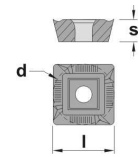
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|-------|
| SDMT 12T3.. | 13,29 | 3,97 | 13,29 |

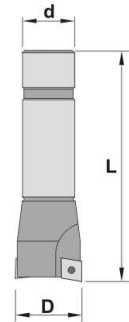


For more information see page: A.48

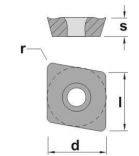
280-281 90°



| REF. | D | d | L | Z | CC.. | | |
|---------|----|----|-----|---|--------|-----|-----|
| 280.012 | 12 | 16 | 110 | 1 | 0602.. | 155 | 507 |
| 280.016 | 16 | 20 | 110 | 2 | 0602.. | 155 | 507 |
| 280.020 | 20 | 20 | 110 | 3 | 0602.. | 155 | 507 |
| 281.020 | 20 | 20 | 110 | 2 | 09T3.. | 138 | 515 |
| 281.025 | 25 | 25 | 110 | 2 | 09T3.. | 138 | 515 |
| 281.032 | 32 | 32 | 125 | 3 | 09T3.. | 140 | 515 |
| 281.040 | 40 | 32 | 125 | 4 | 09T3.. | 140 | 515 |



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



For more information see page: A.38

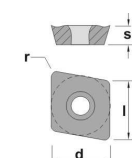
282-283 90°



| REF. | D | d | L | Z | CC.. | | |
|---------|----|----|-----|---|--------|-----|-----|
| 282.016 | 16 | 20 | 175 | 2 | 0602.. | 155 | 507 |
| 282.020 | 20 | 20 | 200 | 3 | 0602.. | 155 | 507 |
| 283.020 | 20 | 20 | 200 | 2 | 09T3.. | 138 | 515 |
| 283.025 | 25 | 25 | 250 | 2 | 09T3.. | 138 | 515 |
| 283.032 | 32 | 32 | 250 | 3 | 09T3.. | 140 | 515 |



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



For more information see page: A.38

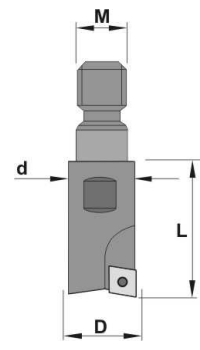


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

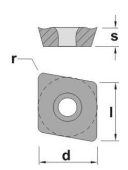
284-285-286 90°



| REF. | D | d | L | M | Z | CC.. | | |
|----------------|----|----|----|-----|---|--------|-----|-----|
| 284.015 | 15 | 14 | 23 | M8 | 2 | 0602.. | 155 | 507 |
| 284.016 | 16 | 14 | 23 | M8 | 2 | 0602.. | 155 | 507 |
| 284.020 | 20 | 18 | 30 | M10 | 3 | 0602.. | 155 | 507 |
| 285.020 | 20 | 18 | 30 | M10 | 2 | 0803.. | 148 | 508 |
| 285.025 | 25 | 21 | 35 | M12 | 2 | 0803.. | 148 | 508 |
| 286.032 | 32 | 29 | 43 | M16 | 3 | 09T3.. | 138 | 515 |
| 286.045 | 45 | 29 | 43 | M16 | 4 | 09T3.. | 140 | 515 |

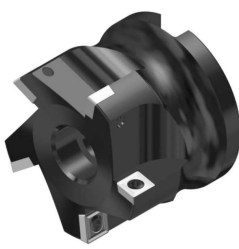


| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

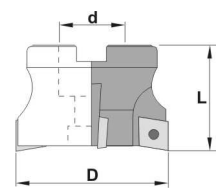


For more information see page: A.38

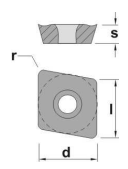
334 90°



| REF. | D | d | L | Z | CC.. | | | |
|----------------|----|----|----|---|--------|-----|-----|-----|
| 334.040 | 40 | 16 | 40 | 5 | 09T3.. | 138 | 535 | 108 |
| 334.050 | 50 | 22 | 40 | 5 | 09T3.. | 138 | 535 | 910 |
| 334.052 | 52 | 22 | 40 | 5 | 09T3.. | 138 | 535 | 910 |
| 334.063 | 63 | 27 | 50 | 6 | 09T3.. | 140 | 535 | 912 |
| 334.066 | 66 | 27 | 50 | 6 | 09T3.. | 140 | 535 | 912 |
| 334.080 | 80 | 27 | 50 | 7 | 09T3.. | 140 | 535 | 912 |



| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

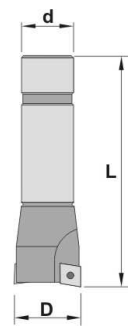


For more information see page: A.38

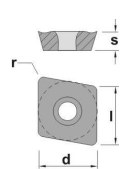
337 90°



| REF. | D | d | L | Z | CC.. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 337.016 | 16 | 20 | 150 | 2 | 0602.. | 155 | 507 |
| 337.020 | 20 | 20 | 175 | 3 | 0602.. | 155 | 507 |
| 337.025 | 25 | 25 | 175 | 2 | 09T3.. | 138 | 515 |
| 337.032 | 32 | 32 | 175 | 3 | 09T3.. | 140 | 515 |



| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

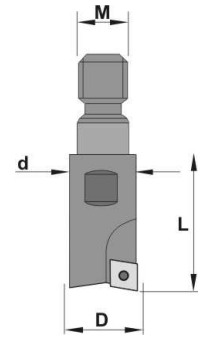


For more information see page: A.38

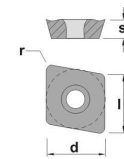
335 90°



| REF. | D | d | M | L | Z | CC.. | | |
|----------------|----|----|-----|----|---|--------|-----|-----|
| 335.015 | 15 | 14 | M8 | 23 | 2 | 0602.. | 155 | 507 |
| 335.016 | 16 | 14 | M8 | 23 | 2 | 0602.. | 155 | 507 |
| 335.020 | 20 | 18 | M10 | 30 | 3 | 0602.. | 155 | 507 |
| 335.025 | 25 | 21 | M12 | 35 | 2 | 09T3.. | 138 | 515 |
| 335.032 | 32 | 29 | M16 | 43 | 3 | 09T3.. | 138 | 515 |
| 335.045 | 45 | 29 | M16 | 43 | 4 | 09T3.. | 140 | 515 |

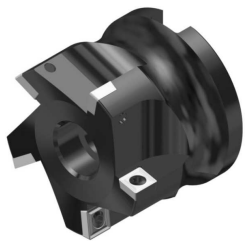


| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

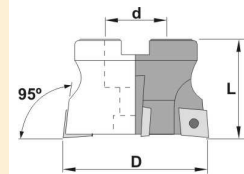


For more information see page: A.38

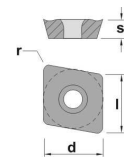
336 95°



| REF. | D | d | L | Z | CC.. | | | |
|----------------|----|----|----|---|--------|-----|-----|-----|
| 336.052 | 52 | 22 | 40 | 5 | 09T3.. | 138 | 535 | 910 |
| 336.066 | 66 | 27 | 50 | 6 | 09T3.. | 140 | 535 | 912 |
| 336.080 | 80 | 27 | 50 | 7 | 09T3.. | 140 | 535 | 912 |



| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

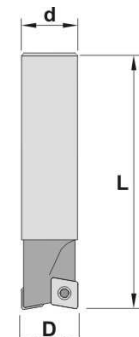


For more information see page: A.38

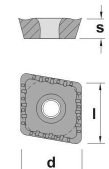
304-314



| REF. | D | d | L | Z | CCKT | | | | |
|----------------|----|----|-----|---|-----------------|-----|-----|-----|-----|
| 304.012 | 12 | 16 | 100 | 1 | 060204 | 155 | - | 507 | - |
| 304.016 | 16 | 16 | 100 | 2 | 060204 / 080308 | 155 | 148 | 507 | 508 |
| 304.020 | 20 | 20 | 125 | 2 | 080308 / 09T308 | 148 | 138 | 508 | 515 |
| 304.025 | 25 | 25 | 125 | 2 | 09T308 / 120408 | 138 | 159 | 515 | 520 |
| 314.012 | 12 | 16 | 150 | 1 | 060204 | 155 | - | 507 | - |
| 314.016 | 16 | 16 | 175 | 2 | 060204 / 080308 | 155 | 148 | 507 | 508 |
| 314.020 | 20 | 20 | 175 | 2 | 080308 / 09T308 | 148 | 138 | 508 | 515 |
| 314.025 | 25 | 25 | 200 | 2 | 09T308 / 120408 | 138 | 159 | 515 | 520 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CCKT 0602.. | 6,45 | 2,38 | 6,35 |
| CCKT 0803.. | 8,05 | 3,18 | 7,94 |
| CCKT 09T3.. | 9,65 | 3,97 | 9,52 |
| CCKT 1204.. | 12,90 | 4,76 | 12,70 |



For more information see page: A.38

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

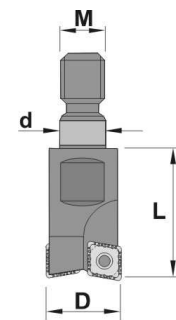


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

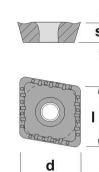
338



| REF. | D | d | L | M | Z | CCKT | | | | |
|----------------|----|----|----|-----|---|-----------------|-----|-----|-----|-----|
| 338.012 | 12 | 14 | 23 | M8 | 1 | 060204 | 155 | - | 507 | - |
| 338.016 | 16 | 14 | 23 | M8 | 2 | 060204 / 080308 | 155 | 148 | 507 | 508 |
| 338.020 | 20 | 18 | 30 | M10 | 2 | 080308 / 09T308 | 148 | 138 | 508 | 515 |
| 338.025 | 25 | 21 | 35 | M12 | 2 | 09T308 / 120408 | 138 | 144 | 515 | - |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CCKT 0602.. | 6,45 | 2,38 | 6,35 |
| CCKT 0803.. | 8,05 | 3,18 | 7,94 |
| CCKT 09T3.. | 9,65 | 3,97 | 9,52 |
| CCKT 1204.. | 12,90 | 4,76 | 12,70 |

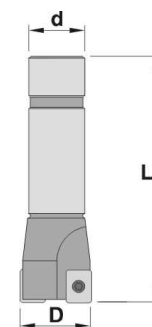


For more information see page: A.38

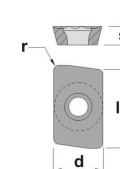
104 90°



| REF. | D | d | L | Z | AP. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 104.010 | 10 | 16 | 110 | 1 | 1003.. | 155 | 507 |
| 104.012 | 12 | 16 | 110 | 1 | 1003.. | 155 | 507 |
| 104.014 | 14 | 16 | 110 | 1 | 1003.. | 155 | 507 |
| 104.016 | 16 | 20 | 110 | 2 | 1003.. | 155 | 507 |
| 104.018 | 18 | 20 | 110 | 2 | 1003.. | 125 | 507 |
| 104.020 | 20 | 20 | 125 | 3 | 1003.. | 125 | 507 |
| 104.022 | 22 | 20 | 125 | 3 | 1003.. | 125 | 507 |
| 104.025 | 25 | 25 | 125 | 4 | 1003.. | 125 | 507 |
| 104.028 | 28 | 25 | 125 | 4 | 1003.. | 125 | 507 |



| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |

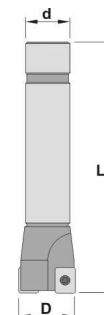


For more information see page: A.36,37

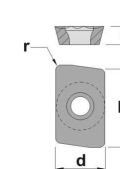
109 90°



| REF. | D | d | L | Z | AP. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 109.016 | 16 | 20 | 175 | 2 | 1003.. | 155 | 507 |
| 109.020 | 20 | 20 | 200 | 3 | 1003.. | 125 | 507 |



| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |



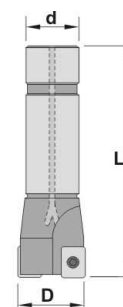
For more information see page: A.36,37

110 90°



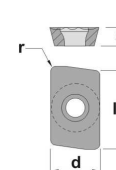
| REF. | D | d | L | Z | AP. | | |
|---------|----|----|-----|---|--------|-----|-----|
| 110.012 | 12 | 16 | 110 | 1 | 1003.. | 155 | 507 |
| 110.016 | 16 | 20 | 110 | 2 | 1003.. | 155 | 507 |
| 110.020 | 20 | 20 | 125 | 3 | 1003.. | 125 | 507 |
| 110.025 | 25 | 25 | 125 | 4 | 1003.. | 125 | 507 |

Internal coolant system



| REF. | l | s | d |
|------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |

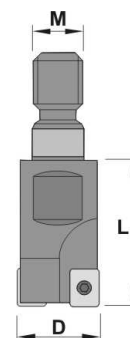
For more information see page: A.36,37



124 90°

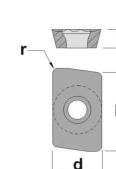


| REF. | D | M | L | Z | AP. | | |
|---------|----|-----|----|---|--------|-----|-----|
| 124.016 | 16 | M8 | 23 | 2 | 1003.. | 155 | 507 |
| 124.020 | 20 | M10 | 30 | 3 | 1003.. | 125 | 507 |
| 124.025 | 25 | M12 | 35 | 3 | 1003.. | 155 | 507 |



| REF. | l | s | d |
|------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |

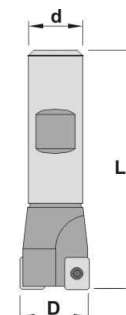
For more information see page: A.36,37



105 90°

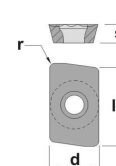


| REF. | D | d | L | Z | AP. | | |
|---------|----|----|----|---|--------|-----|-----|
| 105.012 | 12 | 16 | 90 | 1 | 1003.. | 155 | 507 |
| 105.016 | 16 | 20 | 90 | 2 | 1003.. | 155 | 507 |
| 105.020 | 20 | 20 | 95 | 3 | 1003.. | 125 | 507 |
| 105.025 | 25 | 25 | 95 | 4 | 1003.. | 125 | 507 |



| REF. | l | s | d |
|------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |

For more information see page: A.36,37



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

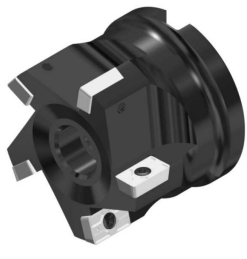
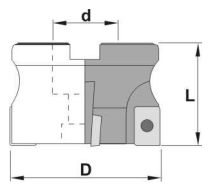
Arbors & adaptors




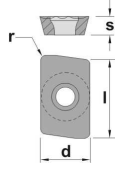
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

118 90°

| REF. | D | d | L | Z | AP. | | | |
|----------------|----|----|----|---|--------|-----|-----|-----|
| 118.032 | 32 | 16 | 40 | 5 | 1003.. | 125 | 517 | 108 |
| 118.040 | 40 | 16 | 40 | 6 | 1003.. | 125 | 517 | 108 |
| 118.050 | 50 | 22 | 40 | 7 | 1003.. | 125 | 517 | 910 |
| 118.063 | 63 | 22 | 50 | 9 | 1003.. | 125 | 517 | 910 |


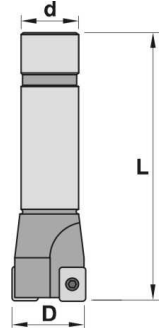
| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |


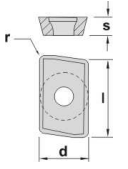
For more information see page: A.36,37

114 90°

| REF. | D | d | L | Z | AP. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 114.020 | 20 | 20 | 200 | 1 | 1604.. | 138 | 515 |
| 114.025 | 25 | 25 | 200 | 2 | 1604.. | 138 | 515 |
| 114.032 | 32 | 32 | 250 | 3 | 1604.. | 140 | 515 |
| 114.040 | 40 | 32 | 250 | 4 | 1604.. | 140 | 515 |


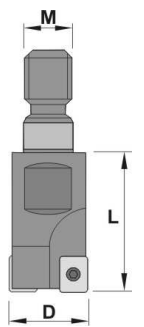
| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |


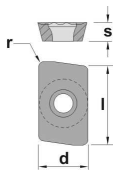
For more information see page: A.36,37

113 90°

| REF. | D | M | L | Z | AP. | | |
|----------------|----|-----|----|---|--------|-----|-----|
| 113.025 | 25 | M12 | 35 | 2 | 1604.. | 138 | 515 |
| 113.032 | 32 | M16 | 43 | 3 | 1604.. | 140 | 515 |

| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |

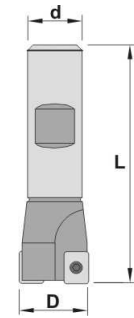



For more information see page: A.36,37

115 90°



| REF. | D | d | L | Z | AP. | | |
|---------|----|----|-----|---|--------|-----|-----|
| 115.020 | 20 | 20 | 100 | 1 | 1604.. | 138 | 515 |
| 115.025 | 25 | 25 | 100 | 2 | 1604.. | 138 | 515 |
| 115.032 | 32 | 32 | 110 | 3 | 1604.. | 140 | 515 |
| 115.040 | 40 | 32 | 110 | 4 | 1604.. | 140 | 515 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

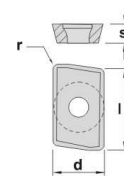
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |

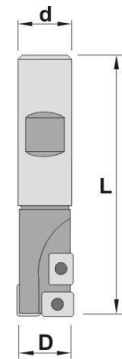


For more information see page: A.36,37

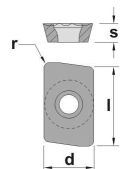
262-263 90°



| REF. | D | d | L | Z | AP. | | |
|---------|----|----|-----|-----|--------|-----|-----|
| 262.020 | 20 | 20 | 90 | 1+1 | 1003.. | 155 | 507 |
| 262.025 | 25 | 25 | 110 | 1+1 | 1003.. | 155 | 507 |
| 263.032 | 32 | 32 | 125 | 1+1 | 1604.. | 138 | 515 |
| 263.040 | 40 | 32 | 125 | 1+1 | 1604.. | 138 | 515 |

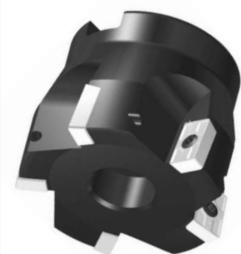


| REF. | l | s | d |
|------------|-------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |
| AP. 1604.. | 16,00 | 4,76 | 9,52 |

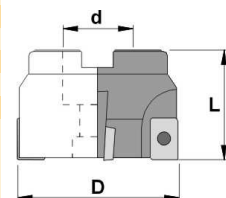


For more information see page: A.36,37

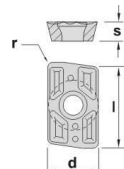
222 90°



| REF. | D | d | L | Z | AP. | | | |
|---------|-----|----|----|---|--------|-----|-----|-----|
| 222.040 | 40 | 16 | 40 | 4 | 1604.. | 140 | 535 | 108 |
| 222.050 | 50 | 22 | 40 | 5 | 1604.. | 140 | 535 | 910 |
| 222.063 | 63 | 27 | 50 | 6 | 1604.. | 140 | 535 | 912 |
| 222.080 | 80 | 27 | 50 | 7 | 1604.. | 140 | 535 | 912 |
| 222.100 | 100 | 32 | 50 | 8 | 1604.. | 140 | 535 | 916 |
| 222.125 | 125 | 40 | 63 | 8 | 1604.. | 140 | 535 | - |
| 222.160 | 160 | 40 | 63 | 9 | 1604.. | 140 | 535 | 952 |



| REF. | l | s | d |
|------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |



For more information see page: A.36,37



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

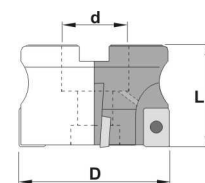
Boring heads

Arbors & adaptors

432 90°



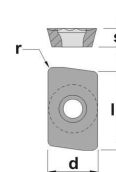
| REF. | D | d | L | Z | AP. | | | |
|----------------|-----|----|----|---|--------|-----|-----|-----|
| 432.040 | 40 | 16 | 40 | 4 | 1604.. | 140 | 535 | 108 |
| 432.050 | 50 | 22 | 40 | 5 | 1604.. | 140 | 535 | 910 |
| 432.063 | 63 | 27 | 50 | 6 | 1604.. | 140 | 535 | 912 |
| 432.080 | 80 | 27 | 50 | 7 | 1604.. | 140 | 535 | 912 |
| 432.100 | 100 | 32 | 50 | 8 | 1604.. | 140 | 535 | 916 |



Internal coolant system

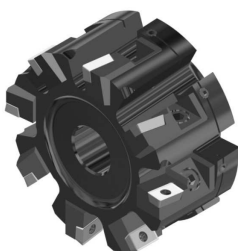


| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |

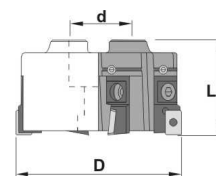


For more information see page: A.36,37

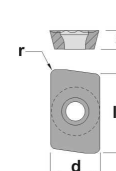
242 90°



| REF. | D | d | L | Z | AP. | | | | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 242.160 | 160 | 40 | 63 | 10 | 1604.. | 140 | 535 | 630 | 187 | 460 | 952 |
| 242.200 | 200 | 60 | 63 | 12 | 1604.. | 140 | 535 | 630 | 187 | 460 | 956 |
| 242.250 | 250 | 60 | 63 | 16 | 1604.. | 140 | 535 | 630 | 187 | 460 | 956 |
| 242.315 | 315 | 60 | 63 | 20 | 1604.. | 140 | 535 | 630 | 187 | 460 | 956 |
| 242.400 | 400 | 60 | 63 | 22 | 1604.. | 140 | 535 | 630 | 187 | 460 | 956 |
| 242.500 | 500 | 60 | 63 | 28 | 1604.. | 140 | 535 | 630 | 187 | 460 | 956 |



| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 17,00 | 4,76 | 9,52 |

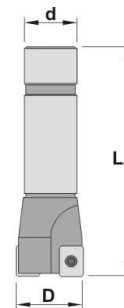


For more information see page: A.36,37

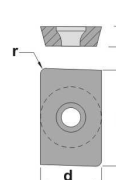
106 90°



| REF. | D | d | L | Z | ADM.. | | |
|----------------|----|----|-----|---|--------|-----|-----|
| 106.016 | 16 | 20 | 110 | 1 | 1503.. | 138 | 515 |
| 106.020 | 20 | 20 | 110 | 1 | 1503.. | 138 | 515 |
| 106.025 | 25 | 25 | 110 | 2 | 1503.. | 138 | 515 |
| 106.032 | 32 | 32 | 125 | 3 | 1503.. | 138 | 515 |
| 106.040 | 40 | 32 | 125 | 4 | 1503.. | 138 | 515 |
| 106.050 | 50 | 32 | 125 | 4 | 1503.. | 140 | 515 |





| REF. | l | s | d |
|---------------------|-------|------|------|
| ADM.. 1503.. | 15,00 | 3,18 | 9,52 |

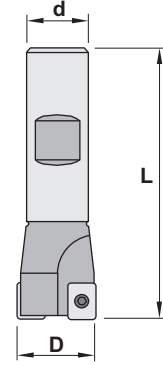


For more information see page: A.36

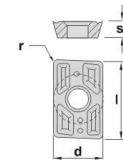
201 90°



| REF. | D | d | L | Z | ADM.. |  |  |
|---------|----|----|-----|---|--------|--|---|
| 201.016 | 16 | 20 | 100 | 1 | 1503.. | 138 | 515 |
| 201.020 | 20 | 20 | 100 | 1 | 1503.. | 138 | 515 |
| 201.025 | 25 | 25 | 100 | 2 | 1503.. | 138 | 515 |
| 201.032 | 32 | 32 | 100 | 3 | 1503.. | 138 | 515 |
| 201.040 | 40 | 32 | 100 | 4 | 1503.. | 138 | 515 |
| 201.050 | 50 | 32 | 100 | 4 | 1503.. | 140 | 515 |





| REF. | l | s | d |
|--------------|-------|------|------|
| ADM.. 1503.. | 15,00 | 3,18 | 9,52 |

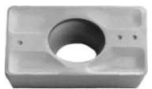
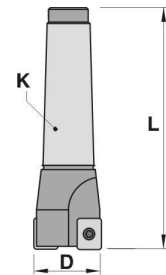


For more information see page: A.36

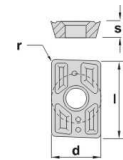
126 90°



| REF. | D | K | L | Z | ADM.. |  |  |
|---------|----|-----|-----|---|--------|--|---|
| 126.020 | 20 | MK3 | 125 | 1 | 1503.. | 138 | 515 |
| 126.025 | 25 | MK3 | 125 | 2 | 1503.. | 138 | 515 |
| 126.032 | 32 | MK3 | 125 | 3 | 1503.. | 138 | 515 |
| 126.040 | 40 | MK3 | 125 | 4 | 1503.. | 138 | 515 |
| 126.050 | 50 | MK3 | 125 | 4 | 1503.. | 140 | 515 |





| REF. | l | s | d |
|--------------|-------|------|------|
| ADM.. 1503.. | 15,00 | 3,18 | 9,52 |

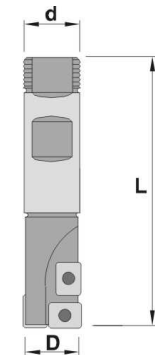


For more information see page: A.36

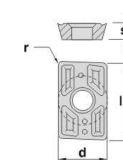
205-225 90°



| REF. | D | d | L | Z | ADM.. |  |  |
|---------|----|----|-----|-----|--------|--|---|
| 205.029 | 29 | 25 | 100 | 1+1 | 1503.. | 138 | 515 |
| 205.032 | 32 | 32 | 100 | 1+1 | 1503.. | 138 | 515 |
| 205.040 | 40 | 32 | 100 | 1+1 | 1503.. | 138 | 515 |
| 225.029 | 29 | 25 | 150 | 1+1 | 1503.. | 138 | 515 |
| 225.032 | 32 | 32 | 175 | 1+1 | 1503.. | 138 | 515 |
| 225.040 | 40 | 32 | 175 | 1+1 | 1503.. | 138 | 515 |



| REF. | l | s | d |
|--------------|-------|------|------|
| ADM.. 1503.. | 15,00 | 3,18 | 9,52 |



For more information see page: A.36

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

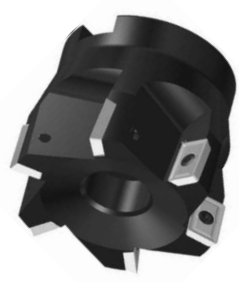
Boring heads

Arbors & adaptors

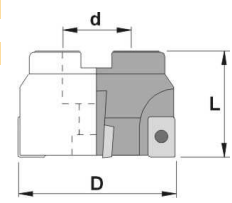


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

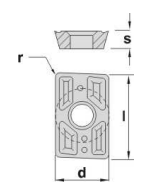
231 90°



| REF. | D | d | L | Z | ADM.. | | | |
|----------------|-----|----|----|---|--------|-----|-----|-----|
| 231.040 | 40 | 16 | 40 | 4 | 1503.. | 140 | 535 | 108 |
| 231.050 | 50 | 22 | 40 | 5 | 1503.. | 140 | 535 | 910 |
| 231.063 | 63 | 27 | 50 | 6 | 1503.. | 140 | 535 | 912 |
| 231.080 | 80 | 32 | 50 | 6 | 1503.. | 140 | 535 | 916 |
| 231.100 | 100 | 40 | 50 | 8 | 1503.. | 140 | 535 | 920 |



| REF. | l | s | d |
|---------------------|-------|------|------|
| ADM.. 1503.. | 15,00 | 3,18 | 9,52 |

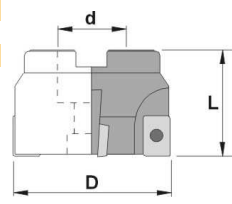


For more information see page: A.36

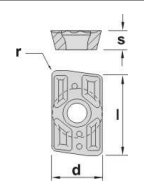
223 90°



| REF. | D | d | L | Z | AP. | | | |
|----------------|-----|----|----|---|--------|-----|-----|-----|
| 223.040 | 40 | 16 | 40 | 3 | 2004.. | 159 | 522 | 108 |
| 223.050 | 50 | 22 | 40 | 4 | 2004.. | 159 | 522 | 910 |
| 223.063 | 63 | 22 | 50 | 5 | 2004.. | 159 | 522 | 910 |
| 223.080 | 80 | 27 | 50 | 6 | 2004.. | 159 | 522 | 912 |
| 223.100 | 100 | 32 | 50 | 6 | 2004.. | 159 | 522 | 916 |
| 223.125 | 125 | 40 | 63 | 8 | 2004.. | 159 | 522 | - |



| REF. | l | s | d |
|-------------------|-------|------|-------|
| AP. 2004.. | 20,00 | 4,76 | 12,70 |

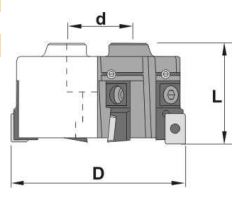


For more information see page: A.36

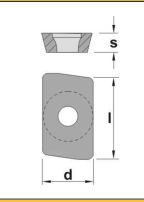
243 90°



| REF. | D | d | L | Z | AP. | | | | | | |
|----------------|-----|----|----|----|--------|-----|-----|-----|-----|-----|-----|
| 243.160 | 160 | 40 | 63 | 10 | 2004.. | 159 | 522 | 620 | 187 | 460 | 952 |
| 243.200 | 200 | 60 | 63 | 12 | 2004.. | 159 | 522 | 620 | 187 | 460 | 956 |
| 243.250 | 250 | 60 | 63 | 16 | 2004.. | 159 | 522 | 620 | 187 | 460 | 956 |
| 243.315 | 315 | 60 | 63 | 20 | 2004.. | 159 | 522 | 620 | 187 | 460 | 956 |
| 243.400 | 400 | 60 | 63 | 22 | 2004.. | 159 | 522 | 620 | 187 | 460 | 956 |
| 243.500 | 500 | 60 | 63 | 28 | 2004.. | 159 | 522 | 620 | 187 | 460 | 956 |



| REF. | l | s | d |
|-------------------|-------|------|-------|
| AP. 2004.. | 20,00 | 4,76 | 12,70 |



For more information see page: A.37,38

Cutting data for facing square shoulder cutters

| Material | P | HB | Condition | Cutting speed m/min. | | | | |
|--------------------------|---------------------------|--|--|--------------------------------------|---------------------------|--|----------------------------------|-------------|
| | | | | TIC25 | TIC21 | TIC28 | P25K | P40K |
| | | | | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.4-0.2-0.1 |
| Unalloyed steel | 110 150 310 | C<0.25% C<0.80% C<1.40% | 250-300-390 | 250-350-450 | 140-160-180 | 180-250-310 | 100-130-160 | |
| | | | 155-180-255 | 100-120-165 | 120-140-150 | 120-145-205 | 65-85-100 | |
| | | | 135-165-210 | 75-110-135 | 80-90-100 | 95-130-170 | 50-75-85 | |
| Low alloyed steel | 125-225 220-450 | Hardened | 170-200-250 110-130-150 | 100-120-165 55-75-95 | 120-140-160 90-120-140 | 120-160-200 70-100-120 | 95-85-105 40-55-65 | |
| High alloyed steel | 150-250 250-300 | Hardened | 140-170-225 90-110-150 | 90-115-150 60-75-90 | 60-80-90 55-60-70 | 110-140-180 65-90-120 | 60-80-90 40-50-60 | |
| High alloyed steel | 150-250 250-350 | Rapid steel (HSS) Hardened Hardened tool steel | 130-160-195 | 75-105-130 | 60-65-70 | 90-125-155 70-95-120 | 50-60-75 30-40-50 | |
| Stainless steel | 150-270 | Ferritic, Martensitic | 155-180-250 | 110-150-190 | 130-180-220 | 120-165-210 | 80-105-130 | |
| Steel castings | 150 150-250 160-200 | Unalloyed Low alloyed High alloyed | 140-180-250 125-150-190 90-110-130 | 80-120-150 70-100-120 55-70-80 | 60-80-90 55-60-70 | 100-145-180 90-120-150 65-90-100 | 60-75-95 50-65-80 35-45-55 | |
| Stainless steel castings | 150-250 | Ferritic, martensitic | | 50-80 | 60-65-70 | 50-70-80 | 30-40-50 | |

| Material | M | HB | Condition | Cutting speed m/min. | | | | |
|---------------------------------------|-------------------------------|-----------------------|-------------|----------------------|-------------|-------------------------|-------------|-------------|
| | | | | TIC25 | TIC21 | TIC28 | K15K | P25K |
| | | | | 0.4-0.2-0.1 | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Stainless steel annealed | 150-220 | Austenitic | 180-220-280 | 80-150-220 | 130-180-220 | | 150-240-300 | |
| Steel castings | 200 | Stainless, austenitic | | 40-70 | 80-120-160 | | 50-60 | |
| Iron, nickel and cobalt base castings | 180-300 220-300 220-300 | | | 40-100 | 70-120-140 | 20-40 20-40 10-20 | | |
| Titanium alloys | 300-400 | | | | 40-80 | | | |

| Material | K | HB | Condition | Cutting speed m/min. | | | | |
|------------------------------------|--------------------|---|--------------------|----------------------|--------------------|-----------------------|---------------------------|-------------|
| | | | | TIC21 | TIC25 | TIC28 | K15K | P25K |
| | | | | 0.3-0.2-0.1 | 0.4-0.2-0.1 | 0.3-0.2-0.1 | 0.2-0.1 | 0.4-0.2-0.1 |
| Tempered steel | HCR 50-65 | | | | | | | |
| Stainless steel castings | 250 | Manganese steel 12-14% Mn | | | | 12-18-20 | 15-20-30 | |
| Malleable cast iron | 110-145 200-230 | Short chipping Long chipping | 200-300 150-200 | | 180-330 | 65-80-95 50-65-80 | 100-125-150 90-115-135 | |
| Grey cast iron | 180 260 | Low tensile strength High tensile strength | 200-400 150-350 | | 130-240 110-200 | 70-95-120 50-70-90 | 85-120-155 70-90-115 | |
| Nodular cast iron | 160 250 | Ferritic Pearlitic | 100-250 100-180 | 100-130 90-110 | 70-140 60-120 | 50-65-80 45-60-70 | 70-90-115 65-80-100 | |
| Chilled cast iron | HCR 40-60 | | | | | | | |
| Aluminium alloys | 60-100 75-110 | Non cast Cast | | | | 500-2100 400-2000 | | |
| Aluminium with high contents of Si | | 10-14% Si 14-16% Si 16-18% Si | | | | 200-1000 110-200 | | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

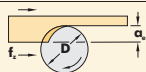
Arbors & adaptors

Cutting data for Drill-Mill cutters

| Material | P | HB | Condition | Tool diameter (D mm.) | Basic qualities | | | | Feed/tooth complete slot f_z |
|--------------------------|---|---------------------------|--|-----------------------|------------------------------|------------------------------|-----------------------------|------------------|---|
| | | | | | TIC25 | P25K | P40K | K15K | |
| | | | | | Cutting speed m/min. | | | | |
| Unalloyed steel | P | 110 170 250 | C<0,25% C<0,8% C<1,4% | 12-16 | 180-230 120-150 80-130 | 150-200 100-140 70-110 | 100-150 80-120 60-100 | 90-110 70-110 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Low alloyed steel | P | 125-225 220-450 | Annealed Hardened | 12-16 | 100-150 60-110 | 90-140 60-110 | 70-110 45-80 | 90-110 70-110 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| High alloyed steel | P | 150-250 250-500 | Annealed Hardened | 12-16 | 80-120 | 80-120 50-80 | 60-100 40-70 | 70-110 45-80 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Stainless steel | P | 150-270 | Ferritic/Martensitic | 12-16 | 120-160 | 100-130 | 60-100 | 70-110 45-80 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Steel castings | P | 150 150-220 160-200 | Unalloyed Low alloyed High alloyed | 12-16 | 80-110 50-90 50-80 | 70-100 40-80 40-70 | 60-100 40-70 | 70-110 45-80 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Stainless steel castings | P | 200 | Ferritic/Martensitic | 12-16 | 50-80 | 40-70 | 35-60 | 70-110 45-80 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |

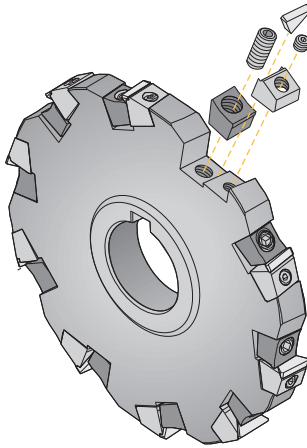
| Material | M | HB | Condition | Tool diameter (D mm.) | Basic qualities | | | | Feed/tooth complete slot f_z |
|--------------------------|---|---------|------------|-----------------------|----------------------|--------|-------|--------|---|
| | | | | | TIC25 | P25K | P40K | K15K | |
| | | | | | Cutting speed m/min. | | | | |
| Stainless steel | M | 150-220 | Austenitic | 12-16 | 80-160 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Stainless steel castings | M | 200 | Austenitic | 12-16 | 40-70 | 40-60 | 35-55 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |

| Material | K | HB | Condition | Tool diameter (D mm.) | Basic qualities | | | | Feed/tooth complete slot f_z |
|--|---|--------------------|---|-----------------------|----------------------|--------|-------|--------|---|
| | | | | | TIC25 | P25K | P40K | K15K | |
| | | | | | Cutting speed m/min. | | | | |
| Malleable cast iron | K | 110-145 200-230 | Short chipping Long chipping | 12-16 | 90-120 80-100 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Grey cast iron | K | 180 260 | Low tensile strength High tensile strength | 12-16 | 60-120 50-100 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Nodular cast iron Spheroidal graphite | K | 160 250 | Ferritic Pearlitic | 12-16 | 50-80 40-70 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Aluminium | K | 60-150 40-180 | Forged Cast | 12-16 | 300-500 250-450 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |
| Bronze-brass alloys | K | 60-150 | | 12-16 | 80-120 | 70-130 | 55-90 | 60-100 | 0,02-0,11 0,11-0,14 0,12-0,18 0,15-0,21 0,18-0,24 |
| | | | | 20 | | | | | |
| | | | | 25 | | | | | |
| | | | | 32 | | | | | |
| | | | | 40 | | | | | |



| | | | | | | | | | |
|---------|-----|----|----|----|-----|-----|---|-----|---|
| D/a_r | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
| f_1 | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

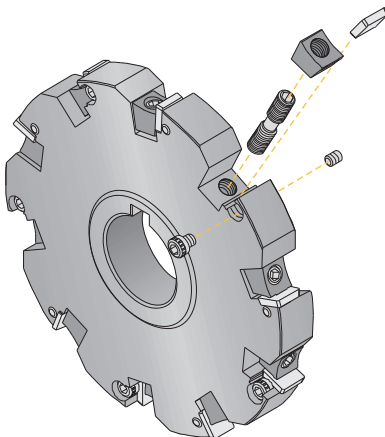
When you trace a contour (side peripheral milling), you must multiply the f_z value of a complete slot (see table) by the correction factor f_1 corresponding to the relationship D/a_r (milling cutter diameter/radial cutting depth) in order to get a suitable feed.


Wedge clamping / Fixation par coin / Spannkeilklemmung

This classic positive insert clamping system allows the use of all models presenting this geometry, both with additional chipbreaker and sintered.

Ce système classique de fixation de plaquettes positives permet d'utiliser toutes les plaquettes de cette géométrie, que ce soit avec brise-copeaux additionnel que sintérisé.

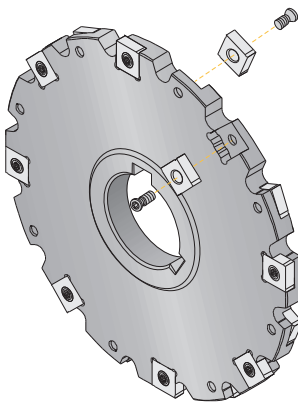
Dieses klassische Klemmsystem von positiven Wendeschneidplatten erlaubt die Verwendung von allen Wendeplatten dieses Typs, un üblicher Sinterausführung sowohl als auch mit Spanbrecher.


Wedge clamping / Fixation par coin / Spannkeilklemmung

This classic positive insert clamping system allows the use of all models presenting this geometry, both with additional chipbreaker and sintered.

Ce système classique de fixation de plaquettes positives permet d'utiliser toutes les plaquettes de cette géométrie, que ce soit avec brise-copeaux additionnel que sintérisé.

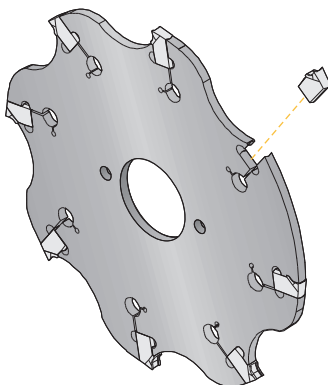
Dieses klassische Klemmsystem von positiven Wendeschneidplatten erlaubt die Verwendung von allen Wendeplatten dieses Typs, un üblicher Sinterausführung sowohl als auch mit Spanbrecher.


Screw clamping / Fixation par vis / Schraubenklemmung

Since the advent of the Torx screw it has been possible to hold with complete safety positive inserts with centre hole. Our range covers all the screw fixing permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.

Seit der Einführung der TORX-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch zu klemmen. Unser Programm bietet alle Klemmmöglichkeiten mit Schraube.


Spring action / Action à ressort / Federklemmung

The inserts are retained by a clamping/spring action into a fixed insert seat.

Les plaquettes sont fixées dans le logement par moyen d'une action de serrage à ressort.

Die Wendeschneidplatten werden durch die Andruckkraft des Körpers im Plattensitz gehalten.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Slot cutters - Fraises disque - Scheibenfräser

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools


Milling cutters

Solid carbide

Boring heads

Arbors & adaptors


218
T Slots 90°



CC.. 0602..
... CC.. 1204..

Page K.31

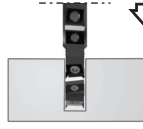
219
T Slots 90°



CC.. 0602..
... CC.. 1204..

Page K.31

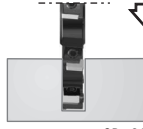
380-384
Slots milling 90°



TP.. 1603..
... TP.. 2204..

Page K.31


361...368
Slot milling 90°



SP.. 0903..
... SP.. 1203..
... SP.. 1504..

Page K.32

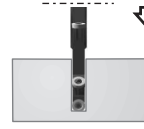
390
Side milling 89°



SP.. 1203..

Page K.32


150
Slot milling



RP.. 0802MO

Page K.33

153
Slot milling



RP.. 1003MO

Page K.33

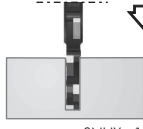
159
Slot milling



RP.. 1204MO

Page K.33


351
Slot milling 89°



SNHX.. 1102..
... SNHX.. 1207..

Page K.34


421
Circular miller



FRC.. 2,2
... FRC.. 4,0

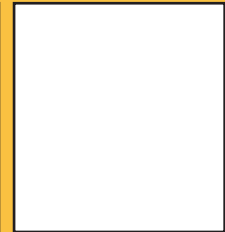
Page K.34

451
Blade body



FRC.. 1,6
... FRC.. 6,0

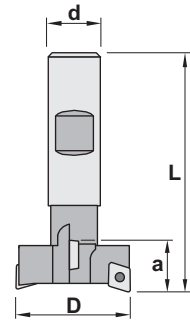
Page K.35



218



| REF. | D | d | L | α | Z | CC.. | | |
|---------|----|----|-----|----------|-----|--------|-----|-----|
| 218.025 | 25 | 25 | 85 | 11 | 2+2 | 0602.. | 125 | 507 |
| 218.032 | 32 | 25 | 95 | 14 | 2+2 | 0803.. | 130 | 508 |
| 218.040 | 40 | 25 | 105 | 18 | 2+2 | 09T3.. | 140 | 515 |
| 218.050 | 50 | 32 | 120 | 22 | 2+2 | 1204.. | 150 | 520 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

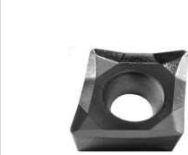
Brazed tools

Milling cutters

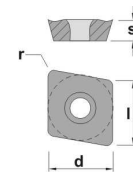
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

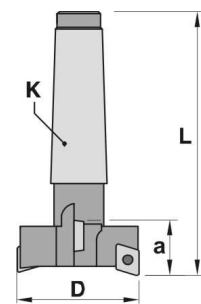


For more information see page: A.38

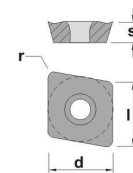
219



| REF. | D | K | L | α | Z | CC.. | | |
|---------|----|-----|-----|----------|-----|--------|-----|-----|
| 219.025 | 25 | MK3 | 125 | 11 | 2+2 | 0602.. | 125 | 507 |
| 219.032 | 32 | MK3 | 125 | 14 | 2+2 | 0803.. | 130 | 508 |
| 219.040 | 40 | MK3 | 134 | 18 | 2+2 | 09T3.. | 140 | 515 |
| 219.050 | 50 | MK4 | 165 | 22 | 2+2 | 1204.. | 150 | 520 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

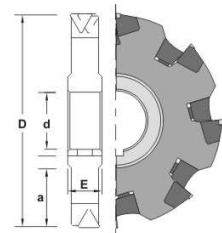


For more information see page: A.38

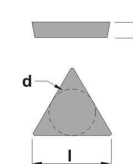
380-384



| REF. | D | d | E | α | Z | TP.. | | | | | | | | |
|---------|-----|----|----|----------|----|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| 380.100 | 100 | 27 | 18 | 28 | 6 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.125 | 125 | 32 | 18 | 39 | 8 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.126 | 125 | 32 | 20 | 39 | 8 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.127 | 125 | 32 | 22 | 39 | 8 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.128 | 125 | 32 | 24 | 39 | 8 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.160 | 160 | 40 | 18 | 49 | 10 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.161 | 160 | 40 | 20 | 49 | 10 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.162 | 160 | 40 | 22 | 49 | 10 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.163 | 160 | 40 | 24 | 49 | 10 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.200 | 200 | 50 | 18 | 60 | 12 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.201 | 200 | 50 | 20 | 60 | 12 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.202 | 200 | 50 | 22 | 60 | 12 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.250 | 250 | 50 | 22 | 86 | 16 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 380.315 | 315 | 50 | 26 | 114 | 20 | 1603.. | 128 | 204 | 600 | 610 | 662 | 663 | 504 | 503 |
| 384.315 | 315 | 50 | 34 | 114 | 16 | 2204.. | 128 | 486 | 601 | 611 | 664 | 665 | 504 | 505 |
| 384.400 | 400 | 50 | 34 | 150 | 20 | 2204.. | 128 | 486 | 601 | 611 | 664 | 665 | 504 | 505 |



| REF. | l | s | d |
|------------|-------|------|-------|
| TP. 1603.. | 16,50 | 3,18 | 9,52 |
| TP. 2204.. | 22,00 | 4,76 | 12,70 |



For more information see page: A.54,55

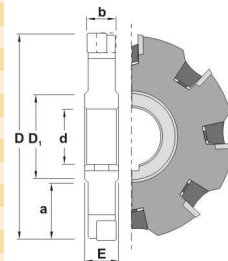


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

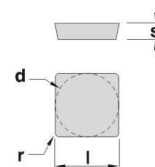
361...368 90°



| REF. | D | b | d | D1 | E | α | Z | SP. | |
|---------|-----|----|----|----|----|-----|----|--------|---------------------------------|
| 361.050 | 50 | 10 | 16 | 28 | 12 | 10 | 6 | 0903.. | 111 114 154 636 637 535 509 502 |
| 361.063 | 63 | 10 | 22 | 35 | 12 | 12 | 6 | 0903.. | 111 114 154 636 637 535 509 502 |
| 361.080 | 80 | 10 | 22 | 35 | 12 | 20 | 8 | 0903.. | 112 114 154 613 614 535 509 502 |
| 361.100 | 100 | 10 | 27 | 41 | 12 | 28 | 10 | 0903.. | 112 114 154 613 614 535 509 502 |
| 362.100 | 100 | 12 | 27 | 41 | 14 | 28 | 10 | 0903.. | 112 124 154 613 614 535 509 502 |
| 363.100 | 100 | 14 | 27 | 41 | 16 | 28 | 10 | 0903.. | 112 124 154 613 614 535 509 502 |
| 361.125 | 125 | 10 | 32 | 48 | 12 | 39 | 12 | 0903.. | 110 114 154 613 614 535 509 502 |
| 362.125 | 125 | 12 | 32 | 48 | 14 | 39 | 12 | 0903.. | 110 124 154 613 614 535 509 502 |
| 363.125 | 125 | 14 | 32 | 48 | 16 | 39 | 12 | 0903.. | 110 124 154 613 614 535 509 502 |
| 361.160 | 160 | 10 | 40 | 58 | 12 | 49 | 14 | 0903.. | 110 114 154 613 614 535 509 502 |
| 362.160 | 160 | 12 | 40 | 58 | 14 | 49 | 14 | 0903.. | 110 124 154 613 614 535 509 502 |
| 363.160 | 160 | 14 | 40 | 58 | 16 | 49 | 14 | 0903.. | 110 124 154 613 614 535 509 502 |
| 364.080 | 80 | 16 | 22 | 35 | 18 | 20 | 6 | 1203.. | 127 126 157 600 610 - 504 525 |
| 364.100 | 100 | 16 | 27 | 41 | 18 | 28 | 8 | 1203.. | 128 126 157 600 610 - 504 525 |
| 364.125 | 125 | 16 | 32 | 48 | 18 | 39 | 10 | 1203.. | 128 126 157 600 610 - 504 525 |
| 365.125 | 125 | 18 | 32 | 48 | 20 | 39 | 10 | 1203.. | 128 105 157 600 610 - 504 525 |
| 366.125 | 125 | 20 | 32 | 48 | 22 | 39 | 10 | 1203.. | 128 105 157 600 610 - 504 525 |
| 364.160 | 160 | 16 | 40 | 58 | 18 | 49 | 12 | 1203.. | 128 126 157 600 610 - 504 525 |
| 365.160 | 160 | 18 | 40 | 58 | 20 | 49 | 12 | 1203.. | 128 105 157 600 610 - 504 525 |
| 366.160 | 160 | 20 | 40 | 58 | 22 | 49 | 12 | 1203.. | 128 105 157 600 610 - 504 525 |
| 364.200 | 200 | 16 | 50 | 72 | 18 | 60 | 16 | 1203.. | 128 126 157 600 610 - 504 525 |
| 365.200 | 200 | 18 | 50 | 72 | 20 | 60 | 16 | 1203.. | 128 105 157 600 610 - 504 525 |
| 366.200 | 200 | 20 | 50 | 72 | 22 | 60 | 16 | 1203.. | 128 105 157 600 610 - 504 525 |
| 366.250 | 250 | 20 | 50 | 72 | 22 | 86 | 20 | 1203.. | 128 105 157 600 610 - 504 525 |
| 367.250 | 250 | 24 | 50 | 72 | 26 | 86 | 20 | 1203.. | 128 105 157 600 610 - 504 525 |
| 367.315 | 315 | 24 | 50 | 72 | 26 | 114 | 24 | 1203.. | 128 105 157 600 610 - 504 525 |
| 368.315 | 315 | 30 | 50 | 72 | 32 | 114 | 20 | 1504.. | 128 115 156 601 611 - 504 505 |
| 368.400 | 400 | 30 | 50 | 72 | 32 | 150 | 24 | 1504.. | 128 115 156 601 611 - 504 505 |



| REF. | l | s | d |
|------------|-------|------|-------|
| SP. 0903.. | 9,52 | 3,18 | 9,52 |
| SP. 1203.. | 12,70 | 3,18 | 12,70 |
| SP. 1504.. | 15,88 | 4,76 | 15,88 |

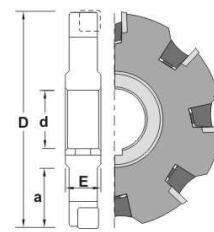


For more information see page: A.50,51

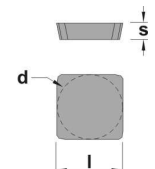
390



| REF. | D | d | E | α | Z | SP. | |
|-----------|-----|----|----|-----|----|--------|---------------------------|
| 390.100.L | 100 | 27 | 18 | 28 | 7 | 1203.. | 128 126 157 - 610 504 525 |
| 390.100.R | 100 | 27 | 18 | 28 | 7 | 1203.. | 128 126 157 600 - 504 525 |
| 390.125.L | 125 | 32 | 22 | 39 | 8 | 1203.. | 128 126 157 - 610 504 525 |
| 390.125.R | 125 | 32 | 22 | 39 | 8 | 1203.. | 128 126 157 600 - 504 525 |
| 390.160.L | 160 | 40 | 22 | 49 | 10 | 1203.. | 128 126 157 - 610 504 525 |
| 390.160.R | 160 | 40 | 22 | 49 | 10 | 1203.. | 128 126 157 600 - 504 525 |
| 390.200.L | 200 | 50 | 22 | 60 | 12 | 1203.. | 128 126 157 - 610 504 525 |
| 390.200.R | 200 | 50 | 22 | 60 | 12 | 1203.. | 128 126 157 600 - 504 525 |
| 390.250.L | 250 | 50 | 22 | 86 | 16 | 1203.. | 128 126 157 - 610 504 525 |
| 390.250.R | 250 | 50 | 22 | 86 | 16 | 1203.. | 128 126 157 600 - 504 525 |
| 390.315.L | 315 | 50 | 26 | 114 | 20 | 1203.. | 128 126 157 - 610 504 525 |
| 390.315.R | 315 | 50 | 26 | 114 | 20 | 1203.. | 128 126 157 600 - 504 525 |





| REF. | l | s | d |
|------------|-------|------|-------|
| SP. 1203.. | 12,70 | 3,18 | 12,70 |

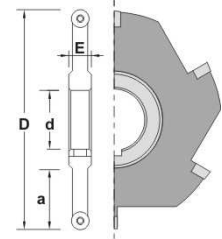


For more information see page: A.50,51

150



| REF. | D | d | E | α | Z | RPMW |  |  |
|---------|-----|----|----|----------|----|--------|---|---|
| 150.050 | 50 | 16 | 10 | 10 | 5 | 0802MO | 130 | 518 |
| 150.063 | 63 | 22 | 10 | 12 | 6 | 0802MO | 130 | 518 |
| 150.080 | 80 | 22 | 10 | 20 | 7 | 0802MO | 130 | 518 |
| 150.100 | 100 | 27 | 10 | 28 | 8 | 0802MO | 130 | 518 |
| 150.125 | 125 | 32 | 10 | 39 | 9 | 0802MO | 130 | 518 |
| 150.160 | 160 | 40 | 10 | 49 | 10 | 0802MO | 130 | 518 |
| 150.200 | 200 | 50 | 10 | 60 | 12 | 0802MO | 130 | 518 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

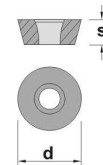
Solid carbide

Boring heads

Arbors & adaptors





| REF. | l | s | d |
|-------------|---|------|------|
| RPMW 0802MO | - | 2,38 | 8,00 |

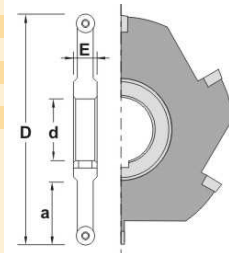


For more information see page: A.47

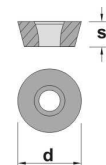
153



| REF. | D | d | E | α | Z | RPMW |  |  |
|---------|-----|----|----|----------|----|--------|---|---|
| 153.050 | 50 | 16 | 12 | 10 | 5 | 1003MO | 138 | 535 |
| 153.063 | 63 | 22 | 12 | 12 | 5 | 1003MO | 140 | 535 |
| 153.080 | 80 | 22 | 12 | 20 | 6 | 1003MO | 140 | 535 |
| 153.100 | 100 | 27 | 12 | 28 | 7 | 1003MO | 140 | 535 |
| 153.125 | 125 | 32 | 12 | 39 | 8 | 1003MO | 140 | 535 |
| 153.160 | 160 | 40 | 12 | 49 | 9 | 1003MO | 140 | 535 |
| 153.200 | 200 | 50 | 12 | 60 | 10 | 1003MO | 140 | 535 |
| 153.250 | 250 | 50 | 12 | 86 | 12 | 1003MO | 140 | 535 |





| REF. | l | s | d |
|-------------|---|------|-------|
| RPMW 1003MO | - | 3,18 | 10,00 |

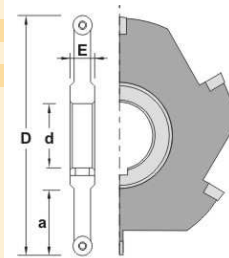


For more information see page: A.47

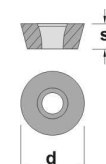
159



| REF. | D | d | E | α | Z | RPMW |  |  |
|---------|-----|----|----|----------|----|--------|---|---|
| 159.080 | 80 | 22 | 14 | 20 | 6 | 1204MO | 140 | 535 |
| 159.100 | 100 | 27 | 14 | 28 | 7 | 1204MO | 140 | 535 |
| 159.125 | 125 | 32 | 14 | 39 | 8 | 1204MO | 140 | 535 |
| 159.160 | 160 | 40 | 14 | 49 | 9 | 1204MO | 140 | 535 |
| 159.200 | 200 | 50 | 14 | 60 | 10 | 1204MO | 140 | 535 |
| 159.250 | 250 | 50 | 14 | 86 | 12 | 1204MO | 140 | 535 |



| REF. | l | s | d |
|-------------|---|------|-------|
| RPMW 1204MO | - | 4,76 | 12,00 |





For more information see page: A.47

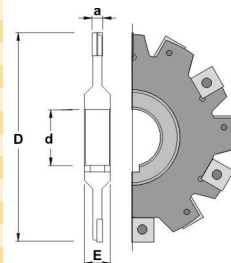


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

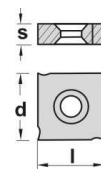
351 90°



| REF. | D | d | a | E | Z | SNHX |  |  |
|---------|-----|----|----|----|----|--------|---|---|
| 351.100 | 100 | 27 | 4 | 12 | 12 | 1102.. | 135 | 517 |
| 351.101 | 100 | 27 | 5 | 12 | 12 | 1103.. | 136 | 517 |
| 351.102 | 100 | 27 | 6 | 12 | 10 | 1203.. | 145 | 535 |
| 351.103 | 100 | 27 | 8 | 12 | 10 | 1245.. | 147 | 535 |
| 351.104 | 100 | 27 | 10 | 12 | 10 | 1205.. | 146 | 535 |
| 351.105 | 100 | 27 | 12 | 16 | 10 | 1207.. | 143 | 535 |
| 351.125 | 125 | 32 | 4 | 12 | 14 | 1102.. | 135 | 517 |
| 351.126 | 125 | 32 | 5 | 12 | 14 | 1103.. | 136 | 517 |
| 351.127 | 125 | 32 | 6 | 12 | 12 | 1203.. | 145 | 535 |
| 351.128 | 125 | 32 | 8 | 12 | 12 | 1245.. | 147 | 535 |
| 351.129 | 125 | 32 | 10 | 12 | 12 | 1205.. | 146 | 535 |
| 351.130 | 125 | 32 | 12 | 16 | 12 | 1207.. | 143 | 535 |
| 351.161 | 160 | 40 | 5 | 12 | 18 | 1103.. | 135 | 517 |
| 351.162 | 160 | 40 | 6 | 12 | 16 | 1203.. | 145 | 535 |
| 351.163 | 160 | 40 | 8 | 12 | 16 | 1245.. | 147 | 535 |
| 351.164 | 160 | 40 | 10 | 12 | 16 | 1205.. | 146 | 535 |
| 351.165 | 160 | 40 | 12 | 16 | 16 | 1207.. | 143 | 535 |
| 351.202 | 200 | 50 | 6 | 12 | 18 | 1203.. | 145 | 535 |
| 351.203 | 200 | 50 | 8 | 12 | 18 | 1245.. | 147 | 535 |
| 351.204 | 200 | 50 | 10 | 12 | 18 | 1205.. | 146 | 535 |
| 351.205 | 200 | 50 | 12 | 16 | 18 | 1207.. | 143 | 535 |
| 351.250 | 250 | 50 | 6 | 12 | 24 | 1203.. | 145 | 535 |
| 351.251 | 250 | 50 | 8 | 12 | 24 | 1245.. | 147 | 535 |
| 351.252 | 250 | 50 | 10 | 12 | 24 | 1205.. | 146 | 535 |
| 351.253 | 250 | 50 | 12 | 16 | 24 | 1207.. | 143 | 535 |




| REF. | l | s | d |
|--------------|-------|------|-------|
| SNHX 1102XX | 11,00 | 2,38 | 11,00 |
| SNHX 1103XX | 11,00 | 2,70 | 11,00 |
| SNHX 1203XX | 12,70 | 3,18 | 12,70 |
| SNHX 12045XX | 12,70 | 4,50 | 12,70 |
| SNHX 1205XX | 12,70 | 5,40 | 12,70 |
| SNHX 1207XX | 12,70 | 7,00 | 12,70 |

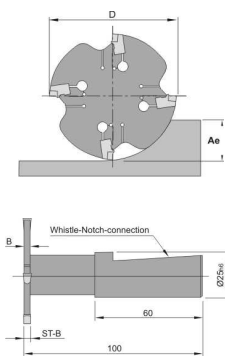


For more information see page: A.49

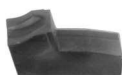
421



| REF. | D | B | ST-B | Ae | Rev max | Z | FRC.. |  |
|---------|-----|-----|------|----|---------|---|-------|---|
| 421.063 | 63 | 1,8 | 2,2 | 20 | 1250 | 4 | 2,2 | 533 |
| 421.064 | 63 | 2,4 | 3,0 | 20 | 1250 | 4 | 3,0 | 533 |
| 421.065 | 63 | 3,0 | 4,0 | 20 | 1250 | 4 | 4,0 | 533 |
| 421.080 | 80 | 1,8 | 2,2 | 26 | 1000 | 5 | 2,2 | 533 |
| 421.081 | 80 | 2,4 | 3,0 | 26 | 1000 | 5 | 3,0 | 533 |
| 421.082 | 80 | 3,0 | 4,0 | 26 | 1000 | 5 | 4,0 | 533 |
| 421.100 | 100 | 1,8 | 2,2 | 36 | 800 | 8 | 2,2 | 533 |
| 421.101 | 100 | 2,4 | 3,0 | 36 | 800 | 8 | 3,0 | 533 |
| 421.102 | 100 | 3,0 | 4,0 | 36 | 800 | 8 | 4,0 | 533 |

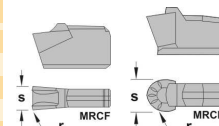


FRC



| REF. | s | r |
|----------|-----|------|
| FRC 2,2 | 2,2 | 0,20 |
| FRC 3,0 | 3,0 | 0,20 |
| FRC 4,0 | 4,0 | 0,20 |
| FRCR 3,0 | 3,0 | 1,50 |
| FRCR 4,0 | 4,0 | 2,00 |

FRCR

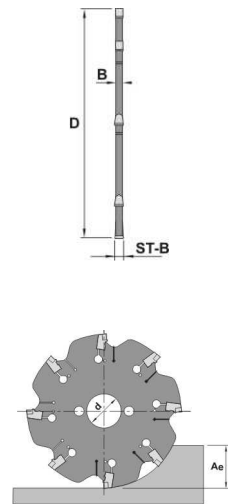


For more information see page: A.44

451



| REF. | D | B | ST-B | Ae | Rev max. min-1 | Z | FRC.. | |
|---------|-----|-----|---------|----|-------------------|----|---------|-----|
| 451.080 | 80 | 1,2 | 1,6 | 22 | 1000 | 4 | 1,6 | 533 |
| 451.081 | 80 | 1,8 | 2,2 | 22 | 1000 | 4 | 2,2 | 533 |
| 451.082 | 80 | 2,4 | 3,0 | 22 | 1000 | 4 | 3,0 | 533 |
| 451.083 | 80 | 3,0 | 4,0 | 22 | 1000 | 4 | 4,0 | 533 |
| 451.084 | 80 | 4,4 | 5,0+6,0 | 22 | 1000 | 4 | 5,0-6,0 | 533 |
| 451.100 | 100 | 1,2 | 1,6 | 28 | 800 | 8 | 1,6 | 533 |
| 451.101 | 100 | 1,8 | 2,2 | 28 | 800 | 8 | 2,2 | 533 |
| 451.102 | 100 | 2,4 | 3,0 | 28 | 800 | 8 | 3,0 | 533 |
| 451.103 | 100 | 3,0 | 4,0 | 28 | 800 | 8 | 4,0 | 533 |
| 451.104 | 100 | 4,4 | 5,0+6,0 | 28 | 800 | 8 | 5,0-6,0 | 533 |
| 451.125 | 125 | 1,2 | 1,6 | 40 | 650 | 10 | 1,6 | 533 |
| 451.126 | 125 | 1,8 | 2,2 | 40 | 650 | 10 | 2,2 | 533 |
| 451.127 | 125 | 2,4 | 3,0 | 40 | 650 | 10 | 3,0 | 533 |
| 451.128 | 125 | 3,0 | 4,0 | 40 | 650 | 10 | 4,0 | 533 |
| 451.129 | 125 | 4,4 | 5,0+6,0 | 40 | 650 | 10 | 5,0-6,0 | 533 |
| 451.160 | 160 | 2,4 | 3,0 | 49 | 500 | 15 | 3,0 | 533 |
| 451.161 | 160 | 3,0 | 4,0 | 49 | 500 | 15 | 4,0 | 533 |
| 451.162 | 160 | 4,4 | 5,0+6,0 | 49 | 500 | 15 | 5,0-6,0 | 533 |
| 451.163 | 200 | 2,4 | 3,0 | 63 | 400 | 20 | 3,0 | 533 |
| 451.164 | 200 | 3,0 | 4,0 | 63 | 400 | 20 | 4,0 | 533 |
| 451.165 | 200 | 4,4 | 5,0+6,0 | 63 | 400 | 20 | 5,0-6,0 | 533 |
| 451.250 | 250 | 2,4 | 3,0 | 88 | 300 | 24 | 3,0 | 533 |
| 451.251 | 250 | 3,0 | 4,0 | 88 | 300 | 24 | 4,0 | 533 |
| 451.252 | 250 | 4,4 | 5,0+6,0 | 88 | 300 | 24 | 5,0-6,0 | 533 |



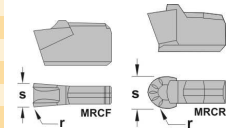
FRC



FRCR



| REF. | s | r |
|----------|-----|------|
| FRC 1,6 | 1,6 | 0,15 |
| FRC 2,2 | 2,2 | 0,20 |
| FRC 3,0 | 3,0 | 0,20 |
| FRC 4,0 | 4,0 | 0,20 |
| FRC 5,0 | 5,0 | 0,30 |
| FRC 6,0 | 6,0 | 0,30 |
| FRCR 3,0 | 3,0 | 1,50 |
| FRCR 4,0 | 4,0 | 2,00 |
| FRCR 5,0 | 5,0 | 2,50 |
| FRCR 6,0 | 6,0 | 3,00 |



For more information see page: A.44

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Cutting data for slot side and face milling cutters

Cutting speed nominal values

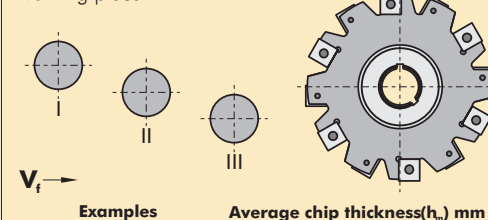
| Material | P | HB | Basic qualities | | | |
|---------------------------------------|---|---------|-----------------|--------|------|-------|
| | | | TIC25 | P25K | K15K | T40L |
| Cutting speed m/min. | | | | | | |
| Unalloyed steel | | 90-250 | 100-210 | 80-180 | | |
| Low alloyed steel | | 130-400 | 50-150 | 50-140 | | |
| High alloyed steel | | 150-500 | 30-90 | 40-90 | | |
| Martensitic, stainless steel ferritic | | 150-270 | 100-200 | 80-130 | | 40-80 |
| Steel castings | | 150-200 | 60-130 | 40-90 | | |

| Material | M | HB | Basic qualities | | | |
|-----------------------------|---|---------|-----------------|--------|-------|-------|
| | | | TIC25 | P25K | K15K | T40L |
| Cutting speed m/min. | | | | | | |
| Austenitic, stainless steel | | 150-270 | 80-180 | 50-120 | | 20-50 |
| Titanium | | 300-450 | | | 20-80 | |

| Material | K | HB | Basic qualities | | | |
|-------------------------|---|---------|-----------------|------|---------|------|
| | | | TIC25 | P25K | K15K | T40L |
| Cutting speed m/min. | | | | | | |
| Malleable cast iron | | 110-230 | | | 60-90 | |
| Grey cast iron | | 180-260 | | | 80-120 | |
| Nodular cast iron | | 160-250 | | | 60-80 | |
| Aluminium alloys | | | | | 200-600 | |
| Bronze and brass alloys | | 60-150 | | | 70-150 | |

Machining example

Working piece



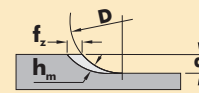
Examples Average chip thickness (h_m) mm

I 0,08 - 0,09
II 0,08
III 0,07 - 0,08

Example I: $f_z \sim h_m$ Example III: $f_z = h_m \sqrt{\frac{D}{a_r}}$

Example II: f_z must be calculated between examples I and II

f_z = Feed per tooth
 D = Milling cutter diameter
 a_r = Radial cutting depth
 h_m = Average chip thickness



Feed nominal values / Valeurs nominales de l'avance / Nennwerte der Schnittgeschwindigkeit

Depending on the milling cutter situation and in relationship with its diameter and the cutting depth, the average chip thickness (h_m) can considerably vary, but it will always be smaller than the feed per tooth. When you mill a groove, the feed is distributed between two stepped inserts, which are symmetrically spaced one at each side of the milling cutter, forming together the slot. Therefore, when you use the formulae, the z value (number of teeth) must always be divided by two.

En dépendant de la situation de la fraise et en relation avec son diamètre et la profondeur de coupe, l'épaisseur moyenne du copeau (h_m) peut varier considérablement, mais elle sera toujours plus petite que l'avance par dent. Quand on usine un canal, l'avance est distribuée entre deux plaquettes échelonnées, qui sont espacées une de chaque côté de la fraise, en formant la rainure ensemble. C'est pour cela que quand on utilise les formules, la valeur z (nombre de dents) doit être toujours divisée par deux.

Die durchschnittliche Spandicke (h_m) kann erheblich variieren, es kommt auf der Situation des Fräasers und seine Beziehung mit dem Durchmesser und die Schnitttiefe an, aber sie wird immer kleiner als dem Vorschub pro Zahn sein. Wenn man eine Nut fräst, ist der Vorschub zwischen zwei gestuften Wendepaletten ausgeteilt, eine auf jeder Seite des Fräasers, die zusammen die Nute bilden. Deswegen muß der Wert z (Zähnezahl) immer durch zwei geteilt werden, wenn man diese Formel verwendet.

Cutting data for slot side and face milling cutters

Cutting speed nominal values - h_m 0,05-0,12

| Material | P | HB | TIC25 | P25K | T40L |
|--------------------|---|---------|----------------------|---------|--------|
| | | | Cutting speed m/min. | | |
| Unalloyed steel | | 110-310 | 140-240 | 130-250 | 70-135 |
| Low alloyed steel | | 125-450 | 130-210 | 85-180 | 45-80 |
| High alloyed steel | | 150-500 | 120-80 | 60-120 | 30-65 |
| Stainlees | | 150-270 | | | 40-90 |
| Steel castings | | 150-250 | 130-210 | 55-115 | 25-60 |

| Material | M | HB | T40L | K15K |
|-----------------------------|---|----|----------------------|-------|
| | | | Cutting speed m/min. | |
| Austenitic, stainless steel | | | 40-90 | |
| Titanium | | | | 20-80 |

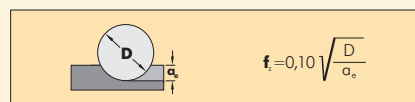
| Material | K | HB | K15K | P25K |
|-------------------------------|---|---------|----------------------|---------|
| | | | Cutting speed m/min. | |
| Malleable cast iron | | 110-230 | 60-90 | 55-100 |
| Grey cast iron | | 180-260 | 80-120 | 60-120 |
| Nodular cast iron-S. graphite | | 160-250 | 60-80 | 40-80 |
| Aluminium alloys | | | 30-100 | 200-600 |
| Bronze and brass alloys | | 60-150 | 70-150 | |

Feed nominal values

The chip average thickness (h_m) must be 0,10 mm. This corresponds to a feed per tooth of 0,3 mm in most of the operations made by a side and face milling cutter. If the radial cutting depth (a_r) is too small compared with the milling cutter diameter, use the following formula:

L'épaisseur moyenne du copeau (h_m) doit être 0,10 mm. Cela correspond à une avance par dent de 0,3 mm à la majorité des opérations faites avec une fraise pour rainurer. Si la profondeur de coupe radiale (a_r) est trop petite comparée avec le diamètre de la fraise, utiliser la formule suivante:

Die durchschnittliche Dicke der Späne (h_m) muß 0,10 mm sein. Das entspricht einem Vorschub pro Zahn von 0,3 mm, gültig für die meisten Anwendungsfälle für einen Nutenfräser. Falls die Radialschnitttiefe (a_r) zu klein im Vergleich mit dem Fräserdurchmesser ist, sollte man folgende Formel verwenden:



NOTE: In order to calculate the table feeds, use the halfth of the inserts in a three cut milling cutter and a face milling cutter in order to get the effective number of teeth.

NOTE : Pour calculer les avances par table, utiliser la moitié des plaquettes dans une fraise à trois tailles et dans une fraise à surfacer, pour pouvoir obtenir le nombre effectif de dents.


BEMERKUNG : Um den Vorschub zu berechnen, beachten Sie, daß Sie bei einem dreiseitig schneidenden Werkzeug die halbe Zähnezahl und bei einem einseitig schneidenden Werkzeug die volle Zähnezahl verwenden müssen.

Table feed = rpm x number of effective teeth x f_z
Avance par table = rpm x nombre effectif de dents x f_z
Frästisch-Vorschub = rpm x effektive Zähnezahl x f_z

Porcupine milling cutters - Fraises hérisson - Igelfräser

209
Slot and side milling 90°

Page K.38 AP. 2004..
SPM.. 1204..

249
Slot and side milling 90°

Page K.38 SC.. 09T3..
SC.. 1204..

207
Slot and side milling 90°

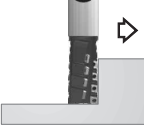
Page K.38 SC.. 09T3..
SC.. 1204..

217
Slot and side milling 90°

Page K.39 SC.. 09T3..
SC.. 1204..

227
Slot and side milling 90°

Page K.39 SC.. 09T3..
SC.. 1204..


204
Slot and side milling 90°

Page K.39 CC.. 0602..
CC.. 0803..
CC.. 09T3..

373-374
Slot and side milling 90°

Page K.40 AP. 1604..

332-333
Slot and side milling 90°

Page K.40 AP. 1604..

372
Slot and side milling 90°

Page K.40 AP. 1003..
AP. 1604..



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

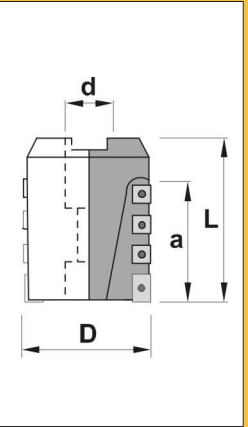


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors



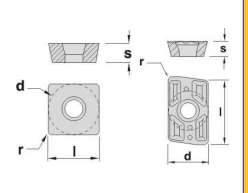
209

| REF. | D | d | L | a | Z | AP.. | SPM.. | | | |
|----------------|-----|----|-----|----|-----|-----------|------------|-----|-----|-----|
| 209.050 | 50 | 22 | 70 | 48 | 1+2 | 2004..(1) | 1204..(11) | 159 | 522 | 910 |
| 209.063 | 63 | 27 | 70 | 58 | 2+2 | 2004..(2) | 1204..(10) | 159 | 522 | 912 |
| 209.080 | 80 | 32 | 80 | 68 | 3+2 | 2004..(2) | 1204..(16) | 159 | 522 | 916 |
| 209.100 | 100 | 40 | 90 | 78 | 3+3 | 2004..(3) | 1204..(21) | 159 | 522 | 920 |
| 209.125 | 125 | 40 | 100 | 88 | 4+4 | 2004..(4) | 1204..(32) | 159 | 522 | - |



SPMW **APMT**

| REF. | l | s | d |
|---------------------|-------|------|-------|
| SPM.. 1204.. | 12,70 | 4,76 | 12,70 |
| AP.. 2004.. | 20,00 | 4,76 | 12,70 |

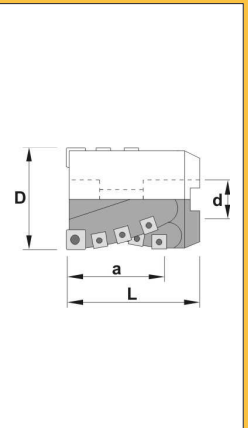


For more information see page: A.37,38,51



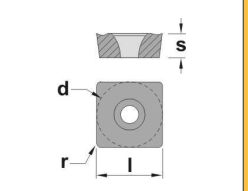
249

| REF. | D | L | d | a | Z | SC.. | | | | | |
|----------------|-----|-----|----|----|-----|------|-----|-----|-----|-----|-----|
| 249.063 | 63 | 80 | 27 | 65 | 2+2 | 2+18 | 150 | 522 | 140 | 535 | 912 |
| 249.080 | 80 | 90 | 32 | 75 | 2+3 | 2+22 | 150 | 522 | 140 | 535 | 916 |
| 249.100 | 100 | 100 | 40 | 85 | 3+3 | 3+36 | 150 | 522 | 140 | 535 | 920 |
| 249.125 | 125 | 110 | 40 | 95 | 4+4 | 4+52 | 150 | 522 | 140 | 535 | - |



SC.. 09T3..
SC.. 1204..

| REF. | l | s | d |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

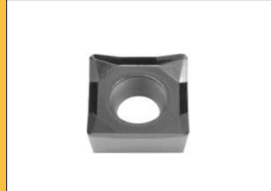
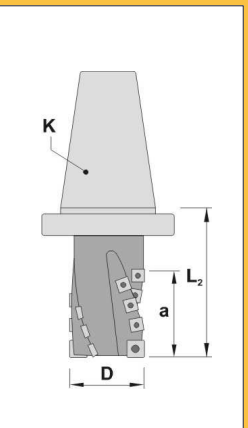


For more information see page: A.47,48



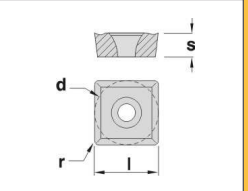
207

| REF. | D | K | L ₂ | a | Z | SC.. | | | | |
|----------------|-----|----|----------------|----|-----|------|-----|-----|-----|-----|
| 207.040 | 40 | 40 | 105 | 60 | 1+2 | 1+13 | 140 | 535 | 150 | 522 |
| 207.050 | 50 | 40 | 105 | 65 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 207.043 | 40 | 50 | 123 | 70 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 207.053 | 50 | 50 | 128 | 75 | 1+2 | 1+16 | 140 | 535 | 150 | 522 |
| 207.063 | 63 | 50 | 133 | 80 | 2+2 | 2+22 | 140 | 535 | 150 | 522 |
| 207.081 | 80 | 50 | 138 | 85 | 2+3 | 2+28 | 140 | 535 | 150 | 522 |
| 207.100 | 100 | 50 | 148 | 95 | 3+3 | 3+39 | 140 | 535 | 150 | 522 |



SC.. 09T3..
SC.. 1204..

| REF. | l | s | d |
|--------------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

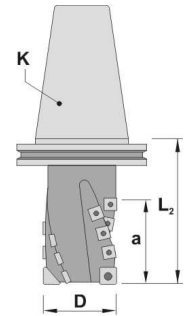


For more information see page: A.47,48

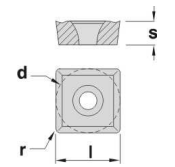
217



| REF. | D | K | L ₂ | α | Z | SC.. | | | | |
|---------|-----|----|----------------|----|-----|------|-----|-----|-----|-----|
| 217.040 | 40 | 40 | 105 | 60 | 1+2 | 1+13 | 140 | 535 | 150 | 522 |
| 217.050 | 50 | 40 | 105 | 65 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 217.043 | 40 | 50 | 123 | 70 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 217.053 | 50 | 50 | 128 | 75 | 1+2 | 1+16 | 140 | 535 | 150 | 522 |
| 217.063 | 63 | 50 | 133 | 80 | 2+2 | 2+22 | 140 | 535 | 150 | 522 |
| 217.081 | 80 | 50 | 138 | 85 | 2+3 | 2+28 | 140 | 535 | 150 | 522 |
| 217.100 | 100 | 50 | 148 | 95 | 3+3 | 3+39 | 140 | 535 | 150 | 522 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

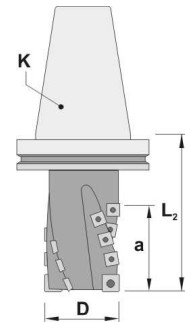


For more information see page: A.47,48

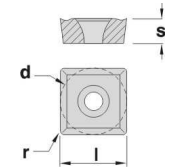
227



| REF. | D | K | L ₂ | α | Z | SC.. | | | | |
|---------|-----|----|----------------|----|-----|------|-----|-----|-----|-----|
| 227.040 | 40 | 40 | 105 | 60 | 1+2 | 1+13 | 140 | 535 | 150 | 522 |
| 227.050 | 50 | 40 | 105 | 65 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 227.043 | 40 | 50 | 123 | 70 | 1+2 | 1+14 | 140 | 535 | 150 | 522 |
| 227.053 | 50 | 50 | 128 | 75 | 1+2 | 1+16 | 140 | 535 | 150 | 522 |
| 227.063 | 63 | 50 | 133 | 80 | 2+2 | 2+22 | 140 | 535 | 150 | 522 |
| 227.081 | 80 | 50 | 138 | 85 | 2+3 | 2+28 | 140 | 535 | 150 | 522 |
| 227.100 | 100 | 50 | 148 | 95 | 3+3 | 3+39 | 140 | 535 | 150 | 522 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| SC.. 09T3.. | 9,52 | 3,97 | 9,52 |
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

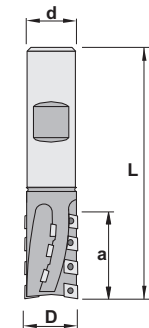


For more information see page: A.47,48

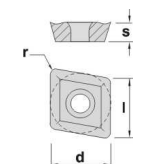
204



| REF. | D | d | L | α | Z | CC.. | | |
|---------|----|----|-----|----|-----|------------|-----|-----|
| 204.025 | 25 | 25 | 125 | 30 | 2+2 | 0602..(12) | 125 | 517 |
| 204.026 | 25 | 25 | 125 | 43 | 2+2 | 0602..(16) | 125 | 517 |
| 204.032 | 32 | 32 | 130 | 30 | 2+2 | 0803..(12) | 130 | 518 |
| 204.033 | 32 | 32 | 130 | 43 | 2+2 | 0803..(16) | 130 | 518 |
| 204.040 | 40 | 32 | 130 | 30 | 2+2 | 09T3..(10) | 140 | 535 |
| 204.041 | 40 | 32 | 130 | 43 | 2+2 | 09T3..(12) | 140 | 535 |



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 0803.. | 8,05 | 3,18 | 7,94 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



For more information see page: A.38

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

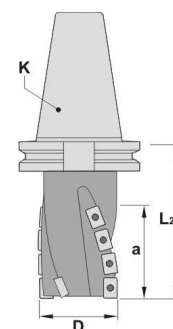


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

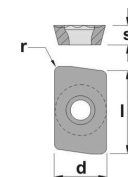
373-374



| REF. | D | K | L2 | a | Z | AP. | | |
|----------------|----|----|-----|----|---|--------|-----|-----|
| 373.050 | 50 | 40 | 105 | 65 | 3 | 1604.. | 140 | 535 |
| 374.050 | 50 | 50 | 105 | 65 | 3 | 1604.. | 140 | 535 |
| 374.063 | 63 | 50 | 130 | 65 | 3 | 1604.. | 140 | 535 |
| 374.080 | 80 | 50 | 140 | 80 | 3 | 1604.. | 140 | 535 |



| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 16,00 | 4,76 | 9,52 |

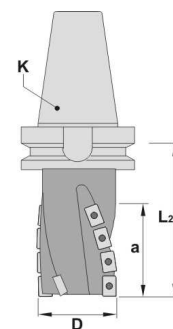


For more information see page: A.36,37

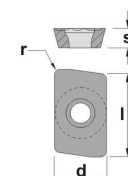
332-333



| REF. | D | K | L2 | a | Z | AP. | | |
|----------------|----|----|-----|----|---|--------|-----|-----|
| 332.050 | 50 | 40 | 105 | 65 | 3 | 1604.. | 140 | 535 |
| 333.050 | 50 | 50 | 105 | 65 | 3 | 1604.. | 140 | 535 |
| 333.063 | 63 | 50 | 130 | 65 | 3 | 1604.. | 140 | 535 |
| 333.080 | 80 | 50 | 140 | 80 | 3 | 1604.. | 140 | 535 |



| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1604.. | 16,00 | 4,76 | 9,52 |

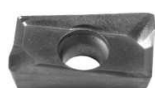
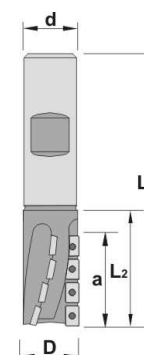


For more information see page: A.36,37

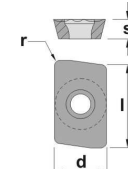
372



| REF. | D | L | L2 | d | a | Z | AP. | | |
|----------------|----|-----|----|----|----|---|--------|-----|-----|
| 372.025 | 25 | 110 | 50 | 25 | 37 | 2 | 1003.. | 155 | 507 |
| 372.032 | 32 | 125 | 55 | 32 | 45 | 2 | 1604.. | 138 | 515 |
| 372.040 | 40 | 125 | 65 | 32 | 50 | 3 | 1604.. | 138 | 515 |



| REF. | l | s | d |
|-------------------|-------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |
| AP. 1604.. | 16,00 | 4,76 | 9,52 |



For more information see page: A.36,37

Cutting data for porcupine milling cutters

| Material | P | HB | Condition | Tool diameter D mm. | Basic qualities | | | | Feed/tooth complete slot f _z |
|--------------------------|---------------------------|--|----------------|------------------------|----------------------|-------------------|------|------------------------|--|
| | | | | | TIC25 | TIC21 | P25K | K15K | |
| | | | | | Cutting speed m/min. | | | | |
| Unalloyed steel | 110 170 250 | C<0,25% C<0,8% C<1,4% | 20-32 40-50 | 250-300 | | 150-200 | | 0,12-0,22 0,15-0,39 | |
| | | | | 150-200 100-150 | | 100-140 70-110 | | | |
| Low alloyed steel | 125-225 220-450 | Annealed Hardened | 20-32 40-50 | 150-200 | | 90-140 | | 0,10-0,21 0,15-0,34 | |
| | | | | 90-140 | | 100-150 60-110 | | | 90-140 60-110 |
| High alloyed steel | 150-250 250-500 | Annealed Hardened | 20-32 40-50 | 130-170 | | 80-120 | | 0,10-0,21 0,15-0,34 | |
| | | | | 90-120 | | 80-120 50-80 | | | |
| Stainless steel | 150-270 | Martensitic/Ferritic | 20-32 40-50 | 140-190 | | 120-160 | | 0,12-0,22 0,15-0,34 | |
| Steel castings | 150 150-220 160-200 | Unalloyed Low alloyed High alloyed | 20-32 40-50 | 130-170 | | 80-110 | | 0,12-0,22 0,15-0,34 | |
| | | | | 110-150 80-120 | | 50-90 50-80 | | | |
| Stainless steel castings | 200 | Martensitic/Ferritic | 20-32 | | | 50-80 | | 0,10-0,21 0,15-0,34 | |

| Material | HB | Condition | Tool diameter D mm. | Basic qualities | | | | Feed/tooth complete slot f _z |
|--|---------|------------------------------|------------------------|----------------------|--------|--------|----------------|--|
| | | | | TIC25 | TIC21 | P25K | K15K | |
| | | | | Cutting speed m/min. | | | | |
| Stainless steel | 150-220 | Austenitic | 20-32 40-50 | | 80-160 | 70-130 | | 0,12-0,23 0,15-0,37 |
| Stainless steel castings | 200 | Austenitic | 20-32 40-50 | | 40-70 | 40-60 | | 0,10-0,21 0,15-0,34 |
| Heat resistant alloys Nickel or cobalt base | 140-300 | Annealed or treated solution | 20-32 40-50 | | | | 15-25 12-20 | 0,05-0,07 0,07-0,10 |
| | 300-475 | Aged | | | | | | |
| Titanium alloys | 300-340 | Annealed or treated solution | 20-32 | | | | 40-80 | 0,07-0,10 |
| | 320-380 | | 40-50 | | | | 30-60 | 0,10-0,15 |

| Material | K | HB | Condition | Tool diameter D mm. | Basic qualities | | | | Feed/tooth complete slot f _z |
|--|--------------------|--|----------------|------------------------|----------------------|-------|--------------------|------------------------|--|
| | | | | | TIC25 | TIC21 | P25K | K15K | |
| | | | | | Cutting speed m/min. | | | | |
| Malleable cast iron | 110-145 200-230 | Short chipping Long chipping | 20-32 40-50 | | | | 60-80 50-70 | 0,12-0,23 0,15-0,37 | |
| | | | | | | | | | |
| Grey cast iron | 180 260 | Low tensile strenght High tensile strenght, alloyed | 20-32 40-50 | | | | 70-100 50-80 | 0,12-0,23 0,15-0,37 | |
| | | | | | | | | | |
| Nodular cast iron Spheroidal graphite | 160 250 | Ferritic Pearlitic | 20-32 40-50 | | | | 40-60 30-50 | 0,10-0,21 0,15-0,34 | |
| | | | | | | | | | |
| Aluminium alloys | 60-150 40-180 | Forged Cast | 20-32 40-50 | | | | 300-500 250-450 | 0,23-0,39 0,31-0,60 | |
| | | | | | | | | | |
| Bronze-brass alloys | 60-150 | | 20-32 40-50 | | | | 80-120 | 0,15-0,31 0,23-0,39 | |



| D/a _r | 50 | 40 | 20 | 10 | 5 | 2,5 | 2 | 1,5 | 1 |
|------------------|-----|----|----|----|-----|-----|---|-----|---|
| f _t | 4,5 | 4 | 3 | 2 | 1,5 | 1 | 1 | 1 | 1 |

When you trace a contour (side peripheral milling), you must multiply the f_z value of a complete slot (see table) by the correction factor f_t corresponding to the relationship D/a_r (milling cutter diameter/radial cutting depth) in order to get a suitable feed.

Quand on trace un contour (fraisage latéral périphérique), on doit multiplier la valeur f_z (voir table) par le facteur de correction f_t correspondant à la relation D/a_r (diamètre de la fraise/profondeur de coupe radiale) pour pouvoir obtenir une avance appropriée.

Wenn man eine Kontur fräst (seitlich-peripherisches Fräsen), muß man den f_z Wert von einer kompletten Nut (siehe Tabelle) durch den Korrekturfaktor f_t, welcher die Beziehung D/a_r entspricht (Durchmesser des Fräasers/Radiale Schnitttiefe) multiplizieren, damit man einen geeigneten Vorschub erhält.

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Specific applications - Applications spécifiques - Spezifische Anwendungen

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

| | | | | | |
|--|---|---|---|--|---|
| <p>224-234 Spot facing milling cutters</p>  <p>Page K.43 CC.. 0602.. CC.. 09T3..</p> | <p>624 Chamfering cutters</p>  <p>Page K.44 TC.. 1102..</p> | <p>724 Chamfering cutters</p>  <p>Page K.44 TC.. 1102..</p> | <p>200 Face and square 90°</p>  <p>Page K.46 AP.. 1003..</p> | <p>262 Face and square 90°</p>  <p>Page K.46 AP.. 1003..</p> | <p>116 Convexe milling cutters</p>  <p>Page K.48 ADM.. 1503..</p> |
| <p>231 Concave milling cutters</p>  <p>Page K.49 ADM.. 1503..</p> | <p>235 Concave milling cutters</p>  <p>Page K.49 ADM.. 1503..</p> | <p>162-163-164 Chamfering cutters</p>  <p>Page K.51 TC.. 1102.. TC.. 16T3..</p> | <p>125-128 Chamfering cutters</p>  <p>Page K.52 ADM.. 1503..</p> | <p>135-136 Chamfering cutters</p>  <p>Page K.52 ADM.. 1503..</p> | <p>174-175 Chamfering cutters</p>  <p>Page K.53 SC.. 1204..</p> |
| <p>304-314 Multi-function</p>  <p>Page K.53 CCKT 0602.. CCKT 1204..</p> | <p>961 Back draft spot facing</p>  <p>Page K.55 CC.. 0602.. CC.. 09T3..</p> | <p>962 Back draft countersink</p>  <p>Page K.55 CC.. 0602.. CC.. 1102..</p> | | | |

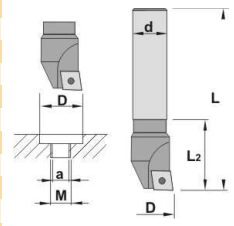
Kits - Kits - Kits

| | | | | | |
|--|---|--|--|---|--|
| <p>KIT MAXICUT Spot facing milling cutters</p>  <p>Page K.43 CC.. 0602.. CC.. 09T3..</p> | <p>KIT MINICUT Chamfering cutters</p>  <p>Page K.45 TC.. 1102..</p> | <p>KIT 200 Face and square 90°</p>  <p>Page K.47 AP.. 1003..</p> | <p>KIT 116 Convexe milling cutters</p>  <p>Page K.48 ADM.. 1503..</p> | <p>KIT 231 Concave milling cutters</p>  <p>Page K.50 ADM.. 1503..</p> | <p>KIT MULTICUT Chamfering cutters</p>  <p>Page K.51 TC.. 1102.. TC.. 16T3..</p> |
| <p>KIT CCKT Multi-function</p>  <p>Page K.54 CCKT 0602.. CCKT 1204..</p> | | | | | |

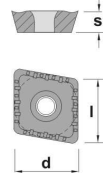
224-234



| REF. | D | L | d | α | L ₂ | Z | CC.. | | |
|---------|----|----|----|----------|----------------|---|--------|-----|-----|
| 224.010 | 10 | 85 | 12 | 4 | 15 | 1 | 0602.. | 155 | 507 |
| 224.011 | 11 | 85 | 12 | 4 | 15 | 1 | 0602.. | 155 | 507 |
| 224.012 | 12 | 85 | 12 | 4 | 15 | 1 | 0602.. | 155 | 507 |
| 224.013 | 13 | 85 | 12 | 5 | 15 | 1 | 0602.. | 155 | 507 |
| 224.014 | 14 | 85 | 12 | 5 | 19 | 1 | 0602.. | 155 | 507 |
| 224.015 | 15 | 85 | 12 | 5 | 19 | 1 | 0602.. | 155 | 507 |
| 224.016 | 16 | 85 | 12 | 5 | 19 | 1 | 0602.. | 155 | 507 |
| 234.017 | 17 | 95 | 16 | 5 | 30 | 1 | 09T3.. | 138 | 515 |
| 234.018 | 18 | 95 | 16 | 5 | 30 | 1 | 09T3.. | 138 | 515 |
| 234.019 | 19 | 95 | 16 | 5 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.020 | 20 | 95 | 16 | 5 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.022 | 22 | 95 | 16 | 6 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.025 | 25 | 95 | 16 | 8 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.026 | 26 | 95 | 16 | 8 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.028 | 28 | 95 | 16 | 10 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.030 | 30 | 95 | 16 | 10 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.032 | 32 | 95 | 16 | 12 | 32 | 1 | 09T3.. | 138 | 515 |
| 234.033 | 33 | 95 | 16 | 12 | 32 | 1 | 09T3.. | 138 | 515 |



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

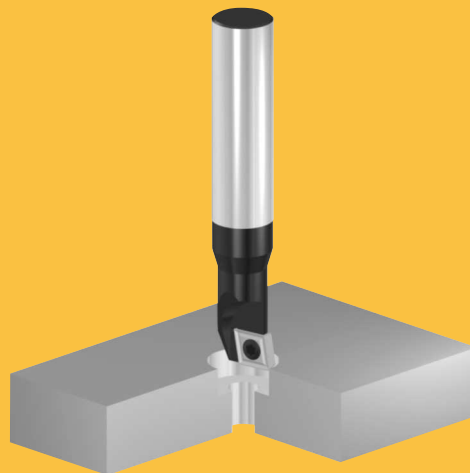
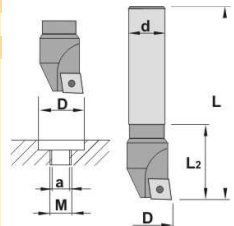


For more information see page: A.38

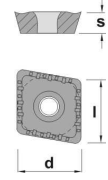
KIT MAXICUT



| REF. | D | d | α | L | L ₂ | M | Z | CC.. | | |
|---------|----|----|----------|----|----------------|-----|---|--------|-----|-----|
| 224.011 | 11 | 12 | 4 | 85 | 15 | M6 | 1 | 0602.. | 155 | 507 |
| 224.014 | 14 | 12 | 5 | 85 | 19 | M8 | 1 | 0602.. | 155 | 507 |
| 234.017 | 17 | 16 | 5 | 95 | 30 | M10 | 1 | 09T3.. | 138 | 515 |
| 234.019 | 19 | 16 | 5 | 95 | 32 | M12 | 1 | 09T3.. | 138 | 515 |
| 234.022 | 22 | 16 | 6 | 95 | 32 | M14 | 1 | 09T3.. | 138 | 515 |
| 234.025 | 25 | 16 | 8 | 95 | 32 | M16 | 1 | 09T3.. | 138 | 515 |



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |



For more information see page: A.38

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads


Arbors & adaptors




- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

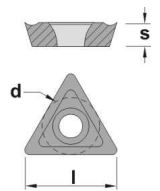
624



| REF. | D | D1 | L | L2 | d | Z | TC.. |  |  |
|----------------|----|-----|----|----|----|---|--------|---|---|
| 624.016 | 16 | 1,2 | 70 | 24 | 12 | 1 | 1102.. | 155 | 507 |
| 624.021 | 21 | 8,5 | 90 | 30 | 20 | 2 | 1102.. | 155 | 507 |







| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |

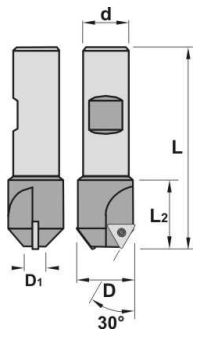



For more information see page: A.51,52

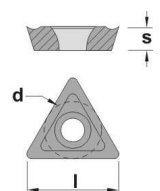
724



| REF. | D | D1 | L | L2 | d | Z | TC.. |  |  |
|----------------|----|------|----|----|----|---|--------|---|---|
| 724.016 | 16 | 5,4 | 70 | 24 | 12 | 1 | 1102.. | 155 | 507 |
| 724.026 | 26 | 15,8 | 90 | 30 | 20 | 2 | 1102.. | 155 | 507 |

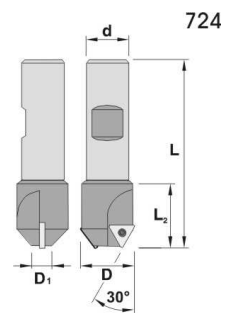
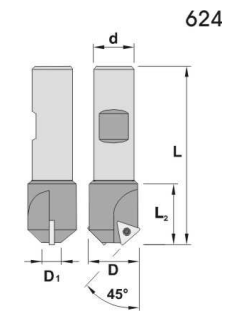
| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |



For more information see page: A.51,52

KIT MINICUT

| REF. | D1 | D | L | L2 | d | Z | TC.. |  |  |
|---------|------|----|----|----|----|---|--------|---|---|
| 624.016 | 1,2 | 16 | 70 | 24 | 12 | 1 | 1102.. | 155 | 507 |
| 624.021 | 8,5 | 21 | 90 | 30 | 20 | 2 | 1102.. | 155 | 507 |
| 724.016 | 5,4 | 16 | 70 | 24 | 12 | 1 | 1102.. | 155 | 507 |
| 724.026 | 15,8 | 26 | 90 | 30 | 20 | 2 | 1102.. | 155 | 507 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

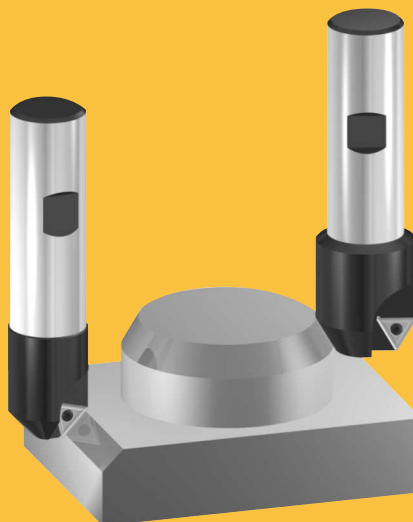
Brazed tools

Milling cutters

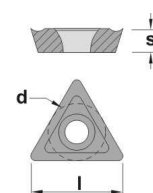
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |






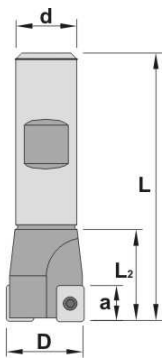

For more information see page: A.51,52



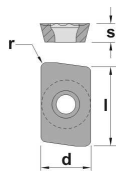
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

200

| REF. | D | L | d | α | L ₂ | Z | AP. |  |  |
|----------------|----|----|----|----------|----------------|---|--------|---|---|
| 200.012 | 12 | 85 | 16 | 10 | 25 | 1 | 1003.. | 155 | 507 |
| 200.016 | 16 | 85 | 16 | 10 | 25 | 2 | 1003.. | 155 | 507 |
| 200.020 | 20 | 90 | 20 | 10 | 30 | 3 | 1003.. | 155 | 507 |

| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |




For more information see page: A.36,37

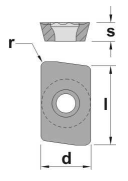
262

| REF. | D | L | d | α | L ₂ | Z | AP. |  |  |
|----------------|----|----|----|----------|----------------|-----|--------|---|---|
| 262.020 | 20 | 90 | 20 | 19 | 35 | 1+1 | 1003.. | 155 | 507 |







| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |

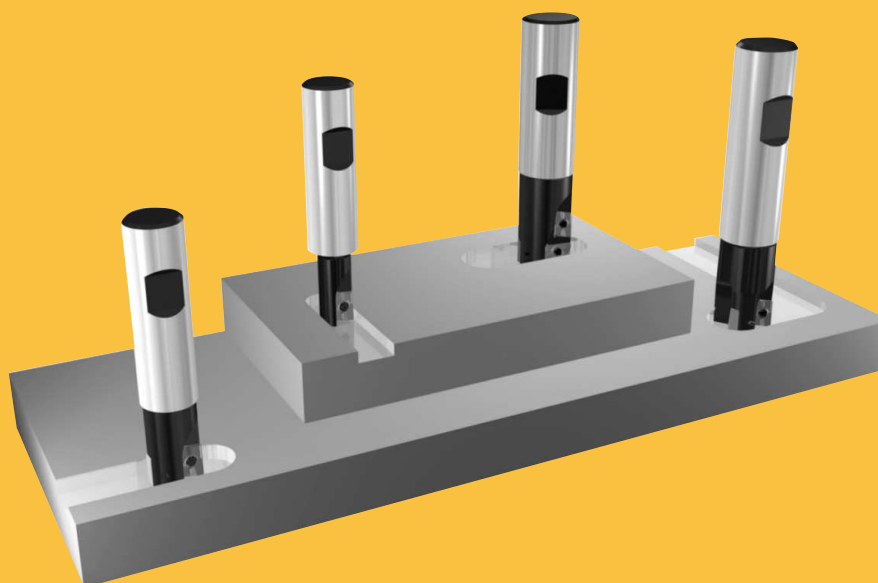
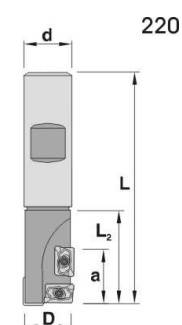
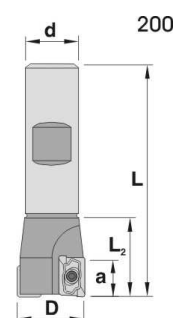


For more information see page: A.36,37

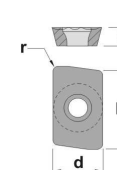
KIT 200



| REF. | D | d | α | L | L ₂ | Z | AP.. |  |  |
|----------------|----|----|----------|----|----------------|-----|--------|---|---|
| 200.012 | 12 | 16 | 10 | 85 | 25 | 1 | 1003.. | 155 | 507 |
| 200.016 | 16 | 16 | 10 | 85 | 25 | 2 | 1003.. | 155 | 507 |
| 200.020 | 20 | 20 | 10 | 90 | 30 | 3 | 1003.. | 155 | 507 |
| 262.020 | 20 | 20 | 19 | 90 | 35 | 1+1 | 1003.. | 155 | 507 |



| REF. | l | s | d |
|-------------------|------|------|------|
| AP. 1003.. | 9,52 | 3,18 | 6,35 |



For more information see page: A.36,37

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors




- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

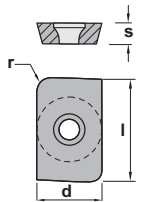
116



| REF. | D | L | d | L2 | rmin | rmax | Z | ADMW |  |  |
|------------------|----|-----|----|----|------|------|---|--------------|---|---|
| 116.01601 | 16 | 120 | 20 | 35 | 1,0 | 3,0 | 1 | 1503R1.0/2.5 | 138 | 515 |
| 116.01603 | 16 | 120 | 20 | 35 | 3,5 | 6,0 | 1 | 1503R3.0/6.0 | 138 | 515 |







| REF. | r | s | d |
|------------------------|------|------|------|
| ADMW 1503R1.0-C | 1,00 | 3,18 | 9,52 |
| ADMW 1503R1.5-C | 1,50 | 3,18 | 9,52 |
| ADMW 1503R2.0-C | 2,00 | 3,18 | 9,52 |
| ADMW 1503R2.5-C | 2,50 | 3,18 | 9,52 |
| ADMW 1503R3.0-C | 3,00 | 3,18 | 9,52 |
| ADMW 1503R3.5-C | 3,50 | 3,18 | 9,52 |
| ADMW 1503R4.0-C | 4,00 | 3,18 | 9,52 |
| ADMW 1503R4.5-C | 4,50 | 3,18 | 9,52 |
| ADMW 1503R5.0-C | 5,00 | 3,18 | 9,52 |
| ADMW 1503R6.0-C | 6,00 | 3,18 | 9,52 |

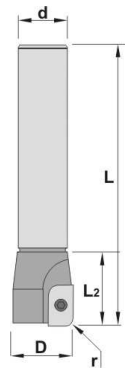



For more information see page: A.36

KIT 116

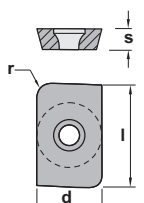


| REF. | D | L | d | L2 | rmin | rmax | Z | ADMW |  |  |
|------------------|----|-----|----|----|------|------|---|--------------|---|---|
| 116.01601 | 16 | 120 | 20 | 35 | 1,0 | 3,0 | 1 | 1503R1.0/2.5 | 138 | 515 |
| 116.01603 | 16 | 120 | 20 | 35 | 3,5 | 6,0 | 1 | 1503R3.0/6.0 | 138 | 515 |







| REF. | r | s | d |
|------------------------|------|------|------|
| ADMW 1503R1.0-C | 1,00 | 3,18 | 9,52 |
| ADMW 1503R1.5-C | 1,50 | 3,18 | 9,52 |
| ADMW 1503R2.0-C | 2,00 | 3,18 | 9,52 |
| ADMW 1503R2.5-C | 2,50 | 3,18 | 9,52 |
| ADMW 1503R3.0-C | 3,00 | 3,18 | 9,52 |
| ADMW 1503R3.5-C | 3,50 | 3,18 | 9,52 |
| ADMW 1503R4.0-C | 4,00 | 3,18 | 9,52 |
| ADMW 1503R4.5-C | 4,50 | 3,18 | 9,52 |
| ADMW 1503R5.0-C | 5,00 | 3,18 | 9,52 |
| ADMW 1503R6.0-C | 6,00 | 3,18 | 9,52 |

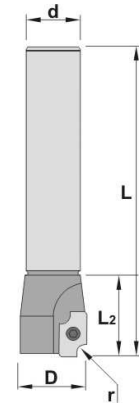


For more information see page: A.36

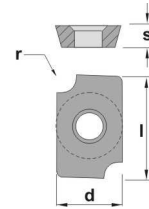
231



| REF. | D | L | d | L2 | rmin | rmax | Z | ADMW |  |  |
|----------|----|-----|----|----|------|------|---|--------------|---|---|
| 231.1701 | 17 | 120 | 16 | 30 | 1,0 | 2,5 | 1 | 1503R1.0/2.5 | 138 | 515 |
| 231.1703 | 17 | 120 | 16 | 30 | 3,0 | 5,0 | 1 | 1503R3.0/5.0 | 138 | 515 |





| REF. | r | s | d |
|---------------|-----|------|------|
| ADMW 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMW 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMW 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMW 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMW 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMW 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMW 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMW 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMW 1503R5.0 | 5.0 | 3,18 | 9,52 |

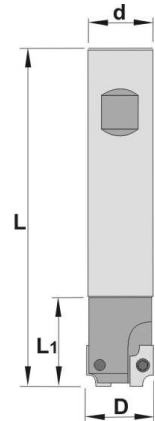


For more information see page: A.36

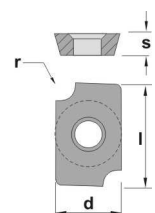
235



| REF. | D | L | d | L1 | rmin | rmax | Z | ADMW |  |  |
|-----------|----|-----|----|----|------|------|---|--------------|---|---|
| 235.02201 | 22 | 120 | 20 | 35 | 1,0 | 2,5 | 2 | 1503R1.0/2.5 | 138 | 515 |
| 235.02203 | 22 | 120 | 20 | 40 | 3,0 | 5,0 | 2 | 1503R3.0/5.0 | 138 | 515 |



| REF. | r | s | d |
|---------------|-----|------|------|
| ADMW 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMW 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMW 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMW 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMW 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMW 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMW 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMW 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMW 1503R5.0 | 5.0 | 3,18 | 9,52 |



For more information see page: A.36

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads



Arbors & adaptors

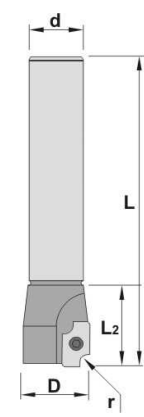


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading

KIT 231



| REF. | D | d | L | L2 | r _{min} | r _{max} | Z | ADMW |  |  |
|-----------------|----|----|-----|----|------------------|------------------|---|--------------|---|---|
| 231.1701 | 17 | 16 | 120 | 30 | 1,0 | 2,5 | 1 | 1503R1.0/2.5 | 138 | 515 |
| 231.1703 | 17 | 16 | 120 | 30 | 3,0 | 5,0 | 1 | 1503R3.0/5.0 | 138 | 515 |

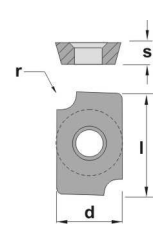


- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide



- Boring heads
- Arbors & adaptors

| REF. | r | s | d |
|----------------------|-----|------|------|
| ADMW 1503R1.0 | 1.0 | 3,18 | 9,52 |
| ADMW 1503R1.5 | 1.5 | 3,18 | 9,52 |
| ADMW 1503R2.0 | 2.0 | 3,18 | 9,52 |
| ADMW 1503R2.5 | 2.5 | 3,18 | 9,52 |
| ADMW 1503R3.0 | 3.0 | 3,18 | 9,52 |
| ADMW 1503R3.5 | 3.5 | 3,18 | 9,52 |
| ADMW 1503R4.0 | 4.0 | 3,18 | 9,52 |
| ADMW 1503R4.5 | 4.5 | 3,18 | 9,52 |
| ADMW 1503R5.0 | 5.0 | 3,18 | 9,52 |

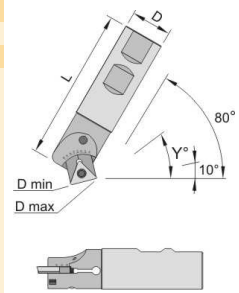


For more information see page: A.36

162-163-164



| REF. | D | L | Y | Dmin | Dmax | Z | TC.. | | | | |
|---------|----|-----|-----------|------|------|---|--------|-----|-----|-----|-----|
| 162.020 | 20 | 100 | 10° - 80° | 5 | 20 | 1 | 1102.. | 621 | 125 | 445 | 507 |
| 163.025 | 25 | 100 | 10° - 80° | 5 | 23 | 1 | 16T3.. | 626 | 140 | 476 | 515 |
| 164.025 | 25 | 175 | 10° - 80° | 5 | 23 | 1 | 16T3.. | 626 | 140 | 476 | 515 |



Inserts

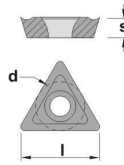
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

Parting & grooving

Threading

Drills

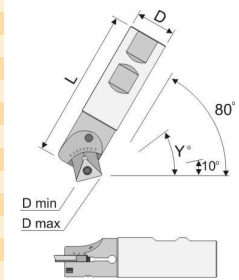
Cartridges

Brazed tools

KIT MULTICUT



| REF. | D | L | Y | DMIN | DMAX | TC.. | | | | |
|---------|-----|-----|-----|------|--------|--------|-----|-----|-----|--|
| 162.020 | 20 | 100 | 10° | 5 | 26 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 20° | 8 | 27 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 30° | 10 | 27 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 40° | 13 | 27 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 45° | 14 | 27 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 50° | 15 | 27 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 60° | 17 | 26 | 1102.. | 621 | 125 | 507 | |
| | 20 | 100 | 70° | 19 | 25 | 1102.. | 621 | 125 | 507 | |
| 163.025 | 25 | 100 | 10° | 5 | 32 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 20° | 6 | 33 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 30° | 7 | 34 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 40° | 10 | 33 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 45° | 11 | 33 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 50° | 13 | 32 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 60° | 16 | 31 | 16T3.. | 626 | 140 | 515 | |
| | 25 | 100 | 70° | 19 | 29 | 16T3.. | 626 | 140 | 515 | |
| 25 | 100 | 80° | 23 | 27 | 16T3.. | 626 | 140 | 515 | | |

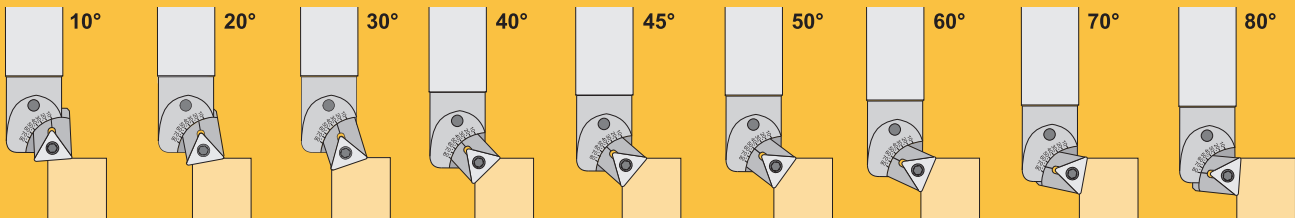


Milling cutters

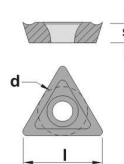
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

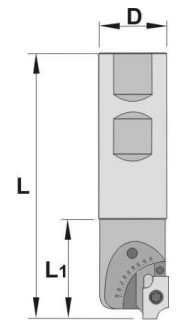
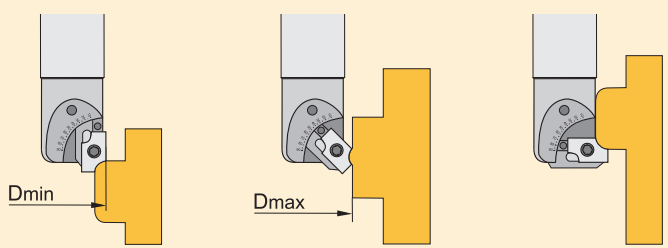


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

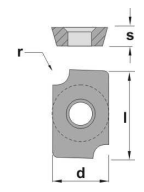
125-128



| REF. | D | L | L1 | Dmin | Dmax | Z | ADMW | | | | |
|----------------|----|-----|----|------|------|---|------|-----|-----|-----|-----|
| 125.025 | 25 | 104 | 37 | 26,5 | 33,0 | 1 | 1503 | 695 | 140 | 476 | 515 |
| 128.025 | 25 | 178 | 37 | 26,5 | 33,0 | 1 | 1503 | 695 | 140 | 476 | 515 |



| REF. | r | s | d |
|----------------------|-----|------|------|
| ADMW 1503R1.0 | 1,0 | 3,18 | 9,52 |
| ADMW 1503R1.5 | 1,5 | 3,18 | 9,52 |
| ADMW 1503R2.0 | 2,0 | 3,18 | 9,52 |
| ADMW 1503R2.5 | 2,5 | 3,18 | 9,52 |
| ADMW 1503R3.0 | 3,0 | 3,18 | 9,52 |
| ADMW 1503R3.5 | 3,5 | 3,18 | 9,52 |
| ADMW 1503R4.0 | 4,0 | 3,18 | 9,52 |
| ADMW 1503R4.5 | 4,5 | 3,18 | 9,52 |
| ADMW 1503R5.0 | 5,0 | 3,18 | 9,52 |

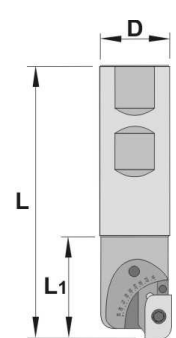
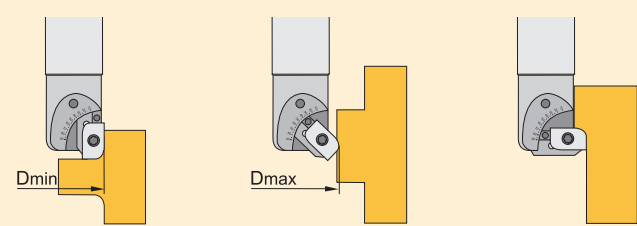


For more information see page: A.36

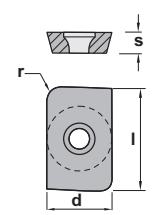
135-136



| REF. | D | L | L1 | Dmin | Dmax | Z | ADMW | | | | |
|----------------|----|-----|----|------|------|---|------|-----|-----|-----|-----|
| 135.025 | 25 | 104 | 37 | 26,5 | 34,0 | 1 | 1503 | 696 | 140 | 476 | 515 |
| 136.025 | 25 | 178 | 37 | 26,5 | 34,0 | 1 | 1503 | 696 | 140 | 476 | 515 |



| REF. | r | s | d |
|------------------------|-----|------|------|
| ADMW 1503R1.0-C | 1,0 | 3,18 | 9,52 |
| ADMW 1503R1.5-C | 1,5 | 3,18 | 9,52 |
| ADMW 1503R2.0-C | 2,0 | 3,18 | 9,52 |
| ADMW 1503R2.5-C | 2,5 | 3,18 | 9,52 |
| ADMW 1503R3.0-C | 3,0 | 3,18 | 9,52 |
| ADMW 1503R3.5-C | 3,5 | 3,18 | 9,52 |
| ADMW 1503R4.0-C | 4,0 | 3,18 | 9,52 |
| ADMW 1503R4.5-C | 4,5 | 3,18 | 9,52 |
| ADMW 1503R5.0-C | 5,0 | 3,18 | 9,52 |
| ADMW 1503R6.0-C | 6,0 | 3,18 | 9,52 |

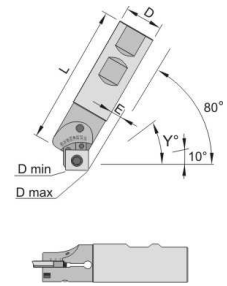
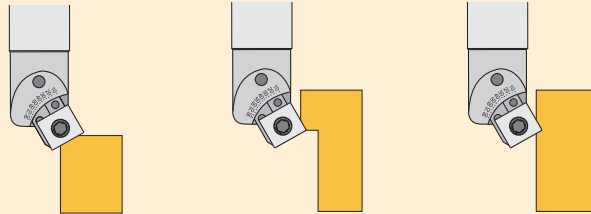


For more information see page: A.36

174-175



| REF. | D | L | Y | Dmin | Dmax | Z | SC.. | | | | |
|---------|----|-----|-----|------|------|---|--------|-----|-----|-----|-----|
| 174.025 | 29 | 101 | 10° | 7,5 | 30,0 | 1 | 1204.. | 697 | 734 | 476 | 520 |
| 175.025 | 29 | 176 | 20° | 10,0 | 32,0 | 1 | 1204.. | 697 | 734 | 476 | 520 |
| | | | 30° | 13,0 | 32,5 | | | | | | |
| | | | 40° | 16,5 | 33,5 | | | | | | |
| | | | 45° | 17,5 | 33,5 | | | | | | |
| | | | 50° | 19,0 | 33,5 | | | | | | |
| | | | 60° | 22,0 | 33,5 | | | | | | |
| | | | 70° | 24,5 | 32,5 | | | | | | |
| | | | 80° | 27,0 | 31,0 | | | | | | |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

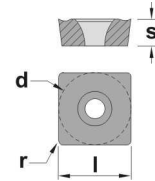
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

| REF. | l | s | d |
|-------------|-------|------|-------|
| SC.. 1204.. | 12,70 | 4,76 | 12,70 |

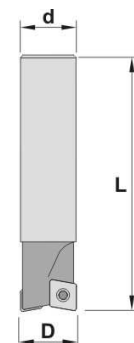


For more information see page: A.47,48

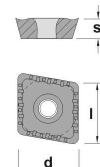
304-314



| REF. | D | d | L | Z | CCKT | | | | |
|---------|----|----|-----|---|-----------------|-----|-----|-----|-----|
| 304.012 | 12 | 16 | 100 | 1 | 060204 | 155 | - | 507 | - |
| 304.016 | 16 | 16 | 100 | 2 | 060204 / 080308 | 155 | 148 | 507 | 508 |
| 304.020 | 20 | 20 | 125 | 2 | 080308 / 09T308 | 148 | 138 | 508 | 515 |
| 304.025 | 25 | 25 | 125 | 2 | 09T308 / 120408 | 138 | 144 | 515 | - |
| 314.012 | 12 | 16 | 150 | 1 | 060204 | 155 | - | 507 | - |
| 314.016 | 16 | 16 | 175 | 2 | 060204 / 080308 | 155 | 148 | 507 | 508 |
| 314.020 | 20 | 20 | 175 | 2 | 080308 / 09T308 | 148 | 138 | 508 | 515 |
| 314.025 | 25 | 25 | 200 | 2 | 09T308 / 120408 | 138 | 144 | 515 | - |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CCKT 0602.. | 6,45 | 2,38 | 6,35 |
| CCKT 0803.. | 8,05 | 3,18 | 7,94 |
| CCKT 09T3.. | 9,65 | 3,97 | 9,52 |
| CCKT 1204.. | 12,90 | 4,76 | 12,70 |



For more information see page: A.38

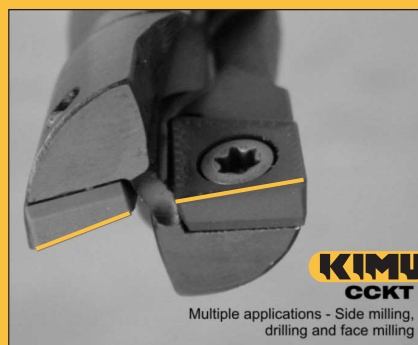
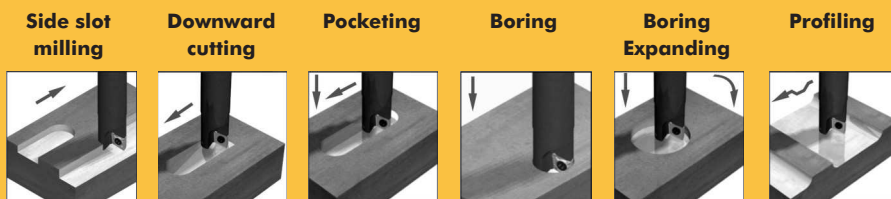
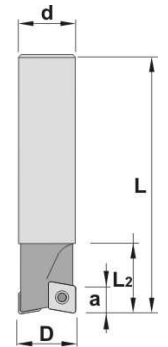


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

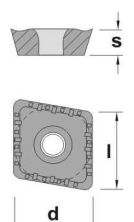
KIT CCKT



| REF. | D | d | L | L ₂ | α | Z | CCKT | | | | |
|----------------|----|----|-----|----------------|-----|---|---------------|-----|-----|-----|-----|
| 304.012 | 12 | 16 | 100 | 25 | 5,0 | 1 | 060204 | 155 | - | 507 | - |
| 304.016 | 16 | 16 | 100 | 25 | 5,0 | 2 | 060204/080308 | 155 | 148 | 507 | 508 |
| 304.020 | 20 | 20 | 125 | 32 | 7,0 | 2 | 080308/09T308 | 148 | 138 | 508 | 515 |
| 304.025 | 25 | 25 | 125 | 40 | 7,6 | 2 | 09T308/120408 | 138 | 144 | 515 | 520 |



| REF. | l | s | d |
|--------------------|-------|------|-------|
| CCKT 0602.. | 6,45 | 2,38 | 6,35 |
| CCKT 0803.. | 8,05 | 3,18 | 7,94 |
| CCKT 09T3.. | 9,65 | 4,00 | 9,52 |
| CCKT 1204.. | 12,90 | 4,76 | 12,70 |

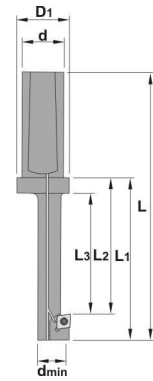


For more information see page: A.38

961



| REF. | D | dmin | d | L | L1 | L2 | L3 | D1 | Z | CC.. | | |
|---------|----|------|----|-----|-----|----|----|----|---|--------|-----|-----|
| 961.018 | 18 | 10,5 | 20 | 112 | 62 | 47 | 40 | 25 | 1 | 0602.. | 155 | 507 |
| 961.020 | 20 | 13,0 | 20 | 113 | 63 | 52 | 45 | 25 | 1 | 0602.. | 155 | 507 |
| 961.024 | 24 | 15,0 | 20 | 118 | 68 | 57 | 50 | 25 | 1 | 0602.. | 155 | 507 |
| 961.026 | 26 | 17,0 | 20 | 128 | 78 | 67 | 60 | 25 | 1 | 0602.. | 125 | 507 |
| 961.030 | 30 | 19,0 | 20 | 138 | 88 | 77 | 70 | 25 | 1 | 0602.. | 125 | 507 |
| 961.033 | 33 | 21,0 | 20 | 152 | 102 | 82 | 75 | 25 | 1 | 09T3.. | 138 | 515 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

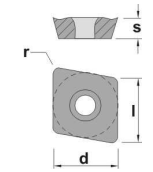
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

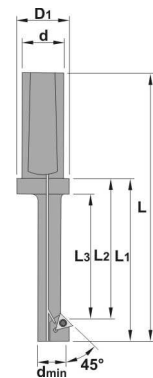


For more information see page: A.38

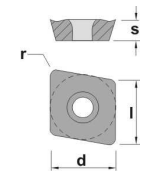
962



| REF. | D | dmin | d | L | L1 | L2 | L3 | D1 | Z | CC../TC.. | | |
|---------|----|------|----|-----|-----|----|----|----|---|-----------|-----|-----|
| 962.015 | 15 | 10 | 20 | 105 | 55 | 42 | 35 | 25 | 1 | 0602.. | 155 | 507 |
| 962.020 | 20 | 14 | 20 | 110 | 60 | 47 | 40 | 25 | 1 | 0602.. | 155 | 507 |
| 962.023 | 23 | 17 | 20 | 120 | 70 | 57 | 50 | 25 | 1 | 1102.. | 125 | 507 |
| 962.027 | 27 | 21 | 20 | 140 | 90 | 77 | 70 | 25 | 1 | 1102.. | 125 | 507 |
| 962.031 | 31 | 24 | 20 | 150 | 100 | 87 | 80 | 25 | 1 | 1102.. | 125 | 507 |



| REF. | l | s | d |
|-------------|-------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |



For more information see page: A.38,51,52

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

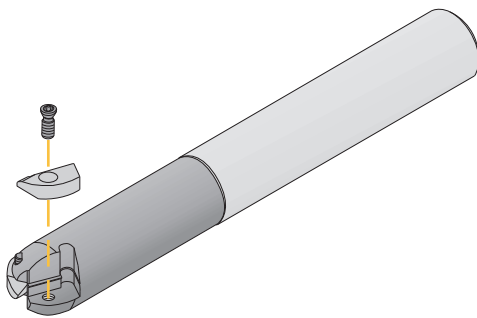
Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

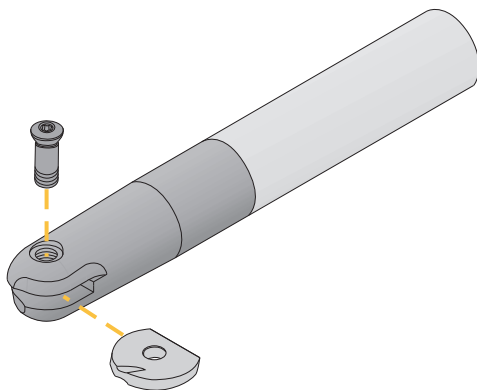


Screw clamping / Fixation par vis / Schraubenklemmung

Since the advent of the Torx screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw clamping permutations.

Dès l'apparition de la vis TORX il est possible de fixer avec sûreté les plaquettes positives avec trou central. Notre gamme couvre toutes les possibilités de fixation avec vis.

Seit der Einführung der TORX-Schraube ist es möglich, die positiven Wendeschneidplatten mit zentralem Loch mit Sicherheit zu klemmen. Unser Programm bietet alle Klemmmöglichkeiten mit Schraube.

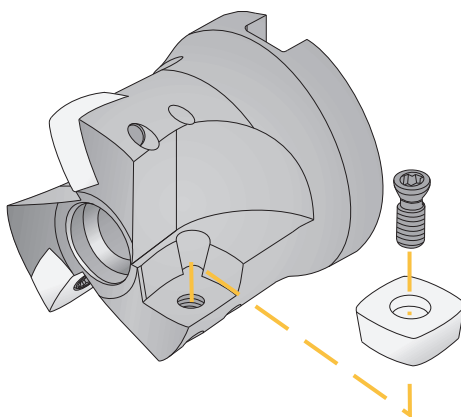


Center screw clamping / Fixation par vis centrale / Zentral-Schraubenklemmung

Grinded high accuracy center screws ensures that the insert is firmly fixed. This clamping system is only used for finishing applications.

Des vis centrales rectifiés de précision garantissent que la plaquette soit solidement fixée. Ce système de serrage est uniquement utilisé pour les applications de finition.

Die geschliffene, hochgenaue Zentralschraube garantiert, daß die Wendeschneidplatte fest geklemmt ist. Dieses Klemmsystem wird nur für Schlicht-Operationen verwendet.

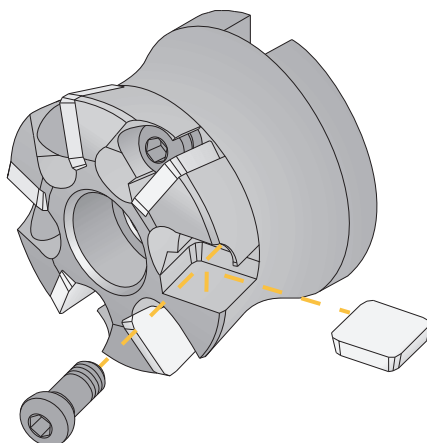


Double clamping / Double fixation / Doppelte Klemmung

Heavy duty work require good fixation, for this purpose we have as designed our double clamping system, one of the safest available.

Les travaux lourds exigent une bonne fixation, pour ce but nous avons conçu notre système de double fixation, l'une des plus sûrs disponibles.

Eine Schwerlastarbeit benötigt eine gute Klemmung. Dafür haben wir unsere doppelte Klemmung entworfen, eine der sichersten, die es gibt.



Wedge screw / Vis-cale support / Keilschraube

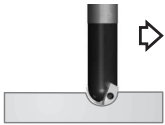
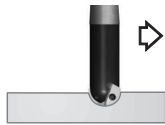
This easy and clean clamping system has been designed for the high feed cutters with flat inserts. The wedge screw clamping system offers good chip evacuation and easy use.

Ce système de serrage facile et propre a été conçu pour les fraises à grande avance avec des plaquettes plates. Le système de serrage avec la vis-cale support offre une bonne évacuation des copeaux et une utilisation facile.







Dieses einfache und saubere Klemmsystem ist für die Hoher-Vorschub-Fräser mit flachen Wendeschneidplatten entworfen worden. Das Keilschrauben-Klemmsystem bietet eine gute Spanabfuhr und eine einfache Verwendung.

Profile milling - Frailage de profils - Profilfräsen

Roughing ball nose - Fraises hémisphériques pour ébauche - Kugelbahnfräser zum Schruppen


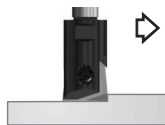



| | | | | | |
|---|---|--|--|--|--|
| <p>354-355 Roughing (Cylindric)</p>  <p>Page K.58 IN.. 25 IN.. 32</p> | <p>356 Roughing (Morse)</p>  <p>Page K.58 IN.. 32 ... IN.. 50</p> | | | | |
|---|---|--|--|--|--|

Finishing ball nose - Fraises hémisphériques pour finition - Kugelbahnfräser zum Schlichten





| | | | | | |
|--|--|--|--|--|--|
| <p>236-237 Copy applications (Finishing Cylindric)</p>  <p>HPR 10 Page K.60 ... HPR 32</p> | <p>853-854 Copy applications (Finishing Morse)</p>  <p>HPR 20 Page K.60 ... HPR 32</p> | <p>856 Copy applications (Finishing Modular)</p>  <p>HPR 10 Page K.60 ... HPR 25</p> | <p>880-881 Copy applications (Finishing Cylindric)</p>  <p>RPR 10 Page K.61 ... RPR 32</p> | <p>883-884 Copy applications (Finishing Morse)</p>  <p>RPR 20 Page K.61 ... RPR 32</p> | <p>886 Copy applications (Finishing Modular)</p>  <p>RPR 10 Page K.61 ... RPR 25</p> |
|--|--|--|--|--|--|

Toroidal cutters - Fraises toroidales - Kopierfräser



High feed - Grande avance - Hoher Vorschub

| | | | | | |
|---|---|--|--|--|---|
| <p>891 Back draft cutter Cylindric</p>  <p>Page K.62 MTK 12 MTK .. MTK 25</p> | <p>896 Back draft cutter Modular</p>  <p>Page K.62 MTK 10 MTK .. MTK 25</p> | | <p>165 High feed</p>  <p>Page K.65 XDKW 0904..</p> | <p>166 High feed</p>  <p>Page K.65 XDKW 1205..</p> | <p>140 High feed</p>  <p>Page K.65 SP. 1203..</p> |
|---|---|--|--|--|---|

Round inserts - Fraises avec plaquettes rondes - Fräser mit runden Wendeschneidplatten

| | | | | | |
|--|---|--|---|--|--|
| <p>32⁰₃-32⁴₂-339 Round milling</p>  <p>Page K.68 RD.. 0702.. ... RD.. 1604..</p> | <p>35²₈-330 Round milling</p>  <p>Page K.68 RD.. 0702.. ... RD.. 1604..</p> | <p>329-331 Round milling</p>  <p>Page K.68 RD.. 12T3MO RD.. 1604MO</p> | <p>251 Round milling</p>  <p>Page K.69 RPM.. 1204..</p> | | |
|--|---|--|---|--|--|

Aluminium die cutting - Frailage de moules en aluminium - Fräser für Aluminium-Legierungen

| | | | | | |
|--|--|--|--|--|--|
| <p>144 General application</p>  <p>Page K.72 VC.. 1103.. VC.. 2205..</p> | <p>244 General application</p>  <p>Page K.72 VC.. 2205..</p> | | | | |
|--|--|--|--|--|--|

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

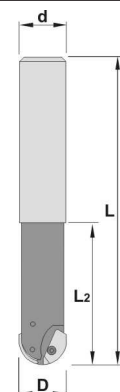
Boring heads

Arbors & adaptors

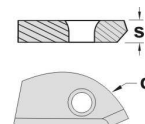
354-355



| REF. | D | d | L | L ₂ | Z | IN.. | | |
|----------------|----|----|-----|----------------|---|------|-----|-----|
| 354.025 | 25 | 25 | 115 | 57 | 2 | 25 | 131 | 535 |
| 354.032 | 32 | 32 | 115 | 57 | 2 | 32 | 159 | 522 |
| 355.025 | 25 | 25 | 150 | 76 | 2 | 25 | 131 | 535 |
| 355.032 | 32 | 32 | 150 | 76 | 2 | 32 | 159 | 522 |



| REF. | l | s | d |
|----------------|---|-----|------|
| IN.. 25 | - | 4,5 | 12,5 |
| IN.. 32 | - | 5,6 | 16,0 |

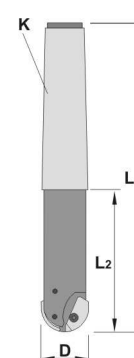


For more information see page: A.44,45

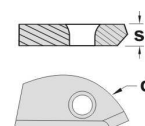
356



| REF. | D | K | L | L ₂ | Z | IN.. | | |
|----------------|----|---|-----|----------------|---|------|-----|-----|
| 356.032 | 32 | 4 | 228 | 119 | 2 | 32 | 159 | 522 |
| 356.040 | 40 | 5 | 231 | 95 | 2 | 40 | 150 | 522 |
| 356.050 | 50 | 5 | 231 | 95 | 2 | 50 | 490 | 562 |



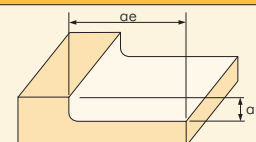
| REF. | l | s | d |
|----------------|---|-----|------|
| IN.. 32 | - | 5,6 | 16,0 |
| IN.. 40 | - | 5,6 | 20,0 |
| IN.. 50 | - | 7,9 | 25,0 |



For more information see page: A.44,45

Recommended cutting conditions

Slotting

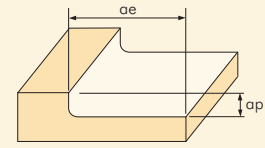


| Material | m/min Cutting Speed | mm/tooth Feed rate | ø20 | | ø25 | | ø30 | | ø40 | | | |
|--|------------------------|-----------------------|--------------------------|--------|-------------------|--------|-------------------|--------|--------------------------|--------|--|--|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | | |
| Carbon Steels (200 HB) | 150-250 | 0,06-0,2 | 3500 | 440 | 2800 | 550 | 2330 | 720 | 1430 | 440 | | |
| | | | V _c =220m/min | | | | | | V _c =180m/min | | | |
| | | | ap=0,3D | | | | | | | | | |
| Alloy Steels (200-250 HB) | 150-230 | 0,05-0,2 | 3180 | 330 | 2550 | 450 | 2120 | 420 | 1270 | 340 | | |
| | | | V _c =200m/min | | | | | | V _c =160m/min | | | |
| | | | ap=0,3D | | | | | | | | | |
| Alloy Steels (25-35 HRC) | 100-160 | 0,03-0,15 | 2070 | 110 | 1660 | 210 | 1380 | 180 | 870 | 170 | | |
| | | | V _c =130m/min | | | | | | V _c =110m/min | | | |
| | | | ap=0,3D | | | | | | | | | |
| Hardened Steels Pre-Harden Steels (40-45 HRC) | 60-120 | 0,02-0,13 | 1100 | 50 | 890 | 80 | 740 | 80 | 560 | 100 | | |
| | | | V _c =70m/min | | | | | | ap=0,3D | | | |
| | | | ap=0,3D | | | | | | | | | |
| Cast Iron (150HB) | 140-240 | 0,06-0,2 | 3500 | 440 | 2800 | 660 | 2330 | 540 | 1430 | 540 | | |
| | | | V _c =220m/min | | | | | | V _c =180m/min | | | |
| | | | ap=0,3D | | | | | | | | | |

Note

- These conditions are for general guidance; in actual machining conditions adjust the parameters according to your actual machine and work-piece conditions.
- For long type please reduce speed and feed by 70%.
- In case of using Long Shank Type, no relation to diameters, basic conditions are:
n=700min⁻¹ Vf=210m/min ap=0,1D ae=0,3D

Recommended cutting conditions



Side Milling

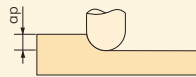
| Material | m/min Actual Maximum Cutting Speed | mm/tooth Feed rate | ø20 | | ø25 | | ø32 | | ø40 | |
|--|--|--|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min |
| Carbon Steels (200 HB) | 150-250 | 0,15-0,6 | 3500 | 4200 | 2800 | 3360 | 2330 | 2800 | 1430 | 1720 |
| | | V _c =220m/min ap<=1,0mm ae=0,3D | | | | | | | | 1430 |
| Alloy Steels (200-250 HB) | 120-200 | 0,1-0,3 | 3500 | 650 | 2800 | 880 | 2330 | 720 | 1430 | 540 |
| | | V _c =220m/min ap=0,5mm ae=0,3D | | | | | | | | 1270 |
| Alloy Steels (25-35 HRC) | 60-120 | 0,15-0,6 | 3180 | 3820 | 2550 | 3060 | 2120 | 2550 | 1270 | 1530 |
| | | V _c =200m/min ap<=1,0mm ae=0,3D | | | | | | | | 1270 |
| Alloy Steels (25-35 HRC) | 60-120 | 0,08-0,3 | 3180 | 540 | 2550 | 660 | 2120 | 530 | 1270 | 410 |
| | | V _c =200m/min ap=0,5mm ae=0,3D | | | | | | | | 870 |
| Alloy Steels (25-35 HRC) | 60-120 | 0,08-0,6 | 2070 | 2500 | 1660 | 2000 | 1380 | 1650 | 870 | 1050 |
| | | V _c =130m/min ap<=1,0mm ae=0,3D | | | | | | | | 870 |
| Alloy Steels (25-35 HRC) | 60-120 | 0,05-0,3 | 2070 | 440 | 1660 | 540 | 1380 | 460 | 870 | 330 |
| | | V _c =130m/min ap=0,5mm ae=0,3D | | | | | | | | 900 |
| Alloy Steels Pre-Harden Steels (40-45 HRC) | 50-100 | 0,07-0,6 | 1110 | 1330 | 890 | 1070 | 740 | 900 | 560 | 670 |
| | | V _c =70m/min ap<=1,0mm ae=0,3D | | | | | | | | 560 |
| Alloy Steels Pre-Harden Steels (40-45 HRC) | 50-100 | 0,05-0,3 | 1110 | 150 | 890 | 200 | 740 | 200 | 560 | 100 |
| | | V _c =70m/min ap=0,5mm ae=0,3D | | | | | | | | 1430 |
| Cast Iron (150HB) | 120-240 | 0,15-1,2 | 3500 | 4200 | 2800 | 3360 | 2330 | 2800 | 1430 | 1720 |
| | | V _c =220m/min ap<=1,0mm ae=0,3D | | | | | | | | 1430 |
| Cast Iron (150HB) | 120-240 | 0,1-0,3 | 3500 | 650 | 2800 | 900 | 2230 | 900 | 1430 | 540 |
| | | V _c =220m/min ap=0,5mm ae=0,3D | | | | | | | | |

Note

- The cutting data in the table show conditions for VB30=0,3mm (flank wear 30min tool-life).
Overhang is the length below the chuck (l b)

- RPM for high-speed machines is calculated using the following formula: $Revolution\ Speed = \frac{500 \times Actual\ Maximum\ Cutting\ Speed}{\pi \times \sqrt{2} \times R \times ap-ap^2}$

- Actual Maximum Cutting Speed:
ap=0,5mm and 1mm
Maximum Cutting Speed at boundary of contact part with work material under the above recommended cutting condition



- Cutting conditions on high-speed machine tools are recommended for contouring path milling.

- 3-5° slant milling is recommended for pocketing using a 70% feed rate, please reduce slant angle below 3° for harder materials. Please use machine guards when cutting steel due to flying chips.

Deep Side Milling

| Material | m/min Cutting Speed | mm/tooth Feed rate | ø20 | | ø25 | | ø30 | | ø40 | | | |
|---|------------------------|-----------------------|--------------------------|--------|-------------------|--------|-------------------|--------|--------------------------|--------|--|--|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | | |
| Carbon Steels (200 HB) | 120-200 | 0,08-0,2 | 2700 | 420 | 2160 | 530 | 1800 | 440 | 1110 | 420 | | |
| | | | V _c =170m/min | | | | | | V _c =140m/min | | | |
| Alloy Steels (200-250 HB) | 120-200 | 0,06-0,2 | ap=1,2D ae=0,1D | | | | | | | | | |
| | | | 2550 | 320 | 2040 | 430 | 1700 | 350 | 1270 | 410 | | |
| Alloy Steels (200-250 HB) | 120-200 | 0,06-0,2 | V _c =160m/min | | | | | | V _c =130m/min | | | |
| | | | ap=1,2D ae=0,1D | | | | | | | | | |
| Alloy Steels (25-35 HRC) | 100-160 | 0,05-0,15 | 1750 | 220 | 1400 | 330 | 1170 | 270 | 790 | 300 | | |
| | | | V _c =110m/min | | | | | | V _c =100m/min | | | |
| Alloy Steels (25-35 HRC) | 100-160 | 0,05-0,15 | ap=1,2D ae=0,1D | | | | | | | | | |
| | | | 960 | 70 | 760 | 100 | 640 | 100 | 480 | 90 | | |
| Hardened Steels Pre-Harden Steels (40-45 HRC) | 60-120 | 0,04-0,13 | V _c =60m/min | | | | | | ap=1,2D ae=0,1D | | | |
| | | | | | | | | | | | | |
| Cast Iron (150HB) | 140-220 | 0,08-0,2 | 2700 | 420 | 2160 | 530 | 1800 | 440 | 1110 | 420 | | |
| | | | V _c =170m/min | | | | | | V _c =140m/min | | | |
| Cast Iron (150HB) | 140-220 | 0,08-0,2 | ap=1,2D ae=0,1D | | | | | | | | | |
| | | | | | | | | | | | | |

Inserts

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Ceramic tools

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Solid carbide

Boring heads



Arbors & adaptors

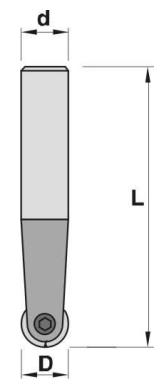


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

236-237

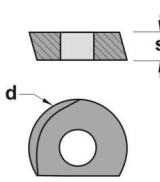


| REF. | D | d | L | Z | HPR |  |  |
|----------------|----|----|-----|---|-----|---|---|
| 236.010 | 10 | 12 | 105 | 2 | 10 | 152 | 535 |
| 236.012 | 12 | 16 | 105 | 2 | 12 | 132 | 522 |
| 236.016 | 16 | 20 | 105 | 2 | 16 | 134 | 522 |
| 236.020 | 20 | 25 | 125 | 2 | 20 | 139 | 522 |
| 236.025 | 25 | 32 | 125 | 2 | 25 | 142 | 537 |
| 236.032 | 32 | 32 | 125 | 2 | 32 | 160 | 537 |
| 237.010 | 10 | 12 | 150 | 2 | 10 | 152 | 535 |
| 237.012 | 12 | 16 | 160 | 2 | 12 | 132 | 522 |
| 237.016 | 16 | 20 | 180 | 2 | 16 | 134 | 522 |
| 237.020 | 20 | 25 | 200 | 2 | 20 | 139 | 522 |
| 237.025 | 25 | 32 | 220 | 2 | 25 | 142 | 537 |
| 237.032 | 32 | 32 | 250 | 2 | 32 | 160 | 537 |





| REF. | l | s | d |
|---------------|---|------|-------|
| HPR 10 | - | 2,40 | 10,00 |
| HPR 12 | - | 2,50 | 12,00 |
| HPR 16 | - | 3,00 | 16,00 |
| HPR 20 | - | 3,00 | 20,00 |
| HPR 25 | - | 4,00 | 25,00 |
| HPR 32 | - | 5,00 | 32,00 |

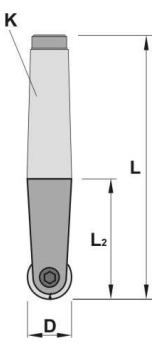
For more information see page: A.44



853-854

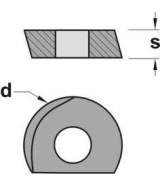


| REF. | D | K | L | L ₂ | Z | HPR |  |  |
|----------------|----|---|-----|----------------|---|-----|---|---|
| 853.020 | 20 | 3 | 190 | 115 | 2 | 20 | 139 | 522 |
| 854.025 | 25 | 4 | 215 | 135 | 2 | 25 | 142 | 537 |
| 854.032 | 32 | 4 | 268 | 160 | 2 | 32 | 160 | 535 |





| REF. | l | s | d |
|---------------|---|------|-------|
| HPR 20 | - | 3,00 | 20,00 |
| HPR 25 | - | 4,00 | 25,00 |
| HPR 32 | - | 5,00 | 32,00 |

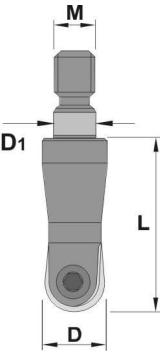
For more information see page: A.44



856

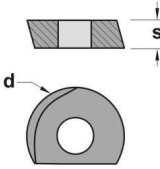


| REF. | D | L | M | D ₁ | Z | HPR |  |  |
|----------------|----|----|-----|----------------|---|-----|---|---|
| 856.010 | 10 | 23 | M6 | 6,5 | 2 | 10 | 152 | 515 |
| 856.012 | 12 | 23 | M6 | 6,5 | 2 | 12 | 132 | 520 |
| 856.016 | 16 | 30 | M8 | 8,5 | 2 | 16 | 134 | 520 |
| 856.020 | 20 | 35 | M10 | 10,5 | 2 | 20 | 139 | 520 |
| 856.025 | 25 | 40 | M12 | 12,5 | 2 | 25 | 142 | 537 |



| REF. | l | s | d |
|---------------|---|------|-------|
| HPR 10 | - | 2,40 | 10,00 |
| HPR 12 | - | 2,50 | 12,00 |
| HPR 16 | - | 3,00 | 16,00 |
| HPR 20 | - | 3,00 | 20,00 |
| HPR 25 | - | 4,00 | 25,00 |

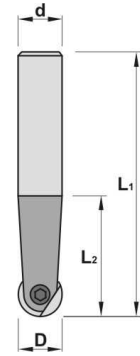
For more information see page: A.44



880-881



| REF. | D | L1 | d | L2 | Z | RPR | | |
|---------|----|-----|----|-----|---|-----|-----|-----|
| 880.010 | 10 | 105 | 10 | 50 | 2 | 10 | 463 | 518 |
| 880.012 | 12 | 105 | 12 | 50 | 2 | 12 | 464 | 510 |
| 880.016 | 16 | 105 | 16 | 50 | 2 | 16 | 469 | 535 |
| 880.020 | 20 | 125 | 20 | 70 | 2 | 20 | 139 | 522 |
| 880.025 | 25 | 125 | 25 | 70 | 2 | 25 | 142 | 537 |
| 880.032 | 32 | 125 | 32 | 70 | 2 | 32 | 160 | 537 |
| 881.010 | 10 | 150 | 10 | 80 | 2 | 10 | 463 | 518 |
| 881.012 | 12 | 160 | 12 | 90 | 2 | 12 | 464 | 510 |
| 881.016 | 16 | 180 | 16 | 100 | 2 | 16 | 469 | 535 |
| 881.020 | 20 | 200 | 20 | 120 | 2 | 20 | 139 | 522 |
| 881.025 | 25 | 220 | 25 | 140 | 2 | 25 | 142 | 537 |
| 881.032 | 32 | 250 | 32 | 160 | 2 | 32 | 160 | 537 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

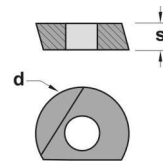
Boring heads

Arbors & adaptors



| REF. | l | s | d |
|--------|---|------|-------|
| RPR 10 | - | 2,60 | 10,00 |
| RPR 12 | - | 3,00 | 12,00 |
| RPR 16 | - | 4,00 | 16,00 |
| RPR 20 | - | 5,00 | 20,00 |
| RPR 25 | - | 6,00 | 25,00 |
| RPR 32 | - | 7,00 | 32,00 |

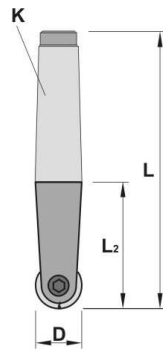
For more information see page: A.47



883-884

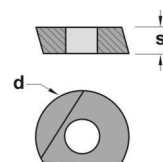


| REF. | D | L | K | L2 | Z | RPR | | |
|---------|----|-----|---|-----|---|-----|-----|-----|
| 883.020 | 20 | 190 | 3 | 115 | 2 | 20 | 139 | 522 |
| 884.025 | 25 | 215 | 4 | 135 | 2 | 25 | 142 | 537 |
| 884.032 | 32 | 268 | 4 | 160 | 2 | 32 | 160 | 537 |



| REF. | l | s | d |
|--------|---|------|-------|
| RPR 20 | - | 5,00 | 20,00 |
| RPR 25 | - | 6,00 | 25,00 |
| RPR 32 | - | 7,00 | 32,00 |

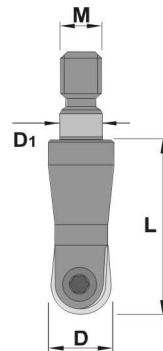
For more information see page: A.47



886

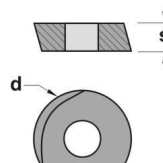


| REF. | D | L | M | D1 | Z | RPR | | |
|---------|----|----|-----|------|---|-----|-----|-----|
| 886.010 | 10 | 23 | M6 | 6,5 | 2 | 10 | 463 | 508 |
| 886.012 | 12 | 23 | M6 | 6,5 | 2 | 12 | 464 | 530 |
| 886.016 | 16 | 30 | M8 | 8,5 | 2 | 16 | 469 | 515 |
| 886.020 | 20 | 30 | M10 | 10,5 | 2 | 20 | 139 | 520 |
| 886.025 | 25 | 35 | M12 | 12,5 | 2 | 25 | 142 | 537 |



| REF. | l | s | d |
|--------|---|------|-------|
| RPR 10 | - | 2,60 | 10,00 |
| RPR 12 | - | 3,00 | 12,00 |
| RPR 16 | - | 4,00 | 16,00 |
| RPR 20 | - | 5,00 | 20,00 |
| RPR 25 | - | 6,00 | 25,00 |

For more information see page: A.47





Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

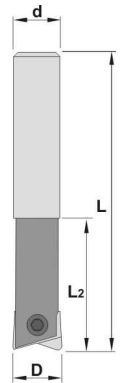
Boring heads

Arbors & adaptors

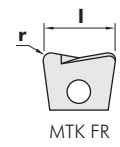
891



| REF. | D | L | d | L ₂ | Z | MTK | | |
|----------------|----|-----|----|----------------|---|-----|-----|-----|
| 891.012 | 12 | 110 | 12 | 53 | 2 | 12 | 464 | 518 |
| 891.016 | 16 | 125 | 16 | 63 | 2 | 16 | 469 | 510 |
| 891.020 | 20 | 140 | 20 | 75 | 2 | 20 | 479 | 535 |
| 891.025 | 25 | 180 | 25 | 90 | 2 | 25 | 142 | 537 |



| REF. | l | r |
|---------------|-------|------|
| MTK 12 | 12,00 | 1,00 |
| MTK 16 | 16,00 | 1,30 |
| MTK 20 | 20,00 | 1,60 |
| MTK 25 | 25,00 | 2,00 |

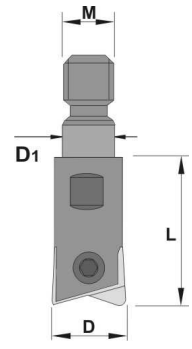


For more information see page: A.45

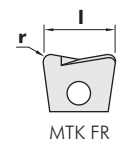
896



| REF. | D | L | M | D ₁ | Z | MTK | | |
|----------------|----|----|-----|----------------|---|-----|-----|-----|
| 896.010 | 10 | 23 | M6 | 6,5 | 2 | 10 | 463 | 508 |
| 896.012 | 12 | 23 | M6 | 6,5 | 2 | 12 | 464 | 530 |
| 896.016 | 16 | 30 | M8 | 8,5 | 2 | 16 | 469 | 515 |
| 896.020 | 20 | 30 | M10 | 10,5 | 2 | 20 | 479 | 520 |
| 896.025 | 25 | 35 | M12 | 12,5 | 2 | 25 | 142 | 537 |



| REF. | l | r |
|---------------|-------|------|
| MTK 10 | 10,00 | 0,60 |
| MTK 12 | 12,00 | 1,00 |
| MTK 16 | 16,00 | 1,30 |
| MTK 20 | 20,00 | 1,60 |
| MTK 25 | 25,00 | 2,00 |



For more information see page: A.45

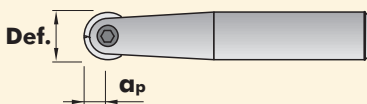
Recommended cutting conditions

| Material | m/min Cutting speed | mm/tooth Feed rate | ø8 | | ø10 | | ø12 | | | |
|---|---------------------------|-----------------------|--|--------|-------------------|--------|-------------------|--------|--|--|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | | |
| Carbon Steels Alloy Steels (30 HRC) | 100-200 | 0,2-0,3 | 6370 | 2550 | 5090 | 2040 | 4240 | 1700 | | |
| | | | Vc=160m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 80-150 | 0,2-0,3 | 4770 | 1910 | 3820 | 1530 | 3180 | 1270 | | |
| | | | Vc=120m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | | | | | |
| Die Tool Steels Pre-Harden Steels (30-40 HRC) | 70-100 | 0,1-0,15 | 3180 | 640 | 2550 | 510 | 2120 | 420 | | |
| | | | Vc=80m/min fz=0,1mm/tooth ap=0,025D ae=0,1D | | | | | | | |
| Hardened Steels (55-65 HRC) | 200-250 | 0,2-0,4 | 9150 | 3660 | 7320 | 2930 | 6100 | 2440 | | |
| | | | Vc=230m/min fz=0,2mm/tooth ap=0,01D ae=0,02D | | | | | | | |
| Cast Iron | 100-200 | 0,3-0,4 | 6730 | 3820 | 5090 | 3050 | 4240 | 2550 | | |
| | | | Vc=160m/min fz=0,3mm/tooth ap=0,025D ae=0,1D | | | | | | | |

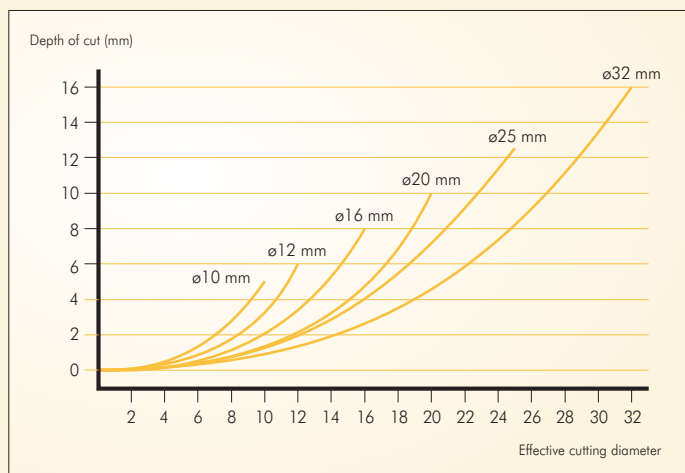
| Material | m/min Cutting speed | mm/tooth Feed rate | ø16 | | ø20 | | ø25 | | ø30(32) | |
|---|---------------------------|-----------------------|--|--------|-------------------|--------|-------------------|--------|-------------------|--------|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min |
| Carbon Steels Alloy Steels (30 HRC) | 100-200 | 0,2-0,3 | 2400 | 1600 | 2550 | 1300 | 2050 | 1030 | 1700 | 850 |
| | | | Vc=160m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 80-150 | 0,2-0,3 | 1600 | 1200 | 1910 | 955 | 1530 | 765 | 1280 | 640 |
| | | | Vc=120m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Die Tool Steels Pre-Harden Steels (30-40 HRC) | 70-100 | 0,1-0,15 | 3200 | 385 | 1280 | 310 | 1020 | 245 | 850 | 205 |
| | | | Vc=80m/min fz=0,12mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Hardened Steels (55-65 HRC) | 200-250 | 0,2-0,4 | 4575 | 2740 | 3660 | 2200 | 2930 | 1760 | 2440 | 1460 |
| | | | Vc=230m/min fz=0,3mm/tooth ap=0,01D ae=0,02D | | | | | | | |
| Cast Iron | 100-200 | 0,3-0,4 | 3200 | 2240 | 2550 | 1790 | 2050 | 1440 | 1700 | 1190 |
| | | | Vc=160m/min fz=0,35mm/tooth ap=0,05D ae=0,1D | | | | | | | |

- Note
- According to the machining situation, refer to the table above to determine the cutting conditions.
 - Be sure to practice safety instructions and precautions such as wearing glasses and safety shoes, and placing safety covers when you use this tool. Because this tool can be broken during machining so failure to follow these instructions may cause personal injury.
 - Never attempt to modify the carbide shank holder. Use the value for the depth of cut (ap) when the carbide shank holder is used.
- Mill diameters D=8~12mm:ap<=0,2mm.
Mill diameters D=16~32mm:ap<=0,3mm.

$$n = \frac{V_c \cdot 1000}{\pi \cdot \text{Def.}} \text{ (Rev/min)}$$



- N = Spindle speed (Rev/min.)
- Vc = Cutting speed
- Def. = Effective cutting diameter
- ap = Max. Depth of cut (mm)



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

Recommended cutting conditions

Turning

| Material | m/min Cutting speed | mm/tooth Feed rate | ø10 | | ø12 | |
|---|---------------------------|-----------------------|--|--------|-------------------|--------|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min |
| Carbon Steels Alloy Steels (30 HRC) | 100-200 | 0,1-0,2 | 5090 | 2040 | 4240 | 1700 |
| | | | Vc=160m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 80-150 | 0,1-0,2 | 3820 | 1530 | 3180 | 1270 |
| | | | Vc=120m/min fz=0,2mm/tooth ap=0,025D ae=0,1D | | | |
| Die Tool Steels Pre-Harden Steels (30-40 HRC) | 70-100 | 0,05-0,1 | 2550 | 510 | 2120 | 420 |
| | | | Vc=80m/min fz=0,1mm/tooth ap=0,025D ae=0,1D | | | |
| Hardened Steels (55-65 HRC) | 130-180 | 0,05-0,1 | 5090 | 1020 | 4240 | 850 |
| | | | Vc=160m/min fz=0,1mm/tooth ap=0,01D ae=0,02D | | | |
| Cast Iron | 100-200 | 0,2-0,3 | 5090 | 3050 | 4240 | 2550 |
| | | | Vc=160m/min fz=0,3mm/tooth ap=0,025D ae=0,1D | | | |

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

| Material | m/min Cutting speed | mm/tooth Feed rate | ø16 | | ø20 | | ø25 | | ø30(32) | |
|---|---------------------------|-----------------------|---|--------|-------------------|--------|-------------------|--------|-------------------|--------|
| | | | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min | min ⁻¹ | mm/min |
| Carbon Steels Alloy Steels (30 HRC) | 100-200 | 0,1-0,2 | 3200 | 1600 | 2550 | 1300 | 2050 | 1030 | 1700 | 850 |
| | | | Vc=160m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 80-150 | 0,1-0,2 | 2400 | 1200 | 1910 | 955 | 1530 | 765 | 1280 | 640 |
| | | | Vc=120m/min fz=0,25mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Die Tool Steels Pre-Harden Steels (30-40 HRC) | 70-100 | 0,05-0,1 | 1600 | 385 | 1280 | 310 | 1020 | 245 | 850 | 205 |
| | | | Vc=80m/min fz=0,12mm/tooth ap=0,05D ae=0,1D | | | | | | | |
| Hardened Steels (55-65 HRC) | 130-180 | 0,05-0,1 | 3180 | 950 | 2550 | 760 | 2040 | 610 | 1700 | 510 |
| | | | Vc=160m/min fz=0,15mm/tooth ap=0,01D ae=0,02D | | | | | | | |
| Cast Iron | 100-200 | 0,2-0,3 | 3200 | 2240 | 2550 | 1790 | 2050 | 1440 | 1700 | 1190 |
| | | | Vc=160m/min fz=0,35mm/tooth ap=0,05D ae=0,1D | | | | | | | |

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Note

- According to the machining situation, refer to the table above to determine the cutting conditions.
- Be sure to practice safety instructions and precautions such as wearing glasses and safety shoes, and placing safety covers when you use this tool.
- Because this tool can be broken during machining so failure to follow these instructions may cause personal injury.
- Never attempt to modify the carbide shank holder. Use the value for the depth of cut (ap) when the carbide shank is used.
 - Mill diameters D=8~12mm:ap<=0,05D.
 - Mill diameters D=16~32mm:ap<=0,1D.
- PCA12M grade is suitable for not so high speed machining.

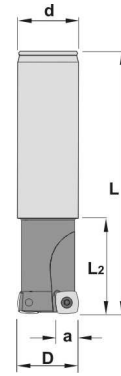
Boring
heads

Arbors &
adaptors

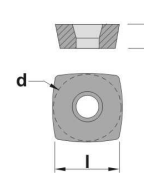
165



| REF. | D | L | L2 | d | α | Z | XDKW | | |
|---------|----|-----|----|----|----|---|--------|-----|-----|
| 165.020 | 20 | 110 | 35 | 20 | 13 | 2 | 090430 | 451 | 530 |
| 165.025 | 25 | 110 | 40 | 25 | 13 | 2 | 090430 | 451 | 530 |
| 165.032 | 32 | 125 | 40 | 32 | 13 | 3 | 090430 | 451 | 530 |

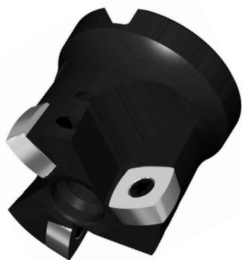


| REF. | l | s | d |
|-------------|------|------|------|
| XDKW 090430 | 9,00 | 4,76 | 9,00 |

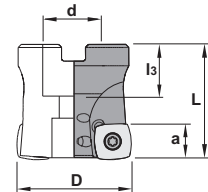


For more information see page: A.58

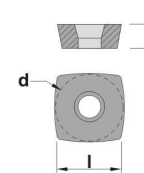
166



| REF. | D | L | d | l3 | α | Z | XDKW | | | |
|---------|----|----|----|----|----|---|--------|-----|-----|-----|
| 166.040 | 40 | 40 | 16 | 20 | 14 | 4 | 120530 | 138 | 535 | 108 |
| 166.050 | 50 | 40 | 22 | 22 | 14 | 5 | 120530 | 140 | 535 | 910 |
| 166.063 | 63 | 50 | 27 | 25 | 14 | 6 | 120530 | 140 | 535 | 912 |
| 166.080 | 80 | 50 | 27 | 25 | 14 | 7 | 120530 | 140 | 535 | 917 |

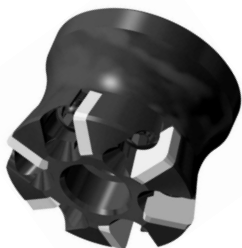


| REF. | l | s | d |
|-------------|-------|------|-------|
| XDKW 120530 | 12,50 | 5,56 | 12,50 |

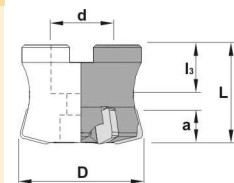


For more information see page: A.58

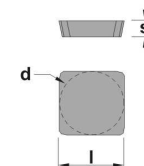
140



| REF. | D | L | d | l3 | α | Z | SP.. | | | | | |
|---------|-----|----|----|----|---|---|--------|-----|-----|-----|-----|-----|
| 140.050 | 50 | 40 | 22 | 20 | 9 | 5 | 1203.. | 666 | 112 | 535 | 103 | 911 |
| 140.063 | 63 | 50 | 27 | 22 | 9 | 5 | 1203.. | 666 | 112 | 535 | 103 | 912 |
| 140.080 | 80 | 50 | 32 | 25 | 9 | 6 | 1203.. | 666 | 112 | 535 | 103 | 917 |
| 140.100 | 100 | 50 | 40 | 29 | 9 | 7 | 1203.. | 666 | 112 | 535 | 103 | 920 |



| REF. | l | s | d |
|------------|-------|------|-------|
| SP. 1203.. | 12,70 | 3,18 | 12,70 |



For more information see page: A.50,51

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

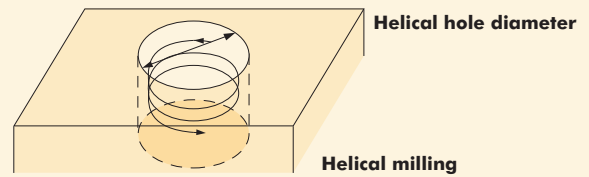
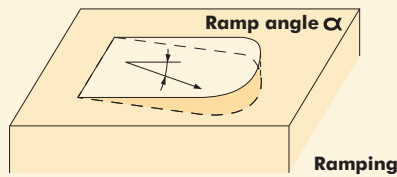
Boring heads

Arbors & adaptors

Inserts

Processing by direct milling is also possible

Since the cutting flute do not extend to the center, there are limitations on the ramp angle and hole diameter, but as shown below, processing by direct milling without a pilot hole is possible for ramping and helical milling.



| Tool diameter | $\varnothing 32$ | $\varnothing 40$ | $\varnothing 50$ | $\varnothing 63$ | $\varnothing 80$ | $\varnothing 100$ |
|-----------------------------|---------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|
| Maximum ramp angle α | 7° | 4,5° | 3° | 1,7° | 1° | 1° |
| Hole diameter | $\varnothing 44-61$ | $\varnothing 61-76$ | $\varnothing 80-96$ | $\varnothing 107-122$ | $\varnothing 142-156$ | $\varnothing 179-195$ |

Note -The ramp angle α should be set within the ranges listed above. Use at ramp angles of 1° or less recommended.
 -For hole diameters outside the ranges listed above, a pilot hole should be drilled before milling.

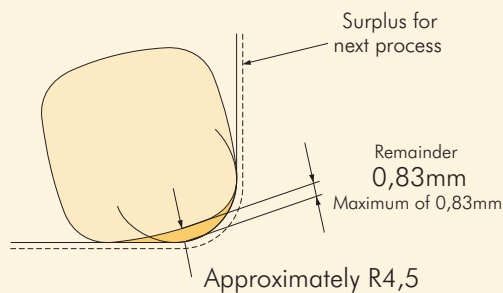
Ceramic tools

Parting & grooving

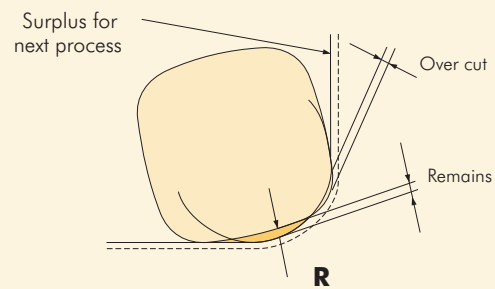
Method for defining conditions of insert tip programmatically

For roughing processing, please create a program with corner R values close to those shown as references below.

When corner R is set to 4,5

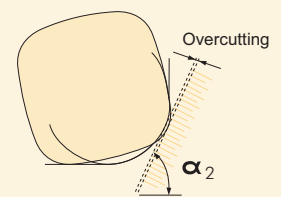
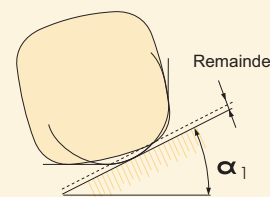
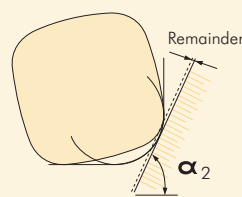
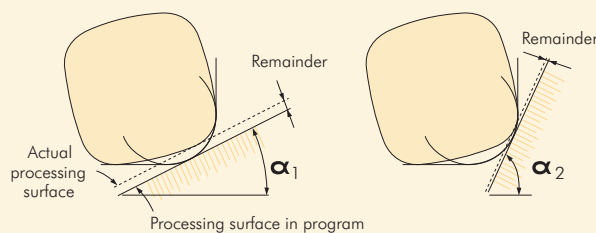


When corner R is set larger



Normally, you should create a program with an input corner R of approximately 4,5. At an approximate input corner R of 4,5, there is no overcutting.

Although overcutting occurs when the approximate R is set to higher values, if the overcutting is within the surplus for the next process, there is no problem with the processing shape and the amount of remainder can be suppressed.



| Approximate input corner R | R4,5 | R5,1 | R5,5 | R5,8 | R6,1 | R6,4 |
|----------------------------|-------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Remainder | 0,83 $\alpha_1=22,1^\circ$ | 0,66 $(\alpha_1=20,3^\circ)$ | 0,55 $(\alpha_1=19^\circ)$ | 0,47 $(\alpha_1=17,9^\circ)$ | 0,39 $(\alpha_1=16,7^\circ)$ | 0,32 $(\alpha_1=15,4^\circ)$ |
| Overcutting | - | 0,1 $(\alpha_2=73,4^\circ)$ | 0,2 $(\alpha_2=67,7^\circ)$ | 0,3 $(\alpha_2=64,7^\circ)$ | 0,4 $(\alpha_2=62,3^\circ)$ | 0,5 $(\alpha_2=60,5^\circ)$ |

Note
 - Overcutting and remainder vary according to the processing shape. The values in the table above are maximum values.
 - The values of α shown are the slopes of the processing surfaces when overcutting and remainder are at their maximum respective values.

For example, when a program is created with an approximate R of 5,1:

Remainder of around 0,66mm is left when the slope of the processing surface is approximately 20,3°, and when the slope of the processing surface is approximately 73,4°, about 0,1mm of overcutting occurs. At areas with other slopes, the overcutting and remainder values are below these values.

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Recommended cutting conditions

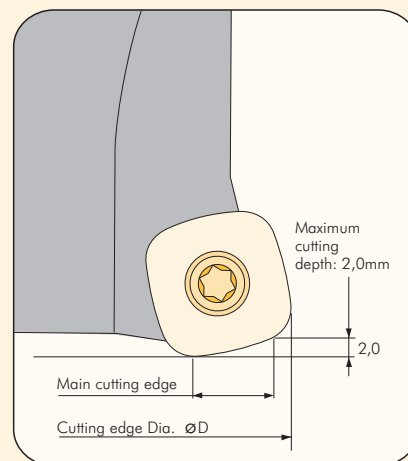
| Material | Cutting speed Vc (m/min) | Per-flute feed rate fz (mm/ tooth) | Ø 20 (2 flutes) | | | Ø 25 (2 flutes) | | | Ø 32 (2 flutes) | | | Ø 40 (3 flutes) | | |
|--|---|---|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|
| | | | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: |
| General Structural Steels (200 HB) | 180-200 | 0,6-1,5 | 2860 | 3430 | 69 | 2290 | 2750 | 69 | 1790 | 5370 | 171 | 1430 | 6400 | 256 |
| | Vc=180m/min fz=1,5mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30 HRC) | 90-150 | 0,6-2,0 | 1430 | 1720 | 34 | 1150 | 1380 | 34 | 895 | 2690 | 86 | 720 | 3240 | 130 |
| | Vc=90m/min fz=1,5mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30-45 HRC) | 180-200 | 0,6-1,5 | 2860 | 3430 | 69 | 2290 | 2750 | 69 | 1790 | 5370 | 171 | 1430 | 6400 | 256 |
| | Vc=180m/min fz=1,5mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (45-50 HRC) | 90-150 | 0,6-2,0 | 1430 | 1720 | 34 | 1150 | 1380 | 34 | 895 | 2690 | 86 | 720 | 3240 | 130 |
| | Vc=90m/min fz=1,5mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (50-55 HRC) | 80-120 | 0,4-0,8 | 1430 | 1430 | 29 | 1150 | 1150 | 29 | 895 | 1430 | 45 | 720 | 1730 | 69 |
| | Vc=90m/min fz=0,8mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (55-60 HRC) | 70-120 | 0,02-0,6 | 1590 | 630 | 6 | 1270 | 510 | 6 | 995 | 600 | 19 | 790 | 710 | 28 |
| | Vc=100m/min fz=0,3mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 70-100 | 0,05-0,2 | 1110 | 440 | 4 | 890 | 360 | 4 | 700 | 280 | 5 | 550 | 330 | 7 |
| | Vc=70m/min fz=0,2mm/tooth ap=0,5mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 50-100 | 0,8-2,0 | 790 | 80 | 0,8 | 630 | 63 | 0,8 | 500 | 50 | 0,8 | 400 | 60 | 1 |
| | Vc=50m/min fz=0,05mm/tooth ap=0,5mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 180-200 | 0,8-2,0 | 2860 | 4580 | 92 | 2290 | 3670 | 92 | 1790 | 7160 | 344 | 1430 | 8580 | 515 |
| | Vc=180m/min fz=2,0mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 90-150 | 0,8-2,0 | 1430 | 2290 | 57 | 1150 | 1840 | 58 | 895 | 3580 | 172 | 720 | 4320 | 259 |
| | Vc=90m/min fz=2,0mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |

| Material | Cutting speed Vc (m/min) | Per-flute feed rate fz (mm/ tooth) | Ø 50 (4 flutes) | | | Ø 63 (4 flutes) | | | Ø 80 (5 flutes) | | | Ø 100 (6 flutes) | | |
|--|---|---|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|----------------------------|------------------------|--------------------|
| | | | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: | Rotation speed min.: | Feed rate mm/min | Q value cm/min: |
| General Structural Steels (200 HB) | 180-200 | 0,6-1,5 | 1150 | 6900 | 510 | 910 | 5500 | 520 | 720 | 5400 | 650 | 570 | 5130 | 770 |
| | Vc=180m/min fz=1,5mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30 HRC) | 90-150 | 0,6-2,0 | 570 | 3420 | 257 | 455 | 2730 | 258 | 360 | 2700 | 325 | 290 | 2610 | 390 |
| | Vc=90m/min fz=1,5mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30-45 HRC) | 180-200 | 0,6-1,5 | 1150 | 6900 | 510 | 910 | 5500 | 520 | 720 | 5400 | 650 | 570 | 5130 | 770 |
| | Vc=180m/min fz=1,5mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (45-50 HRC) | 90-150 | 0,6-2,0 | 570 | 3420 | 257 | 455 | 2730 | 258 | 360 | 2700 | 325 | 290 | 2610 | 390 |
| | Vc=90m/min fz=1,5mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (50-55 HRC) | 80-120 | 0,4-0,8 | 570 | 1820 | 130 | 455 | 1450 | 140 | 360 | 1440 | 170 | 290 | 1400 | 210 |
| | Vc=90m/min fz=0,8mm/tooth ap=1,5mm ae=1,0D | | | | | | | | | | | | | |
| Alloy Steels (55-60 HRC) | 70-120 | 0,02-0,6 | 630 | 760 | 38 | 500 | 600 | 38 | 400 | 600 | 48 | 320 | 576 | 58 |
| | Vc=100m/min fz=0,3mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 70-100 | 0,05-0,2 | 440 | 360 | 18 | 350 | 280 | 18 | 280 | 280 | 22 | 220 | 260 | 26 |
| | Vc=70m/min fz=0,2mm/tooth ap=1,0mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 50-100 | 0,8-2,0 | 440 | 350 | 9 | 350 | 280 | 9 | 270 | 270 | 11 | 220 | 260 | 13 |
| | Vc=70m/min fz=0,2mm/tooth ap=0,5mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 180-200 | 0,8-2,0 | 310 | 62 | 1,5 | 250 | 50 | 1,5 | 200 | 50 | 2,0 | 160 | 48 | 2,4 |
| | Vc=50m/min fz=0,05mm/tooth ap=0,5mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 90-150 | 0,8-2,0 | 1150 | 9200 | 920 | 910 | 7280 | 920 | 720 | 7200 | 1150 | 570 | 6840 | 1370 |
| | Vc=180m/min fz=2,0mm/tooth ap=2,0mm ae=1,0D | | | | | | | | | | | | | |
| Cast Iron | 90-150 | 0,8-2,0 | 570 | 4560 | 456 | 455 | 3640 | 459 | 360 | 3600 | 576 | 290 | 3840 | 696 |
| | Vc=90m/min fz=2,0mm/tooth ap=2,0mm ae=1,0D | | | | | | | | | | | | | |

Note

- Select the best cutting condition when working, referring to above list.
(If the overhang is 3D or less, the recommended cutting speed is Vc=180-200m/min; 3D or more: Vc=90-130m/min.)

- Thick and heavy chips are generated by using this tool. Be sure to remove them with air blow in order to avoid any breakage by blocking with chips.
The recommended method is "Spindle center through" when blowing air. (Pay attention when removing chips in cavity work with the machining center <vertical type>.)



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

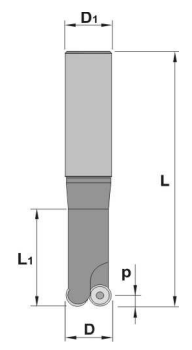


Inserts

32⁰₃-32⁴₉-339



| REF. | D | L | D1 | L1 | p | Z | RD.. | | |
|----------------|----|-----|----|----|-----|---|--------|-----|-----|
| 320.015 | 15 | 100 | 20 | 40 | 3,5 | 2 | 0702MO | 155 | 507 |
| 321.015 | 15 | 150 | 20 | 40 | 3,5 | 2 | 0702MO | 155 | 507 |
| 320.016 | 16 | 100 | 20 | 40 | 3,5 | 2 | 0702MO | 155 | 507 |
| 321.016 | 16 | 150 | 20 | 40 | 3,5 | 2 | 0702MO | 155 | 507 |
| 323.020 | 20 | 100 | 20 | 40 | 5,0 | 2 | 1003MO | 462 | 515 |
| 324.020 | 20 | 150 | 20 | 40 | 5,0 | 2 | 1003MO | 462 | 515 |
| 326.025 | 25 | 125 | 25 | 50 | 6,0 | 2 | 12T3MO | 462 | 515 |
| 327.025 | 25 | 180 | 25 | 60 | 6,0 | 2 | 12T3MO | 462 | 515 |
| 326.032 | 32 | 125 | 32 | 50 | 6,0 | 3 | 12T3MO | 462 | 515 |
| 327.032 | 32 | 180 | 32 | 60 | 6,0 | 3 | 12T3MO | 462 | 515 |
| 339.032 | 32 | 180 | 32 | 60 | 8,0 | 2 | 1604MO | 144 | 515 |



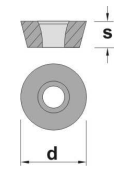
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|--------------------|---|------|-------|
| RD.. 0702MO | - | 2,38 | 7,00 |
| RD.. 1003MO | - | 3,18 | 10,00 |
| RD.. 12T3MO | - | 3,97 | 12,00 |
| RD.. 1604MO | - | 4,76 | 16,00 |



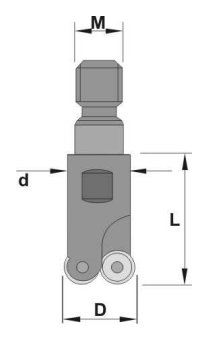
For more information see page: A.46

Parting & grooving

32²₈-330



| REF. | D | L | M | d | Z | RD.. | | |
|----------------|----|----|-----|----|---|--------|-----|-----|
| 322.016 | 16 | 23 | M8 | 14 | 2 | 0702MO | 155 | 507 |
| 325.020 | 20 | 30 | M10 | 18 | 2 | 1003MO | 462 | 515 |
| 325.025 | 25 | 35 | M12 | 21 | 3 | 1003MO | 462 | 515 |
| 325.035 | 35 | 43 | M16 | 29 | 4 | 1003MO | 462 | 515 |
| 325.042 | 42 | 43 | M16 | 29 | 5 | 1003MO | 462 | 515 |
| 328.025 | 25 | 43 | M12 | 21 | 2 | 12T3MO | 462 | 515 |
| 328.032 | 32 | 43 | M16 | 29 | 3 | 12T3MO | 462 | 515 |
| 328.035 | 35 | 43 | M16 | 29 | 3 | 12T3MO | 462 | 515 |
| 328.042 | 42 | 43 | M16 | 29 | 4 | 12T3MO | 462 | 515 |
| 330.032 | 32 | 43 | M16 | 29 | 2 | 1604MO | 144 | 515 |



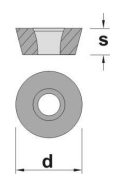
Threading

Drills

Cartridges



| REF. | l | s | d |
|--------------------|---|------|-------|
| RD.. 0702MO | - | 2,38 | 7,00 |
| RD.. 1003MO | - | 3,18 | 10,00 |
| RD.. 12T3MO | - | 3,97 | 12,00 |
| RD.. 1604MO | - | 4,76 | 16,00 |



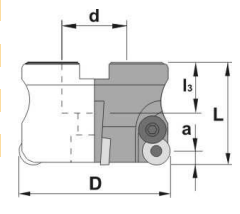
For more information see page: A.46

Brazed tools

329-331



| REF. | D | d | L | ls | a | Z | RD.. | | | |
|----------------|-----|----|----|----|---|---|--------|-----|-----|-------------|
| 329.052 | 52 | 22 | 50 | 20 | 6 | 5 | 12T3.. | 131 | 239 | 131 535 910 |
| 329.066 | 66 | 27 | 50 | 22 | 6 | 6 | 12T3.. | 131 | 239 | 131 535 912 |
| 329.080 | 80 | 27 | 50 | 22 | 6 | 7 | 12T3.. | 131 | 239 | 131 535 912 |
| 331.052 | 52 | 22 | 50 | 20 | 8 | 4 | 1604.. | 144 | 220 | 144 535 910 |
| 331.066 | 66 | 27 | 50 | 22 | 8 | 5 | 1604.. | 144 | 220 | 144 535 912 |
| 331.080 | 80 | 27 | 50 | 22 | 8 | 6 | 1604.. | 144 | 220 | 144 535 912 |
| 331.100 | 100 | 32 | 55 | 25 | 8 | 7 | 1604.. | 144 | 220 | 144 535 916 |
| 331.125 | 125 | 40 | 55 | 30 | 8 | 8 | 1604.. | 144 | 220 | 144 535 - |
| 331.160 | 160 | 40 | 55 | 30 | 8 | 9 | 1604.. | 144 | 220 | 144 535 952 |



Milling cutters

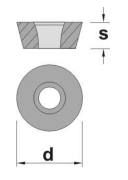
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|--------------------|---|------|-------|
| RD.. 12T3MO | - | 3,97 | 12,00 |
| RD.. 1604MO | - | 4,76 | 16,00 |

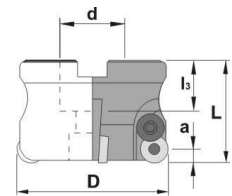


For more information see page: A.46

251



| REF. | D | d | L | ls | Z | RPM.. | | | | | |
|----------------|-----|----|----|----|---|--------|-----|-----|-----|-----|-----|
| 251.040 | 40 | 16 | 40 | 18 | 3 | 1204M0 | 205 | 503 | 140 | 535 | 108 |
| 251.050 | 50 | 22 | 40 | 20 | 4 | 1204M0 | 205 | 503 | 140 | 535 | 910 |
| 251.063 | 63 | 27 | 50 | 22 | 5 | 1204M0 | 205 | 503 | 140 | 535 | 912 |
| 251.080 | 80 | 32 | 50 | 25 | 6 | 1204M0 | 205 | 503 | 140 | 535 | 917 |
| 251.100 | 100 | 40 | 50 | 30 | 7 | 1204M0 | 205 | 503 | 140 | 535 | 920 |
| 251.125 | 125 | 40 | 63 | 30 | 7 | 1204M0 | 205 | 503 | 140 | 535 | - |
| 251.160 | 160 | 40 | 63 | 30 | 8 | 1204M0 | 205 | 503 | 140 | 535 | 952 |



Inserts

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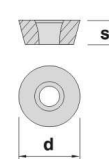
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|--------------|---|------|-------|
| RPM.. 1204M0 | - | 4,76 | 12,70 |



For more information see page: A.47

Inserts

Recommended cutting conditions

| Material | m/min Cutting Speed | mm/tooth Feed rate | ø12 - ø20 | | | ø24 - ø25 | | | ø32 - ø35 | | |
|--|---------------------------|-----------------------|--|--------|----------------------|-------------------|--------|----------------------|-------------------|--------|----------------------|
| | | | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min |
| Mild Steels (200 HB) | 150-250 | 0,3-0,8 | 3980 | 3180 | 28,6 | 3180 | 2540 | 28,6 | 2490 | 2990 | 43,1 |
| | | | Vc=250m/min fz=0,4mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| Carbon Steels Alloy Steels (30 HRC) | 120-230 | 0,3-0,8 | 3980 | 3180 | 47,7 | 3180 | 2540 | 47,6 | 2490 | 2990 | 71,8 |
| | | | Vc=250m/min fz=0,4mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 100-200 | 0,2-0,6 | 2390 | 960 | 8,6 | 1910 | 760 | 8,6 | 1490 | 890 | 12,8 |
| | | | Vc=150m/min fz=0,2mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| Carbon Steels Alloy Steels (40-45 HRC) | 60-150 | 0,15-0,3 | 2390 | 1430 | 21,5 | 1910 | 1150 | 21,6 | 1490 | 1340 | 32,2 |
| | | | Vc=150m/min fz=0,3mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Carbon Steels Alloy Steels (45-50 HRC) | 60-100 | 0,15-0,3 | 1590 | 480 | 2,9 | 1270 | 380 | 2,9 | 990 | 450 | 4,3 |
| | | | Vc=100m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| Alloy Steels (50-60 HRC) | 50-100 | 0,05-0,2 | 1590 | 640 | 6,4 | 1270 | 510 | 6,4 | 990 | 590 | 9,4 |
| | | | Vc=100m/min fz=0,2mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Stainless Steels | 150-240 | 0,2-0,8 | 1270 | 380 | 2,3 | 1020 | 310 | 2,3 | 800 | 360 | 3,5 |
| | | | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| Cast Iron | 100-220 | 0,3-1,0 | 1270 | 380 | 3,8 | 1020 | 310 | 3,9 | 800 | 360 | 5,8 |
| | | | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Alloy Steels (50-60 HRC) | 50-100 | 0,05-0,2 | 1110 | 220 | 1,3 | 890 | 170 | 1,2 | 690 | 200 | 1,9 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| Stainless Steels | 150-240 | 0,2-0,8 | 1110 | 220 | 2,2 | 890 | 170 | 2,1 | 690 | 200 | 3,2 |
| | | | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| Cast Iron | 100-220 | 0,3-1,0 | 3180 | 1590 | 14,3 | 2550 | 1280 | 14,4 | 1990 | 1490 | 21,5 |
| | | | Vc=200m/min fz=0,25mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| Alloy Steels (50-60 HRC) | 50-100 | 0,05-0,2 | 2860 | 1716 | 25,7 | 2290 | 1370 | 25,7 | 1790 | 1610 | 38,6 |
| | | | Vc=180m/min fz=0,3mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |
| Cast Iron | 100-220 | 0,3-1,0 | 2860 | 2290 | 20,6 | 2290 | 1830 | 20,6 | 1790 | 2150 | 31 |
| | | | Vc=180m/min fz=0,4mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| Cast Iron | 100-220 | 0,3-1,0 | 2860 | 2860 | 42,9 | 2290 | 2290 | 42,9 | 1790 | 2690 | 64,6 |
| | | | Vc=180m/min fz=0,5mm/tooth ap=1,5mm ae=0,5D | | | | | | | | |

Turning

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Boring
heads

Arbors &
adaptors

| Material | ø40 - ø42 (R6) | | | ø50 - ø52 (R6) | | | ø40 - ø42 (R8) | | | ø50 - ø52 (R8) | | |
|--|--|--------|----------------------|-------------------|--------|----------------------|-------------------|--------|----------------------|-------------------|--------|----------------------|
| | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min |
| Mild Steels (200 HB) | 1990 | 2990 | 71,8 | 1590 | 3180 | 95,4 | 1990 | 1990 | 47,8 | 1590 | 2390 | 71,7 |
| | Vc=250m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30 HRC) | 1990 | 4780 | 191,2 | 1590 | 5090 | 254,5 | 1990 | 3180 | 159 | 1590 | 3820 | 238,8 |
| | Vc=250m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 1590 | 1910 | 45,8 | 1270 | 2030 | 60,9 | 1590 | 1270 | 30,5 | 1270 | 1520 | 45,6 |
| | Vc=200m/min fz=0,4mm/tooth ap=2mm ae=0,3D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (30-40 HRC) | 1590 | 2860 | 114,4 | 1270 | 3050 | 152,5 | 1590 | 1910 | 95,5 | 1270 | 2290 | 143,1 |
| | Vc=200m/min fz=0,6mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (40-45 HRC) | 1190 | 710 | 17 | 960 | 770 | 23,1 | 1190 | 480 | 11,5 | 960 | 580 | 17,4 |
| | Vc=150m/min fz=0,2mm/tooth ap=2mm ae=0,3D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (40-45 HRC) | 1190 | 1070 | 42,8 | 960 | 1150 | 57,5 | 1190 | 950 | 47,5 | 960 | 1150 | 71,9 |
| | Vc=150m/min fz=0,3mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |
| Carbon Steels Alloy Steels (45-50 HRC) | 800 | 360 | 6,5 | 640 | 380 | 8,6 | 800 | 240 | 4,3 | 640 | 290 | 6,5 |
| | Vc=100m/min fz=0,15mm/tooth ap=1,5mm ae=0,3D | | | | | | | | | | | |
| Alloy Steels (50-60 HRC) | 800 | 480 | 14,4 | 640 | 510 | 19,1 | 800 | 320 | 12,8 | 640 | 380 | 19 |
| | Vc=100m/min fz=0,2mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |
| Alloy Steels (50-60 HRC) | 640 | 290 | 3,5 | 510 | 310 | 4,7 | 640 | 220 | 4 | 510 | 260 | 5,9 |
| | Vc=80m/min fz=0,15mm/tooth ap=1mm ae=0,3D | | | | | | | | | | | |
| Alloy Steels (50-60 HRC) | 640 | 330 | 6,6 | 510 | 350 | 8,8 | 640 | 260 | 7,8 | 510 | 310 | 11,6 |
| | Vc=80m/min fz=0,17mm/tooth ap=1mm ae=0,5D | | | | | | | | | | | |
| Stainless Steels | 550 | 160 | 1,9 | 440 | 170 | 2,5 | 550 | 110 | 1,3 | 440 | 130 | 1,9 |
| | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | | | | | | |
| Stainless Steels | 550 | 160 | 3,2 | 440 | 170 | 4,2 | 550 | 110 | 2,2 | 440 | 130 | 3,2 |
| | Vc=70m/min fz=0,1mm/tooth ap=1mm ae=0,5D | | | | | | | | | | | |
| Cast Iron | 1590 | 1430 | 34,3 | 1270 | 1520 | 45,6 | 1590 | 950 | 22,8 | 1270 | 1140 | 34,2 |
| | Vc=200m/min fz=0,3mm/tooth ap=2mm ae=0,3D | | | | | | | | | | | |
| Cast Iron | 1430 | 2150 | 86 | 1150 | 2300 | 115 | 1430 | 1720 | 86 | 1150 | 2070 | 129,4 |
| | Vc=180m/min fz=0,5mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |
| Cast Iron | 1430 | 2150 | 51,6 | 1150 | 2300 | 69 | 1430 | 1430 | 34,3 | 1150 | 1730 | 51,9 |
| | Vc=180m/min fz=0,6mm/tooth ap=2,5mm ae=0,5D | | | | | | | | | | | |
| Cast Iron | 1430 | 3430 | 137,2 | 1150 | 3680 | 184 | 1430 | 2290 | 114,5 | 1150 | 2760 | 172,5 |
| | Vc=180m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | | | | | | |

Note

-In this table, cutting conditions indicate regular type conditions for frank wear to be 0,3mm in 30 minutes.

-The following formula shows the chip removal volume (Q) per unit time.

$$Q(\text{cm}^3/\text{min}) = \text{ap}(\text{mm}) \times \text{ae}(\text{mm}) \times \text{Vf}(\text{mm}/\text{min}) / 1000$$

-In the case of slotting, feed speed could be down to 70% of the whole.

-This table shows starting points of general cutting conditions. Please adjust according to rigidity of machine tools, tooling, conditions of work-pieces and so on.

-In steel exceeding 60HRC, such as dice steel between the colds, please set the sending (fz) value per one edge about 1/2.

Recommended cutting conditions

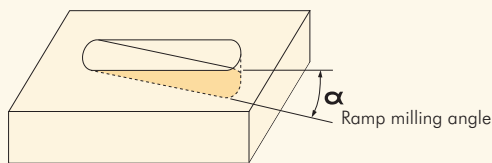
| Material | m/min Cutting Speed | mm/tooth Feed rate | ∅63 (R6) | | | ∅80 (R6) | | | ∅100 (R6) | | |
|--|------------------------|-----------------------|---|--------|----------------------|-------------------|--------|----------------------|-------------------|--------|----------------------|
| | | | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min | min ⁻¹ | mm/min | cm ³ /min |
| Mild Steels (200 HB) | 150-250 | 0,3-0,8 | 3780 | 142,9 | - | - | - | - | - | - | - |
| | | | V _c =250m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 1260 | 6050 | 381,2 | 1000 | 4800 | 384 | 800 | 3200 | 320 |
| Carbon Steels Alloy Steels (30 HRC) | 120-230 | 0,3-0,8 | 1010 | 2420 | 91,5 | - | - | - | - | - | - |
| | | | V _c =200m/min fz=0,4mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 1010 | 3640 | 229,3 | 800 | 2880 | 230,4 | 640 | 1920 | 192 |
| Carbon Steels Alloy Steels (30-40 HRC) | 100-200 | 0,2-0,6 | 760 | 910 | 34,4 | - | - | - | - | - | - |
| | | | V _c =200m/min fz=0,6mm/tooth ap=2mm ae=0,5D | | | | | | | | |
| | | | 760 | 1370 | 86,3 | 600 | 1080 | 86,4 | 480 | 720 | 72 |
| Carbon Steels Alloy Steels (40-45 HRC) | 60-150 | 0,15-0,3 | 510 | 460 | 13 | - | - | - | - | - | - |
| | | | V _c =150m/min fz=0,2mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 510 | 610 | 28,8 | 400 | 480 | 28,8 | 320 | 320 | 24 |
| Carbon Steels Alloy Steels (45-50 HRC) | 60-100 | 0,15-0,3 | 400 | 360 | 6,8 | - | - | - | - | - | - |
| | | | V _c =100m/min fz=0,15mm/tooth ap=1,5mm ae=0,3D | | | | | | | | |
| | | | 400 | 410 | 12,9 | 320 | 330 | 13,2 | 250 | 210 | 10,5 |
| Alloy Steels (50-60 HRC) | 50-100 | 0,05-0,2 | 350 | 210 | 3,9 | 270 | 160 | 3,8 | 220 | 110 | 3,3 |
| | | | V _c =80m/min fz=0,17mm/tooth ap=1mm ae=0,5D | | | | | | | | |
| | | | 350 | 210 | 6,6 | 270 | 160 | 6,4 | 220 | 110 | 5,5 |
| Stainless Steels | 150-240 | 0,2-0,8 | 1010 | 1820 | 68,8 | - | - | - | - | - | - |
| | | | V _c =70m/min fz=0,1mm/tooth ap=1mm ae=0,3D | | | | | | | | |
| | | | 910 | 2730 | 172 | 720 | 2160 | 172,8 | 570 | 1430 | 143 |
| Cast Iron | 100-220 | 0,3-1,0 | 910 | 2730 | 103,2 | - | - | - | - | - | - |
| | | | V _c =180m/min fz=0,5mm/tooth ap=2mm ae=0,3D | | | | | | | | |
| | | | 910 | 4370 | 275,3 | 720 | 3460 | 276,8 | 570 | 2280 | 228 |
| | | | V _c =180m/min fz=0,8mm/tooth ap=2mm ae=0,5D | | | | | | | | |

Field Data

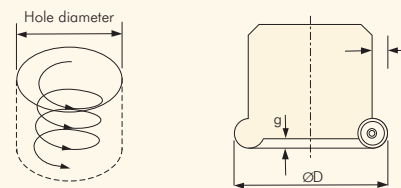
Ramping, Helical Milling, Feeding toward Z-AXIS

There are restrictions to Ramp angle (α) and cutting depth (g) toward Z-axis because of designs of cutting edge.

Ramping



Helical milling



| ∅D | ∅40 | ∅50 ∅52 | ∅63 ∅66 | ∅80 | ∅100 | ∅125 - ∅160 |
|------------------------------|-----------------|---------|---------|---------|---------|-----------------|
| Recommended α | Below 3 degrees | | | | | Below 2 degrees |
| h | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 |
| g | 3,7 | 3,3 | 5,5 | 5,5 | 5,5 | 5,5 |
| Helical hole diameter | 60-78 | 77-100 | 101-124 | 135-158 | 175-198 | 248-255 |

Note

-Chips may be shattered. The wearing of safety glasses and the guard are required in the vicinity of machining.

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors




- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

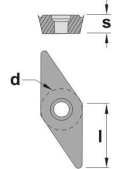
144



| REF. | D | L | M | D1 | Z | VC.. |  |  |
|----------------|----|----|-----|------|---|--------|---|---|
| 144.015 | 15 | 35 | M8 | 8,5 | 2 | 1103.. | 125 | 507 |
| 144.020 | 20 | 35 | M10 | 10,5 | 2 | 1103.. | 125 | 507 |
| 144.025 | 25 | 50 | M12 | 12,5 | 2 | 1604.. | 140 | 515 |
| 144.032 | 32 | 50 | M16 | 17,0 | 2 | 2205.. | 150 | 520 |
| 144.042 | 42 | 50 | M16 | 17,0 | 3 | 2205.. | 150 | 520 |

| REF. | l | s | d |
|--------------------|-------|------|-------|
| VC.. 1103.. | 11,00 | 3,18 | 6,35 |
| VC.. 1604.. | 16,50 | 4,76 | 9,52 |
| VC.. 2205.. | 22,10 | 5,56 | 12,70 |




For more information see page: A.55

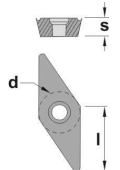
244



| REF. | D | d | L | Z | VC.. |  |  |  |
|----------------|----|----|----|---|--------|---|---|---|
| 244.042 | 42 | 16 | 55 | 3 | 2205.. | 150 | 520 | 108 |
| 244.052 | 52 | 22 | 55 | 3 | 2205.. | 150 | 520 | 910 |
| 244.066 | 66 | 27 | 55 | 4 | 2205.. | 150 | 520 | 912 |
| 244.080 | 80 | 27 | 55 | 5 | 2205.. | 150 | 520 | 912 |

| REF. | l | s | d |
|--------------------|-------|------|-------|
| VC.. 2205.. | 22,10 | 5,56 | 12,70 |



For more information see page: A.55

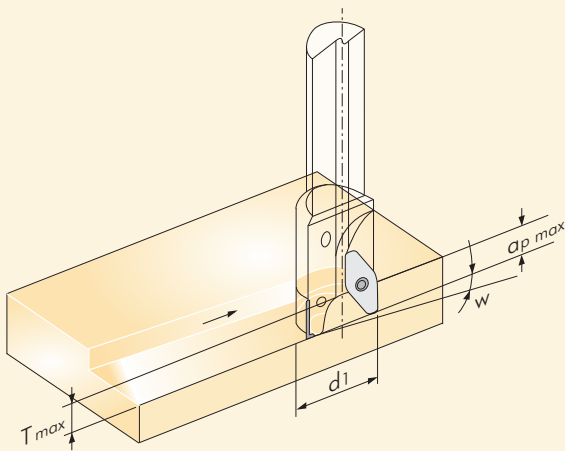
Recommended cutting conditions

| Material | | Cutting Speed | |
|------------------|----------------------------|---------------------|---------------------|
| | | Z10R Vc (mm/min) | K15K Vc (mm/min) |
| Aluminium alloys | Rm < 280 N/mm ² | 1500 | 1000 |
| | Rm < 280 N/mm ² | 1000 | 800 |
| Copper alloys | Long chipping | 300 | 250 |
| Thermoplastics | | | 300 |
| Aluminium alloys | Si < 12 % | 100 | 800 |
| | Si > 12 % | 200 | |
| Copper alloys | Short chipping | 500 | 400 |
| Magnesium alloys | | | 400 |
| Duroplastics | | 200 | 150 |

| Maximum feed per tooth fz (mm/z) in mm | | |
|--|--------------|--------------|
| VC GT 1103.. | VC GT 1604.. | VC GT 2205.. |
| 0,25 | 0,35 | 0,5 |
| 0,2 | 0,3 | 0,4 |

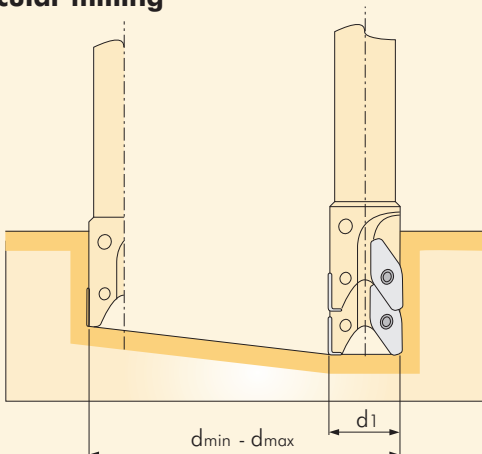
Further application recommendations

Pocket milling and axial plunging



| Helix angle W1 max and internal depth of cut Tmax | | | |
|---|---------------------|---------------------|---------------------|
| | VC GT 110304-ALM | VC GT 160412-ALM | VC GT 220530-ALM |
| a _p max | 10 | 13,5 | 15 |
| T _{max} | 6 | 8 | 9 |
| W1 max in Grad degree | | | |
| 15 | | | |
| 20 | 25 | | |
| 25 | | 24 | |
| 32 | | | 22 |
| 42 | | | 15 |
| 52 | | | 12 |
| 66 | | | 9 |
| 80 | | | 7 |

Circular milling



| d1 mm | d _{min} mm | d _{max} mm |
|----------|------------------------|------------------------|
| 15 | 15 | 15 |
| 20 | 20 | 20 |
| 25 | 25 | 25 |
| 32 | 32 | 32 |
| 42 | 42 | 42 |
| 52 | 52 | 52 |
| 66 | 66 | 66 |
| 80 | 80 | 80 |

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors



Applications
Applications
Anwendungen

L02

End mills
Fraises en carbure monobloc
Vollhartmetallfräser

L04

Torus end mills
Fraises toroidales en carbure monobloc
Toroidale Vollhartmetallfräser

L09

Contour end mills
Fraises en carbure monobloc pour faire des contours
Vollhartmetall-Kontourfräser

L11

Ball nose end mills
Fraises en carbure monobloc avec bout hémisphérique
Vollhartmetall-Kugelbahnfräser

L12

Drills
Forets
Spiralbohrer

L17

Others
Autres
Andere

L21

Tungsten carbide burrs
Limes rotatives
Rotierfräser

L23


Technical information
Information technique
Technische Auskunft

L26

End mills - Fraises en carbure monobloc - Vollhartmetallfräser


Inserts

6020
2 Flutes




Page L.04

6021
2 Flutes




Page L.04

6120
2 Flutes (Long)




Page L.04

7405
2 Flutes




Page L.05

7415
2 Flutes (Long)



Page L.05


6915
2 Flutes



Page L.05


Turning

6030
3 Flutes




Page L.06

6031
3 Flutes




Page L.06

6130
3 Flutes (Long)




Page L.06

6040
4 Flutes




Page L.07

6041
4 Flutes



Page L.07

6140
4 Flutes (Long)




Page L.07

Automatic lathes

Ceramic tools


Parting & grooving

6137
6/8 Flutes




Page L.08

6197
6/8 Flutes



Page L.08

6060
6 Flutes




Page L.08

Threading

Torus end mills - Fraises toroidales en carbure monobloc - Toroidale Vollhartmetallfräser


Drills

6231
2 Flutes




Page L.09

6241
2 Flutes




Page L.09

6327
2 Flutes



Page L.10

6337
2 Flutes (Long)




Page L.10

6427
4 Flutes



Page L.10

6437
4 Flutes (Long)




Page L.11

Cartridges

Contour end mills - Fraises en carbure monobloc pour faire des contours - Vollhartmetall-Kontourfräser


Brazed tools

7965
2 Flutes



Page L.11

7975
2 Flutes with front out




Page L.11

Milling cutters

Ball nose end mills - Fraises en carbure monobloc avec bout hémisphérique - Vollhartmetall-Kugelbahnfräser


Solid carbide

6320
2 Flutes




Page L.12

6321
2 Flutes




Page L.12

6420
2 Flutes (Long)




Page L.12

9645
2 Flutes




Page L.13

6955
2 Flutes (Long)



Page L.13

7597
2 Flutes




Page L.13

Boring heads


Arbors & adaptors

6330
3 Flutes




Page L.14

6331
3 Flutes




Page L.14

6430
3 Flutes



Page L.14

6340
4 Flutes




Page L.15

6341
4 Flutes




Page L.15

6440
4 Flutes




Page L.15

6521
2 Flutes



Page L.16

6541
4 Flutes




Page L.16




Drills - Forets - Spiralbohrer

7020
Hard-metal twist drills
2 Flutes




Page L.17

7030
Hard-metal twist drills
3 Flutes



Page L.18

7120
Hard-metal twist drills
2 Flutes (Long)




Page L.18




Others - Autres - Andere

80
Solid carbide center drill




Page L.21

81
Solid carbide center drill
for C.N.C. 90°




Page L.21

82
Solid carbide center drill
for C.N.C. 120°



Page L.21

83
Solid carbide
Countersinks




Page L.22

84
Solid carbide
Countersinks



Page L.22


85
Centerless ground
carbide



Page L.22


Tungsten carbide burrs - Limes rotatives - Rotierfräser

90
Cylindrical




Page L.23

91
Cylindrical round top




Page L.23

92
Tree radius nose



Page L.23

93
Tree pointed




Page L.23

94
Cone




Page L.24

95
Olive (Egg)




Page L.24

96
Ball




Page L.24

97
Inverted one



Page L.24

98
Deburring 60°



Page L.25

99
Deburring 90°



Page L.25



Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors

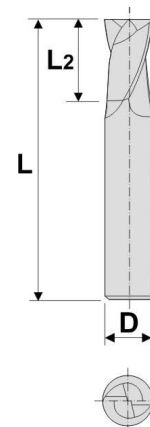


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

6020



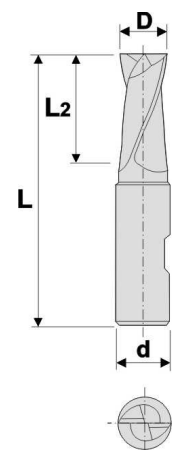
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 602001 | 1 | - | 5 | 40 | ○ | |
| 602002 | 2 | - | 8 | 40 | ● | |
| 602003 | 3 | - | 12 | 40 | ● | |
| 602004 | 4 | - | 12 | 40 | ● | |
| 602005 | 5 | - | 14 | 50 | ● | |
| 602006 | 6 | - | 16 | 50 | ● | |
| 602007 | 7 | - | 20 | 60 | ● | |
| 602008 | 8 | - | 20 | 60 | ● | |
| 602009 | 9 | - | 20 | 60 | ● | |
| 602010 | 10 | - | 22 | 70 | ● | |
| 602011 | 11 | - | 22 | 70 | ● | |
| 602012 | 12 | - | 22 | 70 | ● | |
| 602013 | 13 | - | 25 | 75 | ● | |
| 602014 | 14 | - | 25 | 75 | ● | |
| 602015 | 15 | - | 25 | 75 | ● | |
| 602016 | 16 | - | 28 | 80 | ● | |
| 602018 | 18 | - | 28 | 80 | ● | |
| 602020 | 20 | - | 35 | 100 | ● | |
| 602022 | 22 | - | 35 | 100 | ○ | |
| 602025 | 25 | - | 35 | 100 | ○ | |
| 602030 | 30 | - | 35 | 100 | ○ | |
| 602032 | 32 | - | 35 | 100 | ○ | |



6021



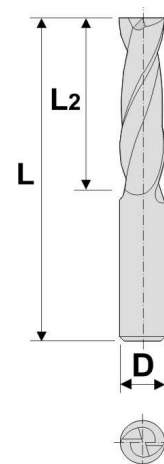
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 602102 | 2 | 6 | 6 | 50 | ○ | |
| 602103 | 3 | 6 | 7 | 57 | ○ | |
| 602104 | 4 | 6 | 8 | 57 | ○ | |
| 602105 | 5 | 6 | 10 | 57 | ○ | |
| 602106 | 6 | 6 | 10 | 57 | ○ | |
| 602107 | 7 | 8 | 13 | 63 | ○ | |
| 602108 | 8 | 8 | 16 | 63 | ○ | |
| 602109 | 9 | 10 | 16 | 72 | ○ | |
| 602110 | 10 | 10 | 19 | 72 | ○ | |
| 602111 | 11 | 12 | 22 | 83 | ○ | |
| 602112 | 12 | 12 | 22 | 83 | ○ | |
| 602113 | 13 | 14 | 22 | 83 | ○ | |
| 602114 | 14 | 14 | 22 | 83 | ○ | |
| 602115 | 15 | 16 | 26 | 92 | ○ | |
| 602116 | 16 | 16 | 26 | 92 | ○ | |
| 602118 | 18 | 18 | 26 | 92 | ○ | |
| 602120 | 20 | 20 | 32 | 104 | ○ | |
| 602122 | 22 | 25 | 32 | 104 | ○ | |
| 602125 | 25 | 25 | 32 | 104 | ○ | |
| 602130 | 30 | 32 | 32 | 104 | ○ | |
| 602132 | 32 | 32 | 32 | 104 | ○ | |



6120



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 612003 | 3 | - | 25 | 60 | ○ | |
| 612004 | 4 | - | 25 | 60 | ○ | |
| 612005 | 5 | - | 30 | 70 | ○ | |
| 612006 | 6 | - | 30 | 70 | ○ | |
| 612007 | 7 | - | 35 | 80 | ○ | |
| 612008 | 8 | - | 35 | 80 | ○ | |
| 612010 | 10 | - | 45 | 100 | ○ | |
| 612012 | 12 | - | 45 | 100 | ○ | |
| 612014 | 14 | - | 45 | 100 | ○ | |
| 612016 | 16 | - | 45 | 100 | ○ | |
| 612018 | 18 | - | 45 | 100 | ○ | |
| 612020 | 20 | - | 55 | 125 | ○ | |
| 612022 | 22 | - | 55 | 125 | ○ | |
| 612025 | 25 | - | 55 | 125 | ○ | |
| 612030 | 30 | - | 55 | 125 | ○ | |
| 612032 | 32 | - | 55 | 125 | ○ | |



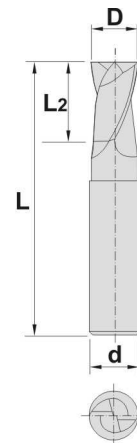
☆ Not suitable ★ Suitable ● Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------|------------|--------------|--------------|---------|-------------|-------------|-----------|----|--------|----|----------|
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | < 850 N/mm² | > 850 N/mm² | | | | | |
| ★ | ★ | ★ | ★ | ☆ | ★ | ★ | ★ | ☆ | ☆ | ★ | ☆ |

7405



| REF. | z | D | d | L | L2 | K10 | TiAIN |
|--------|---|----|----|-----|----|-----|-------|
| 740503 | 2 | 3 | 6 | 57 | 4 | o | |
| 740504 | 2 | 4 | 6 | 57 | 5 | o | |
| 740505 | 2 | 5 | 6 | 57 | 7 | o | |
| 740506 | 2 | 6 | 6 | 57 | 7 | o | |
| 740508 | 2 | 8 | 8 | 63 | 9 | o | |
| 740510 | 2 | 10 | 10 | 72 | 11 | o | |
| 740512 | 2 | 12 | 12 | 83 | 12 | o | |
| 740516 | 2 | 16 | 16 | 92 | 16 | o | |
| 740520 | 2 | 20 | 20 | 104 | 20 | o | |
| 740525 | 2 | 25 | 25 | 106 | 25 | o | |



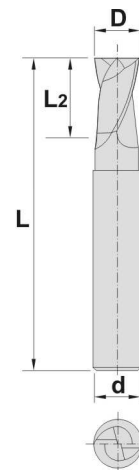
☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|--|------------------|------------------|-----------|----|--------|----|----------|
| <400 N/mm² ☆ <850 N/mm² ☆ <1.100 N/mm² ☆ <1.300 N/mm² ☆ >45 HRC ☆ | ★ | ★ | ☆ | ☆ | ⊕ | ⊕ | ★ |

7415



| REF. | z | D | d | L | L2 | K10 | TiAIN |
|--------|---|----|----|-----|----|-----|-------|
| 741506 | 2 | 6 | 6 | 80 | 7 | o | |
| 741508 | 2 | 8 | 8 | 80 | 9 | o | |
| 741510 | 2 | 10 | 10 | 100 | 11 | o | |
| 741512 | 2 | 12 | 12 | 100 | 12 | o | |
| 741516 | 2 | 16 | 16 | 100 | 16 | o | |
| 741520 | 2 | 20 | 20 | 125 | 20 | o | |
| 741525 | 2 | 25 | 25 | 150 | 25 | o | |



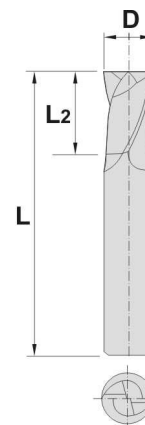
☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|--|------------------|------------------|-----------|----|--------|----|----------|
| <400 N/mm² ☆ <850 N/mm² ☆ <1.100 N/mm² ☆ <1.300 N/mm² ☆ >45 HRC ☆ | ★ | ★ | ☆ | ☆ | ⊕ | ⊕ | ★ |

6915



| REF. | z | D | L | L2 | K10 | TiAIN |
|----------|---|-----|-----|----|-----|-------|
| 691501 | 2 | 1 | 38 | 5 | o | |
| 691501,5 | 2 | 1,5 | 38 | 5 | o | |
| 691502 | 2 | 2 | 38 | 8 | o | |
| 691502,5 | 2 | 2,5 | 38 | 8 | o | |
| 691503 | 2 | 3 | 38 | 12 | o | |
| 691504 | 2 | 4 | 40 | 12 | o | |
| 691505 | 2 | 5 | 50 | 14 | o | |
| 691506 | 2 | 6 | 50 | 16 | o | |
| 691508 | 2 | 8 | 63 | 20 | o | |
| 691510 | 2 | 10 | 72 | 22 | o | |
| 691512 | 2 | 12 | 73 | 22 | o | |
| 691514 | 2 | 14 | 75 | 25 | o | |
| 691516 | 2 | 16 | 82 | 28 | o | |
| 691518 | 2 | 18 | 84 | 28 | o | |
| 691520 | 2 | 20 | 104 | 35 | o | |



☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|--|------------------|------------------|-----------|----|--------|----|----------|
| <400 N/mm² ☆ <850 N/mm² ☆ <1.100 N/mm² ☆ <1.300 N/mm² ☆ >45 HRC ☆ | ★ | ★ | ☆ | ☆ | ⊕ | ⊕ | ★ |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

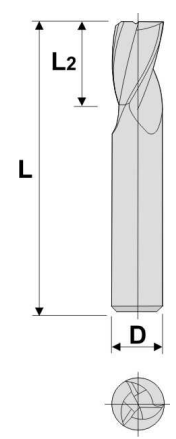
Boring heads

Arbors & adaptors

6030



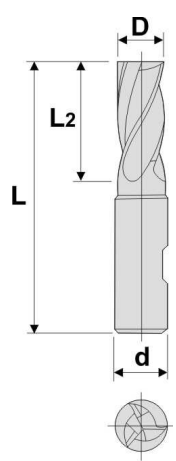
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 603001 | 1 | - | 5 | 40 | ○ | |
| 603002 | 2 | - | 8 | 40 | ● | |
| 603003 | 3 | - | 12 | 40 | ● | |
| 603004 | 4 | - | 12 | 40 | ● | |
| 603005 | 5 | - | 14 | 50 | ● | |
| 603006 | 6 | - | 16 | 50 | ● | |
| 603007 | 7 | - | 20 | 60 | ● | |
| 603008 | 8 | - | 20 | 60 | ● | |
| 603009 | 9 | - | 20 | 60 | ● | |
| 603010 | 10 | - | 22 | 70 | ● | |
| 603011 | 11 | - | 22 | 70 | ● | |
| 603012 | 12 | - | 22 | 70 | ● | |
| 603013 | 13 | - | 25 | 75 | ● | |
| 603014 | 14 | - | 25 | 75 | ● | |
| 603015 | 15 | - | 25 | 75 | ● | |
| 603016 | 16 | - | 28 | 80 | ● | |
| 603018 | 18 | - | 28 | 80 | ● | |
| 603020 | 20 | - | 35 | 100 | ● | |
| 603022 | 22 | - | 35 | 100 | ○ | |
| 603025 | 25 | - | 35 | 100 | ○ | |
| 603030 | 30 | - | 35 | 100 | ○ | |
| 603032 | 32 | - | 35 | 100 | ○ | |



6031



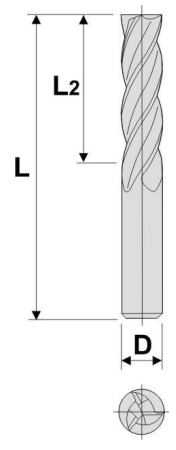
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 603102 | 2 | 6 | 6 | 50 | ○ | |
| 603103 | 3 | 6 | 7 | 57 | ○ | |
| 603104 | 4 | 6 | 8 | 57 | ○ | |
| 603105 | 5 | 6 | 10 | 57 | ○ | |
| 603106 | 6 | 6 | 10 | 57 | ○ | |
| 603107 | 7 | 8 | 13 | 63 | ○ | |
| 603108 | 8 | 8 | 16 | 63 | ○ | |
| 603109 | 9 | 10 | 16 | 72 | ○ | |
| 603110 | 10 | 10 | 19 | 72 | ○ | |
| 603111 | 11 | 12 | 22 | 83 | ○ | |
| 603112 | 12 | 12 | 22 | 83 | ○ | |
| 603113 | 13 | 14 | 22 | 83 | ○ | |
| 603114 | 14 | 14 | 22 | 83 | ○ | |
| 603115 | 15 | 16 | 26 | 92 | ○ | |
| 603116 | 16 | 16 | 26 | 92 | ○ | |
| 603118 | 18 | 18 | 26 | 92 | ○ | |
| 603120 | 20 | 20 | 32 | 104 | ○ | |
| 603122 | 22 | 25 | 32 | 104 | ○ | |
| 603125 | 25 | 25 | 32 | 104 | ○ | |
| 603130 | 30 | 32 | 32 | 104 | ○ | |
| 603132 | 32 | 32 | 32 | 104 | ○ | |



6130



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 613003 | 3 | - | 25 | 60 | ○ | |
| 613004 | 4 | - | 25 | 60 | ○ | |
| 613005 | 5 | - | 30 | 70 | ○ | |
| 613006 | 6 | - | 30 | 70 | ○ | |
| 613007 | 7 | - | 35 | 80 | ○ | |
| 613008 | 8 | - | 35 | 80 | ○ | |
| 613010 | 10 | - | 45 | 100 | ○ | |
| 613012 | 12 | - | 45 | 100 | ○ | |
| 613014 | 14 | - | 45 | 100 | ○ | |
| 613016 | 16 | - | 45 | 100 | ○ | |
| 613018 | 18 | - | 45 | 100 | ○ | |
| 613020 | 20 | - | 55 | 125 | ○ | |
| 613022 | 22 | - | 55 | 125 | ○ | |
| 613025 | 25 | - | 55 | 125 | ○ | |
| 613030 | 30 | - | 55 | 125 | ○ | |
| 613032 | 32 | - | 55 | 125 | ○ | |



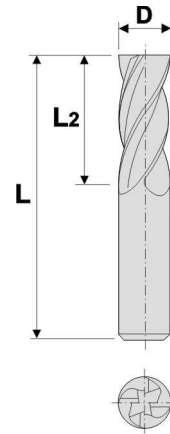
☆ Not suitable ★ Suitable ● Especially suitable

| | | | | | | | |
|---------------|-------------|--------------|------------------|-----------|---------------|------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | <850 N/mm² | >850 N/mm² | |
| ★ | ★ | ★ | ★ | ★ | ☆ | ★ | ☆ |

6040



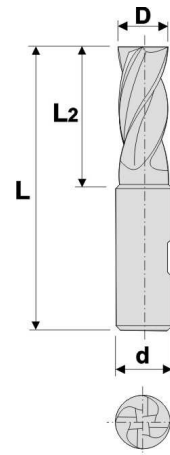
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 604001 | 1 | - | 5 | 40 | ○ | |
| 604002 | 2 | - | 8 | 40 | ● | |
| 604003 | 3 | - | 12 | 40 | ● | |
| 604004 | 4 | - | 12 | 40 | ● | |
| 604005 | 5 | - | 14 | 50 | ● | |
| 604006 | 6 | - | 16 | 50 | ● | |
| 604007 | 7 | - | 20 | 60 | ● | |
| 604008 | 8 | - | 20 | 60 | ● | |
| 604009 | 9 | - | 20 | 60 | ● | |
| 604010 | 10 | - | 22 | 70 | ● | |
| 604011 | 11 | - | 22 | 70 | ● | |
| 604012 | 12 | - | 22 | 70 | ● | |
| 604013 | 13 | - | 25 | 75 | ● | |
| 604014 | 14 | - | 25 | 75 | ● | |
| 604015 | 15 | - | 25 | 75 | ● | |
| 604016 | 16 | - | 28 | 80 | ● | |
| 604018 | 18 | - | 28 | 80 | ● | |
| 604020 | 20 | - | 35 | 100 | ● | |
| 604022 | 22 | - | 35 | 100 | ○ | |
| 604025 | 25 | - | 35 | 100 | ○ | |
| 604030 | 30 | - | 35 | 100 | ○ | |
| 604032 | 32 | - | 35 | 100 | ○ | |



6041



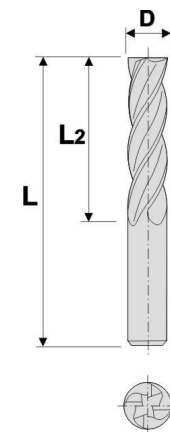
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 604102 | 2 | 6 | 6 | 50 | ○ | |
| 604103 | 3 | 6 | 7 | 57 | ○ | |
| 604104 | 4 | 6 | 8 | 57 | ○ | |
| 604105 | 5 | 6 | 10 | 57 | ○ | |
| 604106 | 6 | 6 | 10 | 57 | ○ | |
| 604107 | 7 | 8 | 13 | 63 | ○ | |
| 604108 | 8 | 8 | 16 | 63 | ○ | |
| 604109 | 9 | 10 | 16 | 72 | ○ | |
| 604110 | 10 | 10 | 19 | 72 | ○ | |
| 604111 | 11 | 12 | 22 | 83 | ○ | |
| 604112 | 12 | 12 | 22 | 83 | ○ | |
| 604113 | 13 | 14 | 22 | 83 | ○ | |
| 604114 | 14 | 14 | 22 | 83 | ○ | |
| 604115 | 15 | 16 | 26 | 92 | ○ | |
| 604116 | 16 | 16 | 26 | 92 | ○ | |
| 604118 | 18 | 18 | 26 | 92 | ○ | |
| 604120 | 20 | 20 | 32 | 104 | ○ | |
| 604122 | 22 | 25 | 32 | 104 | ○ | |
| 604125 | 25 | 25 | 32 | 104 | ○ | |
| 604130 | 30 | 32 | 32 | 104 | ○ | |
| 604132 | 32 | 32 | 32 | 104 | ○ | |



6140



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 614003 | 3 | - | 25 | 60 | ○ | |
| 614004 | 4 | - | 25 | 60 | ○ | |
| 614005 | 5 | - | 30 | 70 | ○ | |
| 614006 | 6 | - | 30 | 70 | ○ | |
| 614007 | 7 | - | 35 | 80 | ○ | |
| 614008 | 8 | - | 35 | 80 | ○ | |
| 614010 | 10 | - | 45 | 100 | ○ | |
| 614012 | 12 | - | 45 | 100 | ○ | |
| 614014 | 14 | - | 45 | 100 | ○ | |
| 614016 | 16 | - | 45 | 100 | ○ | |
| 614018 | 18 | - | 45 | 100 | ○ | |
| 614020 | 20 | - | 55 | 125 | ○ | |
| 614022 | 22 | - | 55 | 125 | ○ | |
| 614025 | 25 | - | 55 | 125 | ○ | |
| 614030 | 30 | - | 55 | 125 | ○ | |
| 614032 | 32 | - | 55 | 125 | ○ | |



☆ Not suitable ★ Suitable ● Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------|------------|--------------|--------------|---------|-------------|-------------|-----------|----|--------|----|----------|
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | < 850 N/mm² | > 850 N/mm² | | | | | |
| ★ | ★ | ★ | ★ | ★ | ★ | ☆ | ★ | ☆ | ☆ | ★ | ☆ |

● Normally available for immediate delivery


○ Only available in a limited quantity

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

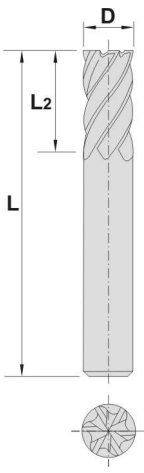


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

6137




| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 613706 | 6 | 6 | 60 | 20 | | ○ |
| 613708 | 6 | 8 | 80 | 25 | | ○ |
| 613710 | 6 | 10 | 80 | 30 | | ○ |
| 613712 | 6 | 12 | 100 | 36 | | ○ |
| 613716 | 6 | 16 | 106 | 46 | | ○ |
| 613720 | 8 | 20 | 125 | 60 | | ○ |
| 613725 | 8 | 25 | 150 | 75 | | ○ |



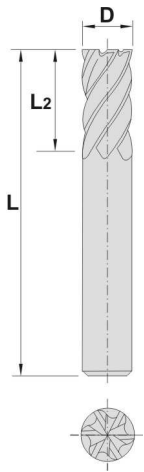
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ☆ | ☆ | ✪ | ✪ | ☆ | ✪ | ★ | ✪ | ☆ | ☆ | ☆ | ☆ |

6197




| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 619706 | 6 | 6 | 60 | 20 | | ○ |
| 619708 | 6 | 8 | 80 | 25 | | ○ |
| 619710 | 6 | 10 | 80 | 30 | | ○ |
| 619712 | 6 | 12 | 100 | 36 | | ○ |
| 619716 | 6 | 16 | 106 | 46 | | ○ |
| 619720 | 8 | 20 | 125 | 60 | | ○ |
| 619725 | 8 | 25 | 150 | 75 | | ○ |



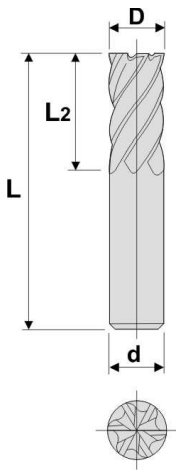
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ☆ | ☆ | ☆ | ✪ | ✪ | ☆ | ☆ | ✪ | ☆ | ☆ | ☆ | ☆ |

6060



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 606003 | 3 | - | 12 | 40 | | ○ |
| 606004 | 4 | - | 12 | 40 | | ○ |
| 606005 | 5 | - | 14 | 50 | | ○ |
| 606006 | 6 | - | 16 | 50 | | ○ |
| 606007 | 7 | - | 20 | 60 | | ○ |
| 606008 | 8 | - | 20 | 60 | | ○ |
| 606009 | 9 | - | 20 | 60 | | ○ |
| 606010 | 10 | - | 22 | 70 | | ○ |
| 606011 | 11 | - | 22 | 70 | | ○ |
| 606012 | 12 | - | 22 | 70 | | ○ |
| 606014 | 14 | - | 25 | 75 | | ○ |
| 606016 | 16 | - | 28 | 80 | | ○ |
| 606018 | 18 | - | 28 | 80 | | ○ |
| 606020 | 20 | - | 35 | 100 | | ○ |
| 606022 | 22 | - | 35 | 100 | | ○ |
| 606025 | 25 | - | 35 | 100 | | ○ |



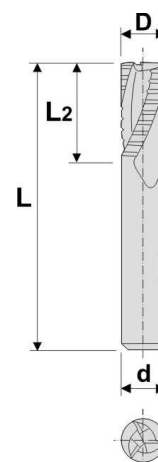
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ✪ | ✪ | ✪ | ✪ | ☆ | ★ | ☆ | ✪ | ☆ | ☆ | ★ | ☆ |

6231



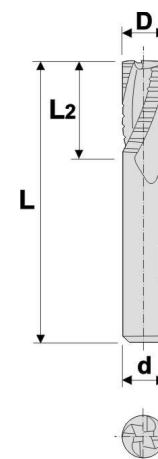
| REF. | D | d | L2 | L | K10 | T1AIN |
|--------|----|----|----|-----|-----|-------|
| 623103 | 3 | 6 | 8 | 57 | o | |
| 623104 | 4 | 6 | 11 | 57 | o | |
| 623105 | 5 | 6 | 13 | 57 | o | |
| 623106 | 6 | 6 | 13 | 57 | o | |
| 623108 | 8 | 8 | 19 | 63 | o | |
| 623110 | 10 | 10 | 22 | 72 | o | |
| 623112 | 12 | 12 | 26 | 83 | o | |
| 623114 | 14 | 14 | 26 | 83 | o | |
| 623116 | 16 | 16 | 32 | 92 | o | |
| 623118 | 18 | 18 | 32 | 92 | o | |
| 623120 | 20 | 20 | 38 | 104 | o | |
| 623122 | 22 | 25 | 38 | 104 | o | |
| 623125 | 25 | 25 | 38 | 104 | o | |
| 623130 | 30 | 32 | 38 | 104 | o | |
| 623132 | 32 | 32 | 38 | 104 | o | |



6241



| REF. | D | d | L2 | L | K10 | T1AIN |
|--------|----|----|----|-----|-----|-------|
| 624103 | 3 | 6 | 8 | 57 | o | |
| 624104 | 4 | 6 | 11 | 57 | o | |
| 624105 | 5 | 6 | 13 | 57 | o | |
| 624106 | 6 | 6 | 13 | 57 | o | |
| 624108 | 8 | 8 | 19 | 63 | o | |
| 624110 | 10 | 10 | 22 | 72 | o | |
| 624112 | 12 | 12 | 26 | 83 | o | |
| 624114 | 14 | 14 | 26 | 83 | o | |
| 624116 | 16 | 16 | 32 | 92 | o | |
| 624118 | 18 | 18 | 32 | 92 | o | |
| 624120 | 20 | 20 | 38 | 104 | o | |
| 624122 | 22 | 25 | 38 | 104 | o | |
| 624125 | 25 | 25 | 38 | 104 | o | |
| 624130 | 30 | 32 | 38 | 104 | o | |
| 624132 | 32 | 32 | 38 | 104 | o | |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

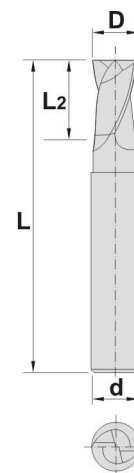
Boring heads

Arbors & adaptors

6327



| REF. | z | D | d | L | L2 | K10 | TiAIN |
|--------|---|----|----|-----|----|-----|-------|
| 632703 | 2 | 3 | 6 | 57 | 4 | | ○ |
| 632704 | 2 | 4 | 6 | 57 | 5 | | ○ |
| 632705 | 2 | 5 | 6 | 57 | 6 | | ○ |
| 632706 | 2 | 6 | 6 | 57 | 7 | | ○ |
| 632708 | 2 | 8 | 8 | 63 | 9 | | ○ |
| 632710 | 2 | 10 | 10 | 72 | 11 | | ○ |
| 632712 | 2 | 12 | 12 | 83 | 12 | | ○ |
| 632716 | 2 | 16 | 16 | 92 | 16 | | ○ |
| 632718 | 2 | 18 | 18 | 92 | 18 | | ○ |
| 632720 | 2 | 20 | 20 | 104 | 20 | | ○ |



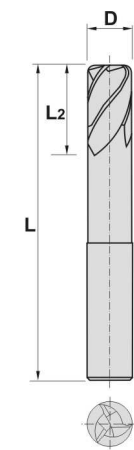
☆ Not suitable ★ Suitable ⬤ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ☆ | ☆ | ⬤ | ⬤ | ⬤ | ⬤ | ★ | ⬤ | ☆ | ☆ | ★ | ☆ |

6337



| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 633706 | 2 | 6 | 80 | 7 | | ○ |
| 633708 | 2 | 8 | 80 | 9 | | ○ |
| 633710 | 2 | 10 | 100 | 11 | | ○ |
| 633712 | 2 | 12 | 120 | 12 | | ○ |
| 633716 | 2 | 16 | 160 | 16 | | ○ |



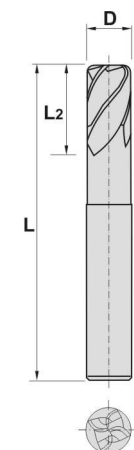
☆ Not suitable ★ Suitable ⬤ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ☆ | ☆ | ⬤ | ⬤ | ⬤ | ⬤ | ★ | ⬤ | ☆ | ☆ | ★ | ☆ |

6427



| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 642706 | 4 | 6 | 57 | 7 | | ○ |
| 642708 | 4 | 8 | 63 | 9 | | ○ |
| 642710 | 4 | 10 | 72 | 11 | | ○ |
| 642712 | 4 | 12 | 83 | 12 | | ○ |
| 642716 | 4 | 16 | 92 | 16 | | ○ |
| 642718 | 4 | 18 | 92 | 18 | | ○ |
| 642720 | 4 | 20 | 104 | 20 | | ○ |



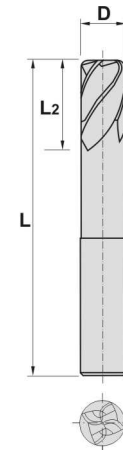
☆ Not suitable ★ Suitable ⬤ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------------------|------------------------|--------------------------|--------------------------|---------|------------------------------|------------------------------|-----------|----|--------|----|----------|
| <400 N/mm ² | <850 N/mm ² | <1.100 N/mm ² | <1.300 N/mm ² | >45 HRC | INOX < 850 N/mm ² | INOX > 850 N/mm ² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| ☆ | ☆ | ⬤ | ⬤ | ⬤ | ★ | ☆ | ⬤ | ★ | ☆ | ☆ | ☆ |

6437



| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 643706 | 4 | 6 | 80 | 7 | | ○ |
| 643708 | 4 | 8 | 80 | 9 | | ○ |
| 643710 | 4 | 10 | 100 | 11 | | ○ |
| 643712 | 4 | 12 | 120 | 12 | | ○ |
| 643716 | 4 | 16 | 160 | 16 | | ○ |



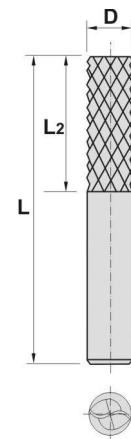
☆ Not suitable ★ Suitable ⊕ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ⊕ | <1.300 N/mm² ⊕ | >45 HRC ⊕ | <850 N/mm² ★ | >850 N/mm² ☆ | ★ |

7965



| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 796502 | 2 | 2 | 38 | 10 | | ○ |
| 796503 | 2 | 3 | 38 | 12 | | ○ |
| 796504 | 2 | 4 | 40 | 15 | | ○ |
| 796505 | 2 | 5 | 50 | 16 | | ○ |
| 796506 | 2 | 6 | 50 | 18 | | ○ |
| 796508 | 2 | 8 | 63 | 25 | | ○ |
| 796510 | 2 | 10 | 72 | 30 | | ○ |
| 796512 | 2 | 12 | 73 | 30 | | ○ |
| 796514 | 2 | 14 | 75 | 30 | | ○ |
| 796516 | 2 | 16 | 82 | 30 | | ○ |
| 796518 | 2 | 18 | 84 | 32 | | ○ |
| 796520 | 2 | 20 | 104 | 35 | | ○ |



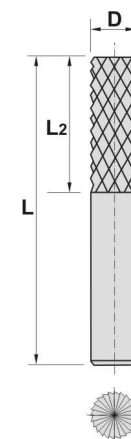
☆ Not suitable ★ Suitable ⊕ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ☆ | <1.300 N/mm² ☆ | >45 HRC ☆ | <850 N/mm² ☆ | >850 N/mm² ☆ | ⊕ |

7975



| REF. | z | D | L | L2 | K10 | TiAIN |
|--------|---|----|-----|----|-----|-------|
| 797502 | 2 | 2 | 38 | 10 | | ○ |
| 797503 | 2 | 3 | 38 | 12 | | ○ |
| 797504 | 2 | 4 | 40 | 15 | | ○ |
| 797505 | 2 | 5 | 50 | 16 | | ○ |
| 797506 | 2 | 6 | 50 | 18 | | ○ |
| 797508 | 2 | 8 | 63 | 25 | | ○ |
| 797510 | 2 | 10 | 72 | 30 | | ○ |
| 797512 | 2 | 12 | 73 | 30 | | ○ |
| 797514 | 2 | 14 | 75 | 30 | | ○ |
| 797516 | 2 | 16 | 82 | 30 | | ○ |
| 797518 | 2 | 18 | 84 | 32 | | ○ |
| 797520 | 2 | 20 | 104 | 35 | | ○ |



☆ Not suitable ★ Suitable ⊕ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ☆ | <1.300 N/mm² ☆ | >45 HRC ☆ | <850 N/mm² ☆ | >850 N/mm² ☆ | ⊕ |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

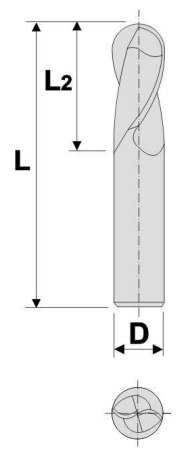


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

6320



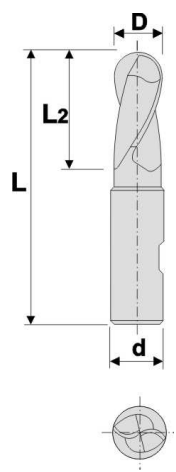
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 632001 | 1 | - | 5 | 40 | ○ | |
| 632002 | 2 | - | 8 | 40 | ● | |
| 632003 | 3 | - | 12 | 40 | ● | |
| 632004 | 4 | - | 12 | 40 | ● | |
| 632005 | 5 | - | 14 | 50 | ● | |
| 632006 | 6 | - | 16 | 50 | ● | |
| 632007 | 7 | - | 20 | 60 | ● | |
| 632008 | 8 | - | 20 | 60 | ● | |
| 632009 | 9 | - | 20 | 60 | ● | |
| 632010 | 10 | - | 22 | 70 | ● | |
| 632011 | 11 | - | 22 | 70 | ● | |
| 632012 | 12 | - | 22 | 70 | ● | |
| 632013 | 13 | - | 25 | 75 | ○ | |
| 632014 | 14 | - | 25 | 75 | ○ | |
| 632015 | 15 | - | 25 | 75 | ○ | |
| 632016 | 16 | - | 28 | 80 | ○ | |
| 632018 | 18 | - | 28 | 80 | ○ | |
| 632020 | 20 | - | 35 | 100 | ○ | |
| 632022 | 22 | - | 35 | 100 | ○ | |
| 632025 | 25 | - | 35 | 100 | ○ | |
| 632030 | 30 | - | 35 | 100 | ○ | |
| 632032 | 32 | - | 35 | 100 | ○ | |



6321



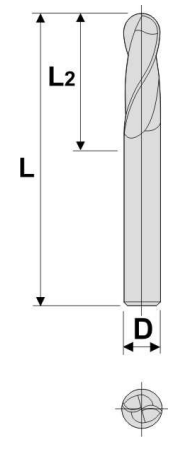
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 632102 | 2 | 6 | 6 | 50 | ○ | |
| 632103 | 3 | 6 | 7 | 57 | ○ | |
| 632104 | 4 | 6 | 8 | 57 | ○ | |
| 632105 | 5 | 6 | 10 | 57 | ○ | |
| 632106 | 6 | 6 | 10 | 57 | ○ | |
| 632107 | 7 | 8 | 13 | 63 | ○ | |
| 632108 | 8 | 8 | 16 | 63 | ○ | |
| 632109 | 9 | 10 | 16 | 72 | ○ | |
| 632110 | 10 | 10 | 19 | 72 | ○ | |
| 632111 | 11 | 12 | 22 | 83 | ○ | |
| 632112 | 12 | 12 | 22 | 83 | ○ | |
| 632113 | 13 | 14 | 22 | 83 | ○ | |
| 632114 | 14 | 14 | 22 | 83 | ○ | |
| 632115 | 15 | 16 | 26 | 92 | ○ | |
| 632116 | 16 | 16 | 26 | 92 | ○ | |
| 632118 | 18 | 18 | 26 | 92 | ○ | |
| 632120 | 20 | 20 | 32 | 104 | ○ | |
| 632122 | 22 | 25 | 32 | 104 | ○ | |
| 632125 | 25 | 25 | 32 | 104 | ○ | |
| 632130 | 30 | 32 | 32 | 104 | ○ | |
| 632132 | 32 | 32 | 32 | 104 | ○ | |



6420



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 642003 | 3 | - | 25 | 60 | ● | |
| 642004 | 4 | - | 25 | 60 | ● | |
| 642005 | 5 | - | 30 | 70 | ● | |
| 642006 | 6 | - | 30 | 70 | ● | |
| 642007 | 7 | - | 35 | 80 | ● | |
| 642008 | 8 | - | 35 | 80 | ● | |
| 642010 | 10 | - | 45 | 100 | ● | |
| 642012 | 12 | - | 45 | 100 | ● | |
| 642014 | 14 | - | 45 | 100 | ○ | |
| 642016 | 16 | - | 45 | 100 | ● | |
| 642018 | 18 | - | 45 | 100 | ○ | |
| 642020 | 20 | - | 55 | 125 | ● | |
| 642022 | 22 | - | 55 | 125 | ○ | |
| 642025 | 25 | - | 55 | 125 | ○ | |
| 642030 | 30 | - | 55 | 125 | ○ | |
| 642032 | 32 | - | 55 | 125 | ○ | |



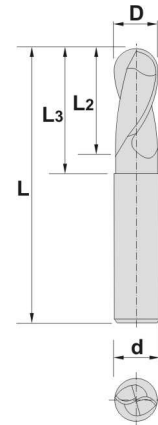
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------|------------|--------------|--------------|---------|-------------|-------------|-----------|----|--------|----|----------|
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | < 850 N/mm² | > 850 N/mm² | | | | | |
| ✪ | ✪ | ✪ | ✪ | ✪ | ✪ | ★ | ✪ | ☆ | ☆ | ★ | ☆ |

6945



| REF. | z | D | d | L | L2 | L3 | K10 | TiAIN |
|--------|---|----|----|-----|----|----|-----|-------|
| 694502 | 2 | 2 | 6 | 57 | 4 | 6 | o | |
| 694503 | 2 | 3 | 6 | 57 | 6 | 9 | o | |
| 694504 | 2 | 4 | 6 | 57 | 8 | 12 | o | |
| 694505 | 2 | 5 | 6 | 57 | 10 | 15 | o | |
| 694506 | 2 | 6 | 6 | 57 | 12 | 20 | o | |
| 694508 | 2 | 8 | 8 | 63 | 16 | 20 | o | |
| 694510 | 2 | 10 | 10 | 72 | 20 | 31 | o | |
| 694512 | 2 | 12 | 12 | 83 | 24 | 37 | o | |
| 694516 | 2 | 16 | 16 | 92 | 32 | 43 | o | |
| 694520 | 2 | 20 | 20 | 104 | 40 | 53 | o | |



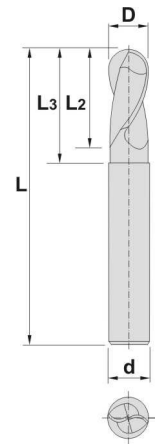
☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics | |
|-----------------|------------------|-------------------|-------------------|--------------|--------|----|----------|---|
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ☆ | <1.300 N/mm² ☆ | >45 HRC ☆ | ☆ | ⊕ | ⊕ | ★ |

6955



| REF. | z | D | d | L | L2 | L3 | K10 | TiAIN |
|--------|---|----|----|-----|----|----|-----|-------|
| 695502 | 2 | 2 | 6 | 80 | 4 | 12 | o | |
| 695503 | 2 | 3 | 6 | 80 | 6 | 15 | o | |
| 695504 | 2 | 4 | 6 | 80 | 8 | 18 | o | |
| 695505 | 2 | 5 | 6 | 80 | 10 | 25 | o | |
| 695506 | 2 | 6 | 6 | 80 | 12 | 30 | o | |
| 695508 | 2 | 8 | 8 | 80 | 16 | 35 | o | |
| 695510 | 2 | 10 | 10 | 100 | 20 | 40 | o | |
| 695512 | 2 | 12 | 12 | 120 | 24 | 50 | o | |
| 695516 | 2 | 16 | 16 | 160 | 32 | 55 | o | |
| 695520 | 2 | 20 | 20 | 160 | 40 | 60 | o | |



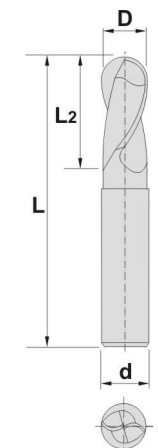
☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics | |
|-----------------|------------------|-------------------|-------------------|--------------|--------|----|----------|---|
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ☆ | <1.300 N/mm² ☆ | >45 HRC ☆ | ☆ | ⊕ | ⊕ | ★ |

7597



| REF. | z | D | d | L | L2 | K10 | TiAIN |
|--------|---|----|----|-----|----|-----|-------|
| 759702 | 2 | 2 | 6 | 80 | 6 | o | |
| 759703 | 2 | 3 | 6 | 80 | 7 | o | |
| 759704 | 2 | 4 | 6 | 80 | 8 | o | |
| 759705 | 2 | 5 | 6 | 80 | 10 | o | |
| 759706 | 2 | 6 | 6 | 80 | 10 | o | |
| 759708 | 2 | 8 | 8 | 100 | 16 | o | |
| 759710 | 2 | 10 | 10 | 120 | 19 | o | |
| 759712 | 2 | 12 | 12 | 120 | 22 | o | |
| 759716 | 2 | 16 | 16 | 160 | 26 | o | |
| 759720 | 2 | 20 | 20 | 160 | 32 | o | |
| 759725 | 2 | 25 | 25 | 160 | 32 | o | |



☆ Not suitable ★ Suitable ⊕ Especially suitable

| Steels | INOX < 850 N/mm² | INOX > 850 N/mm² | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|-----------------|------------------|-------------------|-------------------|--------------|--------|----|----------|
| <400 N/mm² ☆ | <850 N/mm² ☆ | <1.100 N/mm² ⊕ | <1.300 N/mm² ⊕ | >45 HRC ⊕ | ☆ | ☆ | ☆ |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

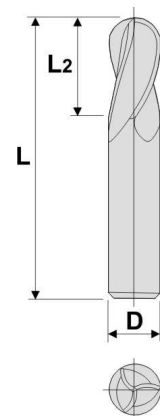
Boring heads

Arbors & adaptors

6330



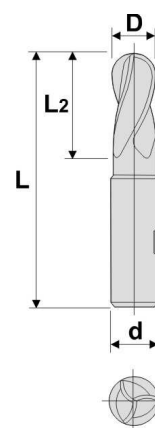
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 633001 | 1 | - | 5 | 40 | ○ | |
| 633002 | 2 | - | 8 | 40 | ○ | |
| 633003 | 3 | - | 12 | 40 | ○ | |
| 633004 | 4 | - | 12 | 40 | ○ | |
| 633005 | 5 | - | 14 | 50 | ○ | |
| 633006 | 6 | - | 16 | 50 | ○ | |
| 633007 | 7 | - | 20 | 60 | ○ | |
| 633008 | 8 | - | 20 | 60 | ○ | |
| 633009 | 9 | - | 20 | 60 | ○ | |
| 633010 | 10 | - | 22 | 70 | ○ | |
| 633011 | 11 | - | 22 | 70 | ○ | |
| 633012 | 12 | - | 22 | 70 | ○ | |
| 633013 | 13 | - | 25 | 75 | ○ | |
| 633014 | 14 | - | 25 | 75 | ○ | |
| 633015 | 15 | - | 25 | 75 | ○ | |
| 633016 | 16 | - | 28 | 80 | ○ | |
| 633018 | 18 | - | 28 | 80 | ○ | |
| 633020 | 20 | - | 35 | 100 | ○ | |
| 633022 | 22 | - | 35 | 100 | ○ | |
| 633025 | 25 | - | 35 | 100 | ○ | |
| 633030 | 30 | - | 35 | 100 | ○ | |
| 633032 | 32 | - | 35 | 100 | ○ | |



6331



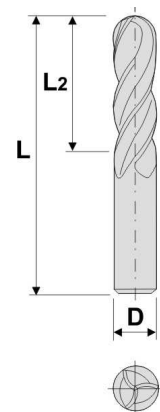
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 633102 | 2 | 6 | 6 | 50 | ○ | |
| 633103 | 3 | 6 | 7 | 57 | ○ | |
| 633104 | 4 | 6 | 8 | 57 | ○ | |
| 633105 | 5 | 6 | 10 | 57 | ○ | |
| 633106 | 6 | 6 | 10 | 57 | ○ | |
| 633107 | 7 | 8 | 13 | 63 | ○ | |
| 633108 | 8 | 8 | 16 | 63 | ○ | |
| 633109 | 9 | 10 | 16 | 72 | ○ | |
| 633110 | 10 | 10 | 19 | 72 | ○ | |
| 633111 | 11 | 12 | 22 | 83 | ○ | |
| 633112 | 12 | 12 | 22 | 83 | ○ | |
| 633113 | 13 | 14 | 22 | 83 | ○ | |
| 633114 | 14 | 14 | 22 | 83 | ○ | |
| 633115 | 15 | 16 | 26 | 92 | ○ | |
| 633116 | 16 | 16 | 26 | 92 | ○ | |
| 633118 | 18 | 18 | 26 | 92 | ○ | |
| 633120 | 20 | 20 | 32 | 104 | ○ | |
| 633122 | 22 | 25 | 32 | 104 | ○ | |
| 633125 | 25 | 25 | 32 | 104 | ○ | |
| 633130 | 30 | 32 | 32 | 104 | ○ | |
| 633132 | 32 | 32 | 32 | 104 | ○ | |



6430



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 643003 | 3 | - | 25 | 60 | ○ | |
| 643004 | 4 | - | 25 | 60 | ○ | |
| 643005 | 5 | - | 30 | 70 | ○ | |
| 643006 | 6 | - | 30 | 70 | ○ | |
| 643007 | 7 | - | 35 | 80 | ○ | |
| 643008 | 8 | - | 35 | 80 | ○ | |
| 643010 | 10 | - | 45 | 100 | ○ | |
| 643012 | 12 | - | 45 | 100 | ○ | |
| 643014 | 14 | - | 45 | 100 | ○ | |
| 643016 | 16 | - | 45 | 100 | ○ | |
| 643018 | 18 | - | 45 | 100 | ○ | |
| 643020 | 20 | - | 55 | 125 | ○ | |
| 643022 | 22 | - | 55 | 125 | ○ | |
| 643025 | 25 | - | 55 | 125 | ○ | |
| 643030 | 30 | - | 55 | 125 | ○ | |
| 643032 | 32 | - | 55 | 125 | ○ | |



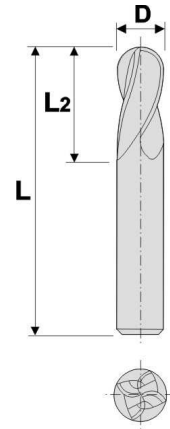
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------|------------|--------------|--------------|---------|-------------|-------------|-----------|----|--------|----|----------|
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | < 850 N/mm² | > 850 N/mm² | | | | | |
| ✪ | ✪ | ✪ | ✪ | ✪ | ✪ | ★ | ✪ | ★ | ☆ | ★ | ☆ |

6340



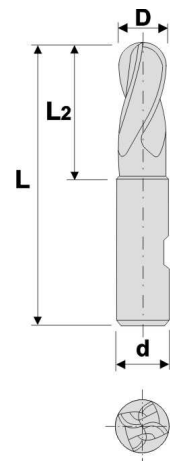
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 634001 | 1 | - | 5 | 40 | • | |
| 634002 | 2 | - | 8 | 40 | • | |
| 634003 | 3 | - | 12 | 40 | • | |
| 634004 | 4 | - | 12 | 40 | • | |
| 634005 | 5 | - | 14 | 50 | • | |
| 634006 | 6 | - | 16 | 50 | • | |
| 634007 | 7 | - | 20 | 60 | • | |
| 634008 | 8 | - | 20 | 60 | • | |
| 634009 | 9 | - | 20 | 60 | • | |
| 634010 | 10 | - | 22 | 70 | • | |
| 634011 | 11 | - | 22 | 70 | • | |
| 634012 | 12 | - | 22 | 70 | • | |
| 634013 | 13 | - | 25 | 75 | • | |
| 634014 | 14 | - | 25 | 75 | • | |
| 634015 | 15 | - | 25 | 75 | • | |
| 634016 | 16 | - | 28 | 80 | • | |
| 634018 | 18 | - | 28 | 80 | • | |
| 634020 | 20 | - | 35 | 100 | • | |
| 634022 | 22 | - | 35 | 100 | • | |
| 634025 | 25 | - | 35 | 100 | • | |
| 634030 | 30 | - | 35 | 100 | • | |
| 634032 | 32 | - | 35 | 100 | • | |



6341



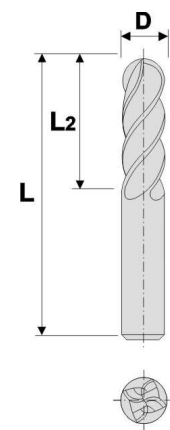
| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|-----|-----|-------|
| 634102 | 2 | 6 | 6 | 50 | ○ | |
| 634103 | 3 | 6 | 7 | 57 | ○ | |
| 634104 | 4 | 6 | 8 | 57 | ○ | |
| 634105 | 5 | 6 | 10 | 57 | ○ | |
| 634106 | 6 | 6 | 10 | 57 | ○ | |
| 634107 | 7 | 8 | 13 | 63 | ○ | |
| 634108 | 8 | 8 | 16 | 63 | ○ | |
| 634109 | 9 | 10 | 16 | 72 | ○ | |
| 634110 | 10 | 10 | 19 | 72 | ○ | |
| 634111 | 11 | 12 | 22 | 83 | ○ | |
| 634112 | 12 | 12 | 22 | 83 | ○ | |
| 634113 | 13 | 14 | 22 | 83 | ○ | |
| 634114 | 14 | 14 | 22 | 83 | ○ | |
| 634115 | 15 | 16 | 26 | 92 | ○ | |
| 634116 | 16 | 16 | 26 | 92 | ○ | |
| 634118 | 18 | 18 | 26 | 92 | ○ | |
| 634120 | 20 | 20 | 32 | 104 | ○ | |
| 634122 | 22 | 25 | 32 | 104 | ○ | |
| 634125 | 25 | 25 | 32 | 104 | ○ | |
| 634130 | 30 | 32 | 32 | 104 | ○ | |
| 634132 | 32 | 32 | 32 | 104 | ○ | |



6440



| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|---|----|-----|-----|-------|
| 644003 | 3 | - | 25 | 60 | ○ | |
| 644004 | 4 | - | 25 | 60 | ○ | |
| 644005 | 5 | - | 30 | 70 | ○ | |
| 644006 | 6 | - | 30 | 70 | ○ | |
| 644007 | 7 | - | 35 | 80 | ○ | |
| 644008 | 8 | - | 35 | 80 | ○ | |
| 644010 | 10 | - | 45 | 100 | ○ | |
| 644012 | 12 | - | 45 | 100 | ○ | |
| 644014 | 14 | - | 45 | 100 | ○ | |
| 644016 | 16 | - | 45 | 100 | ○ | |
| 644018 | 18 | - | 45 | 100 | ○ | |
| 644020 | 20 | - | 55 | 125 | ○ | |
| 644022 | 22 | - | 55 | 125 | ○ | |
| 644025 | 25 | - | 55 | 125 | ○ | |
| 644030 | 30 | - | 55 | 125 | ○ | |
| 644032 | 32 | - | 55 | 125 | ○ | |



☆ Not suitable ★ Suitable ✪ Especially suitable


| Steels | | | | | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
|------------|------------|--------------|--------------|---------|-------------|-------------|-----------|----|--------|----|----------|
| <400 N/mm² | <850 N/mm² | <1.100 N/mm² | <1.300 N/mm² | >45 HRC | < 850 N/mm² | > 850 N/mm² | | ☆ | ☆ | ★ | ☆ |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

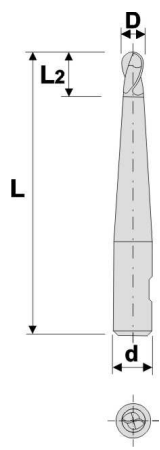


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

6521




| REF. | D | d | L2 | L | K10 | TiAIN |
|--------|----|----|----|----|-----|-------|
| 652103 | 3 | 6 | 4 | 57 | | • |
| 652104 | 4 | 6 | 5 | 57 | | • |
| 652105 | 5 | 8 | 6 | 63 | | • |
| 652106 | 6 | 8 | 6 | 63 | | • |
| 652108 | 8 | 10 | 10 | 72 | | • |
| 652110 | 10 | 12 | 12 | 73 | | • |



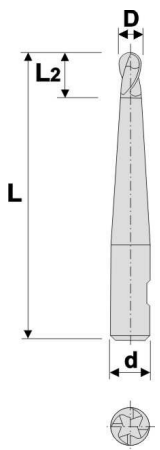
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | INOX < | INOX > | CAST IRON | Ti | Cu, Ms | Al | Plastics | | | | |
|-----------------------------|-----------------------------|-------------------------------|-------------------------------|--------------|----------------------------|----------------------------|----------|---|---|---|---|
| <400 N/mm ² ☆ | <850 N/mm ² ☆ | <1.100 N/mm ² ☆ | <1.300 N/mm ² ✪ | >45 HRC ✪ | 850 N/mm ² ✪ | 850 N/mm ² ★ | ★ | ☆ | ☆ | ☆ | ☆ |

6541



| REF. | D | d | L2 | L | K10 | TiAIN |
|---------|----|----|----|-----|-----|-------|
| 654104 | 4 | 8 | 6 | 100 | | • |
| 654105 | 5 | 8 | 6 | 63 | | ○ |
| 654105L | 5 | 8 | 6 | 100 | | • |
| 654106 | 6 | 8 | 6 | 63 | | ○ |
| 654106L | 6 | 10 | 9 | 100 | | • |
| 654108 | 8 | 10 | 10 | 72 | | ○ |
| 654108L | 8 | 10 | 12 | 100 | | • |
| 654110 | 10 | 12 | 12 | 73 | | ○ |
| 654110L | 10 | 12 | 15 | 100 | | • |
| 654112 | 12 | 16 | 15 | 150 | | • |



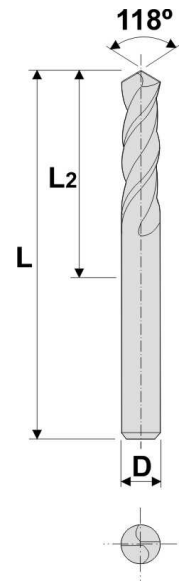
☆ Not suitable ★ Suitable ✪ Especially suitable

| Steels | INOX < | INOX > | CAST IRON | Ti | Cu, Ms | Al | Plastics | | | | |
|-----------------------------|-----------------------------|-------------------------------|-------------------------------|--------------|----------------------------|----------------------------|----------|---|---|---|---|
| <400 N/mm ² ☆ | <850 N/mm ² ☆ | <1.100 N/mm ² ☆ | <1.300 N/mm ² ✪ | >45 HRC ✪ | 850 N/mm ² ✪ | 850 N/mm ² ★ | ★ | ☆ | ☆ | ☆ | ☆ |

7020



| REF. | D | L2 | L | K10 | TiAIN |
|----------|-----|----|----|-----|-------|
| 702000.5 | 0,5 | 6 | 26 | • | |
| 702000.6 | 0,6 | 6 | 26 | • | |
| 702000.7 | 0,7 | 6 | 26 | • | |
| 702000.8 | 0,8 | 6 | 26 | • | |
| 702000.9 | 0,9 | 6 | 26 | • | |
| 702001.0 | 1,0 | 6 | 26 | • | |
| 702001.1 | 1,1 | 7 | 28 | • | |
| 702001.2 | 1,2 | 8 | 30 | • | |
| 702001.3 | 1,3 | 8 | 30 | • | |
| 702001.4 | 1,4 | 9 | 32 | • | |
| 702001.5 | 1,5 | 9 | 32 | • | |
| 702001.6 | 1,6 | 10 | 34 | • | |
| 702001.7 | 1,7 | 10 | 34 | • | |
| 702001.8 | 1,8 | 11 | 36 | • | |
| 702001.9 | 1,9 | 11 | 36 | • | |
| 702002.0 | 2,0 | 12 | 38 | • | |
| 702002.1 | 2,1 | 12 | 38 | • | |
| 702002.2 | 2,2 | 13 | 40 | • | |
| 702002.3 | 2,3 | 13 | 40 | • | |
| 702002.4 | 2,4 | 14 | 43 | • | |
| 702002.5 | 2,5 | 14 | 43 | • | |
| 702002.6 | 2,6 | 14 | 43 | • | |
| 702002.7 | 2,7 | 16 | 46 | • | |
| 702002.8 | 2,8 | 16 | 46 | • | |
| 702002.9 | 2,9 | 16 | 46 | • | |
| 702003.0 | 3,0 | 16 | 46 | • | |
| 702003.1 | 3,1 | 18 | 49 | • | |
| 702003.2 | 3,2 | 18 | 49 | • | |
| 702003.3 | 3,3 | 18 | 49 | • | |
| 702003.4 | 3,4 | 20 | 52 | • | |
| 702003.5 | 3,5 | 20 | 52 | • | |
| 702003.6 | 3,6 | 20 | 52 | • | |
| 702003.7 | 3,7 | 20 | 52 | • | |
| 702003.8 | 3,8 | 22 | 55 | • | |
| 702003.9 | 3,9 | 22 | 55 | • | |
| 702004.0 | 4,0 | 22 | 55 | • | |
| 702004.1 | 4,1 | 22 | 55 | • | |
| 702004.2 | 4,2 | 22 | 55 | • | |
| 702004.3 | 4,3 | 24 | 58 | • | |
| 702004.4 | 4,4 | 24 | 58 | • | |
| 702004.5 | 4,5 | 24 | 58 | • | |
| 702004.6 | 4,6 | 24 | 58 | • | |
| 702004.7 | 4,7 | 24 | 58 | • | |
| 702004.8 | 4,8 | 26 | 62 | • | |
| 702004.9 | 4,9 | 26 | 62 | • | |
| 702005.0 | 5,0 | 26 | 62 | • | |
| 702005.1 | 5,1 | 26 | 62 | • | |
| 702005.2 | 5,2 | 26 | 62 | • | |
| 702005.3 | 5,3 | 26 | 62 | • | |
| 702005.4 | 5,4 | 28 | 66 | • | |
| 702005.5 | 5,5 | 28 | 66 | • | |
| 702005.6 | 5,6 | 28 | 66 | • | |
| 702005.7 | 5,7 | 28 | 66 | • | |
| 702005.8 | 5,8 | 28 | 66 | • | |
| 702005.9 | 5,9 | 28 | 66 | • | |
| 702006.0 | 6,0 | 28 | 66 | • | |
| 702006.1 | 6,1 | 31 | 70 | • | |
| 702006.2 | 6,2 | 31 | 70 | • | |
| 702006.3 | 6,3 | 31 | 70 | • | |
| 702006.4 | 6,4 | 31 | 70 | • | |
| 702006.5 | 6,5 | 31 | 70 | • | |
| 702006.6 | 6,6 | 31 | 70 | • | |
| 702006.7 | 6,7 | 31 | 70 | • | |
| 702006.8 | 6,8 | 34 | 74 | • | |
| 702006.9 | 6,9 | 34 | 74 | • | |
| 702007.0 | 7,0 | 34 | 74 | • | |
| 702007.1 | 7,1 | 34 | 74 | • | |
| 702007.2 | 7,2 | 34 | 74 | • | |
| 702007.3 | 7,3 | 34 | 74 | • | |
| 702007.4 | 7,4 | 34 | 74 | • | |
| 702007.5 | 7,5 | 34 | 74 | • | |
| 702007.6 | 7,6 | 36 | 79 | • | |
| 702007.7 | 7,7 | 36 | 79 | • | |
| 702007.8 | 7,8 | 36 | 79 | • | |
| 702007.9 | 7,9 | 36 | 79 | • | |
| 702008.0 | 8,0 | 36 | 79 | • | |
| 702008.1 | 8,1 | 36 | 79 | • | |
| 702008.2 | 8,2 | 36 | 79 | • | |
| 702008.3 | 8,3 | 36 | 79 | • | |
| 702008.4 | 8,4 | 36 | 79 | • | |
| 702008.5 | 8,5 | 36 | 79 | • | |
| 702008.6 | 8,6 | 40 | 84 | • | |



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

• Normally available for immediate delivery

◦ Only available in a limited quantity

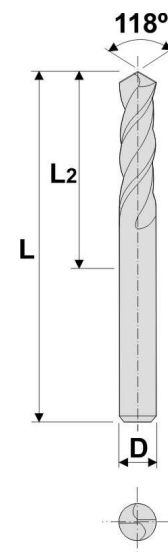


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

7020



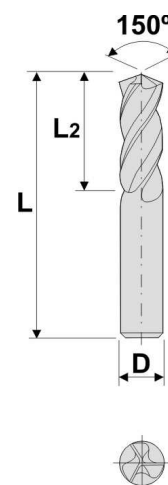
| REF. | D | L2 | L | K10 | TiAIN |
|----------|------|----|-----|-----|-------|
| 702008.7 | 8,7 | 40 | 84 | ● | |
| 702008.8 | 8,8 | 40 | 84 | ● | |
| 702008.9 | 8,9 | 40 | 84 | ● | |
| 702009.0 | 9,0 | 40 | 84 | ● | |
| 702009.1 | 9,1 | 40 | 84 | ● | |
| 702009.2 | 9,2 | 40 | 84 | ● | |
| 702009.3 | 9,3 | 40 | 84 | ● | |
| 702009.4 | 9,4 | 40 | 84 | ● | |
| 702009.5 | 9,5 | 40 | 84 | ● | |
| 702009.6 | 9,6 | 43 | 86 | ● | |
| 702009.7 | 9,7 | 43 | 86 | ● | |
| 702009.8 | 9,8 | 43 | 86 | ● | |
| 702009.9 | 9,9 | 43 | 86 | ● | |
| 702010.0 | 10,0 | 43 | 86 | ● | |
| 702010.2 | 10,2 | 43 | 86 | ● | |
| 702010.5 | 10,5 | 43 | 86 | ● | |
| 702011.0 | 11,0 | 47 | 95 | ● | |
| 702011.5 | 11,5 | 47 | 95 | ● | |
| 702012.0 | 12,0 | 51 | 102 | ● | |
| 702012.5 | 12,5 | 51 | 102 | ● | |
| 702013.0 | 13,0 | 51 | 102 | ● | |
| 702013.5 | 13,5 | 54 | 107 | ● | |
| 702014.0 | 14,0 | 54 | 107 | ● | |
| 702014.5 | 14,5 | 56 | 111 | ● | |
| 702015.0 | 15,0 | 56 | 111 | ● | |
| 702015.5 | 15,5 | 58 | 115 | ● | |
| 702016.0 | 16,0 | 58 | 115 | ● | |
| 702016.5 | 16,5 | 60 | 119 | ● | |
| 702017.0 | 17,0 | 60 | 119 | ● | |
| 702017.5 | 17,5 | 62 | 123 | ● | |
| 702018.0 | 18,0 | 62 | 123 | ● | |
| 702018.5 | 18,5 | 64 | 127 | ● | |
| 702019.0 | 19,0 | 64 | 127 | ● | |
| 702019.5 | 19,5 | 66 | 131 | ● | |
| 702020.0 | 20,0 | 66 | 131 | ● | |



7030



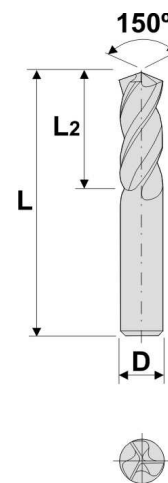
| REF. | D | L2 | L | K10 | TiAIN |
|----------|-----|----|----|-----|-------|
| 703003.0 | 3,0 | 16 | 46 | ○ | |
| 703003.1 | 3,1 | 18 | 49 | ○ | |
| 703003.2 | 3,2 | 18 | 49 | ○ | |
| 703003.3 | 3,3 | 18 | 49 | ○ | |
| 703003.4 | 3,4 | 20 | 52 | ○ | |
| 703003.5 | 3,5 | 20 | 52 | ○ | |
| 703003.6 | 3,6 | 20 | 52 | ○ | |
| 703003.7 | 3,7 | 20 | 52 | ○ | |
| 703003.8 | 3,8 | 22 | 55 | ○ | |
| 703003.9 | 3,9 | 22 | 55 | ○ | |
| 703004.0 | 4,0 | 22 | 55 | ● | |
| 703004.1 | 4,1 | 22 | 55 | ○ | |
| 703004.2 | 4,2 | 22 | 55 | ○ | |
| 703004.3 | 4,3 | 24 | 58 | ○ | |
| 703004.4 | 4,4 | 24 | 58 | ○ | |
| 703004.5 | 4,5 | 24 | 58 | ○ | |
| 703004.6 | 4,6 | 24 | 58 | ○ | |
| 703004.7 | 4,7 | 24 | 58 | ○ | |
| 703004.8 | 4,8 | 26 | 62 | ○ | |
| 703004.9 | 4,9 | 26 | 62 | ○ | |
| 703005.0 | 5,0 | 26 | 62 | ● | |
| 703005.1 | 5,1 | 26 | 62 | ○ | |
| 703005.2 | 5,2 | 26 | 62 | ○ | |
| 703005.3 | 5,3 | 26 | 62 | ○ | |
| 703005.4 | 5,4 | 28 | 66 | ○ | |
| 703005.5 | 5,5 | 28 | 66 | ○ | |
| 703005.6 | 5,6 | 28 | 66 | ○ | |
| 703005.7 | 5,7 | 28 | 66 | ○ | |
| 703005.8 | 5,8 | 28 | 66 | ○ | |
| 703005.9 | 5,9 | 28 | 66 | ○ | |
| 703006.0 | 6,0 | 28 | 66 | ● | |
| 703006.1 | 6,1 | 31 | 70 | ○ | |
| 703006.2 | 6,2 | 31 | 70 | ○ | |
| 703006.3 | 6,3 | 31 | 70 | ○ | |
| 703006.4 | 6,4 | 31 | 70 | ○ | |
| 703006.5 | 6,5 | 31 | 70 | ○ | |



7030



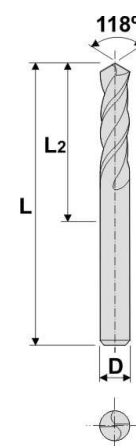
| REF. | D | L2 | L | K10 | TiAIN |
|----------|------|----|-----|-----|-------|
| 703006.6 | 6,6 | 31 | 70 | ○ | |
| 703006.7 | 6,7 | 31 | 70 | ○ | |
| 703006.8 | 6,8 | 34 | 74 | ○ | |
| 703006.9 | 6,9 | 34 | 74 | ○ | |
| 703007.0 | 7,0 | 34 | 74 | ● | |
| 703007.1 | 7,1 | 34 | 74 | ○ | |
| 703007.2 | 7,2 | 34 | 74 | ○ | |
| 703007.3 | 7,3 | 34 | 74 | ○ | |
| 703007.4 | 7,4 | 34 | 74 | ○ | |
| 703007.5 | 7,5 | 34 | 74 | ○ | |
| 703007.6 | 7,6 | 36 | 79 | ○ | |
| 703007.7 | 7,7 | 36 | 79 | ○ | |
| 703007.8 | 7,8 | 36 | 79 | ○ | |
| 703007.9 | 7,9 | 36 | 79 | ○ | |
| 703008.0 | 8,0 | 36 | 79 | ● | |
| 703008.1 | 8,1 | 36 | 79 | ○ | |
| 703008.2 | 8,2 | 36 | 79 | ○ | |
| 703008.3 | 8,3 | 36 | 79 | ○ | |
| 703008.4 | 8,4 | 36 | 79 | ○ | |
| 703008.5 | 8,5 | 36 | 79 | ○ | |
| 703008.6 | 8,6 | 40 | 84 | ○ | |
| 703008.7 | 8,7 | 40 | 84 | ○ | |
| 703008.8 | 8,8 | 40 | 84 | ○ | |
| 703008.9 | 8,9 | 40 | 84 | ○ | |
| 703009.0 | 9,0 | 40 | 84 | ● | |
| 703009.1 | 9,1 | 40 | 84 | ○ | |
| 703009.2 | 9,2 | 40 | 84 | ○ | |
| 703009.3 | 9,3 | 40 | 84 | ○ | |
| 703009.4 | 9,4 | 40 | 84 | ○ | |
| 703009.5 | 9,5 | 40 | 84 | ○ | |
| 703009.6 | 9,6 | 43 | 89 | ○ | |
| 703009.7 | 9,7 | 43 | 89 | ○ | |
| 703009.8 | 9,8 | 43 | 89 | ○ | |
| 703009.9 | 9,9 | 43 | 89 | ○ | |
| 703010.0 | 10,0 | 43 | 89 | ● | |
| 703010.2 | 10,2 | 43 | 89 | ○ | |
| 703010.5 | 10,5 | 43 | 89 | ○ | |
| 703011.0 | 11,0 | 47 | 95 | ● | |
| 703011.5 | 11,5 | 47 | 95 | ○ | |
| 703012.0 | 12,0 | 51 | 102 | ● | |
| 703012.5 | 12,5 | 51 | 102 | ○ | |
| 703013.0 | 13,0 | 51 | 102 | ● | |
| 703013.5 | 13,5 | 54 | 107 | ○ | |
| 703014.0 | 14,0 | 54 | 107 | ● | |
| 703014.5 | 14,5 | 56 | 111 | ○ | |
| 703015.0 | 15,0 | 56 | 111 | ● | |
| 703015.5 | 15,5 | 58 | 115 | ○ | |
| 703016.0 | 16,0 | 58 | 115 | ● | |
| 703016.5 | 16,5 | 60 | 119 | ○ | |
| 703017.0 | 17,0 | 60 | 119 | ● | |
| 703017.5 | 17,5 | 62 | 123 | ○ | |
| 703018.0 | 18,0 | 62 | 123 | ● | |
| 703018.5 | 18,5 | 64 | 127 | ○ | |
| 703019.0 | 19,0 | 64 | 127 | ● | |
| 703019.5 | 19,5 | 66 | 131 | ○ | |
| 703020.0 | 20,0 | 66 | 131 | ● | |



7120



| REF. | D | L2 | L | K10 | TiAIN |
|----------|-----|----|----|-----|-------|
| 712001.0 | 1,0 | 12 | 34 | ● | |
| 712001.1 | 1,1 | 14 | 36 | ○ | |
| 712001.2 | 1,2 | 16 | 38 | ○ | |
| 712001.3 | 1,3 | 16 | 38 | ○ | |
| 712001.4 | 1,4 | 18 | 40 | ○ | |
| 712001.5 | 1,5 | 18 | 40 | ○ | |
| 712001.6 | 1,6 | 20 | 43 | ○ | |
| 712001.7 | 1,7 | 20 | 43 | ○ | |
| 712001.8 | 1,8 | 22 | 46 | ○ | |
| 712001.9 | 1,9 | 22 | 46 | ○ | |
| 712002.0 | 2,0 | 24 | 49 | ● | |
| 712002.1 | 2,1 | 24 | 49 | ○ | |
| 712002.2 | 2,2 | 28 | 53 | ○ | |
| 712002.3 | 2,3 | 28 | 53 | ○ | |
| 712002.4 | 2,4 | 30 | 57 | ○ | |
| 712002.5 | 2,5 | 30 | 57 | ○ | |
| 712002.6 | 2,6 | 30 | 57 | ○ | |
| 712002.7 | 2,7 | 33 | 60 | ○ | |
| 712002.8 | 2,8 | 33 | 60 | ○ | |
| 712002.9 | 2,9 | 33 | 60 | ○ | |
| 712003.0 | 3,0 | 33 | 60 | ● | |
| 712003.1 | 3,1 | 33 | 65 | ○ | |



Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

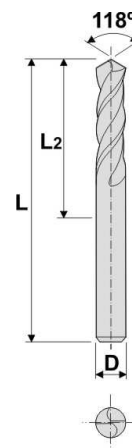
Cartridges

Brazen
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

● Normally available for immediate delivery

○ Only available in a limited quantity

7120



| REF. | D | L2 | L | K10 | TiAIN |
|----------|------|-----|-----|-----|-------|
| 712003.2 | 3,2 | 36 | 65 | ○ | |
| 712003.3 | 3,3 | 36 | 65 | ○ | |
| 712003.4 | 3,4 | 36 | 70 | ○ | |
| 712003.5 | 3,5 | 39 | 70 | ○ | |
| 712003.6 | 3,6 | 39 | 70 | ○ | |
| 712003.7 | 3,7 | 39 | 70 | ○ | |
| 712003.8 | 3,8 | 43 | 75 | ○ | |
| 712003.9 | 3,9 | 43 | 75 | ○ | |
| 712004.0 | 4,0 | 43 | 75 | ● | |
| 712004.1 | 4,1 | 43 | 75 | ○ | |
| 712004.2 | 4,2 | 43 | 75 | ○ | |
| 712004.3 | 4,3 | 47 | 80 | ○ | |
| 712004.4 | 4,4 | 47 | 80 | ○ | |
| 712004.5 | 4,5 | 47 | 80 | ○ | |
| 712004.6 | 4,6 | 47 | 80 | ○ | |
| 712004.7 | 4,7 | 47 | 80 | ○ | |
| 712004.8 | 4,8 | 52 | 86 | ○ | |
| 712004.9 | 4,9 | 52 | 86 | ○ | |
| 712005.0 | 5,0 | 52 | 86 | ● | |
| 712005.1 | 5,1 | 52 | 86 | ○ | |
| 712005.2 | 5,2 | 52 | 86 | ○ | |
| 712005.3 | 5,3 | 52 | 86 | ○ | |
| 712005.4 | 5,4 | 57 | 93 | ○ | |
| 712005.5 | 5,5 | 57 | 93 | ○ | |
| 712005.6 | 5,6 | 57 | 93 | ○ | |
| 712005.7 | 5,7 | 57 | 93 | ○ | |
| 712005.8 | 5,8 | 57 | 93 | ○ | |
| 712005.9 | 5,9 | 57 | 93 | ○ | |
| 712006.0 | 6,0 | 57 | 93 | ● | |
| 712006.1 | 6,1 | 63 | 101 | ○ | |
| 712006.2 | 6,2 | 63 | 101 | ○ | |
| 712006.3 | 6,3 | 63 | 101 | ○ | |
| 712006.4 | 6,4 | 63 | 101 | ○ | |
| 712006.5 | 6,5 | 63 | 101 | ○ | |
| 712006.6 | 6,6 | 63 | 101 | ○ | |
| 712006.7 | 6,7 | 63 | 101 | ○ | |
| 712006.8 | 6,8 | 69 | 109 | ○ | |
| 712006.9 | 6,9 | 69 | 109 | ○ | |
| 712007.0 | 7,0 | 69 | 109 | ● | |
| 712007.1 | 7,1 | 69 | 109 | ○ | |
| 712007.2 | 7,2 | 69 | 109 | ○ | |
| 712007.3 | 7,3 | 69 | 109 | ○ | |
| 712007.4 | 7,4 | 69 | 109 | ○ | |
| 712007.5 | 7,5 | 69 | 109 | ○ | |
| 712007.6 | 7,6 | 75 | 117 | ○ | |
| 712007.7 | 7,7 | 75 | 117 | ○ | |
| 712007.8 | 7,8 | 75 | 117 | ○ | |
| 712007.9 | 7,9 | 75 | 117 | ○ | |
| 712008.0 | 8,0 | 75 | 117 | ● | |
| 712008.1 | 8,1 | 75 | 117 | ○ | |
| 712008.2 | 8,2 | 75 | 117 | ○ | |
| 712008.3 | 8,3 | 75 | 117 | ○ | |
| 712008.4 | 8,4 | 75 | 117 | ○ | |
| 712008.5 | 8,5 | 75 | 117 | ○ | |
| 712008.6 | 8,6 | 81 | 125 | ○ | |
| 712008.7 | 8,7 | 81 | 125 | ○ | |
| 712008.8 | 8,8 | 81 | 125 | ○ | |
| 712008.9 | 8,9 | 81 | 125 | ○ | |
| 712009.0 | 9,0 | 81 | 125 | ● | |
| 712009.1 | 9,1 | 81 | 125 | ○ | |
| 712009.2 | 9,2 | 81 | 125 | ○ | |
| 712009.3 | 9,3 | 81 | 125 | ○ | |
| 712009.4 | 9,4 | 81 | 125 | ○ | |
| 712009.5 | 9,5 | 81 | 125 | ○ | |
| 712009.6 | 9,6 | 87 | 133 | ○ | |
| 712009.7 | 9,7 | 87 | 133 | ○ | |
| 712009.8 | 9,8 | 87 | 133 | ○ | |
| 712009.9 | 9,9 | 87 | 133 | ○ | |
| 712010.0 | 10,0 | 87 | 133 | ● | |
| 712010.2 | 10,2 | 87 | 133 | ○ | |
| 712010.5 | 10,5 | 87 | 133 | ○ | |
| 712010.8 | 10,8 | 94 | 142 | ○ | |
| 712011.0 | 11,0 | 94 | 142 | ● | |
| 712011.5 | 11,5 | 94 | 142 | ○ | |
| 712012.0 | 12,0 | 101 | 151 | ● | |
| 712012.5 | 12,5 | 101 | 151 | ○ | |
| 712013.0 | 13,0 | 101 | 151 | ● | |
| 712013.5 | 13,5 | 108 | 160 | ○ | |
| 712014.0 | 14,0 | 108 | 160 | ● | |
| 712014.5 | 14,5 | 114 | 169 | ○ | |
| 712015.0 | 15,0 | 114 | 169 | ● | |
| 712015.5 | 15,5 | 120 | 178 | ○ | |
| 712016.0 | 16,0 | 120 | 178 | ● | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

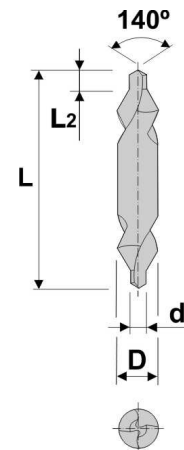
Boring heads

Arbors & adaptors

80



| REF. | D | d | L2 | L | K10 | TIAIN |
|-----------|-------|------|-----|----|-----|-------|
| 800000.80 | 3,15 | 0,80 | 1,3 | 38 | ● | |
| 800001.00 | 3,15 | 1,00 | 1,6 | 38 | ● | |
| 800001.25 | 3,15 | 1,25 | 1,9 | 38 | ● | |
| 800001.60 | 4,00 | 1,60 | 2,4 | 38 | ● | |
| 800002.00 | 5,00 | 2,00 | 2,9 | 50 | ● | |
| 800002.50 | 6,00 | 2,50 | 3,6 | 50 | ● | |
| 800003.15 | 8,00 | 3,15 | 4,4 | 60 | ○ | |
| 800004.00 | 10,00 | 4,00 | 5,6 | 60 | ○ | |
| 800005.00 | 12,00 | 5,00 | 6,0 | 60 | ○ | |



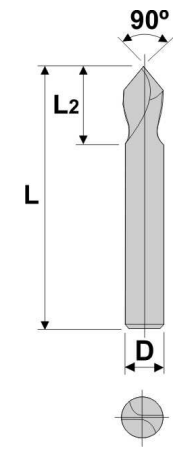
☆ Not suitable ★ Suitable ☼ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ★ | <850 N/mm² ★ | <1.100 N/mm² ★ | <1.300 N/mm² ★ | >45 HRC ☆ | <850 N/mm² ★ | >850 N/mm² ★ | ★ |

81



| REF. | D | d | L2 | L | K10 | TIAIN |
|--------|----|---|----|-----|-----|-------|
| 810006 | 6 | - | 16 | 50 | ● | |
| 810008 | 8 | - | 20 | 60 | ● | |
| 810010 | 10 | - | 22 | 70 | ● | |
| 810012 | 12 | - | 22 | 70 | ● | |
| 810014 | 14 | - | 25 | 75 | ○ | |
| 810016 | 16 | - | 25 | 80 | ○ | |
| 810020 | 20 | - | 30 | 100 | ○ | |



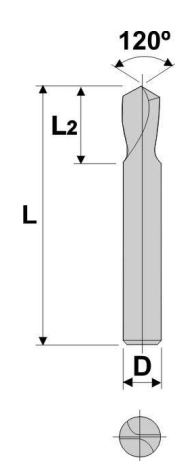
☆ Not suitable ★ Suitable ☼ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ★ | <850 N/mm² ★ | <1.100 N/mm² ★ | <1.300 N/mm² ★ | >45 HRC ☆ | <850 N/mm² ★ | >850 N/mm² ★ | ★ |

82



| REF. | D | d | L2 | L | K10 | TIAIN |
|--------|----|---|----|-----|-----|-------|
| 820006 | 6 | - | 16 | 50 | ● | |
| 820008 | 8 | - | 20 | 60 | ● | |
| 820010 | 10 | - | 22 | 70 | ● | |
| 820012 | 12 | - | 22 | 70 | ● | |
| 820014 | 14 | - | 25 | 75 | ○ | |
| 820016 | 16 | - | 25 | 80 | ○ | |
| 820020 | 20 | - | 30 | 100 | ○ | |



☆ Not suitable ★ Suitable ☼ Especially suitable

| | | | | | | | |
|-----------------|-----------------|-------------------|-------------------|--------------|-----------------|-----------------|-----------------|
| Steels | INOX | INOX | CAST IRON | Ti | Cu, Ms | Al | Plastics |
| <400 N/mm² ★ | <850 N/mm² ★ | <1.100 N/mm² ★ | <1.300 N/mm² ★ | >45 HRC ☆ | <850 N/mm² ★ | >850 N/mm² ★ | ★ |

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

● Normally available for immediate delivery

○ Only available in a limited quantity



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

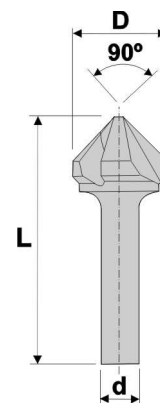
Boring heads

Arbors & adaptors

83



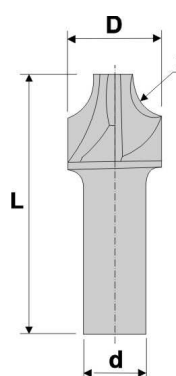
| REF. | D | d | L | z | K10 | TiAIN |
|----------|------|----|----|---|-----|-------|
| 833005.3 | 5,3 | 6 | 50 | 3 | ○ | |
| 833005.8 | 5,3 | 6 | 50 | 3 | ○ | |
| 833006.3 | 6,3 | 6 | 50 | 3 | ○ | |
| 833007.3 | 7,3 | 6 | 50 | 3 | ○ | |
| 833008.3 | 8,3 | 6 | 50 | 3 | ○ | |
| 833009.4 | 9,4 | 8 | 50 | 3 | ○ | |
| 833010.4 | 10,4 | 6 | 50 | 3 | ○ | |
| 833012.4 | 12,4 | 8 | 56 | 3 | ○ | |
| 833013.4 | 13,4 | 8 | 60 | 3 | ○ | |
| 833014.4 | 14,4 | 8 | 60 | 3 | ○ | |
| 833016.4 | 16,4 | 10 | 60 | 3 | ○ | |
| 833019.5 | 19,5 | 10 | 60 | 3 | ○ | |
| 833020.5 | 20,5 | 10 | 60 | 3 | ○ | |
| 833025.0 | 25,0 | 10 | 67 | 3 | ○ | |
| 833031.0 | 31,0 | 12 | 71 | 3 | ○ | |



84



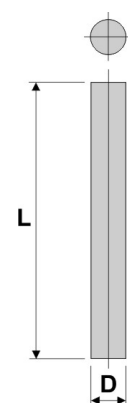
| REF. | D | d | r | L | z | K10 | TiAIN |
|-----------|------|----|-------|----|---|-----|-------|
| 844001.00 | 8,0 | 8 | 1,00 | 50 | 4 | ● | |
| 844001.25 | 8,0 | 8 | 1,25 | 50 | 4 | ○ | |
| 844001.50 | 10,0 | 10 | 1,50 | 50 | 4 | ○ | |
| 844001.75 | 10,0 | 10 | 1,75 | 50 | 4 | ○ | |
| 844002.00 | 12,0 | 12 | 2,00 | 50 | 4 | ● | |
| 844002.25 | 12,0 | 12 | 2,25 | 50 | 4 | ○ | |
| 844002.50 | 12,0 | 12 | 2,50 | 50 | 4 | ○ | |
| 844003.00 | 14,0 | 12 | 3,00 | 55 | 4 | ● | |
| 844003.50 | 16,0 | 12 | 3,50 | 55 | 4 | ○ | |
| 844004.00 | 16,0 | 12 | 4,00 | 60 | 4 | ● | |
| 844004.50 | 18,0 | 12 | 4,50 | 60 | 4 | ○ | |
| 844005.00 | 20,0 | 16 | 5,00 | 65 | 4 | ● | |
| 844006.00 | 21,0 | 16 | 6,00 | 65 | 4 | ● | |
| 844008.00 | 26,5 | 20 | 8,00 | 70 | 4 | ● | |
| 844010.00 | 32,0 | 20 | 10,00 | 70 | 4 | ○ | |
| 844012.00 | 38,0 | 20 | 12,00 | 75 | 4 | ○ | |



85

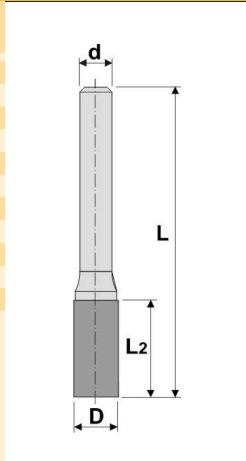


| REF. | D | L | K10 | TiAIN |
|--------|----|-----|-----|-------|
| 850002 | 2 | 100 | ● | |
| 850003 | 3 | 100 | ● | |
| 850004 | 4 | 100 | ● | |
| 850005 | 5 | 100 | ● | |
| 850006 | 6 | 100 | ● | |
| 850007 | 7 | 100 | ● | |
| 850008 | 8 | 100 | ● | |
| 850009 | 9 | 100 | ● | |
| 850010 | 10 | 100 | ● | |
| 850011 | 11 | 100 | ● | |
| 850012 | 12 | 100 | ● | |
| 850014 | 14 | 100 | ○ | |
| 850016 | 16 | 100 | ○ | |
| 850018 | 18 | 100 | ○ | |
| 850020 | 20 | 100 | ○ | |

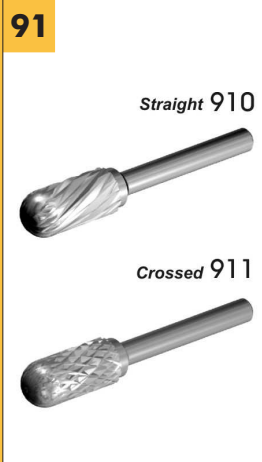




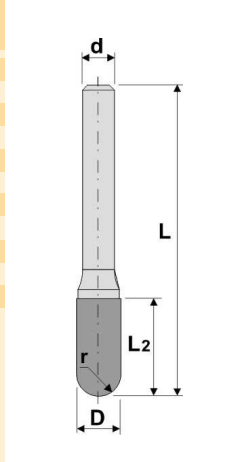
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 90003 | 3 | 3 | 40 | 14 | - | • | |
| 90006 | 6 | 3 | 44 | 14 | - | • | |
| 90008 | 8 | 6 | 63 | 18 | - | • | |
| 90010 | 10 | 6 | 65 | 20 | - | • | |
| 90012 | 12 | 6 | 70 | 25 | - | • | |
| 90016 | 16 | 8 | 70 | 25 | - | • | |
| 90106 | 3 | 3 | 44 | 14 | - | • | |
| 90108 | 6 | 6 | 63 | 18 | - | • | |
| 90110 | 10 | 6 | 65 | 20 | - | • | |
| 90112 | 12 | 6 | 70 | 25 | - | • | |
| 90116 | 16 | 8 | 70 | 25 | - | • | |



- Inserts
- Turning
- Automatic lathes



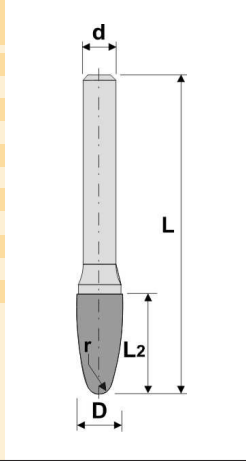
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|-----|-----|-------|
| 91003 | 3 | 3 | 40 | 14 | 1,5 | • | |
| 91006 | 6 | 3 | 44 | 14 | 3,0 | • | |
| 91008 | 8 | 6 | 63 | 18 | 4,0 | • | |
| 91010 | 10 | 6 | 65 | 20 | 5,0 | • | |
| 91012 | 12 | 6 | 70 | 25 | 6,0 | • | |
| 91016 | 16 | 8 | 70 | 25 | 8,0 | • | |
| 91106 | 6 | 3 | 44 | 14 | 3,0 | • | |
| 91108 | 8 | 6 | 63 | 18 | 4,0 | • | |
| 91110 | 10 | 6 | 65 | 20 | 5,0 | • | |
| 91112 | 12 | 6 | 70 | 25 | 6,0 | • | |
| 91116 | 16 | 8 | 70 | 25 | 8,0 | • | |



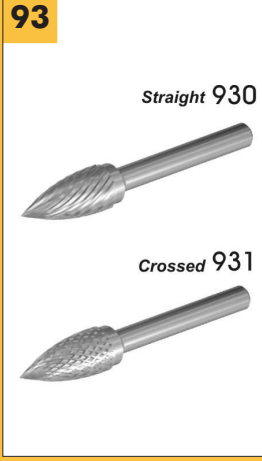
- Ceramic tools
- Parting & grooving
- Threading



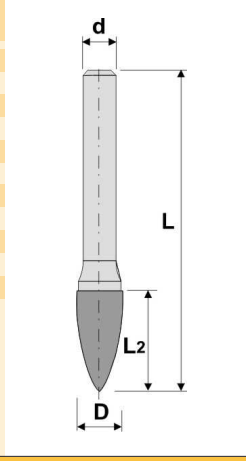
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|-----|-----|-------|
| 92003 | 3 | 3 | 40 | 12 | 0,8 | • | |
| 92006 | 6 | 3 | 44 | 14 | 1,5 | • | |
| 92008 | 8 | 6 | 61 | 16 | 2,0 | • | |
| 92010 | 10 | 6 | 65 | 20 | 2,5 | • | |
| 92012 | 12 | 6 | 70 | 25 | 3,0 | • | |
| 92016 | 16 | 8 | 70 | 25 | 5,0 | • | |
| 92106 | 6 | 3 | 44 | 14 | 1,5 | • | |
| 92108 | 8 | 6 | 61 | 16 | 2,0 | • | |
| 92110 | 10 | 6 | 65 | 20 | 2,5 | • | |
| 92112 | 12 | 6 | 70 | 25 | 3,0 | • | |
| 92116 | 16 | 8 | 70 | 25 | 5,0 | • | |



- Drills
- Cartridges
- Brazed tools



| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 93003 | 3 | 3 | 40 | 12 | - | • | |
| 93006 | 6 | 3 | 44 | 14 | - | • | |
| 93008 | 8 | 6 | 62 | 16 | - | • | |
| 93010 | 10 | 6 | 65 | 20 | - | • | |
| 93012 | 12 | 6 | 70 | 25 | - | • | |
| 93016 | 16 | 8 | 70 | 27 | - | • | |
| 93106 | 6 | 3 | 44 | 14 | - | • | |
| 93108 | 8 | 6 | 62 | 16 | - | • | |
| 93110 | 10 | 6 | 65 | 20 | - | • | |
| 93112 | 12 | 6 | 70 | 25 | - | • | |
| 93116 | 16 | 8 | 70 | 27 | - | • | |



- Solid carbide
- Boring heads
- Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

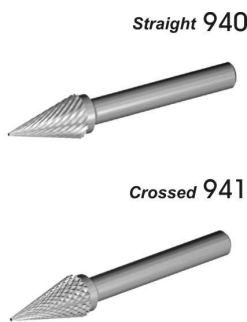
Milling cutters

Solid carbide

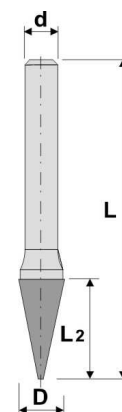
Boring heads

Arbors & adaptors

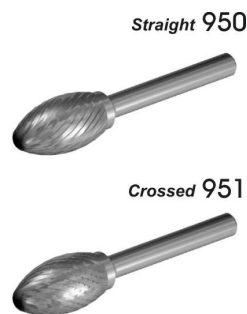
94



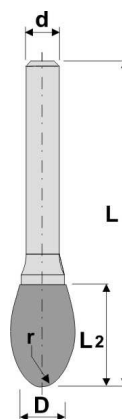
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 94003 | 3 | 3 | 50 | 12 | - | • | |
| 94006 | 6 | 3 | 44 | 14 | - | • | |
| 94008 | 8 | 6 | 62 | 16 | - | • | |
| 94010 | 10 | 6 | 63 | 18 | - | • | |
| 94012 | 12 | 6 | 65 | 20 | - | • | |
| 94016 | 16 | 8 | 70 | 25 | - | • | |
| 94106 | 6 | 3 | 44 | 14 | - | • | |
| 94108 | 8 | 6 | 62 | 16 | - | • | |
| 94110 | 10 | 6 | 63 | 18 | - | • | |
| 94112 | 12 | 6 | 65 | 20 | - | • | |
| 94116 | 16 | 8 | 70 | 25 | - | • | |



95



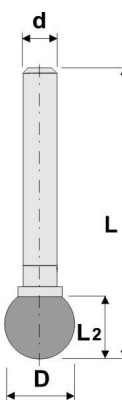
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|-----|-----|-------|
| 95003 | 3 | 3 | 40 | 6 | 1,2 | • | |
| 95006 | 6 | 3 | 39 | 9 | 2,5 | • | |
| 95008 | 8 | 6 | 59 | 14 | 3,7 | • | |
| 95010 | 10 | 6 | 61 | 16 | 4,0 | • | |
| 95012 | 12 | 6 | 65 | 20 | 5,0 | • | |
| 95016 | 16 | 8 | 70 | 25 | 6,5 | • | |
| 95106 | 6 | 3 | 39 | 9 | 2,5 | • | |
| 95108 | 8 | 6 | 59 | 14 | 3,7 | • | |
| 95110 | 10 | 6 | 61 | 16 | 4,0 | • | |
| 95112 | 12 | 6 | 65 | 20 | 5,0 | • | |
| 95116 | 16 | 8 | 70 | 25 | 6,5 | • | |



96



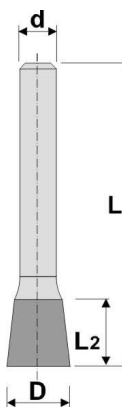
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 96003 | 3 | 3 | 40 | 3 | - | • | |
| 96006 | 6 | 3 | 35 | 5 | - | • | |
| 96008 | 8 | 6 | 52 | 7 | - | • | |
| 96010 | 10 | 6 | 54 | 9 | - | • | |
| 96012 | 12 | 6 | 56 | 11 | - | • | |
| 96016 | 16 | 8 | 59 | 14 | - | • | |
| 96106 | 6 | 3 | 35 | 5 | - | • | |
| 96108 | 8 | 6 | 52 | 7 | - | • | |
| 96110 | 10 | 6 | 54 | 9 | - | • | |
| 96112 | 12 | 6 | 56 | 11 | - | • | |
| 96116 | 16 | 8 | 59 | 14 | - | • | |



97



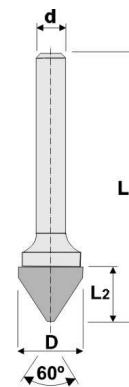
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 97003 | 3 | 3 | 40 | 3 | - | • | |
| 97006 | 6 | 3 | 36 | 6 | - | • | |
| 97008 | 8 | 6 | 53 | 8 | - | • | |
| 97010 | 10 | 6 | 55 | 10 | - | • | |
| 97012 | 12 | 6 | 57 | 12 | - | • | |
| 97016 | 16 | 8 | 60 | 15 | - | • | |
| 97106 | 6 | 3 | 36 | 6 | - | • | |
| 97108 | 8 | 6 | 53 | 8 | - | • | |
| 97110 | 10 | 6 | 55 | 10 | - | • | |
| 97112 | 12 | 6 | 57 | 12 | - | • | |
| 97116 | 16 | 8 | 60 | 15 | - | • | |



98



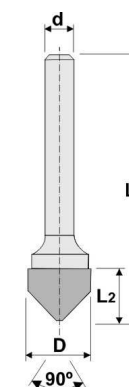
| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 98006 | 6 | 6 | 50 | 6 | - | • | |
| 98008 | 8 | 6 | 53 | 8 | - | • | |
| 98010 | 10 | 6 | 55 | 10 | - | • | |
| 98012 | 12 | 6 | 57 | 12 | - | • | |
| 98016 | 16 | 6 | 61 | 16 | - | • | |



99



| REF. | D | d | L | L2 | r | K10 | TiAIN |
|-------|----|---|----|----|---|-----|-------|
| 99006 | 6 | 6 | 50 | 6 | - | • | |
| 99008 | 8 | 6 | 53 | 8 | - | • | |
| 99010 | 10 | 6 | 55 | 10 | - | • | |
| 99012 | 12 | 6 | 57 | 12 | - | • | |
| 99016 | 16 | 6 | 61 | 16 | - | • | |



Inserts

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Cutting data for solid carbide

| Material | Condition | Feed rate S=mm/2 Ø | | | | | | Coolant | Cutting speed m/min |
|------------------------------|-------------|--------------------------|-------|------|-------|-------|-------|-------------------------|-------------------------|
| | | 2-3 | 4-6 | 7-10 | 11-15 | 16-20 | 21-32 | | |
| Structural steel | R.400/600 | 0.015 | 0.02 | 0.03 | 0.04 | 0.05 | 0.07 | Emulsion | 60-80 40-60 30-50 |
| | R.600/1000 | 0.01 | 0.015 | 0.02 | 0.03 | 0.04 | 0.06 | | |
| | R.1000/1400 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 | | |
| Tool steel | HB 230 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 | Emulsion | 30-50 30-40 |
| | HB 230/285 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 | | |
| Stainless steel | Cr. Mo | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | Emulsion cutting oil | 30-50 20-40 |
| | Cr. Ni | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.05 | | |
| Semi-steel | To 220 | 0.01 | 0.02 | 0.04 | 0.06 | 0.07 | 0.09 | Dry-emulsion | 80-100 |
| Malleable cast iron | Over 220 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.07 | Dry-emulsion | 60-90 |
| Cast steel | R. 800 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.07 | Emulsion | 70-130 |
| Titanium and titanium alloys | 456 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.06 | Emulsion | 30-60 |
| Aluminium & alloys | 10% Si | 0.02 | 0.03 | 0.05 | 0.07 | 0.10 | 0.12 | Emulsion | 500-800 250-500 |
| | 18% Si | 0.01 | 0.02 | 0.03 | 0.05 | 0.07 | 0.10 | | |
| Brass, copper, bronze | 456 | 0.01 | 0.02 | 0.03 | 0.05 | 0.07 | 0.10 | Dry-emulsion | 140-250 |
| Layered plastics | 456 | 0.02 | 0.03 | 0.05 | 0.07 | 0.10 | 0.13 | Dry with suction | 100-200 |

Cutting data for solid carbide drills

| Material | Condition | Feed rate S=mm/2 Ø | | | | Coolant | Cutting speed m/min |
|----------------------------|---|--------------------------|-----------|-----------|-----------|-------------------------|------------------------------------|
| | | 1 - 3 | 4 - 7 | 8 - 13 | 14 - 20 | | |
| Structural steel | R.800 R.800-1000 R.1000-1200 R.1200-1400 | 0.01-0.03 | 0.02-0.05 | 0.05-0.08 | 0.08-0.12 | Emulsion | 80-100 70-100 60-90 50-70 |
| | | 0.01-0.03 | 0.02-0.04 | 0.04-0.07 | 0.07-0.10 | | |
| | | 0.01-0.02 | 0.02-0.03 | 0.03-0.06 | 0.06-0.08 | | |
| | | 0.01-0.02 | 0.02-0.03 | 0.03-0.04 | 0.04-0.06 | | |
| Tool steel HRC 20/30 | HB 230 HB 230/285 | 0.01-0.02 | 0.02-0.03 | 0.03-0.06 | 0.06-0.08 | Emulsion | 30-40 20-30 |
| | | 0.01-0.02 | 0.02-0.03 | 0.03-0.04 | 0.04-0.07 | | |
| Steel HRC 50 | | 0.005-0.01 | 0.01-0.02 | 0.02-0.03 | 0.03 | Emulsion | 8-12 |
| Stainless steel | To 230 | 0.01-0.02 | 0.02-0.05 | 0.05-0.08 | 0.08-0.10 | Emulsion | 25-40 |
| Semi-steel | To 285 | 0.02 | 0.03-0.06 | 0.06-0.09 | 0.10-0.16 | Dry | 60-90 |
| Malleable cast iron | R. 700 | 0.02 | 0.02-0.04 | 0.04-0.08 | 0.09-0.15 | Dry | 70-100 |
| Cast steel | | 0.01-0.02 | 0.02-0.05 | 0.05-0.08 | 0.08-0.14 | Emulsion | 60-90 |
| Titanium & titanium alloys | | 0.005-0.01 | 0.01-0.03 | 0.04-0.08 | 0.8-0.10 | Emulsion cutting oil | 30-60 |
| Aluminium & alloys | 10% Si 12% Si | 0.03-0.06 | 0.06-0.08 | 0.08-0.13 | 0.14-0.20 | Emulsion | 100-140 50-60 |
| | | 0.01-0.04 | 0.04-0.06 | 0.06-0.09 | 0.09-0.12 | | |
| Brass, Copper, Bronze | | 0.03-0.06 | 0.06-0.10 | 0.10-0.15 | 0.15-0.20 | Dry | 60-120 |
| Layered plastics | | 0.02-0.04 | 0.04-0.06 | 0.06-0.08 | 0.08-0.12 | Dry | 60-120 |

Cutting data for tungsten carbide burrs



| Material | Condition | HB | Kind of teeth | | Cutting speed m/min |
|--------------------------|--|--------------------|---------------|-------------|----------------------------------|
| | | | Straight cut | Crossed cut | |
| Unalloyed steel | C < 0,25% C < 1 < 0,80% C, 40% | 110-310 | ● ● ● | ● ● ● | 800-1200 800-1200 800-1200 |
| Low alloyed steel | Annealed Hardened | 125-225 220-450 | ● | ● ● | 700-1000 600-800 |
| High alloyed steel | Annealed Hardened | 150-250 250-500 | ● | ● ● | 600-800 600-800 |
| High alloyed steel | Annealed high speed steel (HSS) Hardened tool steel | 150-250 250-350 | ● | ● ● | 600-800 600-800 |
| Stainless steel | Ferritic-martensitic | 150-270 | ● | ● | 600-800 |
| Steel casting | Unalloyed Low alloyed High alloyed | 150-250 | ● ● ● | ● ● ● | 600-800 600-800 600-800 |
| Stainless steel | Austenitic | 150-270 | ● | ● | 600-800 |
| Stainless steel castings | Ferritic-Martensitic Austenitic Manganese steel | 200 200 250 | ● ● ● | ● ● ● | 400 300 160 |
| Malleable cast iron | Ferritic - Short chip Pearlitic - Long chip | 110-145 200-230 | ● ● | ● ● | 750 650 |
| Grey cast iron | High traction resistant Low traction resistant | 180 260 | ● ● | ● ● | 950 700 |
| Nodular cast iron | Ferritic Pearlitic | 160 250 | ● ● | ● ● | 650 550 |
| Shell cast iron | | 400 | ● | ● | 160 |






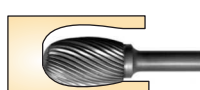

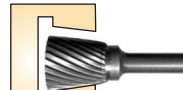

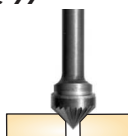
The indicated data are recommended for manual applications, with a strength of 5-25 N. Increase the cutting speed for light deburring. For heavy operations, for instance by a robot, the cutting speed must be reduced.

Les conditions indiquées sont recommandées pour les applications manuelles avec une force de 5-25 N. Augmenter la vitesse de coupe pour les ébavurages légers. Pour les opérations pesantes, par exemple moyennant un robot, on doit réduire la vitesse de coupe.

Die angegebene Bedingungen sind für manuellen Anwendungen mit einer Kraft von 5-25 N empfohlen. Für leichtes Entgraten, die Schnittgeschwindigkeit erhöhen. Für schwere Operationen, z.B. mit einem Roboter, muß die Schnittgeschwindigkeit reduziert werden.

| Straight cutting flutes burrs | Crossed cutting flutes burrs |
|--|---|
| <ul style="list-style-type: none"> - Best surface finishing. - Maximum chip removal in soft materials. - Excellent tool life. - Produce needle chips. | <ul style="list-style-type: none"> - Allow a lower spindle speed. - Smoother operation, even allow speeds. - High chip removal in hard and soft materials. - Produce short and rounded chips. |
| <ul style="list-style-type: none"> - État de surface optimale. - Maximum enlèvement de copeaux dans des matériaux mous. - Excellente vie de l'outil. - Produit des copeaux à forme d'aiguille. | <ul style="list-style-type: none"> - Permet une vitesse de l'axe plus basse. - Opérations plus douces. - Grand enlèvement de copeaux dans des matériaux durs et mous. - Produit des copeaux courts et arrondis. |
| <ul style="list-style-type: none"> - Optimale Oberflächengüte. - Maximale Spanabfuhr in weiche Materialien. - Ausgezeichnete Standzeit. - Sie produzieren nagelförmige Späne. | <ul style="list-style-type: none"> - Sie erlaubt eine niedrigere Drehzahl. - Weichere Operationen. - Hohe Spanabfuhr in harte und weiche Materialien. - Sie produzieren kurze und runde Späne. |

| | | | | |
|--|---|--|--|---|
| Type 90  Surfaces and smooth edges | Type 91  Radius and surfaces | Type 92  General shapes | Type 93  Curved shapes with narrow spaces | Type 94  Narrow spaces |
| Type 95  Complicated shapes | Type 96  Welded shapes and holes in curved surfaces | Type 97  Inverted cone shape | Type 98  30° Degrees chamfering | Type 99  45° Degrees chamfering |

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- Turning
- Automatic lathes
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- Drills
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- Milling cutters
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- Boring heads
- Arbors & adaptors



Technical information
Information technique
Technische Auskunft

M02

Applications
Applications
Anwendungen

M03

Boring heads
Têtes d'alésage
Bohrköpfe

M04

Arbors for boring heads
Attachements pour têtes d'alésage
Dorne für Bohrköpfe

M09

Kits
Kits
Kits

M10

Cutting data
Conditions de coupe
Schnittbedingungen

M12

M01

Inserts

Boring heads

The boring heads are made of Nickel-Chrome alloy steel, with a core toughness of 113,786 to 128,000 lbs/in². All the component parts of the head are heat treated to prolong life and minimise wear on moving parts. The slides are precision ground and close tolerances are maintained in order that the heads provide and maintain accuracy of adjustment throughout their working life. The micrometer adjusting screw of the "finishing heads" has a ground precision thread.

Turning

Têtes d'alésage

Les têtes d'alésage sont faites en acier allié de nickel-chrome, avec une dureté de base de 113.786 à 128.000 lbs/in². Tous les éléments qui composent la tête ont été soumis au traitement thermique pour prolonger la vie de l'outil et minimiser l'usure des parties mobiles. Les parties mobiles sont rectifiées de précision et des tolérances très étroites sont maintenues afin que les têtes proportionnent et maintiennent l'exactitude d'ajustement pendant toute leur vie d'outil. La vis de réglage micrométrique des têtes à aléser pour finition a un filet rectifié de précision.

Automatic lathes

Ceramic tools

Bohrköpfe

Die Bohrköpfe werden aus Nickel-Chrom-Legierungsstahl gemacht, der eine Kernhärte von 113.786 von 128.000 lbs/m² hat. Alle Bauteile des Köpfes sind warmbehandelt, um das Werkzeugleben zu verlängern und um den Verschleiß von den bewegenden Teilen zu minimieren. Die Gleitblöcke sind präzisionsgeschliffen und nahe Toleranzen werden eingehalten, damit die Bohrköpfe die Verstellbarkeitsgenauigkeit während des ganzen Werkzeuglebens einhalten. Die mikrometrische Verstelle schraube der Bohrköpfe zum Schlichten hat eine präzisionsgeschliffene Gewinde.

Parting & grooving

Threading

Drills

Cartridges

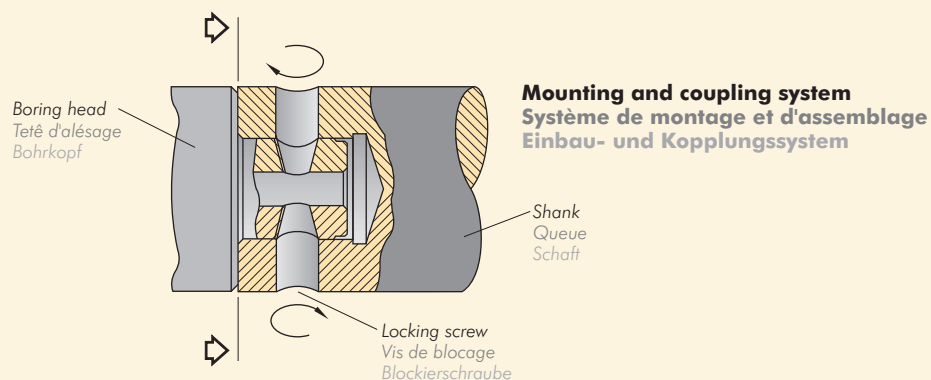
Brazed tools

Milling cutters

Solid carbide


Boring heads

Arbors & adaptors



Adjustable boring bar - Têtes d'alésage réglables - Verstellbare Bohrstangen

66¹
Adjustable boring bar



CC.. 0602..
TC.. 1102..
TC.. 16T3..

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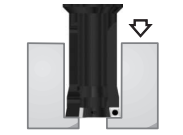


Inserts

Turning

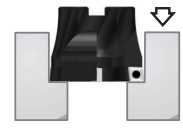
Special boring heads - Têtes d'alésage spéciales - Sonder-Bohrköpfe

433
Special boring head



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434
Special boring head



Page M.05

CC.. 09T3..
CC.. 1204..



Automatic lathes

Ceramic tools

Boring heads - Têtes d'alésage - Bohrköpfe

97⁷¹
Boring head



Page M.04

SCLC
Tools for boring heads



Page M.04

CC.. 0602..
CC.. 09T3..

STFC
Tools for boring heads



Page M.04


TC.. 0602..
TC.. 09T3..
TC.. 1604..



Threading

Drills

63¹ 4⁷⁰
Roughing boring heads



Page M.06

CC.. 0602..
CC.. 09T3..
CC.. 1204..


6344⁷⁵
Roughing boring heads



Page M.06

CC.. 1204..

64¹ 4⁷⁰
Roughing boring heads



Page M.07

CC.. 0602..
CC.. 09T3..
CC.. 1204..

6444⁷⁵
Finishing boring heads



Page M.07

CC.. 1204..

6634⁷⁴
Finishing boring heads



Page M.07

TC.. 16T3..

6634⁷⁵
Finishing boring heads



Page M.08

TC.. 16T3..

Cartridges

Arbors for boring heads - Attachements pour têtes d'alésage - Aufnahmen für Bohrköpfe

60¹⁶ DIN 2080
Arbors for boring heads




Page M.09

60⁴³ DIN 2080
Arbors for boring heads



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60⁴⁷ DIN 69871/A
Arbors for boring heads



Page M.09

60⁴⁹ MAS BT
Arbors for boring heads



Page M.09

60⁶²
Arbors for boring heads



Page M.10

60⁷⁰
Arbors for boring heads



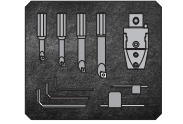
Page M.10

Brazed tools

Milling cutters

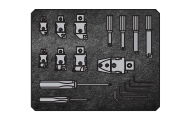
Kits - Kits - Kits

KIT 97



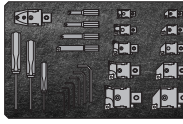
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KIT 7072

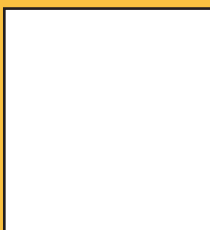


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KIT 7074



Page M.11



Solid carbide


Boring heads

Arbors & adaptors

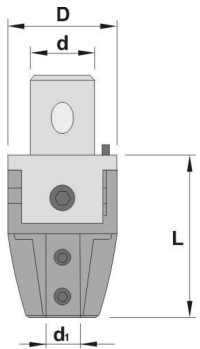
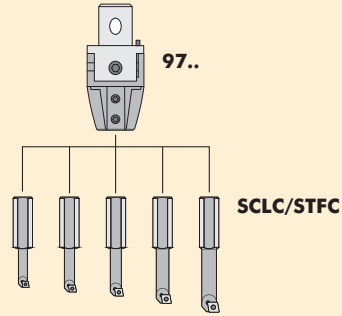


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
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97. ⁷¹/₇₃




| REF. | D | L | d | d1 | ØMIN | ØMAX | | | | | |
|-----------------|----|----|----|----|------|------|-----|-----|-----|-----|-----|
| 97.71.08 | 27 | 50 | 15 | 8 | 10 | 21 | | | | | |
| 97.72.08 | 32 | 58 | 20 | 8 | 10 | 21 | 101 | 505 | 504 | 503 | 158 |
| 97.72.10 | 32 | 58 | 20 | 10 | 13 | 25 | 101 | 505 | 504 | 503 | 158 |
| 97.73.10 | 42 | 70 | 24 | 10 | 13 | 29 | 101 | 505 | 504 | 503 | 158 |
| 97.73.12 | 42 | 70 | 24 | 12 | 16 | 34 | 101 | 505 | 504 | 503 | 158 |
| 97.73.16 | 42 | 70 | 24 | 16 | 20 | 38 | 101 | 505 | 504 | 503 | 158 |

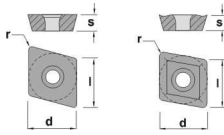
SCLC



| REF. | D | L | L1 | f | Bore Range MIN MAX | CC.. | | |
|-------------------------|----|-----|----|---|-----------------------|--------|-----|-----|
| S0816F SCLC R 06 | 16 | 80 | 35 | 4 | 10 28 | 0602.. | | |
| S1016G SCLC R 06 | 16 | 90 | 45 | 6 | 13 31 | 0602.. | 155 | 507 |
| S1216H SCLC R 06 | 16 | 100 | 57 | 7 | 16 34 | 0602.. | 155 | 507 |
| S1616I SCLC R 09 | 16 | 110 | 73 | 9 | 20 38 | 09T3.. | 138 | 515 |





| REF. | l | s | d |
|--------------------|------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

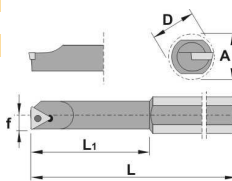



For more information see page: A.38

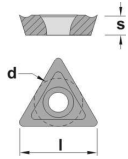
STFC



| REF. | D | L | L1 | f | Bore Range MIN MAX | TC.. | | |
|-------------------------|----|-----|----|----|-----------------------|--------|-----|-----|
| S0816F STFC R 09 | 16 | 80 | 35 | 5 | 10 28 | 0902.. | | |
| S1016G STFC R 09 | 16 | 90 | 45 | 6 | 13 31 | 0902.. | 122 | 506 |
| S1216H STFC R 09 | 16 | 100 | 57 | 7 | 16 34 | 0902.. | 122 | 506 |
| S1616I STFC R 09 | 16 | 110 | 73 | 9 | 20 38 | 0902.. | 122 | 506 |
| S1616I STFC R 16 | 16 | 110 | 73 | 11 | 20 38 | 16T3.. | 155 | 515 |

| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 0602.. | 9,62 | 2,38 | 5,55 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

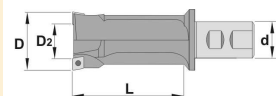


For more information see page: A.51,52

433



| REF. | Z | D | D ₂ | d | L | CC.. | | |
|---------|---|----|----------------|----|-----|--------|-----|-----|
| 433.040 | 3 | 40 | 20 | 25 | 105 | 09T3.. | 140 | 535 |
| 433.045 | 3 | 45 | 25 | 25 | 105 | 09T3.. | 140 | 535 |
| 433.050 | 3 | 50 | 30 | 25 | 105 | 09T3.. | 140 | 535 |
| 433.055 | 3 | 55 | 35 | 25 | 105 | 09T3.. | 140 | 535 |



Inserts

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Automatic lathes

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Parting & grooving

Threading

Drills

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Brazed tools

Milling cutters

Solid carbide

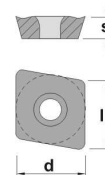
Boring heads

Arbors & adaptors

M05

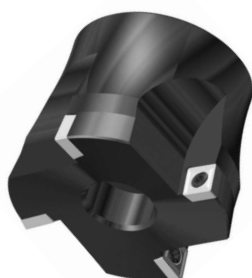


| REF. | l | s | d |
|-------------|------|------|------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |

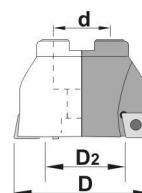


For more information see page: A.38

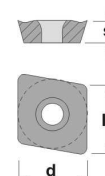
434



| REF. | Z | D | D ₂ | d | CC.. | | |
|---------|---|-----|----------------|----|--------|-----|-----|
| 434.060 | 3 | 60 | 40 | 16 | 09T3.. | 140 | 535 |
| 434.065 | 3 | 65 | 45 | 22 | 09T3.. | 140 | 535 |
| 434.070 | 3 | 70 | 50 | 22 | 09T3.. | 140 | 535 |
| 434.075 | 3 | 75 | 55 | 27 | 1204.. | 150 | 522 |
| 434.080 | 3 | 80 | 60 | 27 | 1204.. | 150 | 522 |
| 434.085 | 3 | 85 | 65 | 32 | 1204.. | 150 | 522 |
| 434.090 | 3 | 90 | 70 | 32 | 1204.. | 150 | 522 |
| 434.095 | 3 | 95 | 75 | 32 | 1204.. | 150 | 522 |
| 434.100 | 3 | 100 | 80 | 32 | 1204.. | 150 | 522 |
| 434.105 | 3 | 105 | 85 | 40 | 1204.. | 150 | 522 |
| 434.110 | 3 | 110 | 90 | 40 | 1204.. | 150 | 522 |
| 434.115 | 3 | 115 | 95 | 40 | 1204.. | 150 | 522 |
| 434.120 | 3 | 120 | 100 | 40 | 1204.. | 150 | 522 |
| 434.125 | 3 | 125 | 105 | 40 | 1204.. | 150 | 522 |
| 434.130 | 3 | 130 | 110 | 40 | 1204.. | 150 | 522 |
| 434.135 | 3 | 135 | 115 | 40 | 1204.. | 150 | 522 |
| 434.140 | 3 | 140 | 120 | 40 | 1204.. | 150 | 522 |
| 434.145 | 3 | 145 | 125 | 40 | 1204.. | 150 | 522 |
| 434.150 | 3 | 150 | 130 | 40 | 1204.. | 150 | 522 |
| 434.155 | 3 | 155 | 135 | 40 | 1204.. | 150 | 522 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



For more information see page: A.38

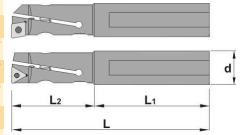


Inserts

66¹/₂



| REF. | L | L1 | L2 | d | Ø MIN | Ø MAX | CC../TC.. | | | | | | |
|----------|-----|-----|----|----|-------|-------|-------------|-----|-----|-----|-----|---------|---------|
| 661.1215 | 105 | 70 | 35 | 12 | 12 | 15 | CC.. 0602.. | 159 | 153 | 155 | - | 545 | 520 507 |
| 661.1520 | 110 | 60 | 50 | 16 | 15 | 20 | CC.. 0602.. | 481 | 404 | 155 | 404 | 502 | 552 507 |
| 661.2025 | 120 | 60 | 60 | 20 | 20 | 25 | TC.. 1102.. | 478 | 437 | 125 | 437 | 525 | 552 507 |
| 661.2530 | 140 | 70 | 70 | 25 | 25 | 30 | TC.. 16T3.. | 739 | 737 | 140 | 737 | 525/505 | - 515 |
| 661.3035 | 160 | 70 | 90 | 25 | 30 | 35 | TC.. 16T3.. | 741 | 737 | 140 | 738 | 525/526 | - 515 |
| 662.1215 | 175 | 145 | 30 | 12 | 12 | 15 | CC.. 0602.. | 159 | 153 | 155 | - | 545 | 520 507 |
| 662.1520 | 175 | 125 | 50 | 16 | 15 | 20 | CC.. 0602.. | 481 | 404 | 155 | 404 | 502 | 552 507 |
| 662.2025 | 200 | 140 | 60 | 20 | 20 | 25 | TC.. 1102.. | 478 | 437 | 125 | 437 | 525 | 552 507 |
| 662.2530 | 200 | 130 | 70 | 25 | 25 | 30 | TC.. 16T3.. | 739 | 737 | 140 | 737 | 525/505 | - 515 |
| 662.3035 | 200 | 110 | 90 | 25 | 30 | 35 | TC.. 16T3.. | 741 | 737 | 140 | 738 | 525/526 | - 515 |



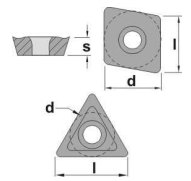
Turning

Automatic lathes

Ceramic tools



| REF. | l | s | d |
|-------------|-------|------|------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| TC.. 1102.. | 11,00 | 2,38 | 6,35 |
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



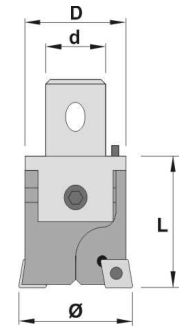
For more information see page: A.38,51,52

Parting & grooving

63.14.70
74



| REF. | D | L | d | Ø MIN | Ø MAX | CC.. | | | | |
|--------------|----|----|----|-------|-------|--------|-----|-----|-----|-----|
| 6314.70.2430 | 22 | 34 | 12 | 24 | 30 | 0602.. | 155 | 517 | 503 | 502 |
| 6334.71.2940 | 27 | 42 | 15 | 29 | 40 | 09T3.. | 140 | 535 | 504 | 502 |
| 6334.72.3950 | 32 | 45 | 20 | 39 | 50 | 09T3.. | 140 | 535 | 504 | 525 |
| 6344.73.4965 | 42 | 56 | 24 | 49 | 65 | 1204.. | 150 | 522 | 505 | 503 |
| 6344.74.6382 | 54 | 56 | 28 | 63 | 82 | 1204.. | 150 | 522 | 506 | 503 |



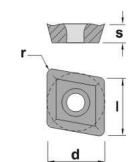
Threading

Drills

Cartridges



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



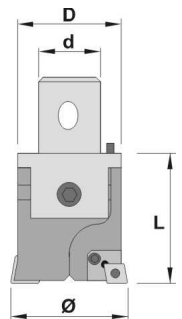
For more information see page: A.38

Brazed tools

6344.75
77



| REF. | D | L | d | Ø MIN | Ø MAX | CC.. | | | | | |
|----------------|-----|-----|----|-------|-------|--------|-----|-----|-----|-----|-----|
| 6344.75.080102 | 68 | 86 | 36 | 80 | 102 | 1204.. | 150 | 522 | 508 | 504 | 641 |
| 6344.76.100125 | 85 | 100 | 50 | 100 | 125 | 1204.. | 150 | 522 | 508 | 505 | 641 |
| 6344.77.125160 | 110 | 100 | 60 | 125 | 160 | 1204.. | 150 | 522 | 508 | 505 | 641 |
| 6344.77.160220 | 145 | 100 | 60 | 160 | 220 | 1204.. | 150 | 522 | 508 | 505 | 641 |



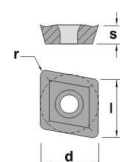
Milling cutters

Solid carbide

Boring heads



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |



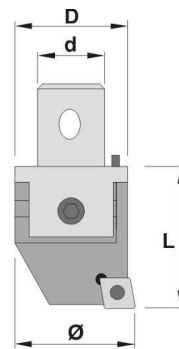
For more information see page: A.38

Arbors & adaptors

64¹⁴4⁷⁰



| REF. | D | L | d | Ø MIN | Ø MAX | CC.. | | | | |
|--------------|----|----|----|-------|-------|--------|-----|-----|-----|-----|
| 6414.70.2430 | 22 | 34 | 12 | 24 | 30 | 0602.. | 155 | 517 | 503 | 502 |
| 6434.71.2940 | 27 | 42 | 15 | 29 | 40 | 09T3.. | 140 | 535 | 504 | 502 |
| 6434.72.3950 | 32 | 45 | 20 | 39 | 50 | 09T3.. | 140 | 535 | 504 | 525 |
| 6444.73.4965 | 42 | 56 | 24 | 49 | 65 | 1204.. | 150 | 522 | 505 | 503 |
| 6444.74.6382 | 54 | 56 | 28 | 63 | 82 | 1204.. | 150 | 522 | 506 | 503 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

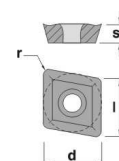
Solid carbide

Boring heads

Arbors & adaptors



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 0602.. | 6,45 | 2,38 | 6,35 |
| CC.. 09T3.. | 9,65 | 3,97 | 9,52 |
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

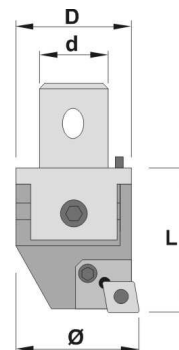


For more information see page: A.38

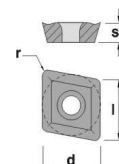
6444⁷⁵₇₇



| REF. | D | L | d | Ø MIN | Ø MAX | CC.. | | | | | |
|----------------|-----|-----|----|-------|-------|--------|-----|-----|-----|-----|-----|
| 6444.75.080102 | 68 | 86 | 36 | 80 | 102 | 1204.. | 150 | 522 | 508 | 504 | 641 |
| 6444.76.100125 | 85 | 100 | 50 | 100 | 125 | 1204.. | 150 | 522 | 508 | 505 | 641 |
| 6444.77.125160 | 110 | 100 | 60 | 125 | 160 | 1204.. | 150 | 522 | 508 | 505 | 641 |
| 6444.77.160220 | 145 | 100 | 60 | 160 | 220 | 1204.. | 150 | 522 | 508 | 505 | 641 |



| REF. | l | s | d |
|-------------|-------|------|-------|
| CC.. 1204.. | 12,90 | 4,76 | 12,70 |

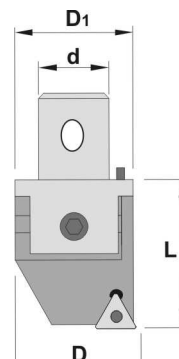


For more information see page: A.38

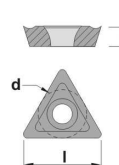
6634⁷²₇₄



| REF. | D1 | L | d | Ø MIN | Ø MAX | TC.. | | | | |
|--------------|----|----|----|-------|-------|--------|-----|-----|-----|-----|
| 6634.72.3950 | 32 | 45 | 20 | 39 | 50 | 16T3.. | 140 | 535 | 504 | 525 |
| 6634.73.4965 | 42 | 56 | 24 | 49 | 65 | 16T3.. | 150 | 522 | 505 | 503 |
| 6634.74.6382 | 54 | 66 | 28 | 63 | 82 | 16T3.. | 150 | 522 | 526 | 503 |



| REF. | l | s | d |
|-------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |



For more information see page: A.51,52

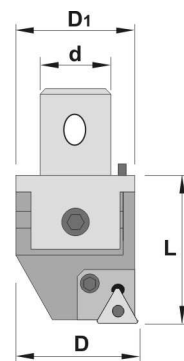


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

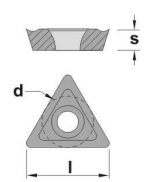
6634.⁷⁵/₇₇



| REF. | D1 | L | d | Ø MIN | Ø MAX | TC.. | | | | | |
|-----------------------|-----|-----|----|-------|-------|--------|-----|-----|-----|-----|-----|
| 6634.75.080102 | 68 | 86 | 36 | 80 | 102 | 16T3.. | 150 | 522 | 508 | 504 | 624 |
| 6634.76.100125 | 85 | 100 | 50 | 100 | 125 | 16T3.. | 150 | 522 | 508 | 505 | 642 |
| 6634.77.125160 | 110 | 100 | 60 | 125 | 160 | 16T3.. | 150 | 522 | 508 | 505 | 642 |
| 6634.77.160220 | 145 | 100 | 60 | 160 | 220 | 16T3.. | 150 | 522 | 508 | 505 | 642 |



| REF. | l | s | d |
|--------------------|-------|------|------|
| TC.. 16T3.. | 16,50 | 3,97 | 9,52 |

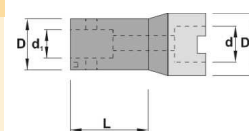


For more information see page: A.51,52

60.¹⁶₄₀



| REF. | D | D1 | L | d1 | d |
|----------|----|----|-----|----|----|
| 60.16.70 | 22 | 32 | 90 | 12 | 16 |
| 60.16.71 | 27 | 32 | 90 | 15 | 16 |
| 60.22.73 | 42 | 40 | 130 | 24 | 22 |
| 60.27.74 | 54 | 48 | 120 | 28 | 27 |
| 60.32.75 | 68 | 58 | 130 | 36 | 32 |
| 60.40.76 | 85 | 70 | 120 | 50 | 40 |



Inserts

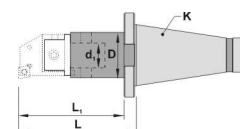
Turning

Automatic lathes

60.⁴³₄₅



| REF. | K | D | L | L1 | d1 |
|--------------|----|-----|-----|-----|----|
| 60.43.70.100 | 30 | 22 | 115 | 100 | 12 |
| 60.43.71.100 | 30 | 27 | 115 | 100 | 15 |
| 60.43.72.100 | 30 | 32 | 115 | 100 | 20 |
| 60.44.70.100 | 40 | 22 | 115 | 100 | 12 |
| 60.44.71.100 | 40 | 27 | 115 | 100 | 15 |
| 60.44.72.100 | 40 | 32 | 115 | 100 | 20 |
| 60.44.73.160 | 40 | 42 | 175 | 160 | 24 |
| 60.44.74.160 | 40 | 54 | 175 | 160 | 28 |
| 60.44.75.160 | 50 | 68 | 176 | 160 | 36 |
| 60.45.70.100 | 50 | 22 | 119 | 100 | 12 |
| 60.45.71.100 | 50 | 27 | 119 | 100 | 15 |
| 60.45.72.130 | 50 | 32 | 149 | 130 | 20 |
| 60.45.73.160 | 50 | 42 | 179 | 160 | 24 |
| 60.45.74.160 | 50 | 54 | 179 | 160 | 28 |
| 60.45.75.200 | 50 | 68 | 220 | 200 | 36 |
| 60.45.76.200 | 50 | 85 | 221 | 200 | 50 |
| 60.45.77.260 | 50 | 100 | 281 | 260 | 60 |



Ceramic tools

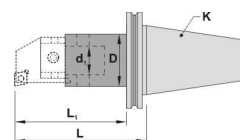
Parting & grooving

Threading

60.⁴⁷₄₈



| REF. | K | D | L | L1 | d1 |
|--------------|----|-----|-----|-----|----|
| 60.47.70.100 | 40 | 22 | 115 | 100 | 12 |
| 60.47.71.100 | 40 | 27 | 115 | 100 | 15 |
| 60.47.72.100 | 40 | 32 | 115 | 100 | 20 |
| 60.47.73.160 | 40 | 42 | 175 | 160 | 24 |
| 60.47.74.160 | 40 | 54 | 175 | 160 | 28 |
| 60.47.75.160 | 40 | 68 | 176 | 160 | 36 |
| 60.48.70.100 | 50 | 22 | 119 | 100 | 12 |
| 60.48.71.100 | 50 | 27 | 119 | 100 | 15 |
| 60.48.72.130 | 50 | 32 | 149 | 130 | 20 |
| 60.48.73.160 | 50 | 42 | 179 | 160 | 24 |
| 60.48.74.160 | 50 | 54 | 179 | 160 | 28 |
| 60.48.75.200 | 50 | 68 | 220 | 200 | 36 |
| 60.48.76.200 | 50 | 85 | 221 | 200 | 50 |
| 60.48.77.260 | 50 | 100 | 281 | 260 | 60 |



Drills

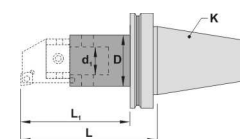
Cartridges

Brazed tools

60.⁴⁹₅₀



| REF. | K | K1 | L | L1 | d1 |
|--------------|----|-----|-----|-----|----|
| 60.49.70.100 | 40 | 22 | 115 | 100 | 12 |
| 60.49.71.100 | 40 | 27 | 115 | 100 | 15 |
| 60.49.72.100 | 40 | 32 | 115 | 100 | 20 |
| 60.49.73.160 | 40 | 42 | 175 | 160 | 24 |
| 60.49.74.160 | 40 | 54 | 175 | 160 | 28 |
| 60.49.75.160 | 40 | 68 | 176 | 160 | 36 |
| 60.50.70.100 | 50 | 22 | 119 | 100 | 12 |
| 60.50.71.100 | 50 | 27 | 119 | 100 | 15 |
| 60.50.72.130 | 50 | 32 | 149 | 130 | 20 |
| 60.50.73.160 | 50 | 42 | 179 | 160 | 24 |
| 60.50.74.160 | 50 | 54 | 179 | 160 | 28 |
| 60.50.75.200 | 50 | 68 | 220 | 200 | 36 |
| 60.50.76.200 | 50 | 85 | 221 | 200 | 50 |
| 60.50.77.260 | 50 | 100 | 281 | 260 | 60 |



Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

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Brazed tools

Milling cutters

Solid carbide

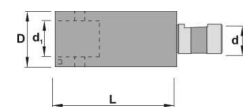
Boring heads

Arbors & adaptors

60.⁶²₆₄



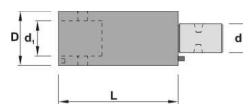
| REF. | D | d | L | d1 |
|----------|----|----|----|----|
| 60.62.70 | 22 | 20 | 20 | 12 |
| 60.62.71 | 27 | 20 | 30 | 15 |
| 60.63.70 | 22 | 20 | 30 | 12 |
| 60.63.71 | 27 | 20 | 45 | 15 |
| 60.63.72 | 32 | 25 | 35 | 20 |
| 60.64.70 | 22 | 20 | 52 | 12 |
| 60.64.71 | 27 | 20 | 52 | 15 |
| 60.64.72 | 32 | 20 | 52 | 20 |
| 60.64.73 | 42 | 25 | 60 | 24 |



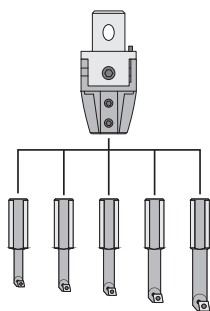
60.⁷⁰₇₃



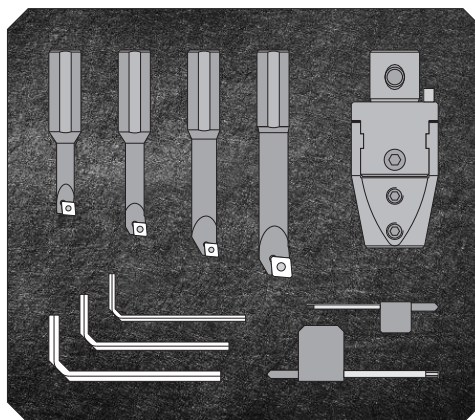
| REF. | D | d | L | d1 |
|-------------|----|----|----|----|
| 60.70.70.20 | 22 | 12 | 20 | 12 |
| 60.70.70.30 | 22 | 12 | 30 | 12 |
| 60.71.71.30 | 27 | 15 | 30 | 15 |
| 60.71.71.45 | 27 | 15 | 45 | 15 |
| 60.72.72.35 | 32 | 20 | 35 | 20 |
| 60.72.72.52 | 32 | 20 | 52 | 20 |
| 60.73.73.40 | 42 | 24 | 40 | 24 |
| 60.73.73.60 | 42 | 24 | 60 | 24 |



KIT 97

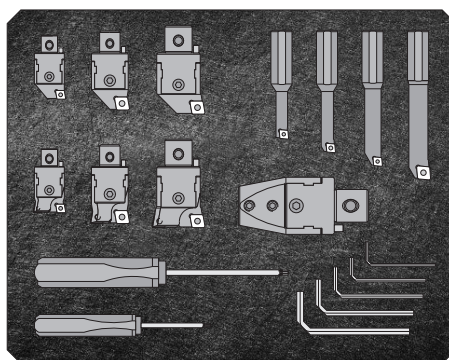


| REF. | Boring head | Boring bars | Bore Range | |
|----------------|-------------|------------------|------------|-----|
| | | | MIN | MAX |
| 97.SCLC | 97.73.16 | S0816F SCLC R 06 | 10 | 28 |
| | | S1016G SCLC R 06 | 13 | 31 |
| | | S1216H SCLC R 06 | 16 | 34 |
| | | S1616I SCLC R 09 | 20 | 38 |
| 97.STFC | 97.73.16 | S0816F STFC R 09 | 10 | 28 |
| | | S1016G STFC R 09 | 13 | 31 |
| | | S1216H STFC R 09 | 16 | 34 |
| | | S1616I STFC R 09 | 20 | 38 |
| | | S1616I STFC R 16 | 20 | 38 |



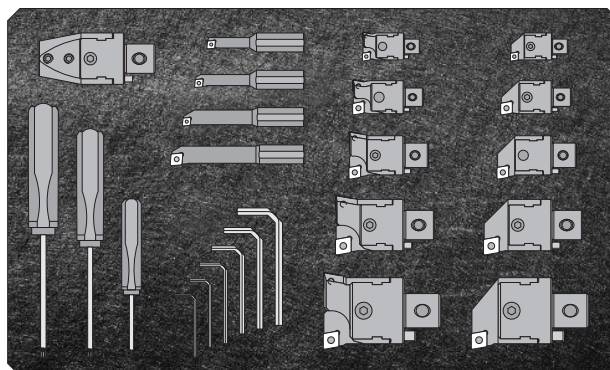
KIT 7072

| REF. | Roughing boring head | Finishing boring head | Boring head | Boring bars | Bore Range | |
|-----------------|----------------------|-----------------------|-------------|------------------|------------|-----|
| | | | | | MIN | MAX |
| SET 7072 | 6314.70.2430 | 6414.70.2430 | 97.73.16 | S0816F SCLC R 06 | 10 | 28 |
| | 6334.71.2940 | 6434.71.2940 | | S1016G SCLC R 06 | 13 | 31 |
| | 6334.72.3950 | 6434.72.3950 | | S1216H SCLC R 06 | 16 | 34 |
| | | | | S1616I SCLC R 09 | 20 | 38 |



KIT 7074

| REF. | Roughing boring head | Finishing boring head | Boring head | Boring bars | Bore Range | |
|-----------------|----------------------|-----------------------|-------------|------------------|------------|-----|
| | | | | | MIN | MAX |
| SET 7074 | 6314.70.2430 | 6414.70.2430 | 97.73.16 | S0816F SCLC R 06 | 10 | 28 |
| | 6334.71.2940 | 6434.71.2940 | | S1016G SCLC R 06 | 13 | 31 |
| | 6334.72.3950 | 6434.72.3950 | | S1216H SCLC R 06 | 16 | 34 |
| | 6344.73.4965 | 6444.73.4965 | | | | |
| | 6344.74.6382 | 6444.74.6382 | | S1616I SCLC R 09 | 20 | 38 |



Inserts

Turning

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Ceramic tools

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Threading

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Milling cutters

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Inserts

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Threading

Drills

Cartridges

Brazed tools

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Solid carbide

Boring heads

Arbors & adaptors

Cutting data for boring heads

| Material | Head size | Diameter | Finishing heads | | | Roughing heads | | |
|--------------------------------|----------------|-----------|-----------------|-------------|---------------|----------------|-------------|---------------------|
| | | | Cutting Speed | Feed | Cutting Depth | Cutting Speed | Feed | Cutting Depth (max) |
| Plain carbon steel | 22 | 24 ÷ 30 | 110 - 140 | 0,05 - 0,15 | 0,05 - 0,30 | 100 - 130 | 0,15 - 0,25 | 4,2 |
| | 27 | 29 ÷ 40 | 115 - 150 | 0,05 - 0,15 | 0,05 - 0,30 | 105 - 140 | 0,15 - 0,30 | 5,7 |
| | 32 | 39 ÷ 50 | 115 - 150 | 0,05 - 0,15 | 0,06 - 0,35 | 105 - 150 | 0,20 - 0,30 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 115 - 150 | 0,10 - 0,20 | 0,06 - 0,35 | 105 - 150 | 0,25 - 0,35 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 115 - 150 | 0,10 - 0,20 | 0,07 - 0,50 | 105 - 150 | 0,30 - 0,40 | 6,3 |
| Alloy steels | 22 | 24 ÷ 30 | 100 - 130 | 0,05 - 0,15 | 0,05 - 0,30 | 90 - 120 | 0,15 - 0,25 | 4,2 |
| | 27 | 29 ÷ 40 | 110 - 140 | 0,05 - 0,15 | 0,05 - 0,30 | 100 - 130 | 0,15 - 0,30 | 5,7 |
| | 32 | 39 ÷ 50 | 110 - 150 | 0,05 - 0,15 | 0,06 - 0,35 | 100 - 130 | 0,20 - 0,30 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 110 - 150 | 0,10 - 0,20 | 0,06 - 0,35 | 100 - 130 | 0,25 - 0,35 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 110 - 150 | 0,10 - 0,20 | 0,07 - 0,50 | 100 - 130 | 0,30 - 0,40 | 6,3 |
| Stainless steels | 22 | 24 ÷ 30 | 70 - 100 | 0,07 - 0,15 | 0,12 - 0,35 | 60 - 90 | 0,12 - 0,20 | 4,2 |
| | 27 | 29 ÷ 40 | 80 - 110 | 0,07 - 0,15 | 0,12 - 0,35 | 70 - 100 | 0,15 - 0,25 | 5,7 |
| | 32 | 39 ÷ 50 | 80 - 110 | 0,07 - 0,15 | 0,20 - 0,50 | 70 - 100 | 0,15 - 0,25 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 80 - 110 | 0,10 - 0,20 | 0,20 - 0,50 | 70 - 100 | 0,20 - 0,30 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 80 - 110 | 0,12 - 0,20 | 0,25 - 0,75 | 70 - 100 | 0,25 - 0,35 | 6,3 |
| Cast iron | 22 | 24 ÷ 30 | 70 - 110 | 0,07 - 0,15 | 0,12 - 0,35 | 60 - 110 | 0,20 - 0,30 | 4,2 |
| | 27 | 29 ÷ 40 | 80 - 115 | 0,07 - 0,15 | 0,12 - 0,35 | 60 - 110 | 0,25 - 0,35 | 5,7 |
| | 32 | 39 ÷ 50 | 80 - 115 | 0,07 - 0,15 | 0,20 - 0,50 | 60 - 110 | 0,25 - 0,35 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 80 - 115 | 0,12 - 0,20 | 0,20 - 0,50 | 60 - 110 | 0,30 - 0,45 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 80 - 115 | 0,12 - 0,20 | 0,25 - 0,75 | 60 - 110 | 0,30 - 0,45 | 6,3 |
| Aluminium and aluminium alloys | 22 | 24 ÷ 30 | 150 - 300 | 0,05 - 0,15 | 0,12 - 0,35 | 120 - 300 | 0,20 - 0,30 | 4,2 |
| | 27 | 29 ÷ 40 | 150 - 360 | 0,10 - 0,20 | 0,12 - 0,35 | 150 - 370 | 0,25 - 0,35 | 5,7 |
| | 32 | 39 ÷ 50 | 150 - 360 | 0,10 - 0,20 | 0,20 - 0,50 | 150 - 370 | 0,25 - 0,35 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 150 - 360 | 0,10 - 0,20 | 0,20 - 0,50 | 150 - 370 | 0,30 - 0,45 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 150 - 360 | 0,10 - 0,25 | 0,25 - 0,75 | 150 - 370 | 0,30 - 0,45 | 6,3 |
| Titanium | 22 | 24 ÷ 30 | 30 - 40 | 0,07 - 0,15 | 0,12 - 0,35 | 25 - 35 | 0,12 - 0,20 | 4,2 |
| | 27 | 29 ÷ 40 | 30 - 45 | 0,07 - 0,15 | 0,12 - 0,35 | 30 - 40 | 0,15 - 0,25 | 5,7 |
| | 32 | 39 ÷ 50 | 30 - 45 | 0,07 - 0,15 | 0,20 - 0,50 | 30 - 40 | 0,15 - 0,25 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 30 - 45 | 0,10 - 0,20 | 0,20 - 0,50 | 30 - 40 | 0,20 - 0,30 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 30 - 45 | 0,10 - 0,20 | 0,25 - 0,75 | 30 - 40 | 0,20 - 0,35 | 6,3 |
| High tempered alloys | 22 | 24 ÷ 30 | 30 - 40 | 0,07 - 0,15 | 0,12 - 0,35 | 25 - 35 | 0,12 - 0,20 | 4,2 |
| | 27 | 29 ÷ 40 | 30 - 45 | 0,07 - 0,15 | 0,12 - 0,35 | 30 - 40 | 0,15 - 0,25 | 5,7 |
| | 32 | 39 ÷ 50 | 30 - 45 | 0,07 - 0,15 | 0,20 - 0,50 | 30 - 40 | 0,15 - 0,25 | 5,7 |
| | 42 - 54 - 68 | 49 ÷ 102 | 30 - 45 | 0,10 - 0,20 | 0,20 - 0,50 | 30 - 40 | 0,20 - 0,30 | 6,3 |
| | 85 - 110 - 145 | 100 ÷ 220 | 30 - 45 | 0,10 - 0,20 | 0,25 - 0,75 | 30 - 40 | 0,20 - 0,35 | 6,3 |



A large, vertically oriented rectangular area with a white background and horizontal lines, intended for writing or drawing. The lines are evenly spaced and run across the width of the page.

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Automatic lathes

Ceramic tools

Parting & grooving

Threading

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Milling cutters

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Boring heads

Arbors & adaptors






MAS BT

| | | | | | |
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HSK

| | | | | | |
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| | | | | | |
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|---|--|--|--|--|--|
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KX
Spanner



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Quick-change




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Quick-change



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Pull studs



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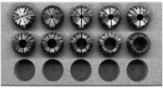
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Reducing bushings



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SER
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KIT 731
Mill chuck



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662.0 (CLS)
Extensions



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KIT C32
Mill chuck



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- Arbors & adaptors

**02_70
80**



| REF. | Types | DIN 2080 | DIN 69871/A | MAS BT | HSK | CAPTO | KM |
|-----------------|-------|----------|-------------|--------|-----|-------|----|
| 02.30.70 | | 30 | 30 | X | 50 | C5 | 50 |
| 02.30.80 | | X | X | 30 | X | X | X |
| 02.40.70 | | 40 | 40 | 40 | 63 | C6 | 63 |
| 02.50.70 | | 50 | 50 | 50 | 100 | X | X |



**02_71
81**



| REF. | Types | DIN 2080 | DIN 69871/A | MAS BT | HSK | CAPTO | KM |
|-----------------|-------|----------|-------------|--------|-----|-------|----|
| 02.30.71 | | 30 | 30 | X | 50 | C5 | 50 |
| 02.30.81 | | X | X | 30 | X | X | X |
| 02.40.71 | | 40 | 40 | 40 | 63 | C6 | 63 |
| 02.50.71 | | 50 | 50 | 50 | 100 | X | X |

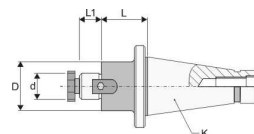


716^{3,4,5}



| REF. | K | d | D | L | L1 |
|---------|----|----|-----|----|----|
| 716.316 | 30 | 16 | 32 | 35 | 17 |
| 716.322 | 30 | 22 | 40 | 35 | 19 |
| 716.327 | 30 | 27 | 48 | 35 | 21 |
| 716.332 | 30 | 32 | 58 | 35 | 24 |
| 716.416 | 40 | 16 | 32 | 37 | 17 |
| 716.422 | 40 | 22 | 40 | 37 | 19 |
| 716.427 | 40 | 27 | 48 | 37 | 21 |
| 716.432 | 40 | 32 | 58 | 37 | 24 |
| 716.440 | 40 | 40 | 70 | 38 | 27 |
| 716.460 | 40 | 60 | 128 | 30 | 40 |
| 716.516 | 50 | 16 | 32 | 40 | 17 |
| 716.522 | 50 | 22 | 40 | 40 | 19 |
| 716.527 | 50 | 27 | 48 | 40 | 21 |
| 716.532 | 50 | 32 | 58 | 40 | 24 |
| 716.540 | 50 | 40 | 70 | 40 | 27 |
| 716.560 | 50 | 60 | 128 | 30 | 40 |

DIN 2080



Inserts

Turning

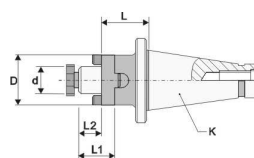
Automatic lathes

718⁴



| REF. | K | d | D | L | L1 | L2 |
|---------|----|----|----|----|----|----|
| 718.416 | 40 | 16 | 32 | 52 | 27 | 17 |
| 718.422 | 40 | 22 | 40 | 52 | 31 | 19 |
| 718.427 | 40 | 27 | 48 | 52 | 33 | 21 |
| 718.432 | 40 | 32 | 58 | 52 | 38 | 24 |
| 718.440 | 40 | 40 | 70 | 52 | 41 | 27 |
| 718.516 | 50 | 16 | 32 | 55 | 27 | 17 |
| 718.522 | 50 | 22 | 40 | 55 | 31 | 19 |
| 718.527 | 50 | 27 | 48 | 55 | 33 | 21 |
| 718.532 | 50 | 32 | 58 | 55 | 38 | 24 |
| 718.540 | 50 | 40 | 70 | 55 | 41 | 27 |

DIN 2080



Ceramic tools

Parting & grooving

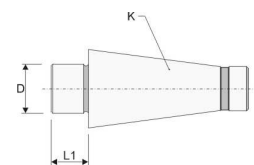
Threading

719^{4,5}



| REF. | K | L1 | D |
|---------|----|----|----|
| 719.440 | 40 | 30 | 40 |
| 719.560 | 50 | 40 | 60 |

DIN 2080



Drills

Cartridges

Brazed tools

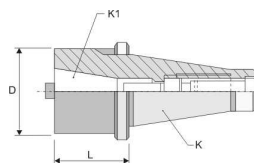
Milling cutters

722^{4,5}



| REF. | K | K1 | D | L |
|---------|----|----|----|----|
| 722.430 | 40 | 30 | 50 | 50 |
| 722.540 | 50 | 40 | 63 | 50 |

DIN 2080



Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

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Solid carbide

Boring heads

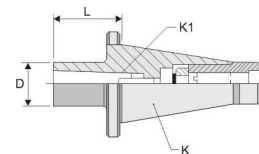
Arbors & adaptors

723^{3,4,5}



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 723.302 | 30 | MK2 | 32 | 50 |
| 723.303 | 30 | MK3 | 40 | 76 |
| 723.402 | 40 | MK2 | 32 | 50 |
| 723.403 | 40 | MK3 | 40 | 65 |
| 723.404 | 40 | MK4 | 48 | 95 |
| 723.503 | 50 | MK3 | 40 | 65 |
| 723.504 | 50 | MK4 | 48 | 65 |

DIN 2080

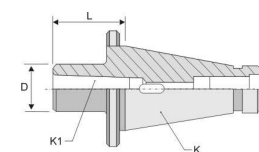


726^{3,4,5}



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 726.302 | 30 | MK2 | 32 | 50 |
| 726.303 | 30 | MK3 | 40 | 76 |
| 726.401 | 40 | MK1 | 25 | 50 |
| 726.402 | 40 | MK2 | 32 | 50 |
| 726.403 | 40 | MK3 | 40 | 65 |
| 726.404 | 40 | MK4 | 48 | 95 |
| 726.503 | 50 | MK3 | 48 | 65 |
| 726.504 | 50 | MK4 | 63 | 70 |

DIN 2080

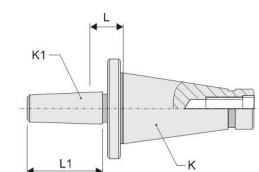


728^{3,4,5}



| REF. | K | K1 | L | L1 |
|----------------|----|-----|----|------|
| 728.312 | 30 | B12 | 15 | 18,5 |
| 728.316 | 30 | B16 | 15 | 24,0 |
| 728.318 | 30 | B18 | 15 | 32,0 |
| 728.412 | 40 | B12 | 17 | 18,5 |
| 728.416 | 40 | B16 | 17 | 24,0 |
| 728.418 | 40 | B18 | 17 | 32,0 |
| 728.516 | 50 | B16 | 20 | 24,0 |
| 728.518 | 50 | B18 | 20 | 32,0 |

DIN 2080

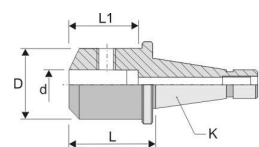


730^{4,5}



| REF. | K | d | D | L | L1 |
|----------------|----|----|----|----|----|
| 730.410 | 40 | 10 | 35 | 50 | 39 |
| 730.412 | 40 | 12 | 42 | 50 | 44 |
| 730.416 | 40 | 16 | 48 | 63 | 47 |
| 730.420 | 40 | 20 | 52 | 63 | 49 |
| 730.425 | 40 | 25 | 65 | 80 | 54 |
| 730.432 | 40 | 32 | 72 | 80 | 58 |
| 730.516 | 50 | 16 | 48 | 63 | 47 |
| 730.520 | 50 | 20 | 52 | 63 | 49 |
| 730.525 | 50 | 25 | 65 | 80 | 54 |
| 730.532 | 50 | 32 | 72 | 80 | 58 |

DIN 2080



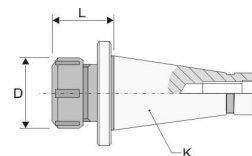


731³₄⁵



| REF. | K | L | D | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|----------|----|-----|----|-----------------|--------------|--------|
| 731.316 | 30 | 38 | 24 | 1-10 | 090 | ER16 |
| 731.320 | 30 | 38 | 32 | 1-13 | 091 | ER20 |
| 731.325 | 30 | 39 | 42 | 1-16 | 092 | ER25 |
| 731.332 | 30 | 50 | 50 | 2-20 | 093 | ER32 |
| 731.416 | 40 | 50 | 24 | 1-10 | 090 | ER16 |
| 731.420 | 40 | 50 | 34 | 1-13 | 091 | ER20 |
| 731.425 | 40 | 50 | 42 | 1-16 | 092 | ER25 |
| 731.432 | 40 | 50 | 50 | 2-20 | 093 | ER32 |
| 731.432L | 40 | 120 | 50 | 2-20 | 093 | ER32 |
| 731.440 | 40 | 56 | 63 | 4-30 | 094 | ER40 |
| 731.440L | 40 | 120 | 63 | 4-30 | 094 | ER40 |
| 731.532 | 50 | 70 | 50 | 2-20 | 093 | ER32 |
| 731.532L | 50 | 100 | 50 | 2-20 | 093 | ER32 |
| 731.540 | 50 | 70 | 63 | 4-30 | 094 | ER40 |
| 731.540L | 50 | 100 | 63 | 4-30 | 094 | ER40 |

DIN 2080

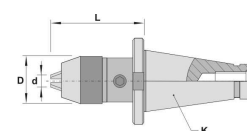


HX-DIN



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|------------|------|----|------------------|------------------|----|
| HX10-DIN40 | 0-10 | 40 | 72 | 81 | 43 |
| HX13-DIN40 | 1-13 | 40 | 86 | 97 | 53 |
| HX16-DIN40 | 3-16 | 40 | 88 | 99 | 57 |
| HX10-DIN50 | 0-10 | 50 | 74 | 83 | 43 |
| HX13-DIN50 | 1-13 | 50 | 89 | 101 | 53 |
| HX16-DIN50 | 3-16 | 50 | 92 | 103 | 57 |

DIN 2080

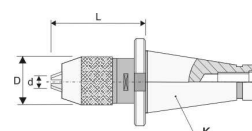


NPU-DIN



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|-------------|------|----|------------------|------------------|----|
| NPU13-DIN40 | 1-13 | 40 | 78 | 89 | 48 |
| NPU16-DIN40 | 3-16 | 40 | 90 | 101 | 55 |
| NPU13-DIN50 | 1-13 | 50 | 74 | 85 | 48 |
| NPU16-DIN50 | 3-16 | 50 | 72 | 83 | 55 |

DIN 2080



Inserts

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Automatic lathes

Ceramic tools

Parting & grooving

Threading

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Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

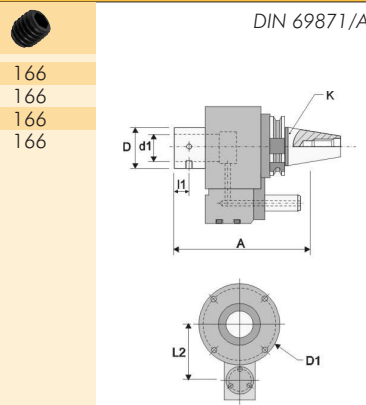


- Inserts
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- Automatic lathes
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- Parting & grooving
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- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

710.⁷/₈



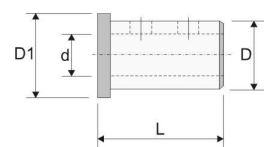
| REF. | K | d1 | A | D | D1 | l1 | l2 | |
|---------|----|----|-----|----|-----|----|----|-----|
| 710.725 | 40 | 25 | 152 | 45 | 95 | 15 | 65 | 166 |
| 710.732 | 40 | 32 | 152 | 48 | 95 | 16 | 65 | 166 |
| 710.832 | 50 | 32 | 152 | 48 | 95 | 16 | 80 | 166 |
| 710.840 | 50 | 40 | 166 | 58 | 110 | 17 | 80 | 166 |



021



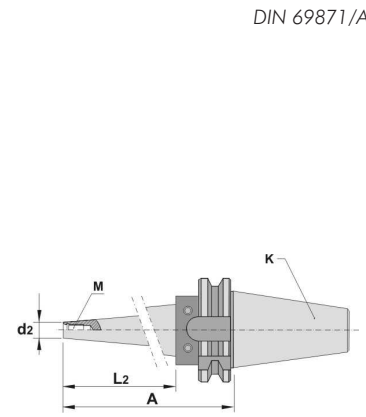
| REF. | D | d | D1 | L |
|-----------|----|----|----|----|
| 021.25.16 | 25 | 16 | 33 | 55 |
| 021.25.20 | 25 | 20 | 33 | 55 |
| 021.32.16 | 32 | 16 | 40 | 60 |
| 021.32.20 | 32 | 20 | 40 | 60 |
| 021.32.25 | 32 | 25 | 40 | 60 |
| 021.40.16 | 40 | 16 | 48 | 65 |
| 021.40.20 | 40 | 20 | 48 | 65 |
| 021.40.25 | 40 | 25 | 48 | 65 |
| 021.40.32 | 40 | 32 | 48 | 65 |



706.⁴/₅ L



| REF. | K | L2 | A | d2 | M |
|--------------|----|-----|-----|------|-----|
| 706.4.10 | 40 | 50 | 70 | 18,0 | M10 |
| 706.4.10L120 | 40 | 100 | 120 | 18,0 | M10 |
| 706.4.10L200 | 40 | 158 | 200 | 18,0 | M10 |
| 706.4.10L250 | 40 | 202 | 250 | 18,0 | M10 |
| 706.4.10L300 | 40 | 258 | 300 | 18,0 | M10 |
| 706.4.12 | 40 | 50 | 70 | 21,0 | M12 |
| 706.4.12L120 | 40 | 100 | 120 | 21,0 | M12 |
| 706.4.12L200 | 40 | 158 | 200 | 21,0 | M12 |
| 706.4.12L250 | 40 | 202 | 250 | 21,0 | M12 |
| 706.4.12L300 | 40 | 258 | 300 | 21,0 | M12 |
| 706.4.16 | 40 | 50 | 70 | 29,0 | M16 |
| 706.4.16L120 | 40 | 100 | 120 | 29,0 | M16 |
| 706.4.16L200 | 40 | 158 | 200 | 29,0 | M16 |
| 706.4.16L250 | 40 | 208 | 250 | 29,0 | M16 |
| 706.4.16L300 | 40 | 252 | 300 | 29,0 | M16 |
| 706.5.12 | 50 | 50 | 70 | 21,0 | M12 |
| 706.5.12L120 | 50 | 100 | 120 | 21,0 | M12 |
| 706.5.12L250 | 50 | 197 | 250 | 21,0 | M12 |
| 706.5.12L300 | 50 | 247 | 300 | 21,0 | M12 |
| 706.5.12L400 | 50 | 347 | 400 | 21,0 | M12 |
| 706.5.16 | 50 | 100 | 120 | 29,0 | M16 |
| 706.5.16L170 | 50 | 150 | 170 | 29,0 | M16 |
| 706.5.16L250 | 50 | 197 | 250 | 29,0 | M16 |
| 706.5.16L300 | 50 | 247 | 300 | 29,0 | M16 |
| 706.5.16L400 | 50 | 347 | 400 | 29,0 | M16 |
| 706.5.16L500 | 50 | 417 | 500 | 29,0 | M16 |



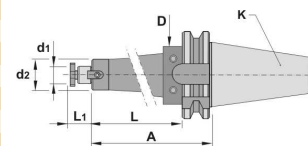


716. L

DIN 69871/A



| REF. | K | D | A | L | L ₁ | d ₁ | d ₂ |
|--------------|----|----|-----|-----|----------------|----------------|----------------|
| 716.7.16L150 | 40 | 50 | 150 | 131 | 36 | 16 | 36 |
| 716.7.16L200 | 40 | 50 | 200 | 181 | 36 | 16 | 36 |
| 716.7.16L250 | 40 | 50 | 250 | 231 | 36 | 16 | 36 |
| 716.7.16L300 | 40 | 50 | 300 | 281 | 36 | 16 | 36 |
| 716.7.22L150 | 40 | 50 | 150 | 131 | 19 | 22 | 44 |
| 716.7.22L200 | 40 | 50 | 200 | 181 | 19 | 22 | 44 |
| 716.7.22L250 | 40 | 50 | 250 | 231 | 19 | 22 | 44 |
| 716.7.22L300 | 40 | 50 | 300 | 281 | 19 | 22 | 44 |
| 716.7.27L150 | 40 | 50 | 150 | 131 | 21 | 27 | 54 |
| 716.7.27L200 | 40 | 50 | 200 | 181 | 21 | 27 | 54 |
| 716.7.27L250 | 40 | 50 | 250 | 231 | 21 | 27 | 54 |
| 716.7.27L300 | 40 | 50 | 300 | 281 | 21 | 27 | 54 |
| 716.8.16L150 | 50 | 80 | 150 | 131 | 36 | 16 | 36 |
| 716.8.16L200 | 50 | 80 | 200 | 181 | 36 | 16 | 36 |
| 716.8.16L250 | 50 | 80 | 250 | 231 | 36 | 16 | 36 |
| 716.8.16L300 | 50 | 80 | 300 | 281 | 36 | 16 | 36 |
| 716.8.16L400 | 50 | 80 | 400 | 381 | 36 | 16 | 36 |
| 716.8.22L200 | 50 | 80 | 200 | 181 | 19 | 22 | 44 |
| 716.8.22L250 | 50 | 80 | 250 | 231 | 19 | 22 | 44 |
| 716.8.22L300 | 50 | 80 | 300 | 281 | 19 | 22 | 44 |
| 716.8.22L400 | 50 | 80 | 400 | 381 | 19 | 22 | 44 |
| 716.8.22L500 | 50 | 80 | 500 | 481 | 19 | 22 | 44 |
| 716.8.27L200 | 50 | 80 | 200 | 181 | 21 | 27 | 54 |
| 716.8.27L250 | 50 | 80 | 250 | 231 | 21 | 27 | 54 |
| 716.8.27L300 | 50 | 80 | 300 | 281 | 21 | 27 | 54 |
| 716.8.27L400 | 50 | 80 | 400 | 381 | 21 | 27 | 54 |
| 716.8.27L500 | 50 | 80 | 500 | 481 | 21 | 27 | 54 |
| 716.8.32L200 | 50 | 80 | 200 | 181 | 24 | 32 | 54 |
| 716.8.32L250 | 50 | 80 | 250 | 231 | 24 | 32 | 64 |
| 716.8.32L300 | 50 | 80 | 300 | 281 | 24 | 32 | 64 |
| 716.8.32L400 | 50 | 80 | 400 | 381 | 24 | 32 | 64 |
| 716.8.32L500 | 50 | 80 | 500 | 481 | 24 | 32 | 64 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

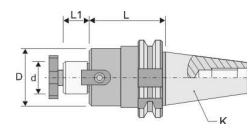
Arbors & adaptors

716.7_s

DIN 69871/A



| REF. | K | d | D | L | L ₁ |
|---------|----|----|-----|----|----------------|
| 716.716 | 40 | 16 | 32 | 44 | 17 |
| 716.722 | 40 | 22 | 40 | 44 | 19 |
| 716.727 | 40 | 27 | 48 | 44 | 21 |
| 716.732 | 40 | 32 | 58 | 59 | 24 |
| 716.740 | 40 | 40 | 70 | 59 | 27 |
| 716.816 | 50 | 16 | 32 | 44 | 17 |
| 716.822 | 50 | 22 | 40 | 44 | 19 |
| 716.827 | 50 | 27 | 48 | 47 | 21 |
| 716.832 | 50 | 32 | 58 | 47 | 24 |
| 716.840 | 50 | 40 | 70 | 59 | 27 |
| 716.860 | 50 | 60 | 128 | 75 | 40 |

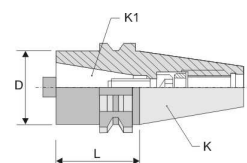


722.8

DIN 69871/A



| REF. | K | K ₁ | D | L |
|---------|----|----------------|----|----|
| 722.840 | 50 | 40 | 70 | 63 |





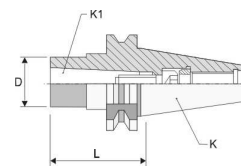
Inserts

723.⁷/₈



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 723.702 | 40 | MK2 | 32 | 50 |
| 723.703 | 40 | MK3 | 40 | 70 |
| 723.704 | 40 | MK4 | 48 | 95 |
| 723.803 | 50 | MK3 | 40 | 65 |
| 723.804 | 50 | MK4 | 48 | 70 |

DIN 69871/A



Turning

Automatic lathes

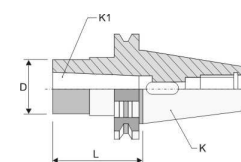
Ceramic tools

726.⁷/₈



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 726.701 | 40 | MK1 | 25 | 50 |
| 726.702 | 40 | MK2 | 32 | 50 |
| 726.703 | 40 | MK3 | 40 | 70 |
| 726.704 | 40 | MK4 | 48 | 95 |
| 726.803 | 50 | MK3 | 40 | 65 |
| 726.804 | 50 | MK4 | 48 | 95 |

DIN 69871/A



Parting & grooving

Threading

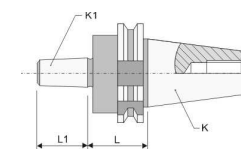
Drills

728.⁷/₈



| REF. | K | K1 | L | L1 |
|----------------|----|-----|----|------|
| 728.712 | 40 | B12 | 25 | 18,5 |
| 728.716 | 40 | B16 | 25 | 24,0 |
| 728.718 | 40 | B18 | 25 | 32,0 |
| 728.816 | 50 | B16 | 25 | 24,0 |
| 728.818 | 50 | B18 | 25 | 32,0 |

DIN 69871/A



Cartridges

Brazed tools

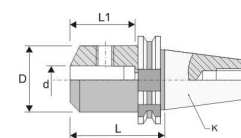
Milling cutters

730.⁷/₈



| REF. | K | d | D | L | L1 |
|----------------|----|----|----|-----|----|
| 730.710 | 40 | 10 | 35 | 50 | 39 |
| 730.712 | 40 | 12 | 42 | 50 | 44 |
| 730.716 | 40 | 16 | 48 | 63 | 47 |
| 730.720 | 40 | 20 | 52 | 63 | 49 |
| 730.725 | 40 | 25 | 65 | 100 | 54 |
| 730.732 | 40 | 32 | 72 | 100 | 58 |
| 730.816 | 50 | 16 | 48 | 63 | 47 |
| 730.820 | 50 | 20 | 52 | 63 | 49 |
| 730.825 | 50 | 25 | 65 | 80 | 54 |
| 730.832 | 50 | 32 | 72 | 100 | 58 |

DIN 69871/A



Solid carbide

Boring heads

Arbors & adaptors

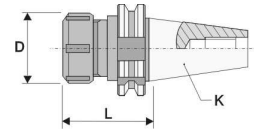


731.7/8



| REF. | K | L | D | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|----------|----|-----|----|-----------------|--------------|--------|
| 731.716 | 40 | 60 | 28 | 1-10 | 090 | ER16 |
| 731.720 | 40 | 70 | 34 | 1-13 | 091 | ER20 |
| 731.725 | 40 | 70 | 42 | 1-16 | 092 | ER25 |
| 731.732 | 40 | 70 | 50 | 2-20 | 093 | ER32 |
| 731.732L | 40 | 120 | 50 | 2-20 | 093 | ER32 |
| 731.740 | 40 | 56 | 63 | 4-30 | 094 | ER40 |
| 731.740L | 40 | 120 | 63 | 4-30 | 094 | ER40 |
| 731.832 | 50 | 70 | 50 | 2-20 | 093 | ER32 |
| 731.832L | 50 | 100 | 50 | 2-20 | 093 | ER32 |
| 731.840 | 50 | 70 | 63 | 4-30 | 094 | ER40 |
| 731.840L | 50 | 120 | 63 | 4-30 | 094 | ER40 |

DIN 69871/A



Inserts

Turning

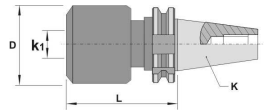
Automatic lathes

734.7



| REF. | K | K1 | D | L |
|---------|----|----|----|-----|
| 734.720 | 40 | 20 | 54 | 105 |
| 734.732 | 40 | 32 | 72 | 105 |
| 734.832 | 50 | 32 | 72 | 105 |

DIN 69871/A



Ceramic tools

Parting & grooving

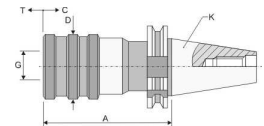
Threading

737.7/8



| REF. | K | N° | G | Ø | | A | D | C | T | | |
|---------|----|----|----|---------|--|-----|----|----|---|------|------|
| 737.712 | 40 | 1 | 19 | M4-M12 | | 60 | 36 | 9 | 9 | 71XX | 75XX |
| 737.720 | 40 | 2 | 31 | M8-M20 | | 92 | 53 | 15 | 9 | 72XX | 76XX |
| 737.733 | 40 | 3 | 48 | M14-M33 | | 138 | 78 | 24 | 9 | 73XX | 77XX |
| 737.812 | 50 | 1 | 19 | M4-M12 | | 60 | 36 | 9 | 9 | 71XX | 75XX |
| 737.820 | 50 | 2 | 31 | M8-M20 | | 92 | 53 | 15 | 9 | 72XX | 76XX |
| 737.833 | 50 | 3 | 48 | M14-M33 | | 138 | 78 | 24 | 9 | 73XX | 77XX |

DIN 69871/A



Drills

Cartridges

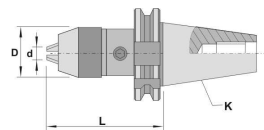
Brazed tools

HX-ID



| REF. | K | d | D | L _{MIN} | L _{MAX} |
|-------------|----|------|----|------------------|------------------|
| HX10-ID40 | 40 | 0-10 | 43 | 77 | 85,5 |
| HX10-ID40/R | 40 | 0-10 | 43 | 77 | 85,5 |
| HX13-ID40 | 40 | 1-13 | 53 | 91 | 103,0 |
| HX13-ID40/R | 40 | 1-13 | 53 | 91 | 103,0 |
| HX16-ID40 | 40 | 3-16 | 57 | 94 | 105,0 |
| HX16-ID40/R | 40 | 3-16 | 57 | 94 | 105,0 |
| HX10-ID50 | 50 | 0-10 | 43 | 79 | 87,5 |
| HX10-ID50/R | 50 | 0-10 | 43 | 79 | 87,5 |
| HX13-ID50 | 50 | 1-13 | 53 | 93 | 105,0 |
| HX13-ID50/R | 50 | 1-13 | 53 | 93 | 105,0 |
| HX16-ID50 | 50 | 3-16 | 57 | 96 | 107,0 |
| HX16-ID50/R | 50 | 3-16 | 57 | 96 | 107,0 |

DIN 69871/A



Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

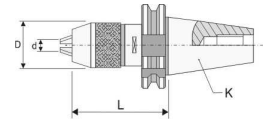
Arbors & adaptors

NPU-ID



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|-------------------|------|----|------------------|------------------|----|
| NPU13-ID40 | 1-13 | 40 | 80 | 91 | 48 |
| NPU16-ID40 | 3-16 | 40 | 97 | 108 | 55 |
| NPU13-ID50 | 1-13 | 50 | 78 | 89 | 48 |
| NPU16-ID50 | 3-16 | 50 | 76 | 89 | 55 |

DIN 69871/A

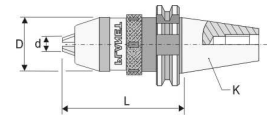


PS-ID



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|------------------|------|----|------------------|------------------|----|
| PS13-ID40 | 1-13 | 40 | 78 | 89 | 48 |
| PS13-ID50 | 1-13 | 50 | 74 | 85 | 48 |

DIN 69871/A



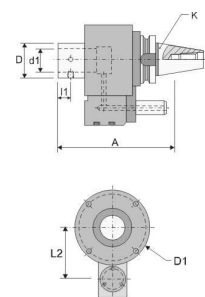


710.º



| REF. | K | d1 | A | D | D1 | l1 | l2 |  |
|---------|----|----|-----|----|-----|----|----|---|
| 710.925 | 40 | 25 | 152 | 45 | 95 | 15 | 65 | 166 |
| 710.932 | 40 | 32 | 152 | 48 | 95 | 16 | 65 | 166 |
| 710.032 | 50 | 32 | 152 | 48 | 95 | 16 | 80 | 166 |
| 710.040 | 50 | 40 | 166 | 58 | 110 | 17 | 80 | 166 |

MAS BT



Inserts

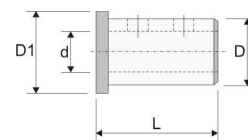
Turning

Automatic lathes

021



| REF. | D | d | D1 | L |
|-----------|----|----|----|----|
| 021.25.16 | 25 | 16 | 33 | 55 |
| 021.25.20 | 25 | 20 | 33 | 55 |
| 021.32.16 | 32 | 16 | 40 | 60 |
| 021.32.20 | 32 | 20 | 40 | 60 |
| 021.32.25 | 32 | 25 | 40 | 60 |
| 021.40.16 | 40 | 16 | 48 | 65 |
| 021.40.20 | 40 | 20 | 48 | 65 |
| 021.40.25 | 40 | 25 | 48 | 65 |
| 021.40.32 | 40 | 32 | 48 | 65 |



Ceramic tools

Parting & grooving

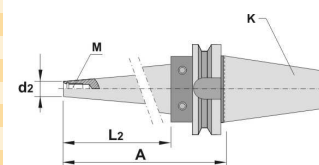
Threading

706.º



| REF. | K | L2 | A | d2 | M |
|--------------|----|-----|-----|------|-----|
| 706.9.10 | 40 | 50 | 80 | 18,0 | M10 |
| 706.9.10L130 | 40 | 100 | 130 | 18,0 | M10 |
| 706.9.10L200 | 40 | 158 | 200 | 18,0 | M10 |
| 706.9.10L250 | 40 | 208 | 250 | 18,0 | M10 |
| 706.9.10L300 | 40 | 258 | 300 | 18,0 | M10 |
| 706.9.12 | 40 | 50 | 80 | 21,0 | M12 |
| 706.9.12L130 | 40 | 100 | 130 | 21,0 | M12 |
| 706.9.12L200 | 40 | 158 | 200 | 21,0 | M12 |
| 706.9.12L250 | 40 | 208 | 250 | 21,0 | M12 |
| 706.9.12L300 | 40 | 258 | 300 | 21,0 | M12 |
| 706.9.16 | 40 | 50 | 80 | 29,0 | M16 |
| 706.9.16L130 | 40 | 100 | 130 | 29,0 | M16 |
| 706.9.16L200 | 40 | 158 | 200 | 29,0 | M16 |
| 706.9.16L250 | 40 | 208 | 250 | 29,0 | M16 |
| 706.9.16L300 | 40 | 258 | 300 | 29,0 | M16 |
| 706.0.12 | 50 | 100 | 140 | 21,0 | M12 |
| 706.0.12L190 | 50 | 150 | 190 | 21,0 | M12 |
| 706.0.12L200 | 50 | 197 | 250 | 21,0 | M12 |
| 706.0.12L250 | 50 | 247 | 300 | 21,0 | M12 |
| 706.0.12L300 | 50 | 347 | 400 | 21,0 | M12 |
| 706.0.16 | 50 | 100 | 140 | 29,0 | M16 |
| 706.0.16L190 | 50 | 150 | 190 | 29,0 | M16 |
| 706.0.16L250 | 50 | 197 | 250 | 29,0 | M16 |
| 706.0.16L300 | 50 | 247 | 300 | 29,0 | M16 |
| 706.0.16L400 | 50 | 347 | 400 | 29,0 | M16 |
| 706.0.16L500 | 50 | 447 | 500 | 29,0 | M16 |

MAS BT



Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

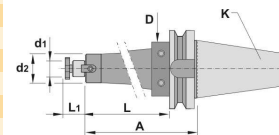


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

716.0L



| REF. | K | D | A | L | L1 | d1 | d2 |
|--------------|----|----|-----|-----|----|----|----|
| 716.9.16L150 | 40 | 50 | 150 | 116 | 36 | 16 | 36 |
| 716.9.16L200 | 40 | 50 | 200 | 166 | 36 | 16 | 36 |
| 716.9.16L250 | 40 | 50 | 250 | 216 | 36 | 16 | 36 |
| 716.9.16L300 | 40 | 50 | 300 | 266 | 36 | 16 | 36 |
| 716.9.22L150 | 40 | 50 | 150 | 116 | 19 | 22 | 44 |
| 716.9.22L200 | 40 | 50 | 200 | 166 | 19 | 22 | 44 |
| 716.9.22L250 | 40 | 50 | 250 | 216 | 19 | 22 | 44 |
| 716.9.22L300 | 40 | 50 | 300 | 266 | 19 | 22 | 44 |
| 716.9.27L150 | 40 | 50 | 150 | 116 | 21 | 27 | 54 |
| 716.9.27L200 | 40 | 50 | 200 | 166 | 21 | 27 | 54 |
| 716.9.27L250 | 40 | 50 | 250 | 216 | 21 | 27 | 54 |
| 716.9.27L300 | 40 | 50 | 300 | 266 | 21 | 27 | 54 |
| 716.0.16L150 | 50 | 80 | 150 | 112 | 36 | 16 | 36 |
| 716.0.16L200 | 50 | 80 | 200 | 162 | 36 | 16 | 36 |
| 716.0.16L250 | 50 | 80 | 250 | 212 | 36 | 16 | 36 |
| 716.0.16L300 | 50 | 80 | 300 | 262 | 36 | 16 | 36 |
| 716.0.16L400 | 50 | 80 | 400 | 362 | 36 | 16 | 36 |
| 716.0.22L200 | 50 | 80 | 200 | 162 | 19 | 22 | 44 |
| 716.0.22L250 | 50 | 80 | 250 | 212 | 19 | 22 | 44 |
| 716.0.22L300 | 50 | 80 | 300 | 262 | 19 | 22 | 44 |
| 716.0.22L400 | 50 | 80 | 400 | 362 | 19 | 22 | 44 |
| 716.0.22L500 | 50 | 80 | 500 | 462 | 19 | 22 | 44 |
| 716.0.27L200 | 50 | 80 | 200 | 162 | 21 | 27 | 54 |
| 716.0.27L250 | 50 | 80 | 250 | 212 | 21 | 27 | 54 |
| 716.0.27L300 | 50 | 80 | 300 | 262 | 21 | 27 | 54 |
| 716.0.27L400 | 50 | 80 | 400 | 362 | 21 | 27 | 54 |
| 716.0.27L500 | 50 | 80 | 500 | 462 | 21 | 27 | 54 |
| 716.0.32L200 | 50 | 80 | 200 | 162 | 24 | 32 | 54 |
| 716.0.32L250 | 50 | 80 | 250 | 212 | 24 | 32 | 64 |
| 716.0.32L300 | 50 | 80 | 300 | 262 | 24 | 32 | 64 |
| 716.0.32L400 | 50 | 80 | 400 | 362 | 24 | 32 | 64 |
| 716.0.32L500 | 50 | 80 | 500 | 462 | 24 | 32 | 64 |

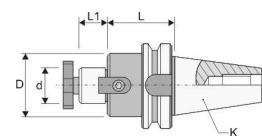


MAS BT

716.0



| REF. | K | d | D | L | L1 |
|---------|----|----|-----|----|----|
| 716.916 | 40 | 16 | 32 | 44 | 17 |
| 716.922 | 40 | 22 | 40 | 44 | 19 |
| 716.927 | 40 | 27 | 48 | 47 | 21 |
| 716.932 | 40 | 32 | 58 | 50 | 24 |
| 716.940 | 40 | 40 | 70 | 52 | 27 |
| 716.016 | 50 | 16 | 32 | 55 | 17 |
| 716.022 | 50 | 22 | 40 | 55 | 19 |
| 716.027 | 50 | 27 | 48 | 58 | 21 |
| 716.032 | 50 | 32 | 58 | 61 | 24 |
| 716.040 | 50 | 40 | 70 | 63 | 27 |
| 716.060 | 50 | 60 | 128 | 25 | 40 |

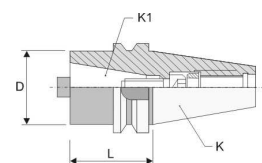


MAS BT

722.0



| REF. | K | K1 | D | L |
|---------|----|----|----|----|
| 722.040 | 50 | 40 | 78 | 70 |



MAS BT

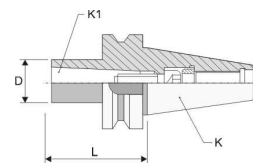


723.º

MAS BT



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 723.902 | 40 | MK2 | 32 | 50 |
| 723.903 | 40 | MK3 | 40 | 70 |
| 723.904 | 40 | MK4 | 48 | 95 |
| 723.003 | 50 | MK3 | 40 | 65 |
| 723.004 | 50 | MK4 | 48 | 70 |



Inserts

Turning

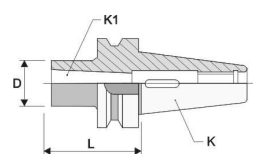
Automatic lathes

726.º

MAS BT



| REF. | K | K1 | D | L |
|----------------|----|-----|----|----|
| 726.901 | 40 | MK1 | 25 | 50 |
| 726.902 | 40 | MK2 | 32 | 50 |
| 726.903 | 40 | MK3 | 40 | 70 |
| 726.904 | 40 | MK4 | 48 | 95 |
| 726.003 | 50 | MK3 | 40 | 65 |
| 726.004 | 50 | MK4 | 48 | 95 |



Ceramic tools

Parting & grooving

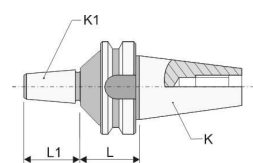
Threading

728.º

MAS BT



| REF. | K | K1 | L | L1 |
|----------------|----|-----|----|------|
| 728.912 | 40 | B12 | 32 | 18,5 |
| 728.916 | 40 | B16 | 32 | 24,0 |
| 728.918 | 40 | B18 | 32 | 32,0 |
| 728.016 | 50 | B16 | 43 | 24,0 |
| 728.018 | 50 | B18 | 43 | 32,0 |



Drills

Cartridges

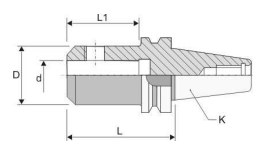
Brazed tools

730.º

MAS BT



| REF. | K | d | D | L | L1 |
|----------------|----|----|----|-----|----|
| 730.910 | 40 | 10 | 35 | 63 | 39 |
| 730.912 | 40 | 12 | 42 | 63 | 44 |
| 730.916 | 40 | 16 | 48 | 63 | 47 |
| 730.920 | 40 | 20 | 52 | 63 | 49 |
| 730.925 | 40 | 25 | 65 | 90 | 54 |
| 730.932 | 40 | 32 | 72 | 100 | 58 |
| 730.016 | 50 | 16 | 48 | 80 | 47 |
| 730.020 | 50 | 20 | 52 | 80 | 49 |
| 730.025 | 50 | 25 | 65 | 100 | 54 |
| 730.032 | 50 | 32 | 72 | 105 | 58 |



Solid carbide

Boring heads

Arbors & adaptors

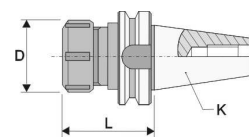


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

731.0



| REF. | K | L | D | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|----------|----|-----|----|-----------------|--------------|--------|
| 731.916 | 40 | 60 | 28 | 1-10 | 090 | ER16 |
| 731.920 | 40 | 70 | 34 | 1-13 | 091 | ER20 |
| 731.925 | 40 | 70 | 42 | 1-16 | 092 | ER25 |
| 731.932 | 40 | 70 | 50 | 2-20 | 093 | ER32 |
| 731.932L | 40 | 135 | 50 | 2-20 | 093 | ER32 |
| 731.940 | 40 | 80 | 63 | 4-30 | 094 | ER40 |
| 731.940L | 40 | 135 | 63 | 4-30 | 094 | ER40 |
| 731.032 | 50 | 80 | 50 | 2-20 | 093 | ER32 |
| 731.032L | 50 | 120 | 50 | 2-20 | 093 | ER32 |
| 731.040 | 50 | 80 | 63 | 4-30 | 094 | ER40 |
| 731.040L | 50 | 120 | 63 | 4-30 | 094 | ER40 |

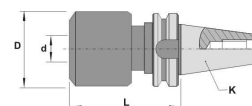


MAS BT

734.0



| REF. | K | d | D | L |
|---------|----|----|----|-----|
| 734.920 | 40 | 20 | 54 | 105 |
| 734.932 | 40 | 32 | 72 | 105 |
| 734.032 | 50 | 32 | 72 | 105 |

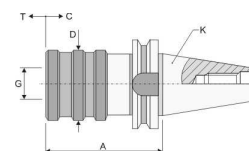


MAS BT

737.0



| REF. | K | N° | G | Ø | A | D | C | T | | |
|---------|----|----|----|---------|-----|----|----|---|--|--|
| 737.912 | 40 | 1 | 19 | M3-M12 | 60 | 36 | 9 | 9 | | |
| 737.920 | 40 | 2 | 31 | M8-M20 | 92 | 53 | 15 | 9 | | |
| 737.933 | 40 | 3 | 48 | M14-M33 | 138 | 78 | 24 | 9 | | |
| 737.012 | 50 | 1 | 19 | M3-M12 | 60 | 36 | 9 | 9 | | |
| 737.020 | 50 | 2 | 31 | M8-M20 | 92 | 53 | 15 | 9 | | |
| 737.033 | 50 | 3 | 48 | M14-M33 | 138 | 78 | 24 | 9 | | |

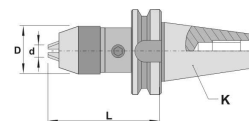


MAS BT

HX-BT



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|-------------|------|----|------------------|------------------|----|
| HX10-BT40 | 0-10 | 40 | 77 | 85,5 | 43 |
| HX10-BT40/R | 0-10 | 40 | 77 | 85,5 | 43 |
| HX13-BT40 | 1-13 | 40 | 91 | 103,0 | 53 |
| HX13-BT40/R | 1-13 | 40 | 91 | 103,0 | 53 |
| HX16-BT40 | 3-16 | 40 | 94 | 105,0 | 57 |
| HX16-BT40/R | 3-16 | 40 | 94 | 105,0 | 57 |
| HX10-BT50 | 0-10 | 50 | 79 | 87,5 | 43 |
| HX10-BT50/R | 0-10 | 50 | 79 | 87,5 | 43 |
| HX13-BT50 | 1-13 | 50 | 93 | 105,0 | 53 |
| HX13-BT50/R | 1-13 | 50 | 93 | 105,0 | 53 |
| HX16-BT50 | 3-16 | 50 | 96 | 107,0 | 57 |
| HX16-BT50/R | 3-16 | 50 | 96 | 107,0 | 57 |



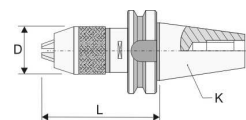
MAS BT

NPU-BT

MAS BT



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|-------------------|------|----|------------------|------------------|----|
| NPU13-BT40 | 1-13 | 40 | 78 | 89 | 48 |
| NPU16-BT40 | 3-16 | 40 | 90 | 101 | 55 |
| NPU13-BT50 | 1-13 | 50 | 74 | 85 | 48 |
| NPU16-BT50 | 3-16 | 50 | 72 | 83 | 55 |

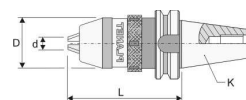


PS-BT

MAS BT



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|------------------|------|----|------------------|------------------|----|
| PS13-BT40 | 1-13 | 40 | 78 | 89 | 48 |
| PS16-BT40 | 3-16 | 40 | 90 | 101 | 55 |
| PS13-BT50 | 1-13 | 50 | 74 | 85 | 48 |
| PS16-BT50 | 3-16 | 50 | 72 | 83 | 55 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

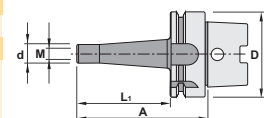
Boring heads

Arbors & adaptors

506.4_s



| REF. | D | L1 | A | d | M |
|-----------|----|----|-----|------|-----|
| 506.4.06 | 40 | 25 | 50 | 9,8 | M6 |
| 506.4.06L | 40 | 75 | 100 | 9,8 | M6 |
| 506.4.08 | 40 | 25 | 50 | 12,8 | M8 |
| 506.4.08L | 40 | 75 | 100 | 12,8 | M8 |
| 506.5.08 | 50 | 25 | 55 | 12,8 | M8 |
| 506.5.06L | 50 | 75 | 105 | 12,8 | M8 |
| 506.5.10 | 50 | 25 | 55 | 12,8 | M10 |
| 506.5.10L | 50 | 75 | 105 | 12,8 | M10 |

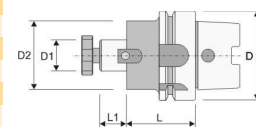


HSK

516



| REF. | D | L | L1 | D1 | D2 |
|---------|-----|----|----|----|----|
| 516.522 | 50 | 60 | 19 | 22 | 50 |
| 516.527 | 50 | 60 | 21 | 27 | 60 |
| 516.622 | 63 | 50 | 19 | 22 | 50 |
| 516.627 | 63 | 60 | 21 | 27 | 60 |
| 516.632 | 63 | 60 | 24 | 32 | 70 |
| 516.640 | 63 | 60 | 27 | 40 | 89 |
| 516.122 | 100 | 50 | 19 | 22 | 50 |
| 516.127 | 100 | 50 | 21 | 27 | 60 |
| 516.132 | 100 | 50 | 24 | 32 | 70 |

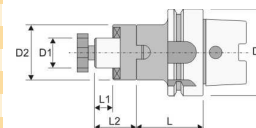


HSK-DIN 138

518



| REF. | D | L | L1 | L2 | D1 | D2 |
|---------|-----|----|----|----|----|----|
| 518.516 | 50 | 40 | 17 | 27 | 16 | 32 |
| 518.522 | 50 | 38 | 19 | 31 | 22 | 40 |
| 518.527 | 50 | 53 | 21 | 33 | 27 | 48 |
| 518.532 | 50 | 51 | 24 | 38 | 32 | 58 |
| 518.616 | 63 | 50 | 17 | 27 | 16 | 32 |
| 518.622 | 63 | 48 | 19 | 31 | 22 | 40 |
| 518.627 | 63 | 48 | 21 | 33 | 27 | 48 |
| 518.632 | 63 | 46 | 24 | 38 | 32 | 58 |
| 518.640 | 63 | 56 | 27 | 41 | 40 | 70 |
| 518.116 | 100 | 50 | 17 | 27 | 16 | 32 |
| 518.122 | 100 | 48 | 19 | 31 | 22 | 40 |
| 518.127 | 100 | 48 | 21 | 33 | 27 | 48 |
| 518.132 | 100 | 46 | 24 | 38 | 32 | 58 |
| 518.140 | 100 | 56 | 27 | 41 | 40 | 70 |

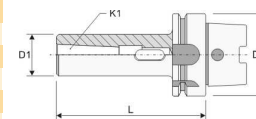


HSK

526



| REF. | D | L | D1 | K1 |
|---------|-----|-----|----|-----|
| 526.501 | 50 | 100 | 25 | MK1 |
| 526.502 | 50 | 120 | 32 | MK2 |
| 526.503 | 50 | 140 | 40 | MK3 |
| 526.601 | 63 | 100 | 25 | MK1 |
| 526.602 | 63 | 120 | 32 | MK2 |
| 526.603 | 63 | 140 | 40 | MK3 |
| 526.604 | 63 | 160 | 48 | MK4 |
| 526.101 | 100 | 110 | 25 | MK1 |
| 526.102 | 100 | 120 | 32 | MK2 |
| 526.103 | 100 | 150 | 40 | MK3 |
| 526.104 | 100 | 170 | 48 | MK4 |
| 526.105 | 100 | 200 | 63 | MK5 |



HSK-DIN 228B

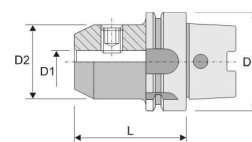


530



| REF. | D | L | D1 | D2 |
|---------|-----|-----|----|----|
| 530.506 | 50 | 65 | 6 | 25 |
| 530.508 | 50 | 65 | 8 | 28 |
| 530.510 | 50 | 65 | 10 | 35 |
| 530.512 | 50 | 80 | 12 | 42 |
| 530.514 | 50 | 80 | 14 | 44 |
| 530.516 | 50 | 80 | 16 | 48 |
| 530.518 | 50 | 80 | 18 | 50 |
| 530.520 | 50 | 80 | 20 | 52 |
| 530.606 | 63 | 65 | 6 | 25 |
| 530.608 | 63 | 65 | 8 | 28 |
| 530.610 | 63 | 65 | 10 | 35 |
| 530.612 | 63 | 80 | 12 | 42 |
| 530.614 | 63 | 80 | 14 | 44 |
| 530.616 | 63 | 80 | 16 | 48 |
| 530.618 | 63 | 80 | 18 | 50 |
| 530.620 | 63 | 80 | 20 | 52 |
| 530.625 | 63 | 110 | 25 | 65 |
| 530.632 | 63 | 110 | 32 | 72 |
| 530.106 | 100 | 80 | 6 | 25 |
| 530.108 | 100 | 80 | 8 | 28 |
| 530.110 | 100 | 80 | 10 | 35 |
| 530.112 | 100 | 80 | 12 | 42 |
| 530.114 | 100 | 80 | 14 | 44 |
| 530.116 | 100 | 100 | 16 | 48 |
| 530.118 | 100 | 100 | 18 | 50 |
| 530.120 | 100 | 100 | 20 | 52 |
| 530.125 | 100 | 100 | 25 | 65 |
| 530.132 | 100 | 100 | 32 | 72 |

HSK-DIN 1835B



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

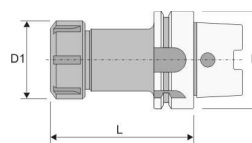
Drills

531



| REF. | D | L | D1 | COLLET | SIZE OF COLLETS |
|---------|-----|-----|----|--------|-----------------|
| 531.532 | 50 | 100 | 50 | ER32 | 2-20 |
| 531.632 | 63 | 100 | 50 | ER32 | 2-20 |
| 531.640 | 63 | 120 | 63 | ER40 | 3-26 |
| 531.132 | 100 | 100 | 50 | ER32 | 3-20 |
| 531.140 | 100 | 120 | 63 | ER40 | 3-26 |

HSK-DIN 6499



Cartridges

Brazed tools

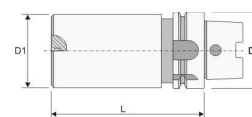
Milling cutters

533



| REF. | D | L | D1 |
|---------|----|-----|-----|
| 533.563 | 50 | 200 | 63 |
| 533.680 | 63 | 250 | 80 |
| 533.600 | 63 | 250 | 100 |

HSK



Solid carbide

Boring heads

Arbors & adaptors



535

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

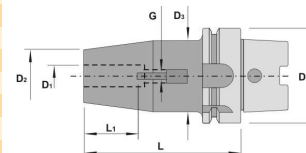
Solid carbide

Boring heads

Arbors & adaptors



| REF. | D | D1 | D2 | L | L1 | G |
|--------------|-----|----|----|-----|----|-----|
| 535.4.06 | 40 | 6 | 21 | 80 | 36 | M5 |
| 535.4.08 | 40 | 8 | 21 | 80 | 36 | M6 |
| 535.4.10 | 40 | 10 | 24 | 80 | 42 | M8 |
| 535.4.12 | 40 | 12 | 24 | 90 | 47 | M10 |
| 535.4.14 | 40 | 14 | 28 | 90 | 47 | M10 |
| 535.4.16 | 40 | 16 | 28 | 90 | 50 | M12 |
| 535.5.06 | 50 | 6 | 21 | 80 | 36 | M5 |
| 535.5.08 | 50 | 8 | 21 | 80 | 36 | M6 |
| 535.5.10 | 50 | 10 | 24 | 85 | 42 | M8 |
| 535.5.12 | 50 | 12 | 24 | 90 | 47 | M10 |
| 535.5.14 | 50 | 14 | 28 | 90 | 47 | M10 |
| 535.5.16 | 50 | 16 | 28 | 95 | 50 | M12 |
| 535.5.18 | 50 | 18 | 33 | 95 | 50 | M12 |
| 535.5.20 | 50 | 20 | 33 | 100 | 52 | M16 |
| 535.6.06L80 | 63 | 6 | 21 | 80 | 36 | M5 |
| 535.6.06L120 | 63 | 6 | 21 | 120 | 36 | M5 |
| 535.6.06L160 | 63 | 6 | 21 | 160 | 36 | M5 |
| 535.6.08L80 | 63 | 8 | 21 | 80 | 36 | M6 |
| 535.6.08L120 | 63 | 8 | 21 | 120 | 36 | M6 |
| 535.6.08L160 | 63 | 8 | 21 | 160 | 36 | M6 |
| 535.6.10L85 | 63 | 10 | 24 | 85 | 42 | M8 |
| 535.6.10L120 | 63 | 10 | 24 | 120 | 42 | M8 |
| 535.6.10L160 | 63 | 10 | 24 | 160 | 42 | M8 |
| 535.6.12L90 | 63 | 12 | 24 | 90 | 47 | M10 |
| 535.6.12L120 | 63 | 12 | 24 | 120 | 47 | M10 |
| 535.6.12L160 | 63 | 12 | 24 | 160 | 47 | M10 |
| 535.6.14 | 63 | 14 | 27 | 90 | 47 | M10 |
| 535.6.16 | 63 | 16 | 27 | 95 | 50 | M12 |
| 535.6.18 | 63 | 18 | 33 | 95 | 50 | M12 |
| 535.6.20 | 63 | 20 | 33 | 100 | 52 | M16 |
| 535.6.25 | 63 | 25 | 44 | 115 | 58 | M20 |
| 535.6.32 | 63 | 32 | 44 | 120 | 58 | M20 |
| 535.8.06 | 80 | 6 | 21 | 85 | 36 | M5 |
| 535.8.08 | 80 | 8 | 21 | 85 | 36 | M6 |
| 535.8.10 | 80 | 10 | 24 | 90 | 42 | M8 |
| 535.8.12 | 80 | 12 | 24 | 95 | 47 | M10 |
| 535.8.14 | 80 | 14 | 28 | 95 | 47 | M10 |
| 535.8.16 | 80 | 16 | 28 | 100 | 50 | M12 |
| 535.8.18 | 80 | 18 | 33 | 100 | 50 | M12 |
| 535.8.20 | 80 | 20 | 33 | 105 | 52 | M16 |
| 535.8.25 | 80 | 25 | 44 | 115 | 58 | M20 |
| 535.8.32 | 80 | 32 | 44 | 120 | 58 | M20 |
| 535.1.06 | 100 | 6 | 21 | 85 | 36 | M5 |
| 535.1.08 | 100 | 8 | 21 | 85 | 36 | M6 |
| 535.1.10 | 100 | 10 | 24 | 90 | 42 | M8 |
| 535.1.12 | 100 | 12 | 24 | 95 | 47 | M10 |
| 535.1.14 | 100 | 14 | 28 | 95 | 47 | M10 |
| 535.1.16 | 100 | 16 | 28 | 100 | 50 | M12 |
| 535.1.18 | 100 | 18 | 33 | 100 | 50 | M12 |
| 535.1.20 | 100 | 20 | 33 | 105 | 52 | M16 |
| 535.1.25 | 100 | 25 | 44 | 115 | 58 | M20 |
| 535.1.32 | 100 | 32 | 44 | 120 | 58 | M20 |

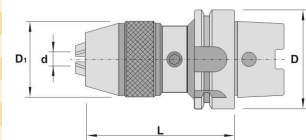


HSK

HX-HSK



| REF. | D | d | D1 | L _{MIN} | L _{MAX} |
|---------------|-----|------|----|------------------|------------------|
| HX13-HSK50 | 50 | 1-13 | 53 | 116,0 | 127,0 |
| HX13-HSK50/R | 50 | 1-13 | 53 | 116,0 | 127,0 |
| HX16-HSK50 | 50 | 3-16 | 57 | 119,0 | 131,0 |
| HX16-HSK50/R | 50 | 3-16 | 57 | 119,0 | 131,0 |
| HX13-HSK63 | 63 | 1-13 | 53 | 115,0 | 126,0 |
| HX13-HSK63/R | 63 | 1-13 | 53 | 115,0 | 126,0 |
| HX16-HSK63 | 63 | 3-16 | 57 | 117,5 | 129,5 |
| HX16-HSK63/R | 63 | 3-16 | 57 | 117,5 | 129,5 |
| HX13-HSK100 | 100 | 1-13 | 53 | 108,5 | 119,5 |
| HX13-HSK100/R | 100 | 1-13 | 53 | 108,5 | 119,5 |
| HX16-HSK100 | 100 | 3-16 | 57 | 111,0 | 123,0 |
| HX16-HSK100/R | 100 | 3-16 | 57 | 111,0 | 123,0 |



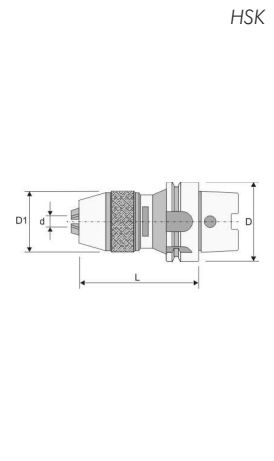
HSK/A-AD



NPU-HSK



| REF. | D | L | D1 | d |
|---------------------|-----|-----|----|------|
| NPU13-HSK50 | 50 | 108 | 44 | 1-13 |
| NPU13-HSK63 | 63 | 110 | 44 | 1-13 |
| NPU13-HSK100 | 100 | 134 | 49 | 1-13 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

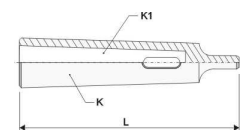
Arbors & adaptors

CR



| REF. | K | K1 | L |
|--------|-----|-----|-----|
| CR-2x1 | MK2 | MK1 | 92 |
| CR-3x1 | MK3 | MK1 | 99 |
| CR-3x2 | MK3 | MK2 | 112 |
| CR-4x2 | MK4 | MK2 | 124 |
| CR-4x3 | MK4 | MK3 | 140 |
| CR-5x3 | MK5 | MK3 | 156 |
| CR-5x4 | MK5 | MK4 | 171 |

DIN 228/B



E



| REF. | K | K1 |
|--------|-----|------|
| E-12/2 | MK2 | B-12 |
| E-16/2 | MK2 | B-16 |
| E-18/2 | MK2 | B-18 |
| E-16/3 | MK3 | B-16 |
| E-18/3 | MK3 | B-18 |
| E-16/4 | MK4 | B-16 |
| E-18/4 | MK4 | B-18 |

DIN 228/B

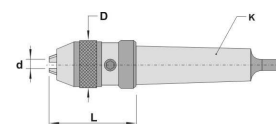


HX-MT



| REF. | d | K | D | L _{MIN} | L _{MAX} |
|-----------|------|------|----|------------------|------------------|
| HX13-MT-2 | 1-13 | MT-2 | 53 | 95,5 | 106,5 |
| HX16-MT-2 | 3-16 | MT-2 | 57 | 98,0 | 107,0 |
| HX13-MT-3 | 1-13 | MT-3 | 53 | 95,5 | 106,5 |
| HX16-MT-3 | 3-16 | MT-3 | 57 | 98,0 | 107,0 |
| HX13-MT-4 | 1-13 | MT-4 | 53 | 95,5 | 106,5 |
| HX16-MT-4 | 3-16 | MT-4 | 57 | 98,0 | 107,0 |

DIN 228/B

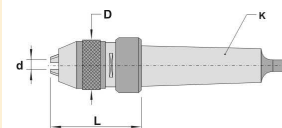


SPS-MT



| REF. | d | K | D | L _{MIN} | L _{MAX} |
|-----------|------|-----|----|------------------|------------------|
| SPS13-MT3 | 1-13 | MK3 | 48 | 80 | 92 |
| SPS16-MT3 | 3-16 | MK3 | 54 | 85 | 96 |
| SPS16-MT4 | 3-16 | MK4 | 54 | 85 | 96 |

DIN 228/B

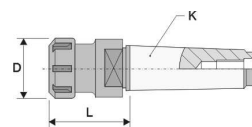


700.³/₄



| REF. | K | L | D | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|---------|-----|----|----|-----------------|--------------|--------|
| 700.332 | MK3 | 70 | 50 | 2-20 | 093 | ER32 |
| 700.340 | MK3 | 80 | 63 | 4-30 | 093 | ER40 |
| 700.432 | MK4 | 60 | 50 | 2-20 | 093 | ER32 |
| 700.440 | MK4 | 81 | 63 | 4-30 | 094 | ER40 |

DIN 228/A



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

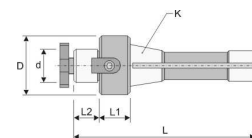


Inserts

816



| REF. | K | d | D | L | L1 | L2 |
|----------------|----|----|----|-----|----|----|
| 816.016 | R8 | 16 | 32 | 137 | 25 | 17 |
| 816.022 | R8 | 22 | 41 | 137 | 25 | 19 |
| 816.027 | R8 | 27 | 43 | 137 | 25 | 21 |
| 816.032 | R8 | 32 | 64 | 143 | 25 | 24 |
| 816.040 | R8 | 40 | 70 | 143 | 25 | 27 |



R-8

Turning

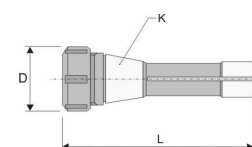
Automatic lathes

Ceramic tools

831



| REF. | K | L | D | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|----------------|----|-----|----|-----------------|--------------|--------|
| 831.016 | R8 | 133 | 28 | 0.5-10 | 090 | ER16 |
| 831.032 | R8 | 133 | 50 | 2-20 | 093 | ER32 |
| 831.040 | R8 | 143 | 63 | 4-30 | 094 | ER40 |



R-8

Parting & grooving

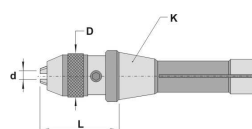
Threading

Drills

HX-R8



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|----------------|------|----|------------------|------------------|----|
| HX13-R8 | 1-13 | R8 | 95,0 | 106,0 | 53 |
| HX16-R8 | 3-16 | R8 | 97,0 | 109,5 | 57 |



R-8

Cartridges

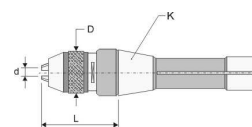
Brazed tools

Milling cutters

NPU-R8



| REF. | d | K | L _{MIN} | L _{MAX} | D |
|-----------------|------|----|------------------|------------------|----|
| NPU08-R8 | 0-13 | R8 | 65 | 72 | 37 |



R-8

Solid carbide

Boring heads

Arbors & adaptors

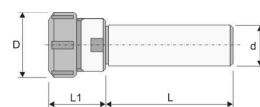


031



| REF. | d | D | L | L1 | SIZE OF COLLETS | CLAMPING NUT | COLLET |
|----------------|----|----|-----|----|-----------------|--------------|--------|
| 031.616 | 16 | 22 | 160 | 30 | 1-10 | 090 | ER16 |
| 031.216 | 20 | 22 | 160 | 30 | 1-10 | 090 | ER16 |
| 031.232 | 20 | 50 | 100 | 53 | 2-20 | 093 | ER32 |
| 031.532 | 25 | 50 | 100 | 53 | 2-20 | 093 | ER32 |
| 031.332 | 32 | 50 | 100 | 53 | 2-20 | 093 | ER32 |
| 031.340 | 32 | 63 | 130 | 53 | 4-30 | 094 | ER40 |
| 031.432 | 40 | 50 | 120 | 53 | 2-20 | 093 | ER32 |
| 031.440 | 40 | 63 | 120 | 60 | 4-30 | 094 | ER40 |

DIN 1835-A



Inserts

Turning

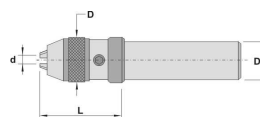
Automatic lathes

HX-CIL



| REF. | d | D1 | LMIN | LMAX | D |
|--------------------|------|----|------|-------|----|
| HX13-CIL-20 | 1-13 | 20 | 92,5 | 103,5 | 53 |
| HX16-CIL-20 | 3-16 | 20 | 95,0 | 107,0 | 57 |
| HX13-CIL-25 | 1-13 | 25 | 92,5 | 103,5 | 53 |
| HX16-CIL-25 | 3-16 | 25 | 95,0 | 107,0 | 57 |
| HX13-CIL-32 | 1-13 | 32 | 92,5 | 103,5 | 53 |
| HX16-CIL-32 | 3-16 | 32 | 95,0 | 107,0 | 57 |
| HX13-CIL-40 | 1-13 | 40 | 92,5 | 103,5 | 53 |
| HX16-CIL-40 | 3-16 | 40 | 95,0 | 107,0 | 57 |

DIN 1835-A



Ceramic tools

Parting & grooving

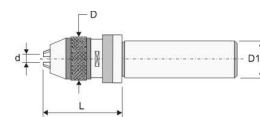
Threading

NPU-CIL



| REF. | d | D1 | LMIN | LMAX | D |
|--------------------|------|----|------|------|----|
| NPU08-CIL25 | 0-8 | 25 | 66 | 72 | 37 |
| NPU13-CIL32 | 1-13 | 32 | 66 | 72 | 37 |
| NPU16-CIL40 | 3-16 | 40 | 83 | 94 | 55 |

DIN 1835-A



Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

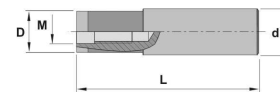


Inserts

6⁰⁶₁₆²⁶.0



| REF. | d | L | M | D |
|-----------|----|-----|-----|----|
| 606.010 | 20 | 125 | M10 | 18 |
| 606.012 | 25 | 125 | M12 | 21 |
| 606.006HD | 12 | 125 | M6 | 10 |
| 606.008HD | 16 | 125 | M8 | 14 |
| 616.006HD | 12 | 150 | M6 | 10 |
| 616.008HD | 16 | 150 | M8 | 14 |
| 616.010HD | 20 | 150 | M10 | 18 |
| 616.012HD | 25 | 150 | M12 | 21 |
| 626.010HD | 20 | 200 | M10 | 18 |
| 626.012HD | 25 | 200 | M12 | 21 |



Turning

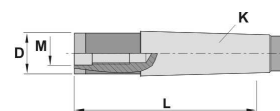
Automatic lathes

Ceramic tools

6³⁶.0



| REF. | K | L | M | D |
|---------|----|-----|-----|----|
| 636.008 | 30 | 125 | M8 | 14 |
| 636.010 | 30 | 125 | M10 | 18 |
| 636.012 | 30 | 125 | M12 | 21 |
| 646.016 | 40 | 154 | M16 | 29 |



Parting & grooving

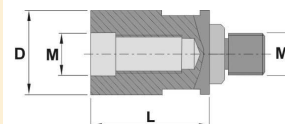
Threading

Drills

60⁰_i



| REF. | D | L | M | M ₁ |
|---------|----|----|----|----------------|
| 600.808 | 14 | 30 | 8 | 8 |
| 601.010 | 18 | 35 | 10 | 10 |
| 601.212 | 21 | 40 | 12 | 12 |
| 601.616 | 29 | 40 | 16 | 16 |



Cartridges

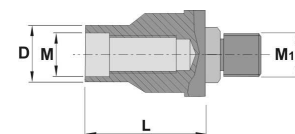
Brazed tools

Milling cutters

61⁰_i



| REF. | D | L | M | M ₁ |
|---------|----|----|----|----------------|
| 610.810 | 14 | 30 | 8 | 10 |
| 611.012 | 18 | 35 | 10 | 12 |
| 611.216 | 21 | 40 | 12 | 16 |
| 610.812 | 14 | 40 | 8 | 12 |
| 611.016 | 18 | 60 | 10 | 16 |



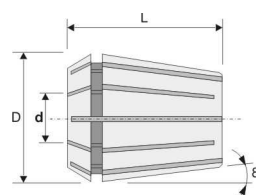
Solid carbide

Boring heads

Arbors & adaptors

ER

| REF. | L | D | d |
|--------|----|------|----|
| ER1601 | 27 | 17,5 | 01 |
| ER1602 | 27 | 17,5 | 02 |
| ER1603 | 27 | 17,5 | 03 |
| ER1604 | 27 | 17,5 | 04 |
| ER1605 | 27 | 17,5 | 05 |
| ER1606 | 27 | 17,5 | 06 |
| ER1607 | 27 | 17,5 | 07 |
| ER1608 | 27 | 17,5 | 08 |
| ER1609 | 27 | 17,5 | 09 |
| ER1610 | 27 | 17,5 | 10 |
| ER2001 | 31 | 21 | 01 |
| ER2002 | 31 | 21 | 02 |
| ER2003 | 31 | 21 | 03 |
| ER2004 | 31 | 21 | 04 |
| ER2005 | 31 | 21 | 05 |
| ER2006 | 31 | 21 | 06 |
| ER2007 | 31 | 21 | 07 |
| ER2008 | 31 | 21 | 08 |
| ER2009 | 31 | 21 | 09 |
| ER2010 | 31 | 21 | 10 |
| ER2011 | 31 | 21 | 11 |
| ER2012 | 31 | 21 | 12 |
| ER2013 | 31 | 21 | 13 |
| ER2501 | 35 | 26 | 01 |
| ER2502 | 35 | 26 | 02 |
| ER2503 | 35 | 26 | 03 |
| ER2504 | 35 | 26 | 04 |
| ER2505 | 35 | 26 | 05 |
| ER2506 | 35 | 26 | 06 |
| ER2507 | 35 | 26 | 07 |
| ER2508 | 35 | 26 | 08 |
| ER2509 | 35 | 26 | 09 |
| ER2510 | 35 | 26 | 10 |
| ER2511 | 35 | 26 | 11 |
| ER2512 | 35 | 26 | 12 |
| ER2513 | 35 | 26 | 13 |
| ER2514 | 35 | 26 | 14 |
| ER2515 | 35 | 26 | 15 |
| ER2516 | 35 | 26 | 16 |
| ER3202 | 40 | 33 | 02 |
| ER3203 | 40 | 33 | 03 |
| ER3204 | 40 | 33 | 04 |
| ER3205 | 40 | 33 | 05 |
| ER3206 | 40 | 33 | 06 |
| ER3207 | 40 | 33 | 07 |
| ER3208 | 40 | 33 | 08 |
| ER3209 | 40 | 33 | 09 |
| ER3210 | 40 | 33 | 10 |
| ER3211 | 40 | 33 | 11 |
| ER3212 | 40 | 33 | 12 |
| ER3213 | 40 | 33 | 13 |
| ER3214 | 40 | 33 | 14 |
| ER3215 | 40 | 33 | 15 |
| ER3216 | 40 | 33 | 16 |
| ER3217 | 40 | 33 | 17 |
| ER3218 | 40 | 33 | 18 |
| ER3219 | 40 | 33 | 19 |
| ER3220 | 40 | 33 | 20 |
| ER4003 | 46 | 41 | 03 |
| ER4004 | 46 | 41 | 04 |
| ER4005 | 46 | 41 | 05 |
| ER4006 | 46 | 41 | 06 |
| ER4007 | 46 | 41 | 07 |
| ER4008 | 46 | 41 | 08 |
| ER4009 | 46 | 41 | 09 |
| ER4010 | 46 | 41 | 10 |
| ER4011 | 46 | 41 | 11 |
| ER4012 | 46 | 41 | 12 |
| ER4013 | 46 | 41 | 13 |
| ER4014 | 46 | 41 | 14 |
| ER4015 | 46 | 41 | 15 |
| ER4016 | 46 | 41 | 16 |
| ER4017 | 46 | 41 | 17 |
| ER4018 | 46 | 41 | 18 |
| ER4019 | 46 | 41 | 19 |
| ER4020 | 46 | 41 | 20 |
| ER4021 | 46 | 41 | 21 |
| ER4022 | 46 | 41 | 22 |
| ER4023 | 46 | 41 | 23 |
| ER4024 | 46 | 41 | 24 |
| ER4025 | 46 | 41 | 25 |
| ER4026 | 46 | 41 | 26 |



Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazen
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

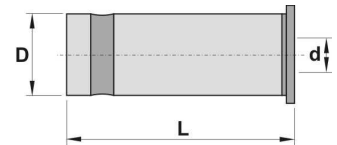
Boring heads

Arbors & adaptors

C



| REF. | d | D | L |
|-------|----|----|----|
| C2006 | 6 | 20 | 55 |
| C2008 | 8 | 20 | 55 |
| C2010 | 10 | 20 | 55 |
| C2012 | 12 | 20 | 55 |
| C2016 | 16 | 20 | 55 |
| C3206 | 6 | 32 | 65 |
| C3208 | 8 | 32 | 65 |
| C3210 | 10 | 32 | 65 |
| C3212 | 12 | 32 | 65 |
| C3216 | 16 | 32 | 65 |
| C3220 | 20 | 32 | 65 |
| C3225 | 25 | 32 | 65 |

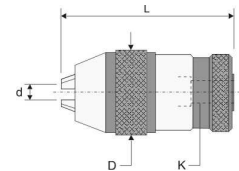


SP DIN238

SP DIN238



| REF. | d | K | LMIN | LMAX | D |
|----------|------|-----|------|------|----|
| SP08-B12 | 0-8 | B12 | 67 | 67 | 37 |
| SP10-B12 | 0-10 | B12 | 81 | 81 | 41 |
| SP10-B16 | 0-10 | B16 | 81 | 81 | 41 |
| SP13-B16 | 1-13 | B16 | 88 | 88 | 46 |
| SP16-B16 | 3-16 | B16 | 95 | 95 | 55 |
| SP16-B18 | 3-16 | B18 | 95 | 95 | 55 |

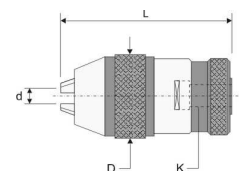


SPX DIN238

SPX DIN238



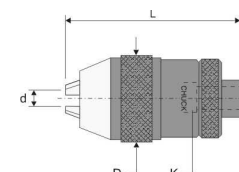
| REF. | d | K | LMIN | LMAX | D |
|-----------|------|-----|------|------|----|
| SPX08-B12 | 0-8 | B12 | 67 | 67 | 37 |
| SPX13-B16 | 1-13 | B16 | 88 | 88 | 46 |
| SPX16-B16 | 3-16 | B16 | 95 | 95 | 55 |
| SPX16-B18 | 3-16 | B18 | 95 | 95 | 55 |



CK CHUCK



| REF. | d | K | LMIN | LMAX | D |
|----------|------|-----|------|------|----|
| CK08-B12 | 0-8 | B12 | 61 | 68 | 34 |
| CK10-B12 | 0-10 | B12 | 73 | 80 | 39 |
| CK13-B16 | 1-13 | B16 | 86 | 95 | 44 |
| CK16-B16 | 3-16 | B16 | 102 | 115 | 51 |
| CK16-B18 | 3-16 | B18 | 102 | 115 | 51 |
| CK20-B18 | 5-20 | B18 | 127 | 140 | 64 |

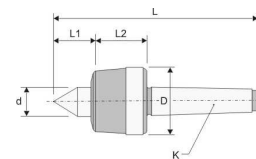




RN



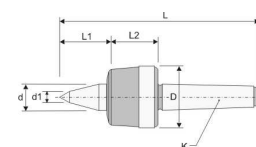
| REF. | K | D | d | L1 | L2 | L |
|---------|-----|----|----|----|----|-----|
| R-200-N | MK2 | 42 | 18 | 24 | 35 | 128 |
| R-300-N | MK3 | 49 | 22 | 29 | 47 | 163 |
| R-400-N | MK4 | 63 | 30 | 35 | 52 | 196 |
| R-500-N | MK5 | 85 | 35 | 48 | 64 | 250 |



RC



| REF. | K | D | d | d1 | L1 | L2 | L |
|---------|-----|----|----|----|----|----|-----|
| R-300-C | MK3 | 49 | 22 | 10 | 38 | 47 | 174 |
| R-400-C | MK4 | 63 | 30 | 11 | 46 | 52 | 207 |
| R-500-C | MK5 | 85 | 35 | 18 | 64 | 64 | 266 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

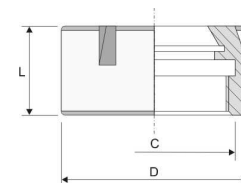


Inserts

090..091



| REF. | L | C | D | COLLET |
|------|----|-------|----|--------|
| 090 | 18 | M19x1 | 22 | ER16 |
| 091 | 19 | M24x1 | 28 | ER20 |

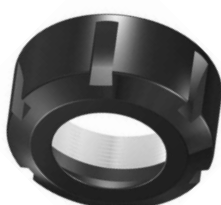


Turning

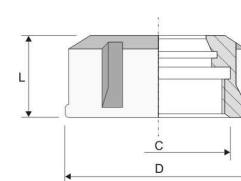
Automatic lathes

Ceramic tools

092..094



| REF. | L | C | D | COLLET |
|------|------|---------|----|--------|
| 092 | 20,0 | M32x1,5 | 42 | ER25 |
| 093 | 22,3 | M40x1,5 | 50 | ER32 |
| 094 | 25,3 | M50x1,5 | 63 | ER40 |

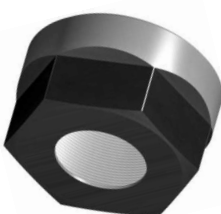


Parting & grooving

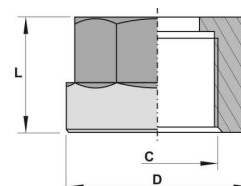
Threading

Drills

095..096



| REF. | L | C | D | COLLET |
|------|----|---------|----|--------|
| 095 | 17 | M22x1,5 | 28 | ER16 |
| 096 | 19 | M25x1,5 | 34 | ER20 |



Cartridges

Brazed tools

Milling cutters

017..021



| REF. | CLAMPING NUTS |
|------|---------------|
| 017 | 2190 |
| 021 | 2191 |

Solid carbide

Boring heads

Arbors & adaptors



014..022



| REF. | CLAMPING NUTS |
|------|---------------|
| 014 | - |
| 015 | - |
| 016 | 090 |
| 020 | 091 |
| 022 | - |

025..040



| REF. | CLAMPING NUTS |
|------|---------------|
| 025 | 092 |
| 032 | 093 |
| 040 | 094 |

KX

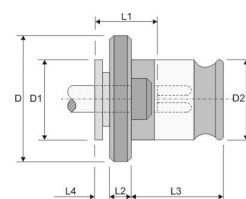


| REF. | h | L | H |
|-------|---|-----|-----|
| KX-12 | 9 | 100 | 100 |

71..73



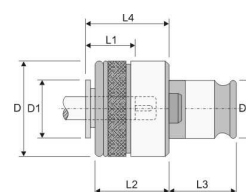
| REF. | THREAD RANGE | D | D1 | D2 | L1 | L2 | L3 | L4 |
|------|--------------|----|----|----|----|----|------|----|
| 71XX | M3-M12 | 30 | 19 | 19 | 17 | 4 | 21,5 | 7 |
| 72XX | M8-M20 | 48 | 30 | 31 | 30 | 5 | 35,0 | 11 |
| 73XX | M14-M33 | 70 | 48 | 48 | 44 | 6 | 55,5 | 14 |



75..77



| REF. | THREAD RANGE | D | D1 | D2 | L1 | L2 | L3 | L4 |
|------|--------------|----|----|----|----|----|------|----|
| 75XX | M3-M12 | 30 | 19 | 19 | 17 | 25 | 21,5 | 25 |
| 76XX | M8-M20 | 48 | 30 | 31 | 30 | 31 | 35,0 | 34 |
| 77XX | M14-M33 | 70 | 48 | 48 | 44 | 41 | 55,5 | 45 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Table of adaptors

| DIN | Ø x □ | DIN 352 | DIN 5156/5157 | DIN 371 | DIN 374 | DIN 376 | DIN 371 | DIN 374/376 |
|-----|-----------|------------------------------|----------------------|--------------------|------------|------------|-----------------------------|------------------|
| 01 | 2,5 x 2,1 | M1/1,8 | | M 1/1,8 | M3,5 | M3,5 | 1/16" Nr. 0/1 | |
| 02 | 2,8 x 2,1 | M2 M2,2 M2,5 | | M2 M2,2 M2,5 | M4 | M4 | 3/32" Nr. 2 Nr. 3 | |
| 03 | 3,5 x 2,7 | M3 | | M3 | M5 | M5 | 1/8" Nr. 4 Nr. 5 | |
| 04 | 4 x 3 | M3,5 | | M3,5 | M5,5 | M5,5 | Nr. 6 | |
| 05 | 4,5 x 3,4 | M4 | | M4 | M6 | M6 | 5/32" Nr. 8 | |
| 06 | 5,5 x 4,3 | - | | | M7 | M7 | | |
| 07 | 6 x 4,9 | M4,5 M5 M6 M7 M8 | G 1/16" | M4,5 M5 M6 | M8 | M8 | Nr. 10/12 3/16" 7/32" | 1/4" 5/16" |
| 08 | 7 x 5,5 | M10 | G 1/8" | M7 | M10 | M10 | 1/4" | 3/8" |
| 09 | 8 x 6,2 | M1 | | M8 | M11 | M11 | 5/16" | 7/16" |
| 10 | 9 x 7 | M12 | | M9 | M12 | M12 | 3/8" | 1/2" |
| 11 | 10 x 8 | | | M10 | | | | |
| 12 | 11 x 9 | M14 | G 1/4" | | M14 | M14 | | 9/16" |
| 13 | 12 x 9 | M16 | G 3/8" | | M16 | M16 | | 5/8" |
| 14 | 14 x 11 | M18 | | | M18 | M18 | | 11/16" 3/4" |
| 15 | 16 x 12 | M20 | G 1/2" | | M20 | M20 | | 13/16" |
| 16 | 18 x 14,5 | M22 M24 | G 5/8" | | M22 M24 | M22 M24 | | 7/8" 15/16" |
| 17 | 20 x 16 | M27 | G 3/4" | | M27 | M27 | | 1" |
| 18 | 22 x 18 | M30 | G 7/8" | | M30 | M30 | | 1 1/8" |
| 19 | 25 x 20 | M33 | G 1" | | M33 | M33 | | 1 1/4" |
| 20 | 28 x 22 | M36 | G 1 1/8" | | M36 | M36 | | 1 3/8" |
| 21 | 32 x 24 | M39 M42 | G 1 1/4" | | M39 M42 | M39 M42 | | 1 1/2" 1 5/8" |
| 22 | 36 x 29 | M45 M48 | G 1 3/8" G 1 1/2" | | M45 M48 | M45 M48 | | 1 3/4" 1 7/8" |

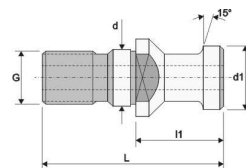
| ISO 529 | Ø x □ | M - MF | | UNC - UNF | | BSW - BSF | | BA |
|---------|------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------------------|
| | | Reduced Shank | Reinforced Shank | Reduced Shank | Reinforced Shank | Reduced Shank | Reinforced Shank | Reduced Shank |
| 30 | 2,24 x 1,8 | M3 | | Nr. 5 | | 1/8 | | |
| 31 | 2,5 x 2,0 | M3,5 | M1/2 | Nr. 6 | Nr. 0 Nr. 1 | | | Nr. 11 Nr. 10 Nr. 9 |
| 32 | 2,8 x 2,24 | | M2,2 M2,5 | | Nr. 2 Nr. 3 | | | Nr. 8 Nr. 7 Nr. 6 |
| 33 | 3,15 x 2,5 | M4 | M3 | Nr. 8 | Nr. 4 Nr. 5 | | 1/8 | Nr. 5 |
| 34 | 3,55 x 2,8 | M4,5 | M3,5 | Nr. 10 | Nr. 6 | 3/16 | | Nr. 4 |
| 35 | 4,0 x 3,15 | M5 | M4 | Nr. 12 | | 7/32 | | |
| 36 | 4,5 x 3,55 | M6 | M4,5 | 1/4 | Nr. 8 | 1/4 | | Nr. 3 |
| 37 | 5,0 x 4,0 | | M5 | | Nr. 10 | | 3/16 | Nr. 2 |
| 38 | 5,6 x 4,5 | M7 | | | Nr. 12 | 9/32 | 7/32 | Nr. 1 |
| 39 | 6,3 x 5,0 | M8 | M6 | 5/16 | 1/4 | 5/16 | 1/4 | Nr. 0 |
| 40 | 7,1 x 5,6 | M9 | M7 | 3/8 | | 3/8 | 9/32 | |
| 41 | 8,0 x 6,3 | M10 | M8 | 7/16 | 5/16 | 7/16 | 5/16 | |
| 42 | 9,0 x 7,1 | M12 | M9 | 1/2 | | 1/2 | | |
| 11 | 10 x 8,0 | | M10 | | 3/8 | | 3/8 | |
| 43 | 11,2 x 9,0 | M14 | | 9/16 | | 9/16 | | |
| 44 | 12,5 x 10 | M16 | | 5/8 | | 5/8 | | |
| 45 | 14 x 11 | M18 M20 | | 3/4 | | 11/16 3/4 | | |
| 46 | 16 x 12,5 | M22 | | 7/8 | | 7/8 | | |
| 47 | 18 x 14 | M24 | | 1 | | 1 | | |
| 17 | 20 x 16 | M27 M30 | | 1 1/8 | | 1 1/8 | | |
| 48 | 22,4 x 18 | M33 | | 1 1/4 | | 1 1/4 | | |
| 19 | 25 x 20 | M36 | | 1 3/8 | | 1 3/8 | | |
| 49 | 28 x 22,4 | M39 M42 | | 1 1/2 | | 1 1/2 | | |
| 50 | 31,5 x 25 | M45 M48 | | 1 3/4 | | 1 3/4 | | |
| 51 | 35,5 x 28 | M52 | | 2 | | 2 | | |

960..961

FORM A



| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|----|----|----|
| 960 | 40 | M16 | 17 | 19 | 54 | 26 |
| 961 | 50 | M24 | 25 | 28 | 74 | 34 |

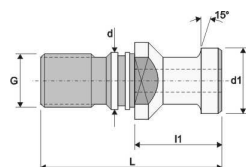


962..963

FORM B



| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|----|----|----|
| 962 | 40 | M16 | 17 | 19 | 54 | 26 |
| 963 | 50 | M24 | 25 | 28 | 74 | 34 |

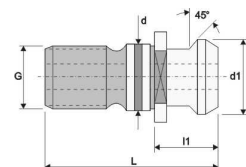


964..965

FORM B



| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|-------|------|-------|
| 964 | 40 | M16 | 17 | 18,95 | 44,5 | 16,40 |
| 965 | 50 | M24 | 25 | 29,10 | 65,5 | 25,55 |

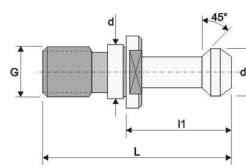


966..967

TYPE I



| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|----|----|----|
| 966 | 40 | M16 | 17 | 15 | 60 | 35 |
| 967 | 50 | M24 | 25 | 23 | 85 | 45 |

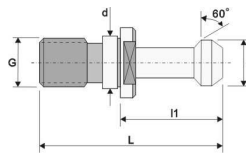


968..969

TYPE II



| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|----|----|----|
| 968 | 40 | M16 | 17 | 15 | 60 | 35 |
| 969 | 50 | M24 | 25 | 23 | 85 | 45 |

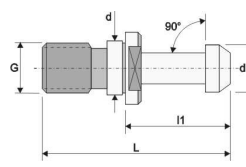


970..971

TYPE III



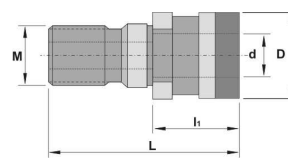
| REF. | K | G | d | d1 | L | l1 |
|------|----|-----|----|----|----|----|
| 970 | 40 | M16 | 17 | 15 | 60 | 35 |
| 971 | 50 | M24 | 25 | 23 | 85 | 45 |



097..099



| REF. | M | d | D | l1 | L |
|------|-----|-----|-------|----|----|
| 097 | M16 | M16 | 25,00 | 53 | 25 |
| 098 | M16 | M16 | 25,00 | 56 | 28 |
| 099 | M24 | M24 | 39,29 | 68 | 25 |



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors



- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

SER



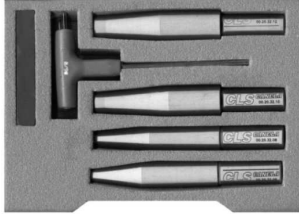
| REF. | SIZE OF COLLETS |
|--------------|---|
| SER16 | ER16= 1-2-3-4-5-6-7-8-9-10 |
| SER20 | ER20= 1-2-3-4-5-6-7-8-9-10-11-12-13 |
| SER25 | ER25= 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16 |
| SER32 | ER32= 3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20 |
| SER40 | ER40= -4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26 |

KIT 731



| REF. | CHUCK | COLLET | SIZE OF COLLETS | CLAMPING NUT |
|--------------------|---------|--------|-----------------|--------------|
| KIT 731.316 | 731.316 | ER16 | 10 (1-10) | 090 |
| KIT 731.320 | 731.320 | ER20 | 12 (2-13) | 091 |
| KIT 731.325 | 731.325 | ER25 | 15 (2-16) | 092 |
| KIT 731.332 | 731.332 | ER32 | 18 (3-20) | 093 |
| KIT 731.340 | 731.340 | ER40 | 23 (4-26) | 094 |
| KIT 731.432 | 731.432 | ER32 | 18 (3-20) | 093 |
| KIT 731.440 | 731.440 | ER40 | 23 (4-26) | 094 |
| KIT 731.532 | 731.532 | ER32 | 18 (3-20) | 093 |
| KIT 731.540 | 731.540 | ER40 | 23 (4-26) | 094 |
| KIT 731.732 | 731.732 | ER32 | 18 (3-20) | 093 |
| KIT 731.740 | 731.740 | ER40 | 23 (4-26) | 094 |
| KIT 731.832 | 731.832 | ER32 | 18 (3-20) | 093 |
| KIT 731.840 | 731.840 | ER40 | 23 (4-26) | 094 |
| KIT 731.932 | 731.932 | ER32 | 18 (3-20) | 093 |
| KIT 731.940 | 731.940 | ER40 | 23 (4-26) | 094 |
| KIT 731.032 | 731.032 | ER32 | 18 (3-20) | 093 |
| KIT 731.040 | 731.040 | ER40 | 23 (4-26) | 094 |

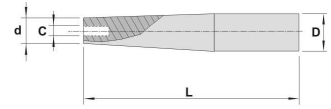
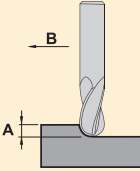
662.0



| REF. | C | d | L | L |
|---------|----|----|-----|----|
| 662.006 | 6 | 12 | 150 | 20 |
| 662.008 | 8 | 15 | 150 | 20 |
| 662.010 | 10 | 18 | 150 | 20 |
| 662.012 | 12 | 20 | 150 | 20 |

CUTTING CONDITIONS SUGGESTED
CONDITIONS DE COUPE SUGGERÉES
EMPFOHLENE SCHNITTBEDINGUNGEN

| REF. | A | B | | |
|---------|----|----------|-----|-----|
| 662.006 | 6 | 0,05 x Z | 524 | 501 |
| 662.008 | 8 | 0,05 x Z | 524 | 501 |
| 662.010 | 10 | 0,05 x Z | 500 | 501 |
| 662.012 | 12 | 0,05 x Z | 500 | 501 |

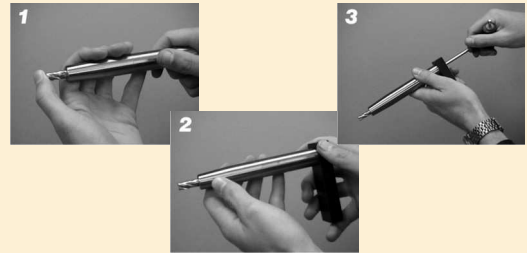


Instructions / Instructions / Instruktionen:

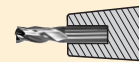
To obtain from CLS extensions a proper operation is very important to insert the end mill completely. CLS handle could get damaged due to a bad end mill position.

Pour obtenir un fonctionnement correcte des rallonges CLS il est très important d'introduire totalement la fraise. Une mauvaise collocation peut provoquer l'endommagement du rallonge CLS.

Um von den CLS-Verlängerungen eine richtige Operation zu bekommen, ist es sehr wichtig, den Hartmetallfräser völlig einzufügen. Der CLS Griff könnte wegen einer schlechten Positionierung des Hartmetallfräasers beschädigt werden.



INCORRECT
INCORRECTE
FALSCH



CORRECT
CORRECTE
RICHTIG

KIT C32



| REF. | Composition |
|--------------|---|
| KIT BT40 C20 | 1 49.40.34.20 + 5 collets c20: 6, 8, 10, 12, 16 |
| KIT TC40 C20 | 1 47.40.34.20 + 5 collets c20: 6, 8, 10, 12, 16 |
| KIT BT40 C32 | 1 49.40.34.32 + 7 collets c32: 6, 8, 10, 12, 16, 20, 25 |
| KIT TC40 C32 | 1 47.40.34.32 + 7 collets c32: 6, 8, 10, 12, 16, 20, 25 |
| KIT BT50 C32 | 1 49.50.34.32 + 7 collets c32: 6, 8, 10, 12, 16, 20, 25 |
| KIT TC50 C32 | 1 47.50.34.32 + 7 collets c32: 6, 8, 10, 12, 16, 20, 25 |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Reference list of materials
Liste de référence des matières
Werkstoff-Liste

002

Spare parts
Pièces détachées
Ersatzteile

008

Alphanumeric index
Index alphanumérique
Alphanumerisches Inhalt

023

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Reference list of materials (Steels)

| ISO | Germany | | U.S.A. AISI/SAE | Japan JIS | Spain UNE | U.K. | | Sweden SS | France AFNOR | Italy UNI |
|----------|------------|------------------|--------------------|----------------|-----------------|--------------|-------|--------------|-----------------|-----------------|
| | W.-nr. | DIN | | | | BS | EN | | | |
| P | 1.0038 | RS1.37-2 | A570.36 | STKM 12A,C | - | 4360 40 C | - | 131 | E 24-2 Ne | - |
| | 1.0038 | GS-CK16 | 1115 | - | - | 030A04 | 1A | 1325 | - | - |
| | 1.0116 | St.37-3 | A573-81 65 | - | F.111 | 4360 40 B | - | 1312 | E 24-U | Fe37-3 |
| | 1.0401 | C15 | 1015 | - | F.112 | 080M15 | - | 1350 | CC12 | C15C16 |
| | 1.0402 | C22 | 1020 | - | 11SMn28 | 050A20 | 2C/2D | 1450 | CC20 | C20C21 |
| | 1.0715 | 9SMn28 | 1213 | SUM22 | 11SMnPb28 | 230M07 | - | 1912 | S250 | CF9S Mn28 |
| | 1.0718 | 9SMnPb28 | 12L13 | SUM22L | 10SPb20 | - | - | 1914 | S250Pb | CF9S MnP b28 |
| | 1.0722 | 10SPb20 | - | - | 12SMn35 | - | - | - | 10PbF2 | CF 10P b20 |
| | 1.0736 | 9SMn36 | 1215 | - | 12SMnPb36 | 240M07 | 1B | - | S300 | CF9S Mn36 |
| | 1.0737 | 9SMnPb36 | 12L14 | - | C15K | - | - | 1926 | S300Pb | CF9MnPb36 |
| | 1.1141 | Ck15 | 1015 | S15C | - | 080M15 | 32C | 1370 | XC12 | C16 |
| | 1.1158 | Ck25 | 1025 | S25C | - | - | - | - | - | - |
| | 1.8900 | StE 380 | A572-60 | - | - | 4360 55 E | - | 2145 | - | FeE390KG |
| | - | 17 MnV 6 | A572-60 | - | - | 4360 55 E | - | 2142 | NFA 35-501 E36 | - |
| | 1.0501 | C35 | 1035 | - | F.113 | 060A35 | - | 1550 | CC35 | C35 |
| | 1.0503 | C45 | 1045 | - | F.114 | 080M46 | - | 1650 | CC45 | C45 |
| | 1.0726 | 35S20 | 1140 | - | F210G | 212M36 | 8M | 1657 | 35MF4 | - |
| | 1.1157 | 40Mn4 | 1039 | - | - | 150M36 | 15 | - | 35M5 | - |
| | 1.1167 | 36Mn5 | 1335 | SMn438(H) | 36Mn5 | - | - | 2120 | 40M5 | - |
| | 1.1170 | 28Mn6 | 1330 | SCMn1 | - | 150M28 | 14A | - | 20M5 | C28Mn |
| | 1.1183 | Cf35 | 1035 | S35C | - | 060A35 | - | 1572 | XC38TS | C36 |
| | 1.1191 | Ck45 | 1045 | S45C | C45K | 080M46 | - | 1672 | CX42 | C45 |
| | 1.1213 | Cf53 | 1050 | S50C | - | 060A52 | - | 1674 | XC48TS | C53 |
| | 1.0535 | C55 | 1055 | - | - | 070M55 | - | 1655 | - | C55 |
| | 1.0601 | C60 | 1060 | - | - | 080A62 | 43D | - | CC55 | C60 |
| | 1.1203 | Ck55 | 1055 | S55c | C55K | 070M55 | - | - | XC55 | C50 |
| 1.1221 | Ck60 | 1060 | S58C | - | 080A62 | 43D | 1678 | XC60 | C60 | |
| 1.1274 | CK 101 | 1095 | - | F-5117 | 060A96 | - | 1870 | XC100 | - | |
| 1.1545 | C105W1 | W 1 | SK 3 | F-5118 | BW1A | - | 1880 | Y105 | C36KU | |
| 1.1545 | C105W1 | W210 | SUP4 | F.515 | BW2 | - | 2900 | Y120 | C120KU | |
| P | 1.0144 | St.44-2 | A573-81 | SM400A;B;C | - | 4360 43C | - | 1412 | E28-3 | - |
| | 1.0570 | St.52-3 | - | SM490A;B;YA;YB | - | 4360 50B | - | 2132 | E36-3 | Fe52BFN/Fe52CFN |
| | 1.0841 | St.52-3 | 5120 | - | F-431 | 150 M 19 | - | 2172 | 20 MC 5 | Fe52 |
| | 1.0904 | 55Si7 | 9255 | - | 56Si7 | 250A53 | 45 | 2085 | 55S7 | 55Si8 |
| | 1.0961 | 60SiCr7 | 9262 | - | 60SiCr8 | - | - | - | 60SC7 | 60SiCr8 |
| | 1.3505 | 100Cr | 52100 | SUJ2 | F.131 | 534A99 | 31 | 2258 | 100C6 | 100Cr6 |
| | 1.5415 | 15Mo3 | ASTM A204Gr.A | - | 16Mo3 | 1501-240 | - | 2912 | 15D3 | 16Mo3KW |
| | 1.5423 | 16Mo5 | 4520 | - | 16Mo5 | 1503-245-420 | - | - | - | 16Mo5 |
| | 1.5622 | 14Ni6 | ASTM A350LF5 | - | 15Ni6 | - | - | - | 16N6 | 14Ni6 |
| | 1.6523 | 21NiCrMo2 | 8620 | SNCM220(H) | 20NiCrMo2 | 805M20 | 362 | 2506 | 20NCD2 | 20NiCrMo2 |
| | 1.6546 | 40NiCrMo22 | 8740 | SNCM240 | 40NiCrMo2 | 311-Type7 | - | - | - | 40NiCrMo2(KB) |
| | 1.6587 | 17CrNiMo6 | - | - | 14NiCrMo13 | 820A16 | - | - | 18NCD6 | - |
| | 1.7015 | 15Cr3 | 5015 | SCr415(H) | - | 523M15 | - | - | 12C3 | - |
| | 1.7045 | 42Cr4 | 5140 | SCr440 | 42Cr4 | - | - | 2245 | - | - |
| | 1.7176 | 55Cr3 | 5155 | SUP9(A) | - | 527A60 | 48 | - | 55C3 | - |
| | 1.7262 | 15CrMo5 | - | SCM415(H) | 12CrMo4 | - | - | 2216 | 12CD4 | - |
| 1.7335 | 13CrMo4 4 | ASTM A182F11;F12 | - | 14CrMo45 | 1501-620Gr27 | - | - | 15CD3.5 | 14CrMo4 5 | |
| 1.7380 | 10CrMo9 10 | ASTM A182F.22 | - | TU.H | 1501-622Gr31;45 | - | 2218 | 12CD9, 10 | 12CrMo9, 10 | |

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Arbors & adaptors

Reference list of materials (Stainless steels)

| ISO | Germany | | U.S.A. | Japan | Spain | U.K. | | Sweden | France | Italy |
|--|-------------------|----------------|-------------|--------------|--------|----------|------|---------------|-----------------|----------------|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| M Stainless steel (Ferritic / Martensitic) | 1.4000 | X7Cr13 | 403 | SUS403 | F.3110 | 403S17 | - | 2301 | Z6Cr13 | X6Cr13 |
| | 1.4001 | X7Cr14 | - | - | F.8401 | - | - | - | - | - |
| | 1.4005 | X12CrS13 | 416 | SUS416 | F.3411 | 416 S 21 | - | 2380 | Z11CF13 | X12 CrS 13 |
| | 1.4016 | X8Cr17 | 430 | SUS430 | F.3113 | 430S15 | 960 | 2320 | Z8C17 | X8Cr17 |
| | 1.4006 | X10Cr13 | 410 | SUS410 | F.3401 | 410S21 | 56A | 2302 | Z10C14 | X12Cr13 |
| | - | X8Cr17 | 430 | SUS430 | F.3113 | 430S17 | 60 | 2320 | Z8C17 | X8Cr17 |
| | 1.4034 | X46Cr13 | - | SUS420J2 | F.3405 | 420S45 | 56D | 2304 | Z40CM | X40Cr14 |
| | - | - | - | - | - | - | - | - | Z38C13M | - |
| | 1.4003 | - | 405 | - | - | 405S17 | - | - | Z8CA12 | X6CrAl13 |
| | 1.4021 | - | 420 | - | - | 420S37 | - | 2303 | Z20C13 | X20Cr13 |
| | 1.4057 | X22CrNi17 | 431 | SUS431 | F.3427 | 431S29 | 57 | 2321 | Z15CNi6.02 | X16CrNi16 |
| | 1.4104 | X12CrMoS17 | 430F | SUS430F | F.3117 | - | - | 2383 | Z10CF17 | X10CrS17 |
| | 1.4113 | X6CrMo17 | 434 | SUS434 | - | 434S17 | - | 2325 | Z8CD17.01 | X8CrMo17 |
| | 1.4313 | X5CrNi13 4 | CA6-NM | SCS5 | - | 425C11 | - | 2385 | Z4CND13.4M | (G)X6CrNi304 |
| | 1.4724 | X10CrAl113 | 405 | SUS405 | F.311 | 403S17 | - | - | Z10C13 | X10CrAl12 |
| | 1.4742 | X10CrAl118 | 430 | SUS430 | F.3113 | 430S15 | 60 | - | Z10CAS18 | X8Cr17 |
| | 1.4747 | X80CrNiSi20 | HNV6 | SUH4 | F.320B | 443S65 | 59 | - | Z80CSN20.02 | X80CrSiNi20 |
| | 1.4762 | X10CrAl24 | 446 | SUH446 | - | - | - | 2322 | Z10CAS24 | X16Cr26 |
| | 1.4871 | X53CrMnNiN21 9 | EV8 | SUH35, SUH36 | - | 349S54 | - | - | Z52CMN21.09 | X53CrMnNiN219 |
| | 1.4521 | X1CrMoTi18 2 | S44400 | - | - | - | - | 2326 | - | - |
| 1.4922 | X20CrMoV12-1 | - | - | - | - | - | 2317 | - | X20CrMoNi 12 01 | |
| 1.4542/ | - | 630 | - | - | - | - | - | Z7CNU17-04 | - | |
| 1.4548 | - | - | - | - | - | - | - | - | - | |
| M Stainless steel (Austenitic) | 1.4306 | - | 304L | - | - | 304S11 | - | 2352 | Z2CrNi18 11 | X2CrNi18 11 |
| | 1.4350 | X5CrNi189 | 304 | SUS304 | F.3551 | 304S31 | 58E | 2332/2333 | Z6CN18.09 | X5CrNi18 10 |
| | - | - | - | - | F.3541 | - | - | - | - | - |
| | - | - | - | - | F.3504 | - | - | - | - | - |
| | 1.4305 | X12CrNiS18 8 | 303 | SUS303 | F.3508 | 303S21 | 58M | 2346 | Z10CNF 18.09 | X10CrNiS 18.09 |
| | 1.4301 | X5CrNi189 | 304 | SUS304 | F.3551 | 304S15 | 58E | 2332 | Z6CN18.09 | X5CrNi18 10 |
| | - | - | - | SUS304L | - | 304C12 | - | 2333 | Z3CN19.10 | - |
| | 1.4306 | X2CrNi18 9 | 304L | SCS19 | F.3503 | 304S12 | - | 2352 | Z2CrNi18 10 | X2CrNi18 11 |
| | 1.4310 | X12CrNi17 7 | 301 | SUS301 | F.3517 | - | - | 2331 | Z12CN17.07 | X12CrNi17 07 |
| | 1.4311 | X2CrNi18 10 | 304LN | SUS304LN | - | 304S62 | - | 2371 | Z2CN18.10 | - |
| | 1.4401 | X5CrNiMo18 10 | 316 | SUS316 | F.3543 | 316S16 | 58J | 2347 | Z6CND17.11 | X5CrNiMo17 12 |
| | 1.4429 | X2CrNiMoN18 13 | 316LN | SUS316LN | - | - | - | 2375 | Z2CND17.13 | - |
| | 1.4404 | - | 316L | - | - | 316S13 | - | 2348 | Z2CND17-12 | X2CrNiMo1712 |
| | 1.4435 | X2CrNiMo18 12 | 316L | SCS16 | - | 316S13 | - | 2353 | Z2CND17.12 | X2CrNiMo17 12 |
| | - | - | - | SUS316L | - | - | - | - | - | - |
| | 1.4436 | - | 316 | - | - | 316S33 | - | 2343 | Z6CND18-12-03 | X8CrNiMo1713 |
| | - | - | - | - | - | - | - | 2347 | - | - |
| | 1.4438 | X2CrNiMo18 16 | 317L | SUS317L | - | 317S12 | - | 2367 | Z2 NCDU25-20 | X2CrNiMo18 16 |
| | 1.4539 | X1NiCrMo | UNS V 0890A | - | - | - | - | 2562 | Z6CNT18.10 | - |
| | 1.4541 | X10CrNiTi18 9 | 321 | SUS321 | F.3553 | 321S12 | 58B | 2337 | - | X6CrNiTi18 11 |
| - | - | - | - | F.3523 | - | - | - | Z6CNNb18.10 | - | |
| 1.4550 | X10CrNiNb18 9 | 347 | SUS347 | F.3552 | 347S17 | 58F | 2338 | - | X6CrNiNb18 11 | |
| - | - | - | - | F.3524 | - | - | - | - | - | |
| 1.4571 | X10CrNiMoTi18 10 | 316Ti | - | F.3535 | 320S17 | 58J | 2350 | Z6NDT17.12 | X6CrNiMoNb17 13 | |
| 1.4583 | X10CrNiMoNb 18 12 | 318 | - | - | - | - | - | Z6CNDNb17 13B | - | |
| 1.4828 | X15CrNiSi20 12 | 309 | SUH309 | - | 309S24 | - | - | Z15CNS20.12 | X6CrNi25 20 | |

Reference list of materials (Stainless steels)

| ISO | Germany | | U.S.A. AISI/SAE | Japan JIS | Spain UNE | U.K. | | Sweden SS | France AFNOR | Italy UNI |
|---|-------------------|----------------|--------------------|--------------|--------------|---------|-----|--------------|------------------|--------------|
| | W.-nr. | DIN | | | | BS | EN | | | |
| M Stainless steel (Austenitic) | 1.4845 | X12CrNi25 21 | 310S | SUH310 | F.331 | 310S24 | - | 2361 | Z12CN25 20 | - |
| | 1.4406 | X10CrNi18.08 | 308 | SCS17 | F.8414 | 301S21 | 58C | 2370 | Z1NCDU25.20 | - |
| | 1.4418 | X4 CrNiMo16 5 | - | - | - | - | - | 2387 | Z6CND16-04-01 | X2CrNiMo1712 |
| | 1.4568 /1.4504 | - | 17-7PH | - | - | 316S111 | - | - | Z8CNA17-07 | - |
| | 1.4563 | - | NO8028 | - | - | - | - | 2584 | Z1NCDU31-27-03 | - |
| | - | - | S31254 | - | - | - | - | 2378 | Z1CNDU20-18-06AZ | - |
| | - | - | - | - | - | - | - | - | - | - |
| M Stainless steel (Austenitic / Ferritic (Duplex)) | 1.4417 | X2CrNiMoSi19 5 | S31500 | - | - | - | - | 2376 | - | - |
| | - | X8CrNiMo27 5 | S32900 | - | - | - | - | 2324 | - | - |
| | - | X2CrNiN23 4 | S322304 | - | - | - | - | 2327 | Z2CN23-04AZ | - |
| | - | - | - | - | - | - | - | 2328 | - | - |
| | - | X2CrNiMoN22 53 | S31803 | - | - | - | - | 2377 | Z2CND22-05-03 | - |
| | - | - | - | - | - | - | - | - | - | - |

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

Reference list of materials (Castings)

| ISO | Germany | | U.S.A. | Japan | Spain | U.K. | | Sweden | France | Italy |
|---------------------------------|-------------|-------------|------------|---------|-------------|------------|------|----------|------------|-----------|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| K Malleable cast iron | - | - | - | FCMB310 | - | 8 290/6 | - | 0814 | MN 32-8 | - |
| | - | GTS-35 | 32510 | FCMW330 | - | B 340/12 | - | 0815 | MN 35-10 | - |
| | 0.8145 | GTS-45 | 40010 | FCMW370 | - | P 440/7 | - | 0852 | Mn 450 | GMN 45 |
| | 0.8155 | GTS-55 | 50005 | FCMP490 | - | P 510/4 | - | 0854 | MP 50-5 | GMN 55 |
| | - | GTS-65 | 70003 | FCMP540 | - | P 570/3 | - | 0858 | MP 60-3 | - |
| | 0.8165 | GTS-65-02 | A220-70003 | FCMP590 | - | P570/3 | - | 0856 | Mn 650-3 | GMN 65 |
| | 0.8170 | GTS-70-02 | A220-80002 | FCMP690 | - | P690/2 | - | 0862 | Mn700-2 | GMN 70 |
| K Cast iron | - | - | - | - | - | - | - | 0100 | - | - |
| | - | GG10 | No 20 B | FC100 | - | - | - | 0110 | Ft 10 D | - |
| | 0.6015 | GG15 | No 25 B | FC150 | FG 15 | Grade 150 | - | 0115 | Ft 15 D | G 15 |
| | 0.6020 | GG20 | No 30 B | FC200 | - | Grade 220 | - | 0120 | Ft 20 D | G 20 |
| | 0.6025 | GG25 | No 35 B | FC250 | FG25 | Grade 260 | - | 0125 | Ft 25 D | G 25 |
| | - | - | No 40 B | - | - | - | - | - | - | - |
| | 0.6030 | GG30 | No 45 B | FC300 | FG30 | Grade 300 | - | 0130 | Ft 30 D | G 30 |
| | 0.6035 | GG35 | No 50 B | FC350 | FG35 | Grade 350 | - | 0135 | Ft 35 D | G 35 |
| | 0.6040 | GG40 | No 55 B | - | - | Grade 400 | - | 0140 | Ft 40 D | - |
| 0.6660 | GGL-NiCr202 | A436 Type 2 | - | - | L-NiCuCr202 | - | 0523 | L-NC 202 | - | |
| K Nodular SG iron | 0.7040 | GGG 40 | 60-40-18 | FCD400 | FGE 38-17 | SNG 420/12 | - | 0717-02 | FCS 400-12 | GS 370-17 |
| | - | GGG 40.3 | - | - | - | SNG 370/17 | - | 0717-12 | FGS 370-17 | - |
| | 0.7033 | GGG 35.3 | - | - | - | - | - | 0717-15 | - | - |
| | 0.7050 | GGG 50 | 80-55-06 | FCD500 | FGE 50-7 | SNG 500/7 | - | 0727-02 | FGS 500-7 | GS 500 |
| | 0.7660 | GGG-NiCr202 | A43D2 | - | - | Grade S6 | - | 0776 | S-NC 202 | - |
| | - | GGG 60 | - | FCD600 | - | SNG 600/3 | - | 0732-03 | FGS 600-3 | - |
| | 0.7070 | GGG 70 | 100-70-03 | FCD700 | FGS 70-2 | SNG 700/2 | - | 0737-01 | FGS 700-2 | GS 700-2 |

Reference list of materials (Non ferrous materials)

| ISO | Germany | | U.S.A. | Japan | Spain | U.K. | | Sweden | France | Italy |
|-----------------------------------|----------------|--------------|-----------|-------|-------|------|------|--------|--------|-------|
| | W.-nr. | DIN | AISI/SAE | JIS | UNE | BS | EN | SS | AFNOR | UNI |
| N Non ferrous materials | 3.2373 | G-AISI9MGWA | SC64D | C4BS | - | - | - | 4251 | A-STG | - |
| | - | G-ALMG5 | GD-AISI12 | AC4A | - | LM5 | - | 4252 | A-SU12 | - |
| | - | - | 356.1 | A5052 | - | LM25 | - | 4244 | - | - |
| | - | GD-AISI12 | A413.0 | A6061 | - | - | - | 4247 | - | - |
| | - | GD-AISI8Cu3 | A380.1 | A7075 | - | LM24 | - | 4250 | - | - |
| | - | G-AISI12(Cu) | A413.1 | ADC12 | - | LM20 | - | 4260 | - | - |
| | - | G-AISI12 | A413.2 | - | - | LM6 | - | 4261 | - | - |
| - | G-AISI10Mg(Cu) | A360.2 | - | - | LM9 | - | 4253 | - | - | |

Reference list of materials (Heat resistant super-alloys)

| ISO | Germany | | U.S.A. AISI/SAE | Japan JIS | Spain UNE | U.K. | | Sweden SS | France AFNOR | Italy UNI |
|-------------------------------------|-------------|------------------|--------------------|--------------|--------------|--------------|----|--------------|-----------------|---------------|
| | W.-nr. | DIN | | | | BS | EN | | | |
| S Heat resistant super-alloys | 1.4864 | X12NiCrSi36 16 | 330 | SUH330 | - | - | - | - | Z12NCS35.16 | F-3313 |
| | 1.4865 | G-X40NiCrSi38 18 | - | SCH15 | - | 330C11 | - | - | - | XG50NiCr39 19 |
| | 2.4603 | - | 5390A | - | - | - | - | - | NC22FeD | - |
| | 2.4856 | NiCr22Mo9Nb | 5666 | - | - | - | - | - | NC22FeDNB | - |
| | 2.4630 | NiCr20Ti | - | - | - | HR5,203-4 | - | - | NC20T | - |
| | LW2.4662 | NiFe35Cr14MoTi | 5660 | - | - | - | - | - | ZSNCDT42 | - |
| | LW2.4670 | S-NiCr13A16MoNb | 5391 | - | - | 3146-3 | - | - | NC12AD | - |
| | LW2.4668 | NiCr19Fe19NbMo | 5383 | - | - | HR8 | - | - | NC19eNB | - |
| | 2.4375 | NiCu30Al | 4676 | - | - | 3072-76 | - | - | - | - |
| | 2.4631 | NiCr20TiAk | - | - | - | Hr401,601 | - | - | NC20TA | - |
| | 2.4973 | NiCr19Co11MoTi | AMS 5399 | - | - | - | - | - | NC19KDT | - |
| | LW2.4668 | NiCr19Fe19NbMo | AMS 5544 | - | - | - | - | - | NC20K14 | - |
| | LW2.4674 | NiCo15Cr10MoAlTi | AMS 5397 | - | - | - | - | - | - | - |
| LW2.4964 | CoCr20W15Ni | 5537C | - | - | - | - | - | KC20WN | - | |
| - | CoCr22W14Ni | AMS 5772 | - | - | - | - | - | KC22WN | - | |
| S Titanium alloys | - | TiAl5Sn2.5 | AMS R54520 | - | - | TA14/17 | - | - | T-A5E | - |
| | - | TiAl6V4 | AMS R56400 | - | - | TA10-13/TA28 | - | - | T-A6V | - |
| | - | TiAl6V4ELI | AMS R56401 | - | - | TA11 | - | - | - | - |
| | - | TiAl4MoSn4Si0.5 | - | - | - | - | - | - | - | - |

Reference list of materials (Hardened materials)

| ISO | Germany | | U.S.A. AISI/SAE | Japan JIS | Spain UNE | U.K. | | Sweden SS | France AFNOR | Italy UNI |
|----------------------------|---------|-------------|--------------------|--------------|--------------|------|----|--------------|-----------------|--------------|
| | W.-nr. | DIN | | | | BS | EN | | | |
| H Hardened materials | 1.4108 | X100CrMo13 | 440A | C4BS | - | - | - | - | - | - |
| | 1.4111 | X110CrMoV15 | 610 | AC4A | - | - | - | - | - | - |
| | - | X65CrMo14 | 0-2 | AC4A | - | - | - | - | - | - |

Inserts

Turning

Automatic
lathesCeramic
toolsParting &
grooving

Threading

Drills

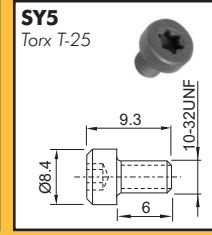
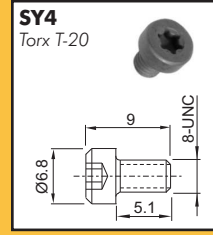
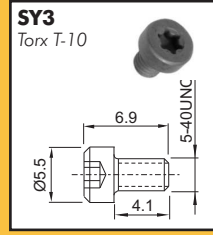
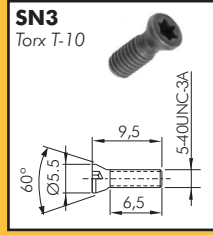
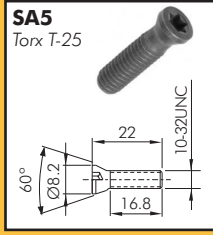
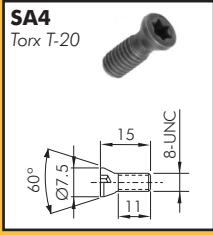
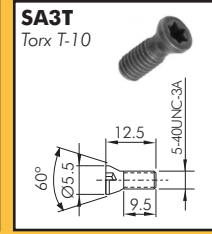
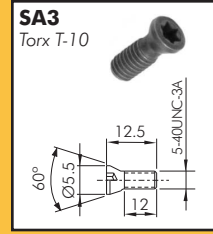
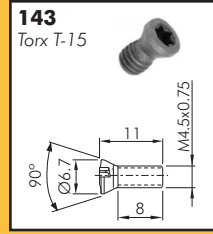
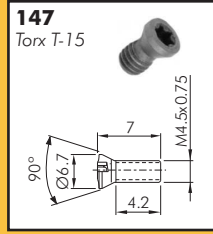
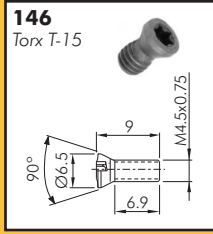
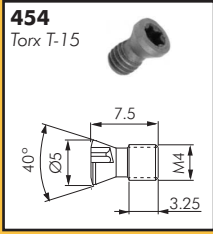
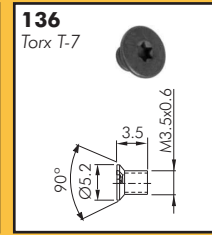
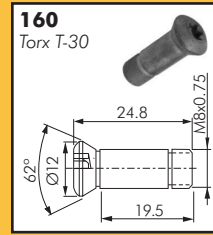
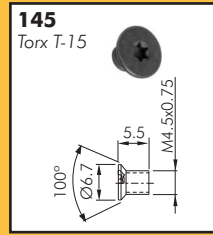
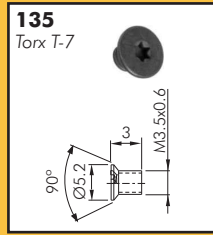
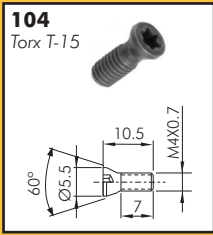
Cartridges

Brazed
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

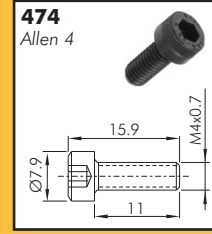
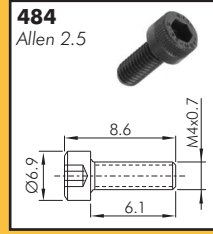
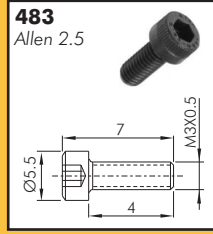
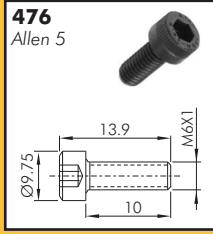
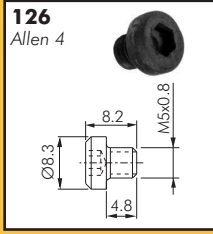
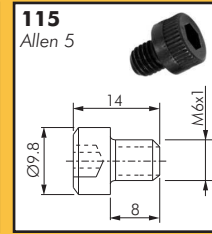
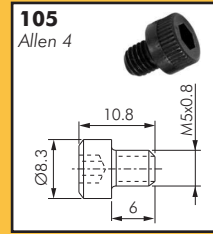
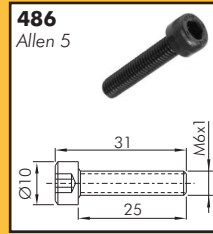
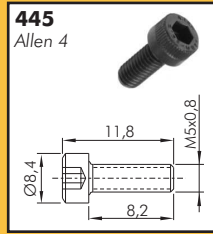
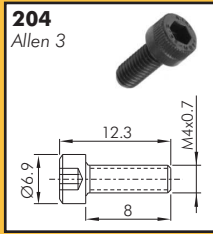
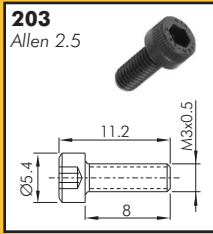
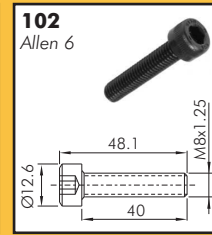
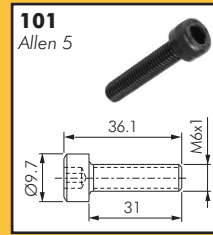
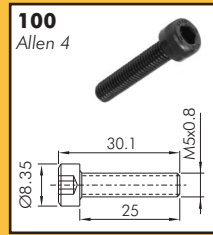
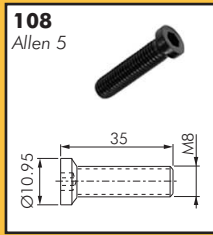
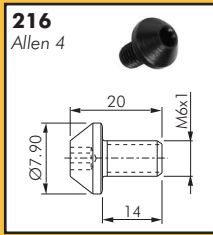
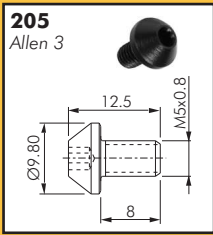
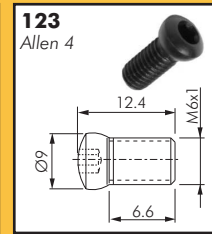
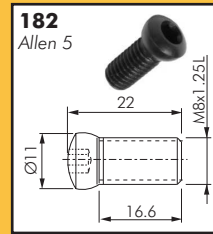
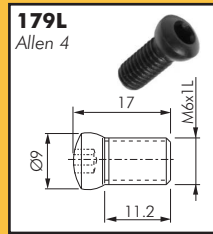
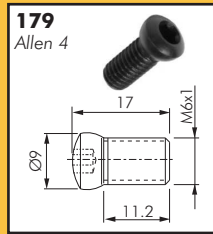
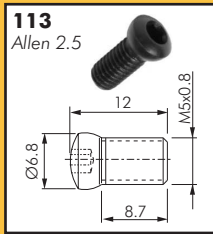
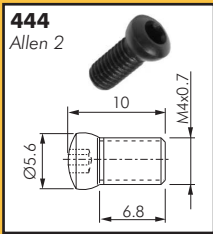
Screws (Torx) - Vis (Torx) - Schrauben (Torx)

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

| | | | | | |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 221 Torx T-15 | 465 Torx T-10 | 470 Torx T-20 | 471 Torx T-20 | 472 Torx T-20 | 478 Torx T-25 |
| 114 Torx T-9 | 121 Torx T-6 | 122 Torx T-6 | 125 Torx T-7 | 130 Torx T-8 | 131 Torx T-15 |
| 140 Torx T-15 | 144 Torx T-15 | 150 Torx T-20 | 481 Torx T-25 | 124 Torx T-9 | 447 Torx T-15 |
| 133 Torx T-15 | 141 Torx T-15 | 463 Torx T-8 | 464 Torx T-10 | 152 Torx T-15 | 155 Torx T-7 |
| 148 Torx T-8 | 462 Torx T-15 | 138 Torx T-15 | 467 Torx T-15 | 460 Torx T-20 | 132 Torx T-20 |
| 134 Torx T-20 | 139 Torx T-20 | 196 Torx T-15 | 159 Torx T-20 | 142 Torx T-30 | 469 Torx T-15 |
| 129 Torx T-7 | 185 Torx T-8 | 479 Torx T-20 | 103 Torx T-9 | 137 Torx T-10 | 489 Torx T-25 |



Screws (Allen) - Vis (Allen) - Schrauben (Allen)



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

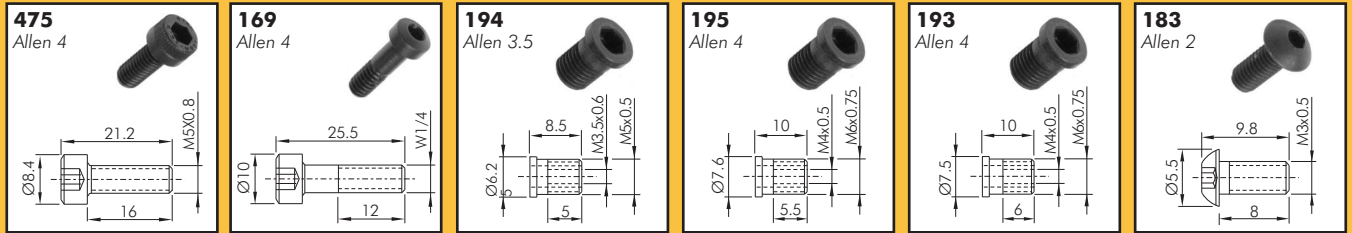
Milling cutters

Solid carbide

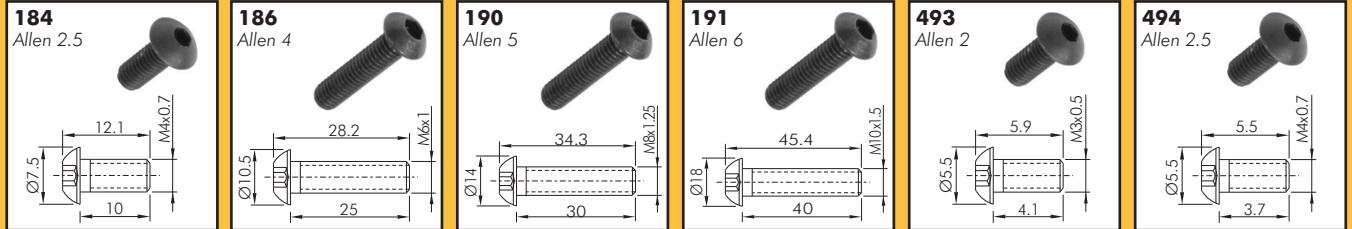
Boring heads

Arbors & adaptors

Inserts

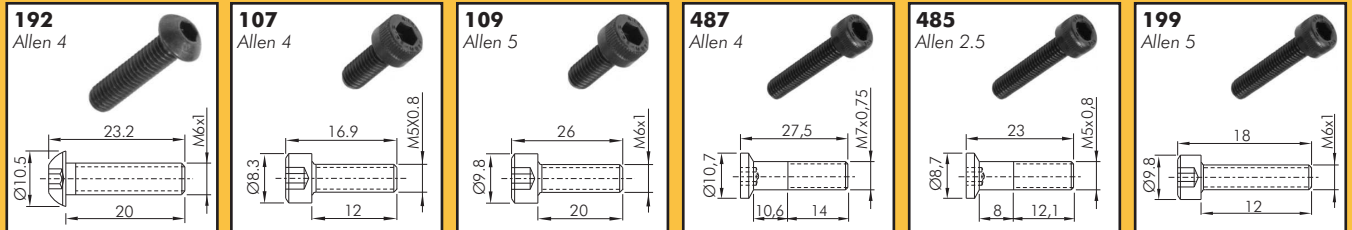


Turning



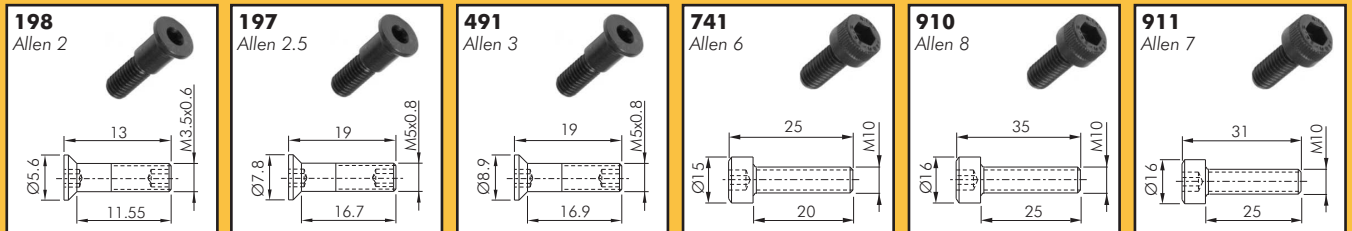
Automatic lathes

Ceramic tools

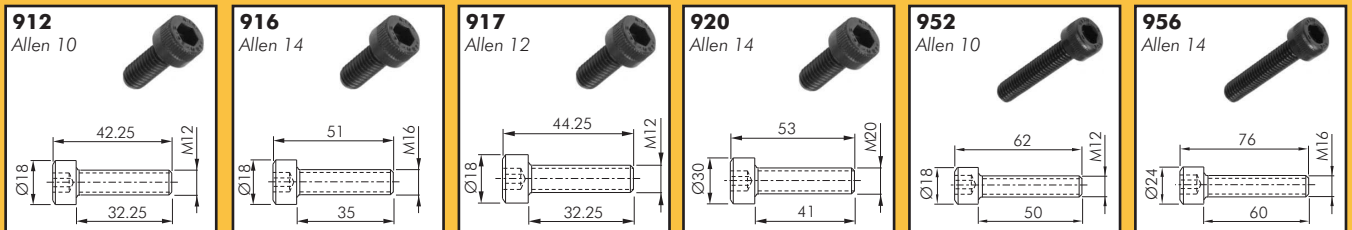


Parting & grooving

Threading



Drills

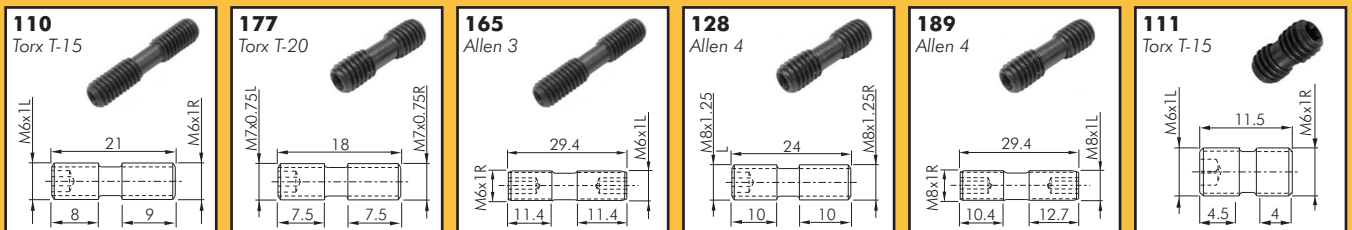


Cartridges

Brazed tools

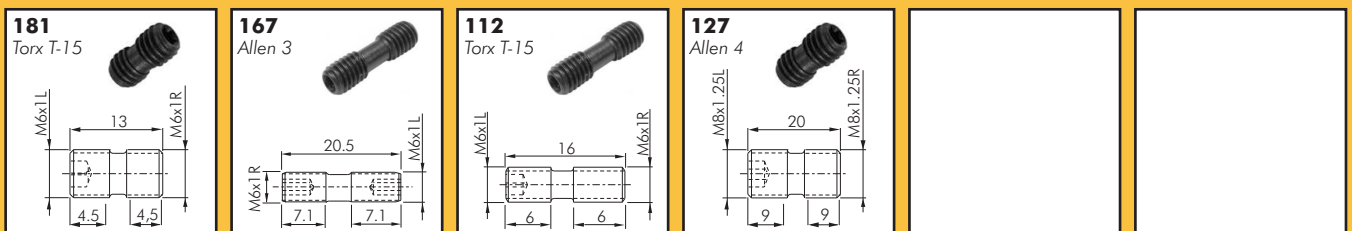
Milling cutters

Clamp screws - Vis de fixation - Schrauben für Spannung



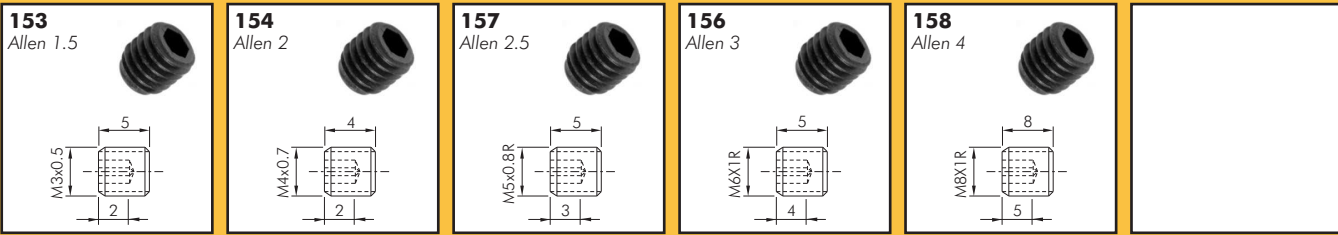
Solid carbide

Boring heads

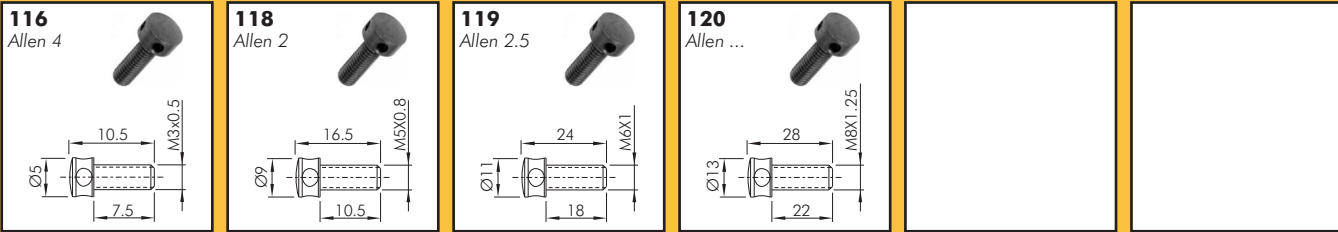


Arbors & adaptors

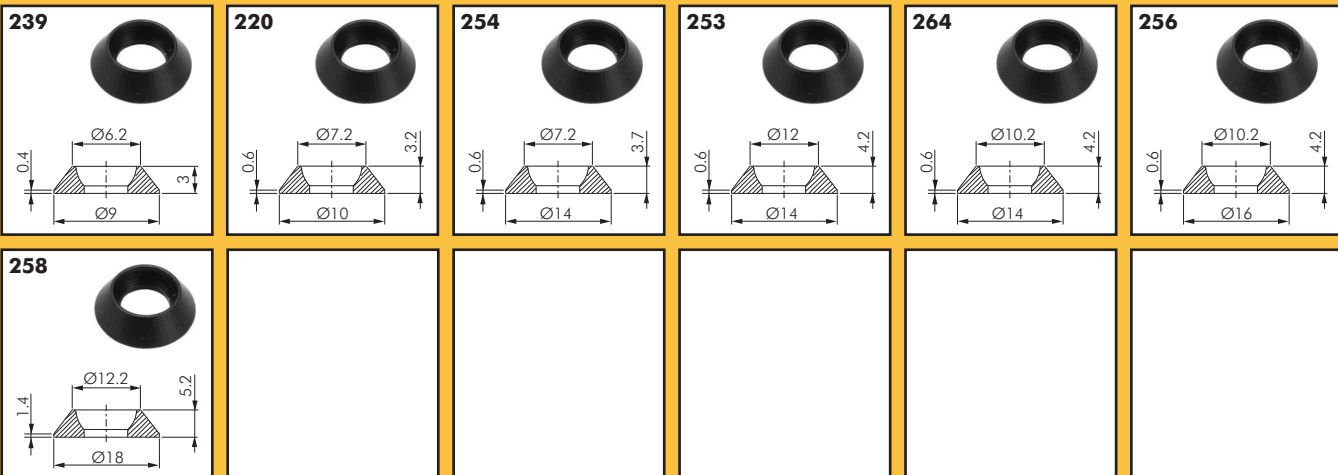
Screws - Vis - Schrauben



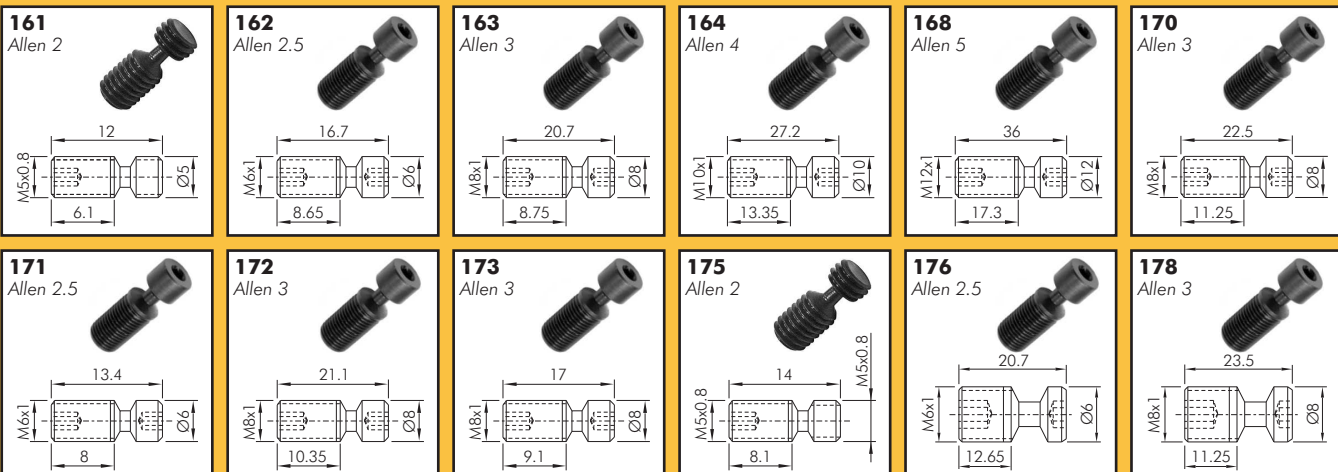
Adj. Screws - Vis réglables - Einstellbare Schrauben



Washers - Rondelles - Federscheiben



Lever lock system / Screws - Vis pour fixation par levier - Schrauben für Kniehebel-Klemmung



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

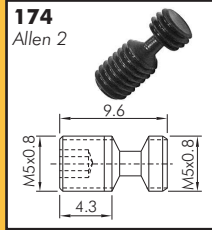
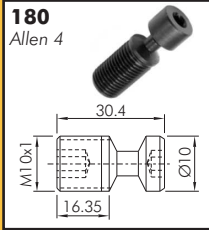
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

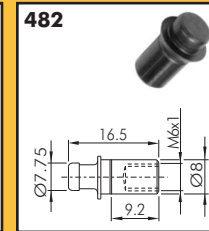
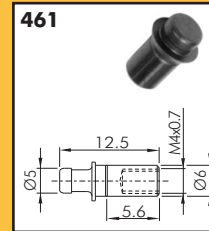
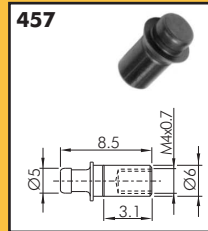
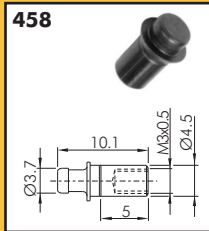
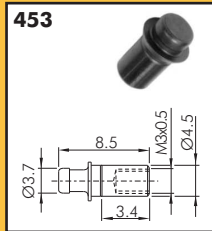
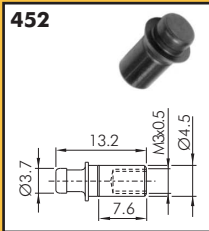
Inserts



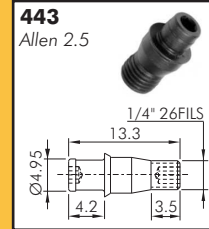
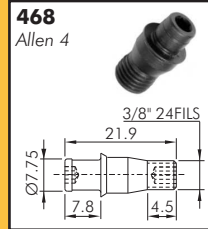
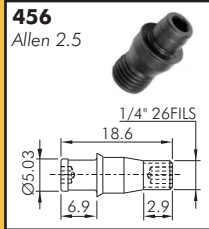
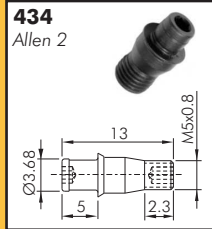
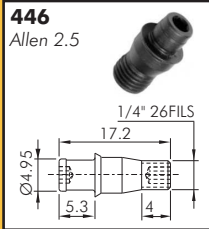
Turning

Lock pins - Pivots de fixation - Stifte

Automatic lathes



Ceramic tools

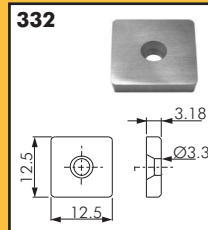
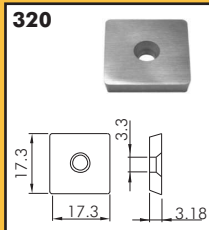
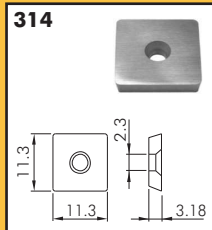
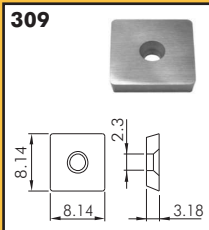


Parting & grooving

Threading

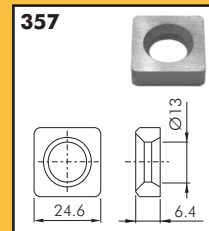
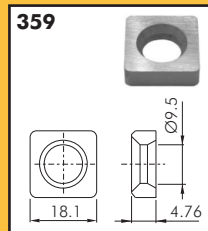
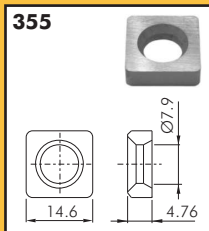
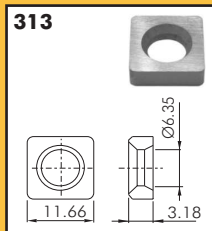
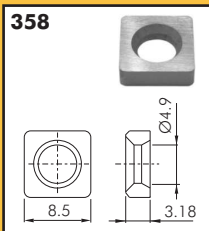
Square / Shim seats - Sous-plaquettes carrées - Quadratische Unterlegplatten

Drills



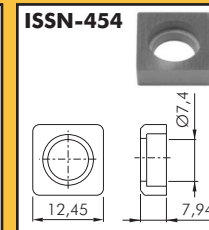
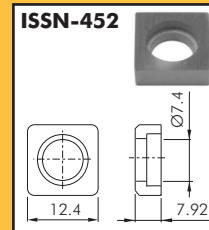
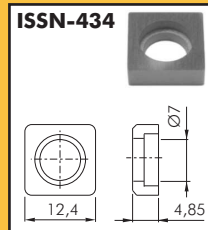
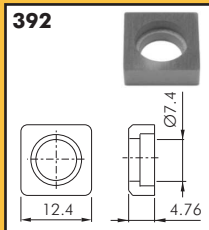
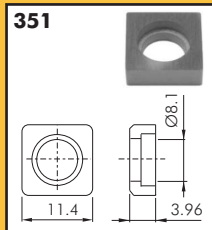
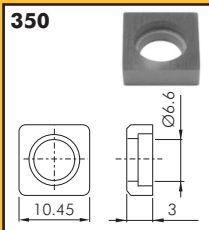
Cartridges

Brazed tools



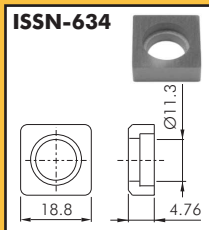
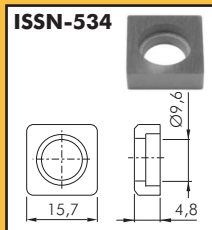
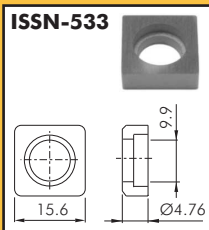
Milling cutters

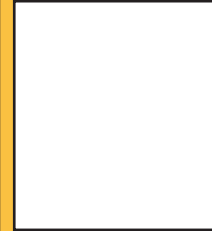
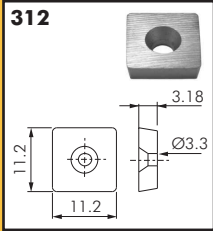
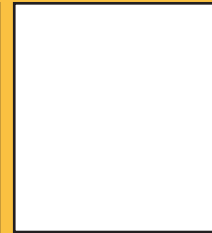
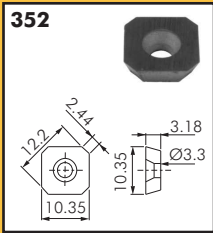
Solid carbide



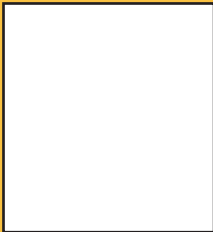
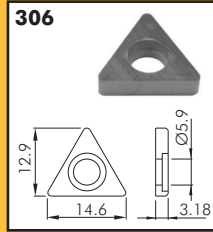
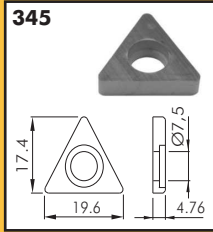
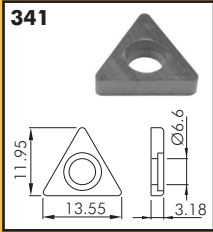
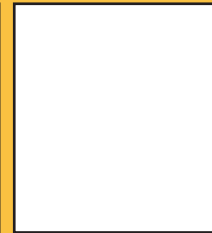
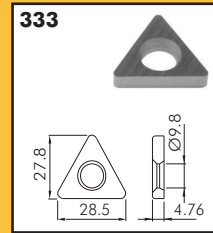
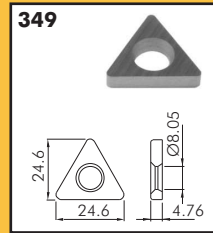
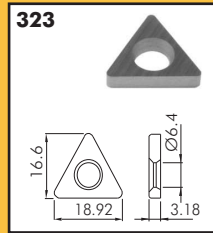
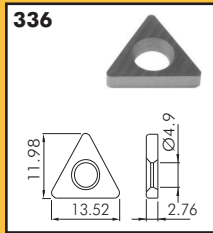
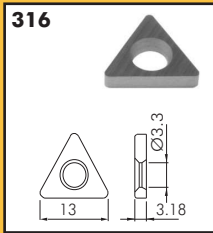
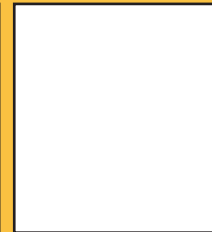
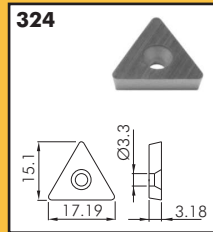
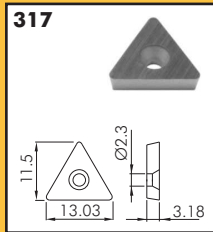
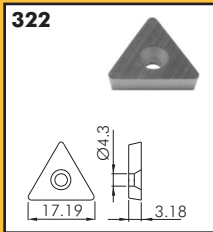
Boring heads

Arbors & adaptors





Triangular / Shim seats - Sous-plaquettes triangulaires - Dreieckige Unterlegplatten



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

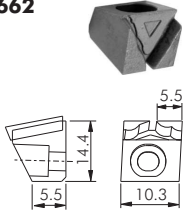
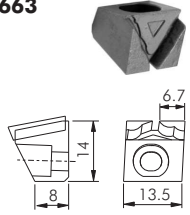
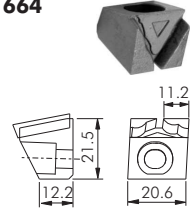
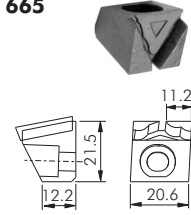
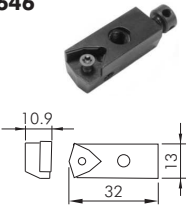
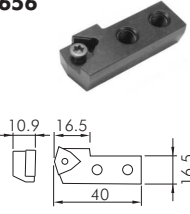
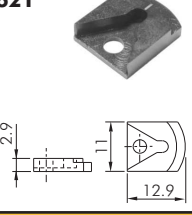
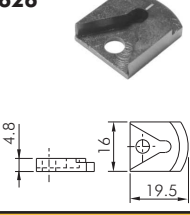
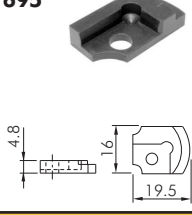
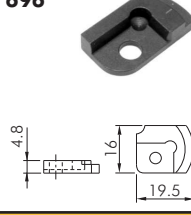
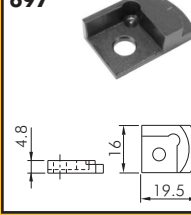
Brazed tools

Milling cutters

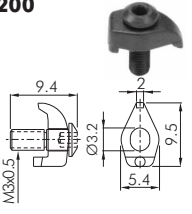
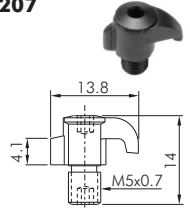
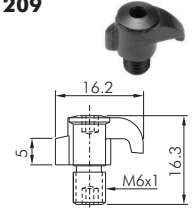
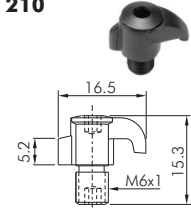
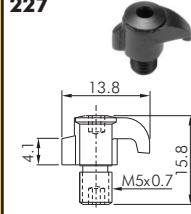
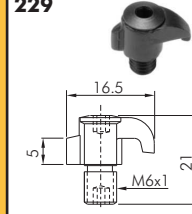
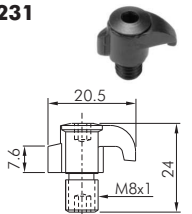
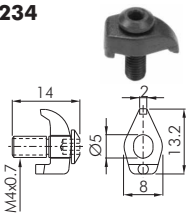
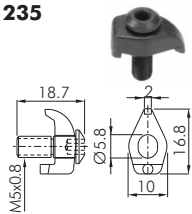
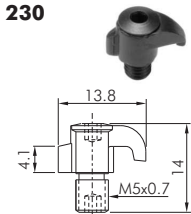
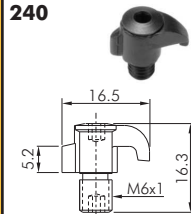
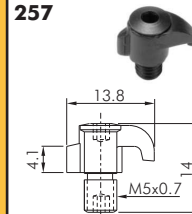
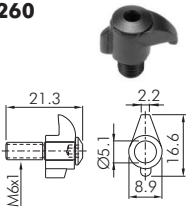
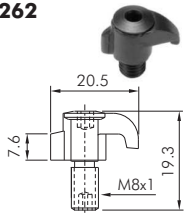
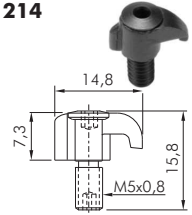
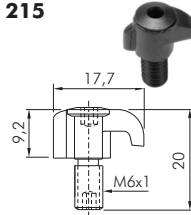
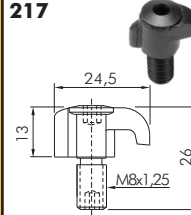
Solid carbide

Boring heads

Arbors & adaptors

| | | | | | |
|---|---|---|---|--|--|
| 662  | 663  | 664  | 665  | | |
| 646  | 656  | | | | |
| 621  | 626  | 695  | 696  | 697  | |

Top clamp (C) system / Clamps - Brides (Système C) - Pratzte (System C)

| | | | | | |
|---|---|---|---|--|---|
| 200  | 207  | 209  | 210  | 227  | 229  |
| 231  | 234  | 235  | 230  | 240  | 257  |
| 260  | 262  | 214  | 215  | 217  | |

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

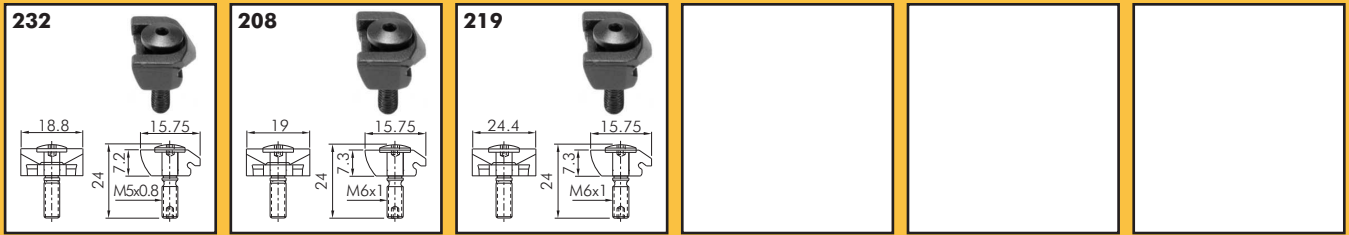
Solid carbide

Boring heads

Arbors & adaptors

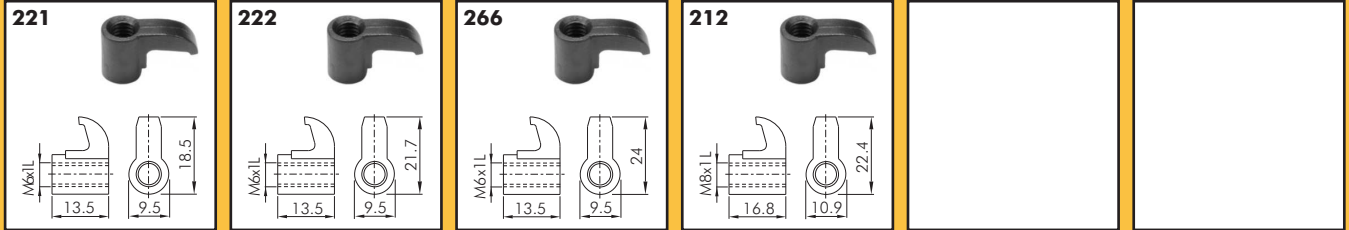
Wedge clamp (M-K) system / Clamps - Brides (Système M-K) - Pratze (System M-K)

Inserts



Turning

Automatic lathes

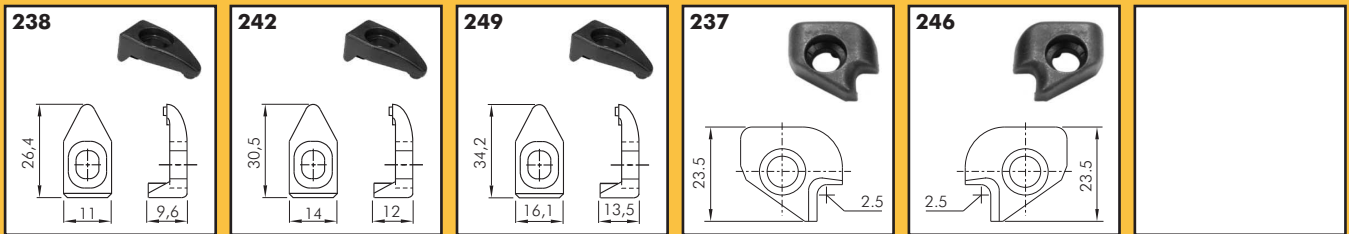


Ceramic tools

Parting & grooving

Dimple lock / Clamps - Brides pour "Dimple lock" - Dimple Lock Pratzen

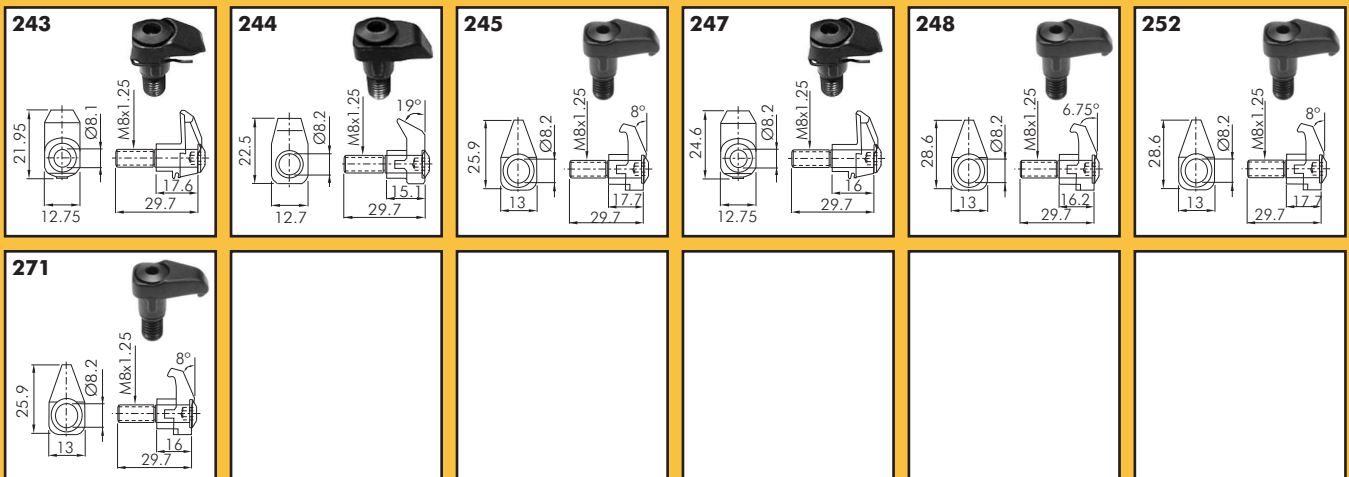
KNUX / Clamps - Brides KNUX - KNUX Pratzen



Threading

Drills

Ceramic tools / Clamps - Brides pour outils céramiques - Pratzen für keramische Werkzeuge



Cartridges

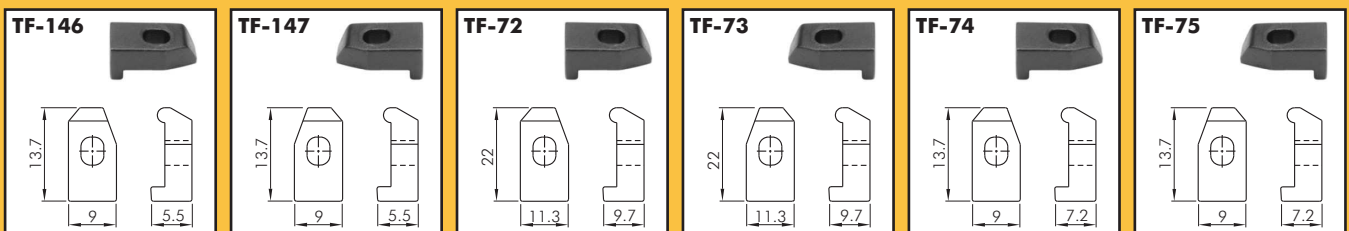
Brazed tools

Milling cutters

Solid carbide

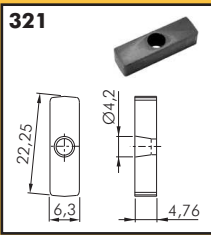
Boring heads

Notch tools / Clamps - Brides pour outils "Notch" - Pratze für Notch-Werkzeuge

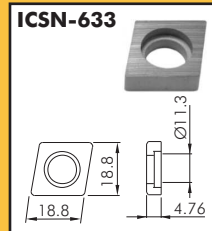
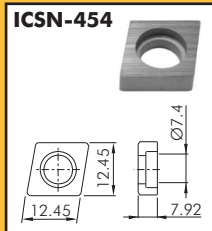
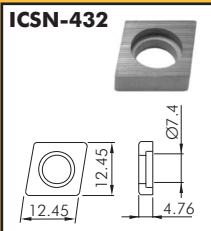
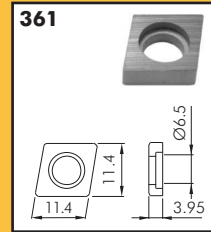
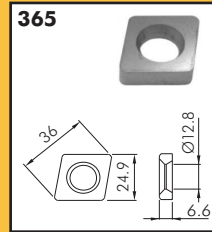
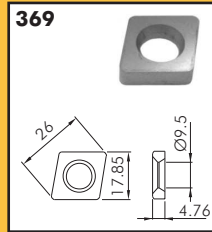
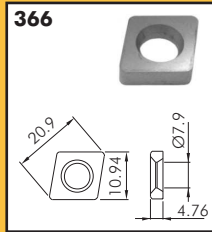
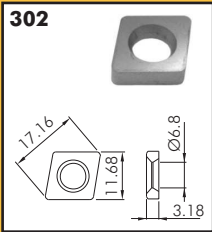
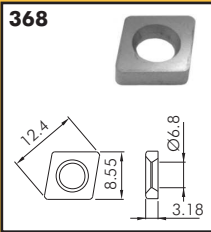


Arbors & adaptors

Shim seat - Sous-plaquette - Unterlegplatte



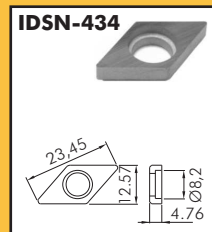
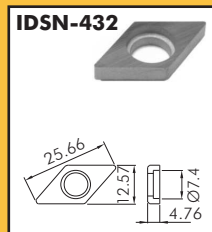
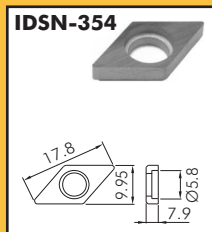
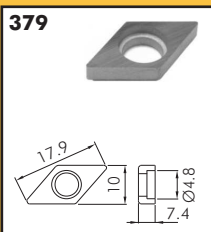
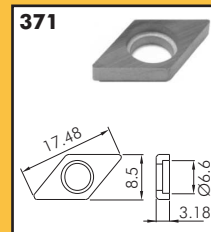
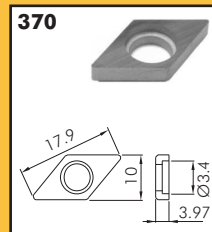
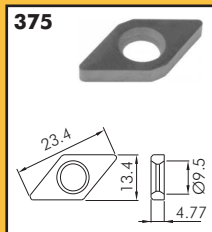
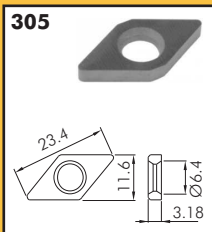
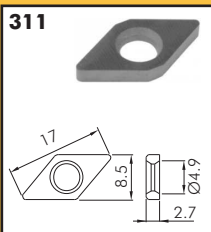
80° Rhombic / Shim seats - Sous-plaquettes rhombiques 80° - 80° rhombische Unterlegplatten



75° Rhombic / Shim seats - Sous-plaquettes rhombiques 75° - 75° rhombische Unterlegplatten



55° Rhombic / Shim seats - Sous-plaquettes rhombiques 55° - 55° rhombische Unterlegplatten



Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

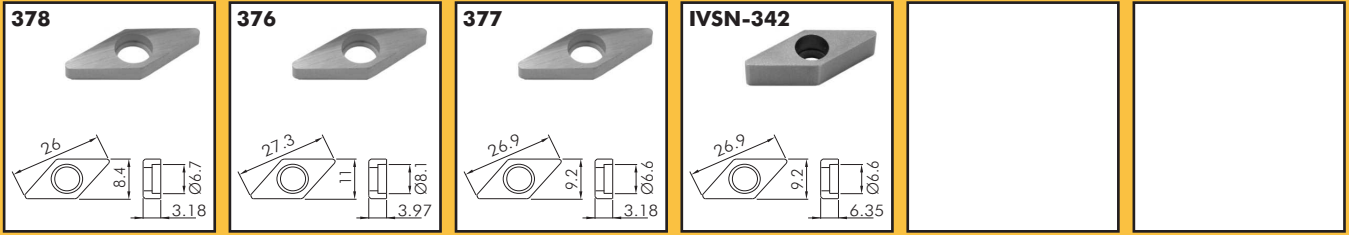
Solid carbide

Boring heads

Arbors & adaptors

35° Rhombic / Shim seats - Sous-plaquettes rhombiques 35° - 35° rhombische Unterlegplatten

Inserts

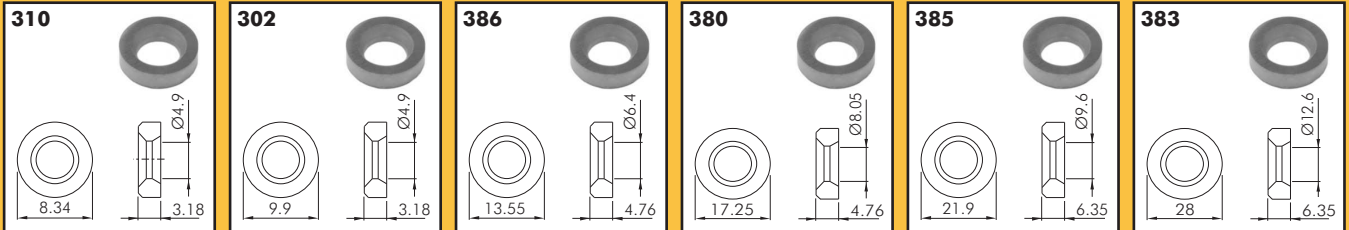


Turning

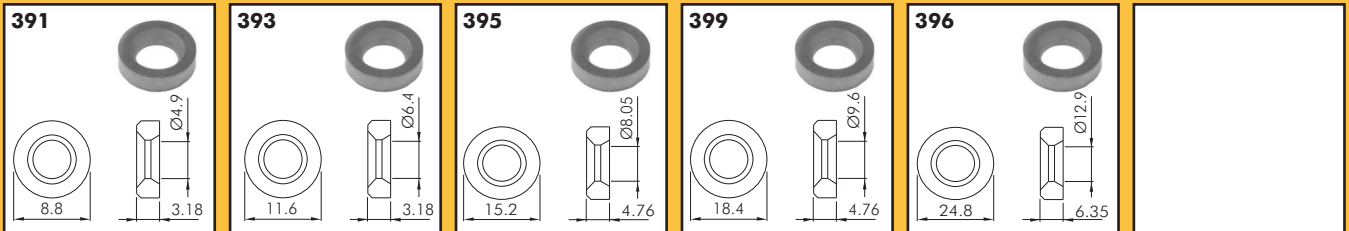
Automatic lathes

Round / Shim seats - Sous-plaquettes rondes - Runde Unterlegplatten

Ceramic tools

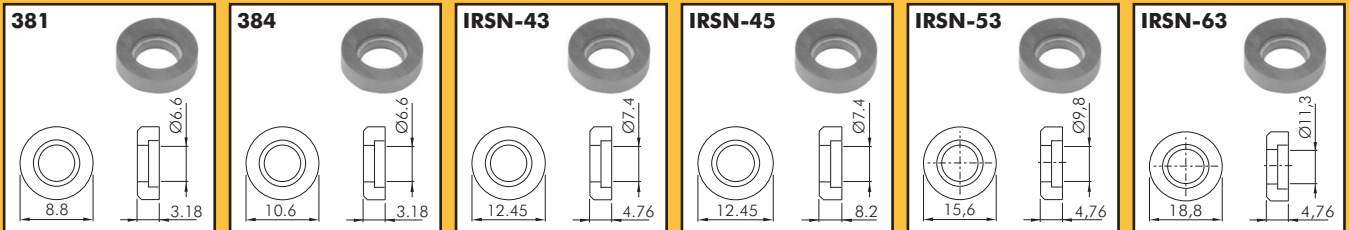


Parting & grooving



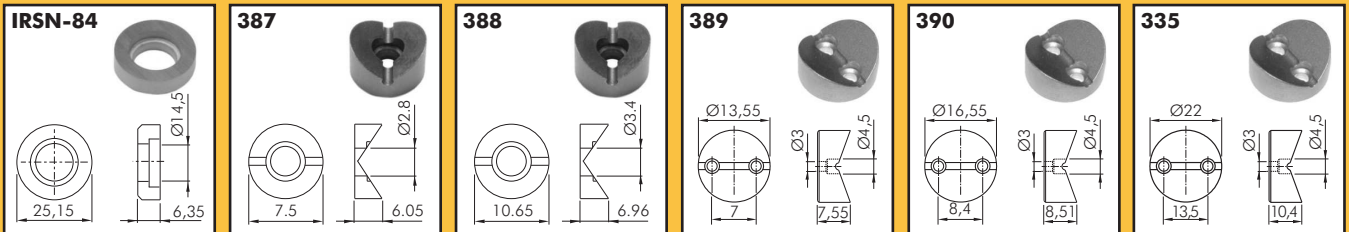
Threading

Drills



Cartridges

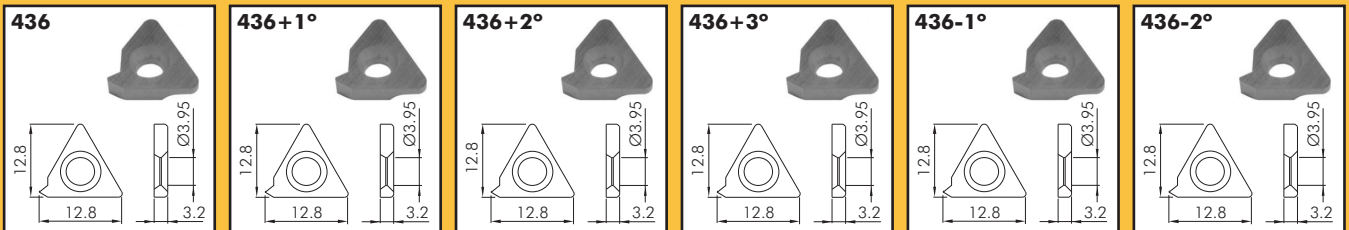
Brazed tools



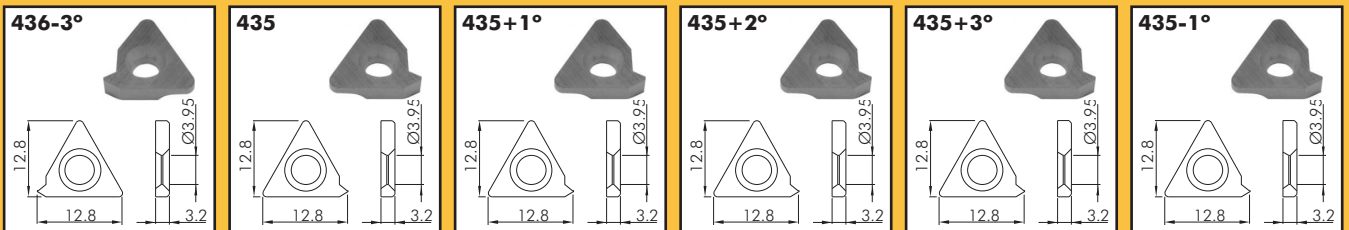
Milling cutters

Threading / Shim seats - Sous-plaquettes pour outils de filetage - Unterlegplatten für Gewindedreh-Werkzeuge

Solid carbide



Boring heads



Arbors & adaptors

| | | | | | |
|-------------------|-------------------|-----------------|----------------|----------------|----------------|
| 435-2° | 435-3° | 343 | 346 | YE3 | YE4 |
| YI3 | YI4 | YI5 | | | |
| 318R | 330R | 330L | | | |

Trigon / Shim seats - Sous-plaquettes trigones - Trigon Unterlegplatten

| | | | | | |
|----------------|----------------|--|----------------|----------------|---------------------|
| 307 | 308 | | 304 | 329 | IWSN-433 |
|----------------|----------------|--|----------------|----------------|---------------------|

KNUX/ Shim seats - Sous-plaquettes pour plaquettes KNUX - Unterlegplatten für KNUX-Wendepplatten

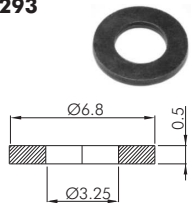
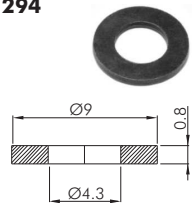
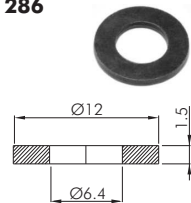
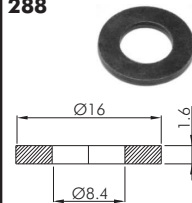
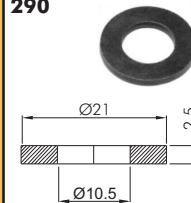
| | | | | | |
|----------------|----------------|--|--|--|--|
| 327 | 328 | | | | |
|----------------|----------------|--|--|--|--|

Others - Autres - Andere

| | | | | | |
|----------------|----------------|----------------|----------------|----------------|--|
| 009 | 002 | 005 | 029 | 035 | |
|----------------|----------------|----------------|----------------|----------------|--|

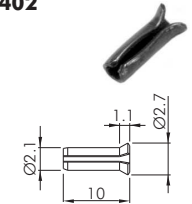
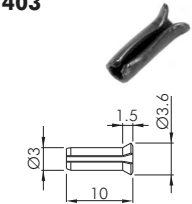
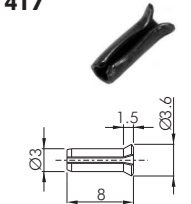
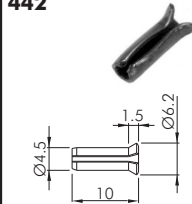
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

| | | | | | |
|---|---|---|--|---|--|
| 293  | 294  | 286  | 288  | 290  | |
|---|---|---|--|---|--|

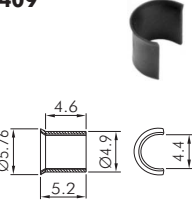
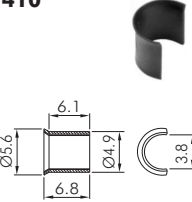
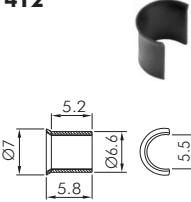
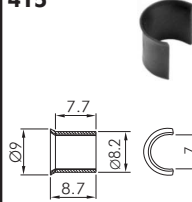
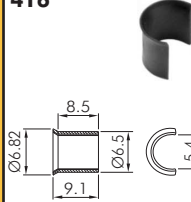
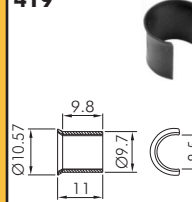
Turning

Automatic lathes

| | | | | | |
|---|---|---|--|--|--|
| 402  | 403  | 417  | 442  | | |
|---|---|---|--|--|--|

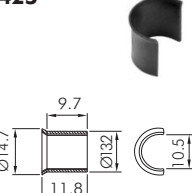
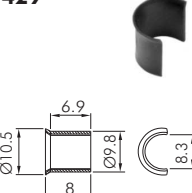
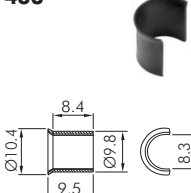
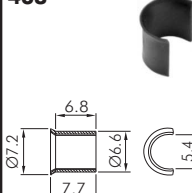
Ceramic tools

Parting & grooving

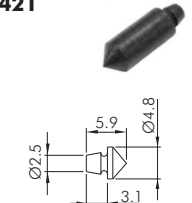
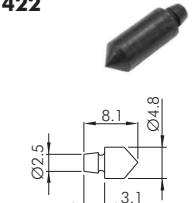
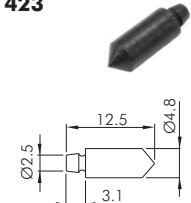
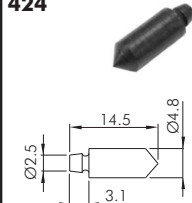
| | | | | | |
|---|---|---|--|---|---|
| 409  | 410  | 412  | 415  | 416  | 419  |
|---|---|---|--|---|---|

Threading

Drills

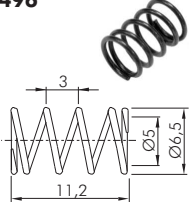
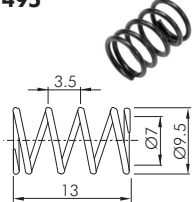
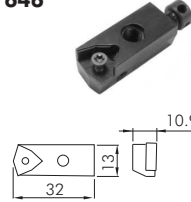
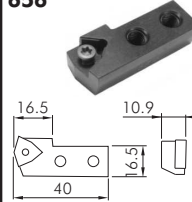
| | | | | | |
|--|--|--|---|--|--|
| 425  | 429  | 433  | 438  | | |
|--|--|--|---|--|--|

Cartridges

| | | | | | |
|---|---|---|--|--|--|
| 421  | 422  | 423  | 424  | | |
|---|---|---|--|--|--|

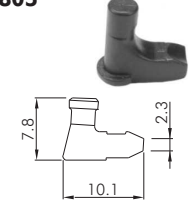
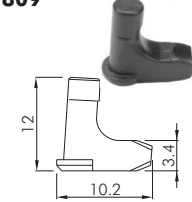
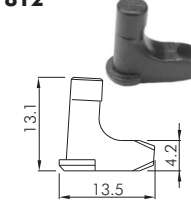
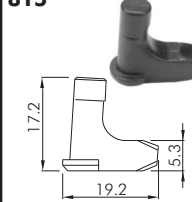
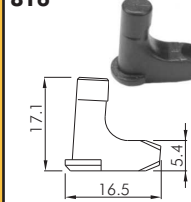
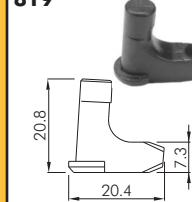
Brazed tools

Milling cutters

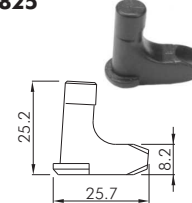
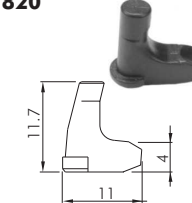
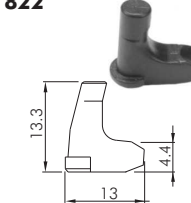
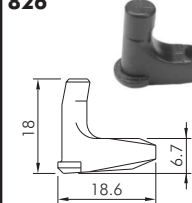
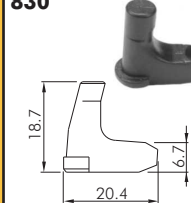
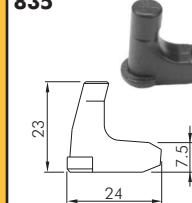
| | | | | | |
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| | | | | | |
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Allen Wrenches - Clés Allen - Allen Schlüssel

| | | | | | |
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Cartridges



CLS Wrenches - Clés CLS - Schlüssel für CLS

| | | | | | |
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| 501  | 524  Allen 4 | 500  Allen 5 | | | |
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Blades Wrenches - Clés pour les lames - Schlüssel für Stechschwerter

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KIMU Mecànic, S.A.

Conditions of sale:

All sales are made in accordance with our standard conditions of sale, current at the time orders are accepted. Specifications and prices subject to change without notice.

Product warranty:

KIMU Mecànic will repair or replace any of its products, which in its judgement, are found to be defective in material or workmanship. All claims must be made in writing within thirty days after receipt of product. No claims for labor or damages will be allowed. In no event shall KIMU Mecànic be liable for consequential or special damages of any kind.

Special tool quotation:

Orders for special tools must be confirmed in writing before manufacturing can begin. Special items and non-stock standard items cannot be cancelled or returned for exchange or credit.

Delivery terms:

Barcelona. Full transportation costs will be charged to the buyer. Specify shipment to be made by other than regular means of transportation.

Claims:

Claims for loss in transit must be made against the transportation company. The foregoing shall constitute the sole and exclusive remedies of the customer and are in lieu of all other warranties, expressed, implied or statutory, including but not limited to any implied warranty of merchantability or fitness.

Returns:

No merchandise will be accepted for return after 30 days of shipment. All returns must be pre-paid and must be accompanied by our Return Goods Authorization (RGA) number. This number must appear on the outside of the box. Merchandise must be received in good condition or will be refused.

Conditions de vente:

Toutes les ventes sont en accord avec nos conditions générales de vente, en vigueur au moment d'accepter les commandes. Les spécifications et les prix sont sujets à changement sans préavis.

Garantie de produit:

KIMU Mecànic réparera ou remplacera tout produit qui soit considéré défectueux en ce qui concerne le matériel et la fabrication. Toutes les réclamations doivent être faites par écrit maximum trente jours après la réception du produit. Aucune réclamation pour le travail ou les dommages ne sera permise. KIMU Mecànic ne sera en aucun cas responsable pour les dommages importants ou spéciaux de n'importe quelle sorte.

Offres d'outils spéciaux:

Les commandes pour les outils spéciaux doivent être confirmées par écrit avant que la fabrication puisse commencer. Les articles spéciaux et les articles standards non-stockés ne peuvent pas être annulés ou retournés pour échange ou crédit.

Conditions de livraison:

Barcelone. Les frais de transport complets seront chargés à l'acheteur. Si le transport doit être fait par un autre moyen qui ne soit pas l'habituel, cela devra être spécifié.

Réclamations:

Les réclamations pour pertes pendant le transit doivent être faites contre la compagnie de transport. Cela constituera le remède seul et exclusif du client et est à la place de toutes les autres garanties, exprimées, impliquées ou statutaires, en incluant, mais non limitées à n'importe quelle garantie implicite de valeur marchande ou d'aptitude.

Retours:

Aucune marchandise ne sera acceptée pour le retour après 30 jours de l'expédition. Tous les retours doivent être envoyés en port payé et doivent être accompagnés par notre numéro d'Autorisation de Retour de Marchandises (RGA). Ce numéro doit apparaître sur l'extérieur de la boîte. Les marchandises doivent être reçues en bon état ou seront refusées.

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Verkaufsbedingungen:

Alle Verkäufe werden in Übereinstimmung mit unseren Standard-Lieferbedingungen gemacht, die gültig waren wenn die Bestellungen akzeptiert worden sind. Spezifizierungen und Preise können ohne Benachrichtigung geändert werden.

Produktgarantie:

KIMU Mecànic wird die Produkte ersetzen oder reparieren, die ihrer Meinung nach, einen Defekt der Materialien oder der Herstellung haben. Alle Ansprüche müssen schriftlich innerhalb von dreißig Tagen nach der Einnahme des Produktes erhoben werden. Kein Anspruch auf die Arbeit oder Schäden wird erlaubt. In keinem Fall wird KIMU Mecànic für Folgeschäden jeder Art verantwortlich sein.

Angebote für Sonderwerkzeuge:

Die Bestellungen von Sonderwerkzeuge müssen schriftlich bestätigt werden, bevor Herstellung beginnen kann. Sonderwerkzeuge und nicht auf Lager liegende Standardwerkzeuge können nicht storniert oder für den Austausch oder Kredit zurückgegeben werden.

Lieferbedingungen:

Alle Transportkosten sind vom Käufer zu bezahlen. Der Käufer muß den Verkäufer informieren, wenn er eine Sendung durch einem anderen Transportmittel gemacht werden muß, das nicht das gewöhnliche ist.

Einsprüche:

Ansprüche auf den Verlust während der Fahrt müssen gegen die Transport-Gesellschaft erhoben werden. Das Vorstehende soll die alleinigen und exklusiven Hilfsmittel des Kunden einsetzen und wird anstatt aller anderen Garantien (ausgedrückt, einbezogen oder gesetzlich, einschließlich, aber nicht beschränkt auf jede implizierte Garantie der Marktfähigkeit oder Eignung) angewendet.

Rückgaben:

Keine Waren werden für die Rückgabe 30 Tagen nach dem Versanddatum akzeptiert. Alle Rückgaben müssen frei Haus geschickt werden und mit unserer Rückgabe-Genehmigungsnummer (RGA) begleitet werden. Diese Nummer muss auf der Außenseite des Kartons erscheinen. Waren müssen in gutem Zustand erhalten werden oder werden verweigert.

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KIMU Mecànic, S.A.

This catalog contains information and specifications concerning cutting tools sold by KIMU Mecànic. Although some of the cutting tools made from carbides are very tough and resist breakage, most are brittle and special safety precautions are required when using them.

Small fragment and chips may be thrown from a cutting tool when a fracture occurs. Since these fragments or chips are thrown at very high speeds and are very hot, contact with the skin or eyes could cause severe injury. Also, the grinding of these cutting tools will produce fine carbide and cobalt or nickel dust which may be harmful to the lungs. Listed below are some suggestions on how to minimize the potential for injury while using cutting tools.

For more information about the product hazards and safety precautions that must be taken to minimize the possibility of injury while using cutting tools, please call your KIMU Mecànic Sales Engineer.

KIMU Mecànic has no control over use of these cutting tools. The user must determine the suitability of these tools in its particular application.

WARNING: Very hot chip fragments may be thrown from cutting tools at very high speeds. These chips can cause severe burns, cuts or punctures to the skin, or damage to the eyes. The following are some of the safety precautions that must be followed by operators and observers while using cutting tools:

1. Make sure that the insert size and shape are adequate for use to which it is being put.
2. Chip control is necessary to prevent a continuous chip catching in the workpiece.
3. Chips are very hot and have sharp edges and should not be moved by hand.
4. Turn off the machine whenever chips are removed or when the cutting tools are changed.
5. Do not use air hoses to blow chips away from the machine.
6. To prevent tool breakage use the correct size toolholder.
7. Make sure that the overhang on the toolholder is as short as possible. Too much overhang can result in chatter and tool breakage.
8. To prevent the workpiece from coming loose during use, be sure the workpiece is tight and secure in its holder.
9. Overloading of tungsten carbide cutting tools may cause fractures of these tools.
10. A slug may be ejected at high speeds during drilling.

To protect the operator and observer from possible flying objects which could result in severe injury, the following protective devices should be worn or used while using cutting tools:

1. Wear hard hats.
2. Wear safety glasses with side shields.
3. Wear closed shoes with steel toes.
4. Keep protective enclosure on machine in place during operation.

WARNING: Grinding or finishing carbide produces fine carbide and cobalt or nickel dust. This dust may cause injury to the lungs. Operators and observers must take the following safety precautions to minimize the possibility of such injury:

1. Use with adequate ventilation.
2. Maintain the dust or mist level below recommended levels.
3. Avoid breathing dust or mist. If not possible, wear appropriate respirators, particularly when grinding tungsten carbide.
4. Minimize prolonged skin contact.
5. Wash hands thoroughly after handling.

WARNING: Use of cutting fluids and work materials create hazards. Be careful at all times.

1. Keep the cutting fluid clean so no particles can be carried back across the workpiece and possibly scratch it.
2. Cutting fluids may catch on fire when exposed to high temperatures generated during cutting.
3. Work materials such as aluminium, magnesium, uranium and titanium are flammable and could catch on fire.
4. Cutting fluids should be treated or replaced to reduce bacterial levels which may cause illness.

-WARNING-

Speeds, Feeds and Grade information within this catalogue are for reference only. If the operator does not feel safe using our speeds, feeds and grades, then the operator should use what is comfortable to him or her. KIMU Mecànic is not responsible for any damage or injury that occurs using the speeds, feeds and grades information within catalogue.

**Conditions, terms, and prices are subject to change without notice.
Any typographical or other error in this catalogue is subject to correction.**

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KIMU Mecànic, S.A.

Ce catalogue contient des renseignements et des spécifications concernant les outils coupants vendus par KIMU Mecànic. Bien que certains des outils coupants faits en carbure sont très durs et résistent la casse, la plupart est fragile et les précautions de sécurité spéciales sont requises lors de leur utilisation.

Quand une fracture se produit, des petits fragments et des copeaux peuvent être lancés d'un outil coupant. Étant donné que ces fragments ou copeaux sont projetés à des vitesses très élevées et sont très chauds, le contact avec la peau ou les yeux peut provoquer des blessures graves. En outre, l'affûtage de ces outils de coupe peut produire des fines poussières de carbure, cobalt ou nickel, qui peuvent être nocives pour les poumons. Veuillez trouver ci-dessous quelques suggestions sur la façon de minimiser les risques de blessures lors de l'utilisation des outils de coupe.

Pour plus de renseignements sur les hasards du produit et les précautions de sécurité qui doivent être prises pour minimiser la possibilité de blessures lors de l'utilisation des outils de coupe, s'il vous plaît appelez votre ingénieur de ventes chez KIMU Mecànic.

KIMU Mecànic n'a aucun contrôle sur l'utilisation de ces outils coupants. L'utilisateur doit déterminer la convenance de ces outils pour son utilisation particulière.

AVERTISSEMENT: Des fragments de copeaux très chauds peuvent être lancés des outils de coupe à des vitesses très élevées. Ces copeaux peuvent provoquer des brûlures sévères, des coupures ou des ponctions à la peau, ou des dommages aux yeux. Voici quelques précautions de sécurité qui doivent être suivies par l'opérateur et les observateurs lors de l'utilisation des outils de coupe:

1. Assurez-vous que les dimensions et la forme de la plaquette sont appropriées pour l'utilisation à laquelle vous la destinez.
2. Le contrôle des copeaux est nécessaire pour empêcher que les copeaux soient continuellement pris dans la pièce à usiner.
3. Les copeaux sont très chauds et ont des bords pointus, pourtant ils ne devraient pas être déplacés avec les mains.
4. Éteignez la machine chaque fois que les copeaux soient enlevés ou quand les outils coupants soient changés.
5. N'utilisez pas de tuyaux d'air pour enlever les copeaux de la machine.
6. Pour prévenir la casse de l'outil, veuillez utiliser un outil de dimensions correctes.
7. Assurez-vous que le surplomb de l'outil soit le plus court possible. Un surplomb trop grand peut provoquer des vibrations et la fracture de l'outil.
8. Pour empêcher que la pièce à usiner se desserre pendant l'utilisation, vérifiez que la pièce à usiner est bien serrée et sûre à sa place.
9. La surcharge des outils coupants en carbure de tungstène peut provoquer des fractures de ces outils.
10. Un disque peut être éjecté à grande vitesse pendant le forage.

Pour protéger l'opérateur et l'observateur des possibles objets volants qui pourraient entraîner des blessures graves, les dispositifs de protection suivants doivent être portés ou utilisés lors de l'utilisation des outils coupants:

1. Portez des casques de sécurité
2. Portez des lunettes de sécurité avec des protections latérales.
3. Portez des chaussures fermées avec des pointes d'acier.
4. Tenez la clôture protectrice en place sur la machine pendant l'opération.

AVERTISSEMENT: L'affûtage ou la finition de carbure peut produire des fines poussières de carbure, cobalt ou nickel. Ces poussières peuvent produire des blessures aux poumons. Les opérateurs et les observateurs doivent prendre les précautions de sécurité suivantes afin de minimiser la possibilité de ces blessures:

1. Utilisez avec une ventilation adéquate.
2. Maintenez le niveau de la poussière ou du brouillard au-dessous des niveaux recommandés.
3. Évitez de respirer la poussière ou le brouillard. Si ce n'est pas possible, portez des masques appropriés, en particulier quand vous affûtez du carbure de tungstène.
4. Minimisez le contact prolongé avec la peau.
5. Lavez-vous les mains soigneusement après la manipulation.

AVERTISSEMENT: L'utilisation des fluides de coupe et de matériel de travail, créent des risques. Soyez prudent en tout temps.

1. Tenez les fluides propres de sorte que aucune particule ne puisse être reportée en arrière à travers la pièce à usiner et éventuellement la rayer.
2. Les fluides de coupe peuvent prendre feu quand ils sont exposés aux hautes températures produites pendant l'usinage.
3. Les matières telles que l'aluminium, le magnésium, l'uranium et le titane sont inflammables et pourraient prendre feu.
4. Les fluides de coupe devraient être traités ou remplacés pour réduire les niveaux bactériens qui pourraient provoquer des maladies.

-AVERTISSEMENT-

Les renseignements sur les vitesses, les avances et les nuances indiqués dans ce catalogue sont seulement indicatifs. Si l'opérateur ne se sent pas sûr en utilisant nos vitesses, avances et nuances, alors il devrait utiliser ce qui est confortable pour lui. KIMU Mecànic n'est pas responsable des dommages ou blessures qui se produisent en utilisant les vitesses, avances et renseignements des nuances dans le catalogue.

Les conditions, les termes et les prix sont sujets à changements sans préavis. Toute erreur typographique ou autre erreur dans ce catalogue est sujet à correction.

KIMU Mecànic, S.A.

Dieser Katalog enthält Information und Spezifizierungen bezüglich Schneidwerkzeugen, die durch KIMU Mecànic verkauft sind. Obwohl einige der aus Hartmetall gemachten Schneidwerkzeuge sehr zäh sind und Brechung widerstehen, sind die meisten spröde, und spezielle Sicherheitsvorsichtsmaßnahmen sind erforderlich, wenn man sie verwendet.

Kleine Bruchstücke und Späne können von einem Schneidwerkzeug geworfen werden, wenn ein Bruch vorkommt. Da diese Bruchstücke oder Späne mit sehr hohen Geschwindigkeiten geworfen werden und sehr heiß sind, können sie strenge Verletzungen verursachen wenn sie mit der Haut oder mit den Augen in Verbindung treten. Außerdem wird der Schleifen dieser Schneidwerkzeuge feines Karbid- und Kobalt- oder Nickel-Staub erzeugen, der für die Lungen schädlich sein kann. Verzeichnet unten sind einige Vorschläge darauf, wie man das Potenzial für Verletzungen minimiert, wenn man Schneidwerkzeugen verwendet.

Für mehr Information über die Produktgefahren und Sicherheitsvorsichtsmaßnahmen, die genommen werden müssen, um die Möglichkeit der Verletzung zu minimieren, wenn Sie Schneidwerkzeugen verwenden, rufen Sie bitte Ihren KIMU Mecànic Verkaufsspezialisten an.

KIMU Mecànic hat keine Kontrolle über den Gebrauch dieser Schneidwerkzeuge. Der Benutzer muss die Eignung dieser Werkzeuge in seiner besonderen Anwendung bestimmen.

WARNUNG: Sehr heiße Span-Bruchstücke können von den Schneidwerkzeugen mit sehr hohen Geschwindigkeiten geworfen werden. Diese Späne können strenge Brandwunden, Schnitte oder Einstiche zur Haut verursachen, oder den Augen beschädigen. Folgend sind einige der Sicherheitsvorsichtsmaßnahmen, denen von Maschinenbedienern und Beobachtern gefolgt werden müssen, wenn sie Schneidwerkzeuge verwenden:

1. Stellen Sie sicher, dass die Größe und Form der Wendeschneidplatte für den Gebrauch entsprechend sind, zu dem gestellt worden sind.
2. Span-Kontrolle ist notwendig, um zu verhindern, daß die Späne dauernd im Werkstück greifen.
3. Späne sind sehr heiß und haben scharfe Ränder und sollten nicht mit der Hand berührt werden.
4. Schalten Sie die Maschine ab, immer wenn die Späne entfernt werden, oder wenn die Schneidwerkzeuge gewechselt werden.
5. Verwenden Sie keine Luftschläuche, um die Späne von der Maschine wegzublasen.
6. Um Werkzeug-Brechung zu verhindern, verwenden Sie die richtigen Größe des Werkzeughalters.
7. Stellen Sie sicher, daß die Auskrägung auf dem Werkzeughalter so kurz wie möglich ist. Zu viele Auskrägung kann Schwingungen und Werkzeug-Brechung verursachen.
8. Um zu vermeiden, daß das Werkstück lose während des Gebrauches wird, überprüfen Sie, daß das Werkstück fest und sicher geklemmt ist.
9. Die Überbelastung von Hartmetall-Schneidwerkzeugen kann Brüche dieser Werkzeuge verursachen.
10. Ein Klumpen kann mit hohen Geschwindigkeiten während des Bohrens geworfen werden.

Um den Maschinenbediener und Beobachter von möglichen fliegenden Gegenständen zu schützen, die Verletzungen verursachen konnten, sollten die folgenden Schutzgeräte getragen oder verwendet werden, wenn man Schneidwerkzeuge verwendet:

1. Tragen Sie harte Hüte.
2. Tragen Sie Sicherheitsbrille mit Seitenschildern.
3. Tragen Sie geschlossene Schuhe mit Stahlspitzen.
4. Behalten Sie die Schutzwand der Maschine im Platz während der Operation.

WARNUNG: Hartmetall schleifen oder fertigen erzeugt feines Karbid- und Kobalt- oder Nickel-Staub. Dieser Staub kann Verletzungen zu den Lungen verursachen. Maschinenbediener und Beobachter müssen die folgenden Sicherheitsvorsichtsmaßnahmen nehmen, um die Möglichkeit solcher Verletzung zu minimieren:

1. Verwenden Sie es mit der entsprechenden Lüftung.
2. Behalten Sie den Staub oder das Nebel-Niveau unter des empfohlenen Niveaus.
3. Vermeiden Sie, den Staub oder das Nebel zu atmen. Wenn nicht möglich, dann verwenden Sie Atemschutzmasken, besonders wenn Sie Karbid schleifen.
4. Minimieren Sie den verlängerten Hautkontakt.
5. Waschen Sie sich die Hände gründlich nach dem Berühren.

WARNUNG: Der Gebrauch von Schneidflüssigkeiten und Arbeitsmaterialien schafft Gefahren. Seien Sie zu jeder Zeit sorgfältig.

1. Halten Sie die Schneidflüssigkeit sauber, sodaß keine Partikeln das Werkstück kratzen können.
2. Schneidflüssigkeiten können im Brand geraten, wenn sie zu den hohen Temperaturen ausgestellt werden, die beim Schneiden erzeugt worden sind.
3. Arbeitsmaterialien wie Aluminium, Magnesium, Uran und Titan sind feuergefährlich und konnten im Brand geraten.
4. Schneidflüssigkeiten sollten behandelt oder ersetzt werden, um das Bakterienniveau zu reduzieren, die Krankheiten verursachen können.

-WARNUNG-

Informationen über Geschwindigkeiten, Vorschübe und Sorten innerhalb dieses Katalogs sind nur als Hinweis zu benutzen. Wenn der Maschinenbediener sich nicht sicher fühlt, indem er unsere Geschwindigkeiten, Vorschübe und Sorten verwendet, dann sollte der Maschinenbediener verwenden, was am bequemster zu ihm oder ihr ist. Kimu Mecànic ist für jeden Schaden oder Verletzung nicht verantwortlich, die vorkommen kann, wenn man die Informationen über Geschwindigkeiten, Vorschübe und Sorten verwendet, die in diesem Katalog sind.

**Bedingungen, Fristen und Preise sind Änderungen vorbehalten.
Irgendwelcher typografischer oder anderer Fehler in diesem Katalog ist der Korrektur unterworfen.**

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

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TURNING AND MILLING



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