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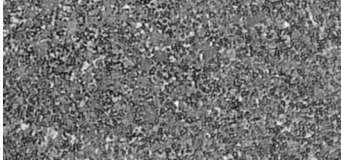
Brazed
tools

Milling
cutters

Solid
carbide

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heads

Arbors &
adaptors



K15K

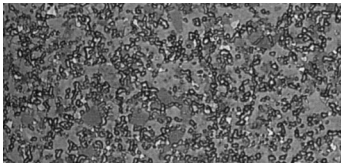
K10

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.

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

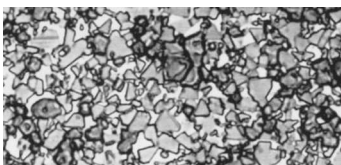
P25 - M20

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.

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

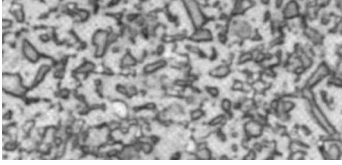
P40 - M30

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

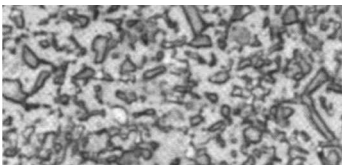
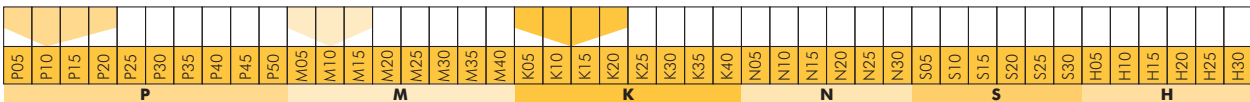
P15 - M10 - K10

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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lathes

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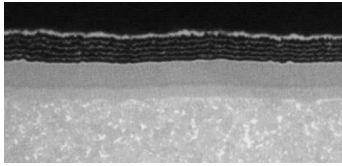
Brazed
tools

Milling
cutters

Solid
carbide

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heads

Arbors &
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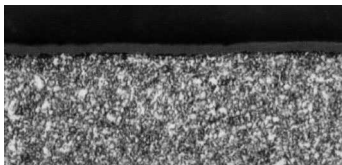
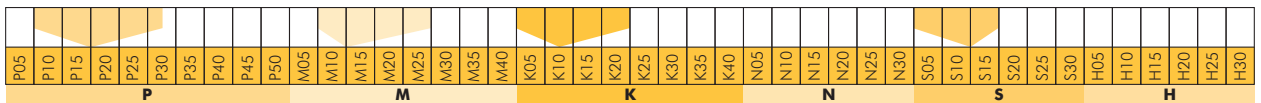
TIC15

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.



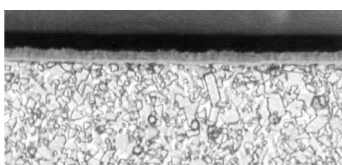
TIC17

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

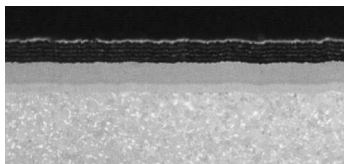
P20 - M20 - K15

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.





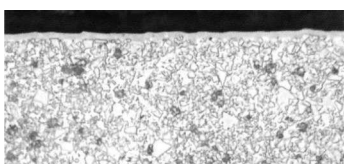
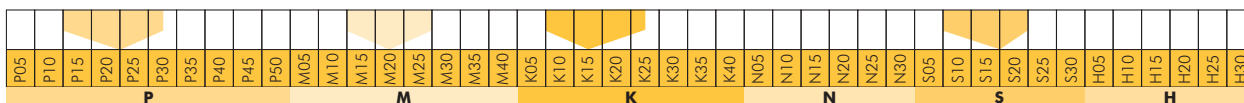
TIC20

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.



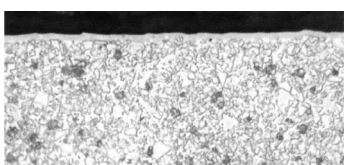
TIC25

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.



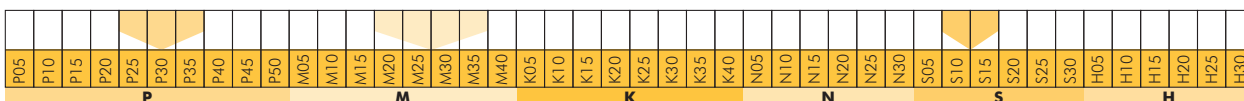
TIC28

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																
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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 reliante 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

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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.

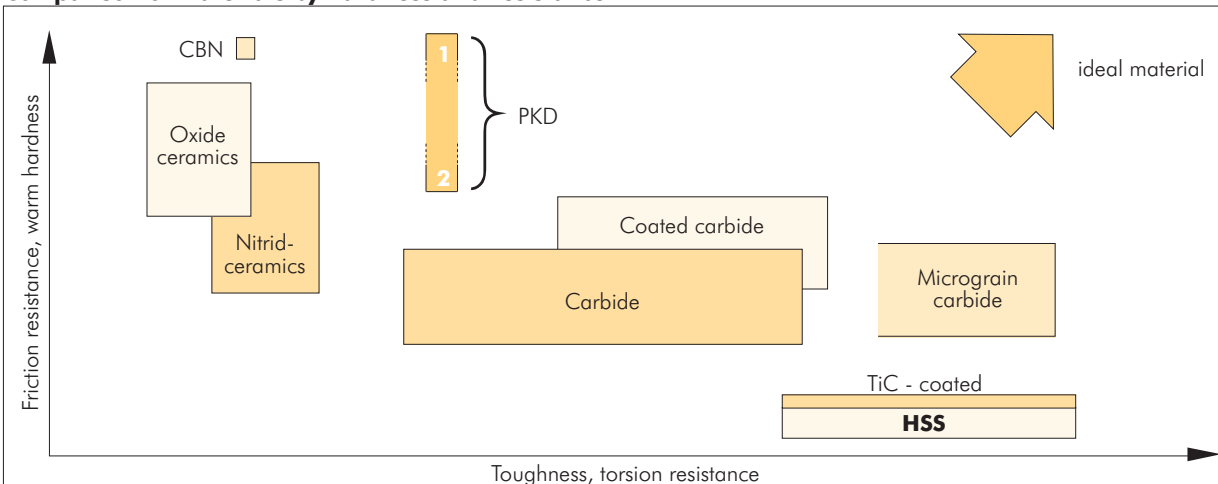
Le PKD se compose d'une couche de diamant d'épaisseur 0,5 millimètres, qui est inséparablement rattachée à une base de carbure. Cette couche de diamant polycristallin s'origine à une opération de pressage, laquelle fait attacher de très petits grains de diamant moyennant un liant métallique. Cette nuance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

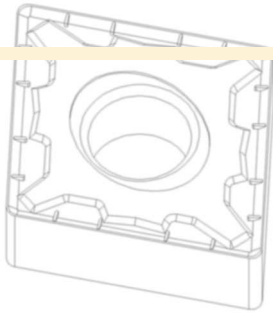
Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

Arbors &
adaptors

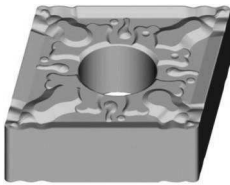


BASIC GEOMETRIES

- 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).

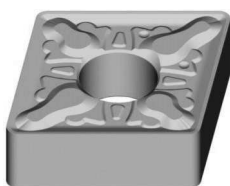
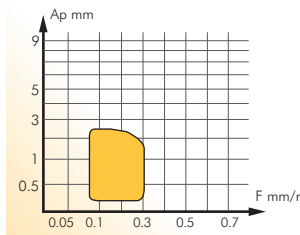
Main application area: Cutting depth (A_p): 0,2 - 2,5 mm
Feed (f): 0,08 - 0,3 mm

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.

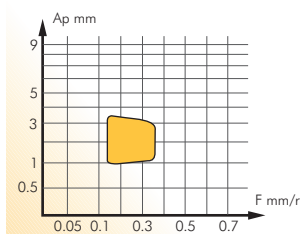
Main application area: Cutting depth (A_p): 1,0 - 3,5 mm
Feed (f): 0,15 - 0,35 mm

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

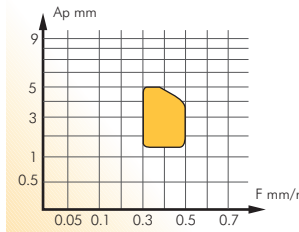




-CR Geometry

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

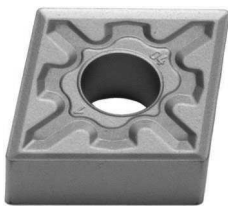


C'est le brise-copeaux le plus résistant pour les plaquettes réversibles. Le brise-copeaux CR est approprié pour des hauts avances et aussi pour des profondeurs de coupe demandées normalement pour des plaquettes d'une seule face. Le brise-copeaux a une large arête négative, laquelle proportionne une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

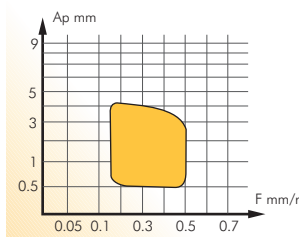
Haupt-Einsatzbereich: Schnitttiefe (A_p): 1,5 - 5 mm
Vorschub (f): 0,3 - 0,5 mm



-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.

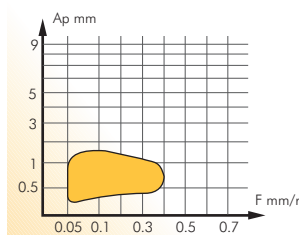
Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 4,0 mm
Vorschub (f): 0,15 - 0,5 mm



-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
toolsMilling
cuttersSolid
carbideBoring
headsArbors &
adaptors

Inserts

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
carbide

Boring
heads

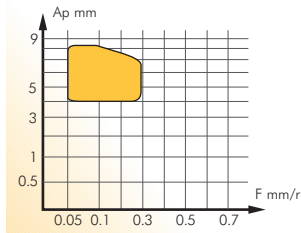
Arbors &
adaptors



-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.

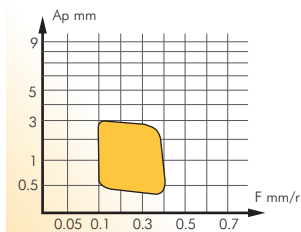
Haupt-Einsatzbereich: Schnitttiefe (A_p): 0,5 - 2,5 mm
Vorschub (f): 0,05 - 0,25 mm



-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: Schnitttiefe (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.

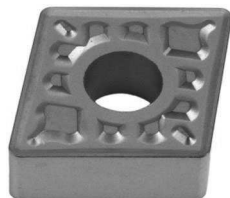
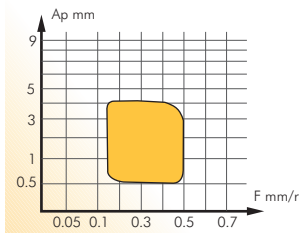
Main application area: Cutting depth (A_p): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm

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.

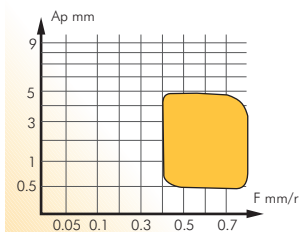
Excellente performance sur les aciers et matériaux qui durcissent quand on les usine.

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

Turning

Automatic
lathes

Ceramic
tools

Parting &
grooving

Threading

Drills

Cartridges

Brazed
tools

Milling
cutters

Solid
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.

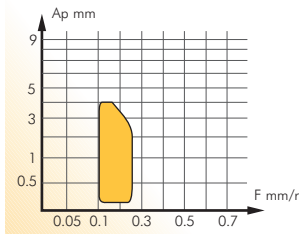
Main application area: Cutting depth (A_p): 0,1 - 4 mm
Feed (f): 0,1 - 0,25 mm

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.

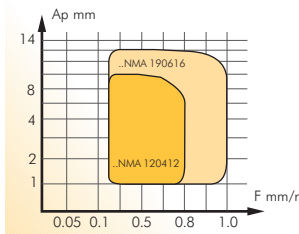
Main application area: Cutting depth (A_p): 1 - 12 mm
Feed (f): 0,2 - 1 mm

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

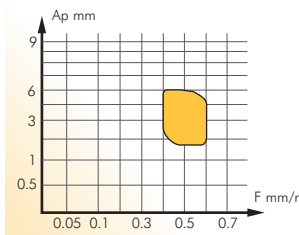
Brise-copeaux pour plaquettes simples.

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.

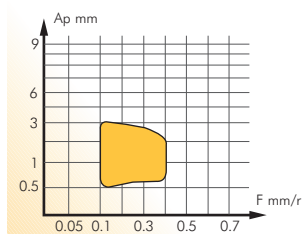
Main application area: Cutting depth (A_p): 0,5 - 3 mm
Feed (f): 0,1 - 0,4 mm

Plaquettes positives/négatives 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.

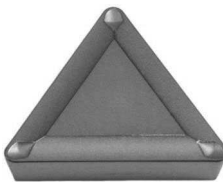
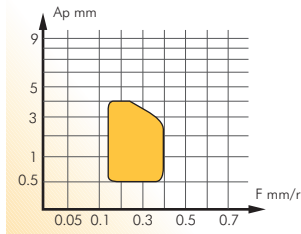
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

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.

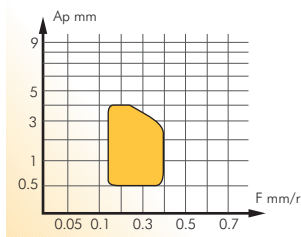
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm

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.

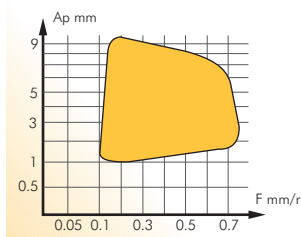
Main application area: Cutting depth (A_p): 1 - 10 mm
Feed (f): 0,1 - 0,75 mm

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.

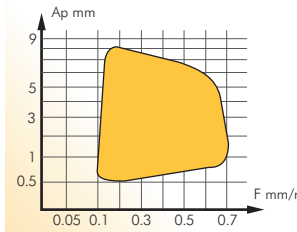
Main application area: Cutting depth (A_p): 0,5 - 8 mm
Feed (f): 0,1 - 0,7 mm

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.

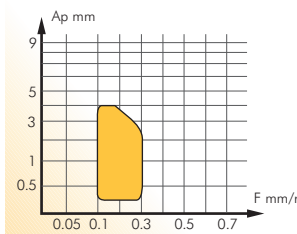
Main application area: Cutting depth (A_p): 0,2 - 4 mm
Feed (f): 0,1 - 0,3 mm

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

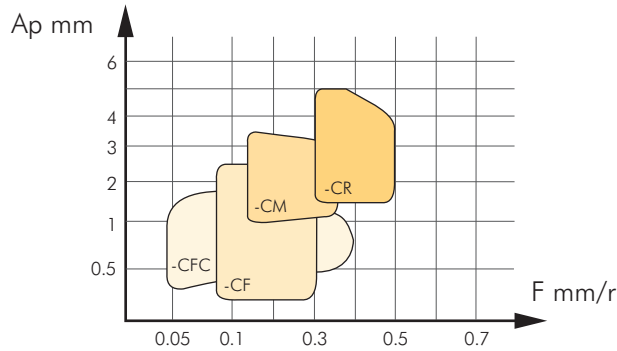
Solid carbide

Boring heads

Arbors & adaptors

Complementary geometries (steel)

1 - Select geometry



2 - Select grade

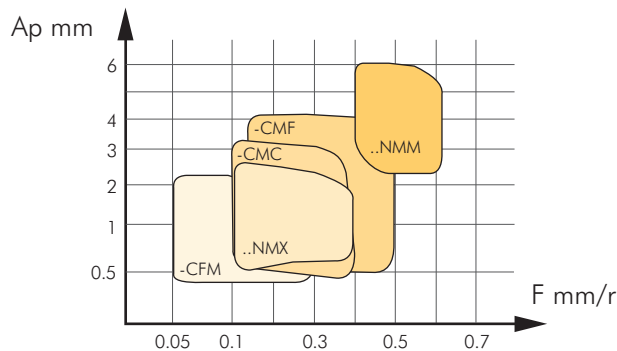
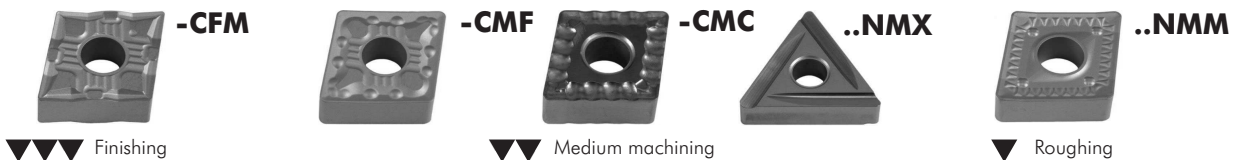
Cutting condition

	▼▼▼▼ 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

1 - Select geometry



2 - Select grade

Cutting condition

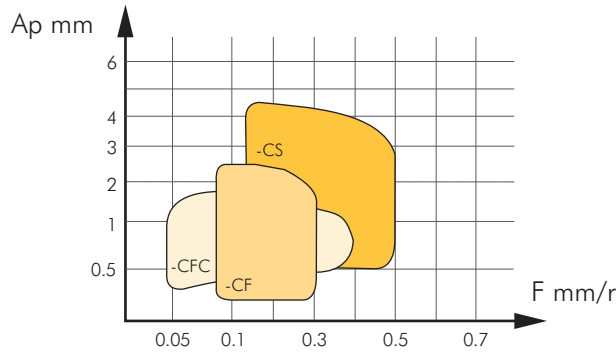
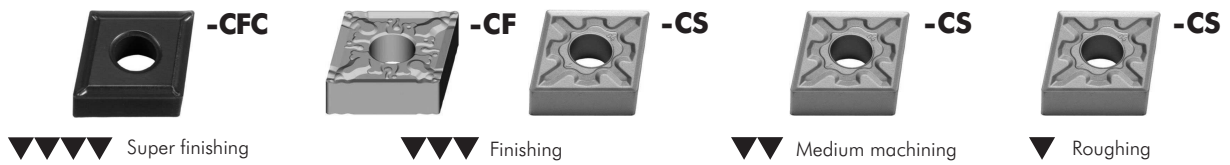
	▼▼▼ Finishing	▼▼ Medium machining	▼ Roughing
⊗ Interrupted cut	TIC30	TIC30	TIC30
○ Inconsistent cut	TIC15 - TIC30	CK30 - TIC20 - TIC30	TIC30
● Consistent cut	TIC15	CK30 - TIC15 - TIC30	TIC30

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Stainless steel)

1 - Select geometry



2 - Select grade

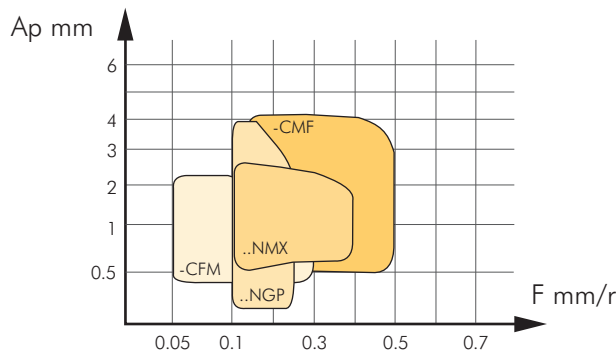
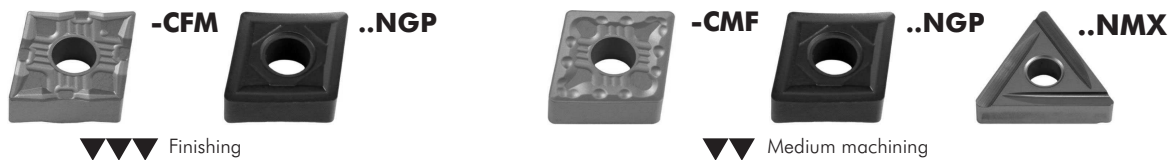
Cutting condition	Super finishing	Finishing	Medium machining	Roughing
Interrupted cut	-	TIC30 - TIC35	TIC30 - TIC35	TIC35
Inconsistent cut	CK30	TIC15 - TIC30 - TIC35	TIC30 - TIC35	TIC35
Consistent cut	CK30	TIC15 - TIC30 - TIC35	TIC30 - TIC35	TIC35

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

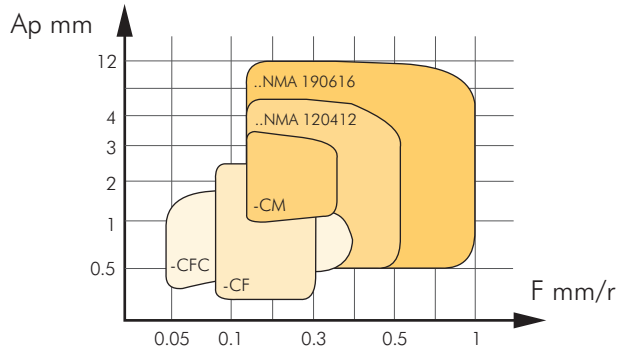
Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

1 - Select geometry



2 - Select grade

Cutting condition

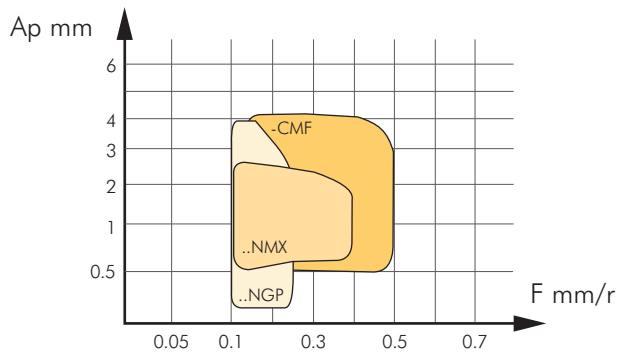
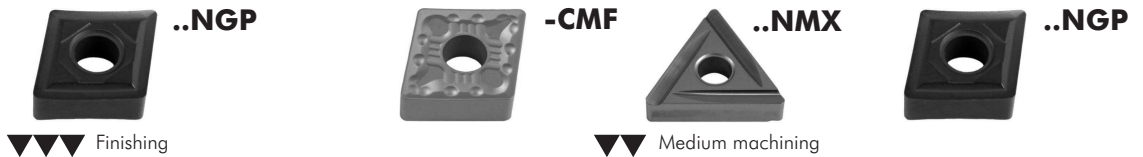
	Super finishing	Finishing	Medium machining	Roughing
⊗ Interrupted cut	-	TIC15	TIC15 - TIC17	TIC15 - TIC17
⊖ Inconsistent cut	CK30	TIC15	TIC15 - TIC17	TIC15 - TIC17
⊙ Consistent cut	CK30	TIC15	TIC15 - TIC17	TIC15 - TIC17

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (Cast iron)

1 - Select geometry



2 - Select grade

Cutting condition

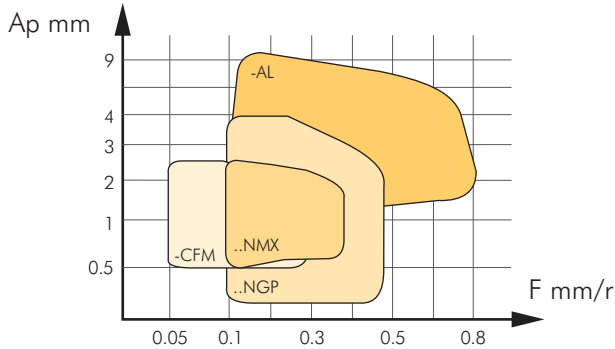
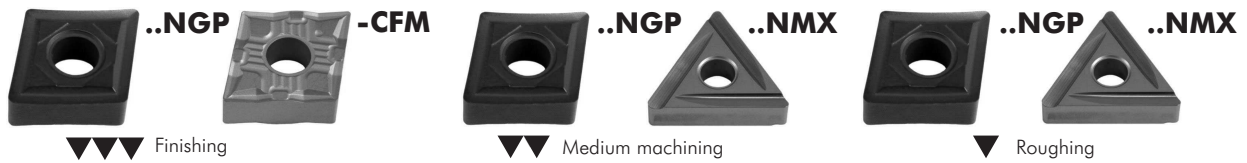
	Finishing	Medium machining
⊗ Interrupted cut	TIC15 - TIC17	CK30 - TIC15 - TIC17
⊖ Inconsistent cut	CK30 - TIC15 - TIC17	CK30 - TIC15 - TIC17
⊙ Consistent cut	CK30 - TIC15 - TIC17	CK30 - TIC15 - TIC17

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

- Interrupted cut
- Inconsistent cut
- Consistent cut

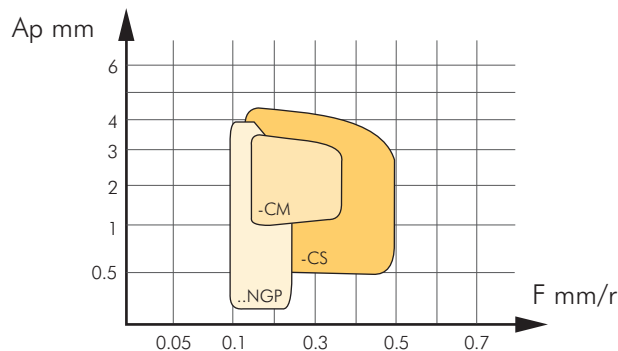
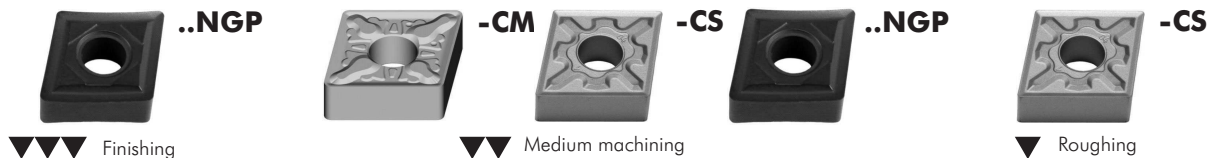
	Finishing	Medium machining	Roughing
	K15K - TIC15 - TIC17 - Z10R	CK30 - TIC17 - Z10R	CK30 - TIC17 - Z10R
	K15K - TIC15 - TIC17 - Z10R	CK30 - TIC17 - Z10R	CK30 - TIC17 - Z10R
	K15K - TIC15 - TIC17 - Z10R	CK30 - TIC17 - Z10R	CK30 - TIC17 - Z10R

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

- Interrupted cut
- Inconsistent cut
- Consistent cut

	Finishing	Medium machining	Roughing
	TIC17	TIC17 - TIC30 - TIC35	TIC35
	TIC17	TIC17 - TIC30 - TIC35	TIC35
	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

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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

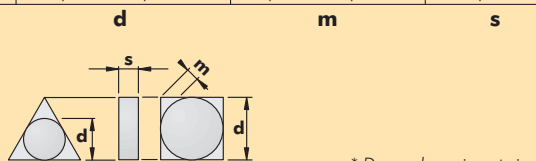
E

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



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.

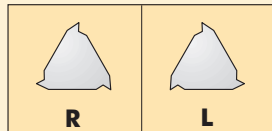
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts

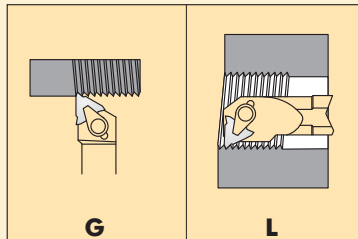
L 166 G - 3 B A 075

1 2 3 4 5 6 7

1



3



6

A	ISO mm.
C	SI
L	ISO Inch
K	Whitworth

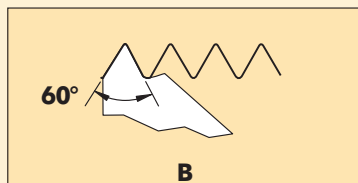
2



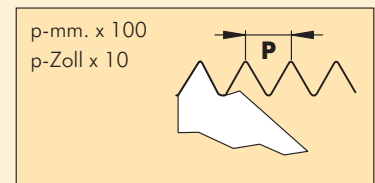
4

	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

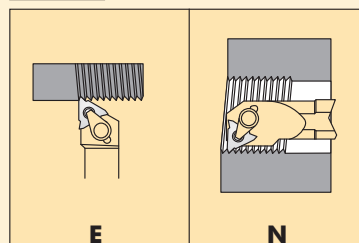
16 E L - AG 55

1 2 3 4 5

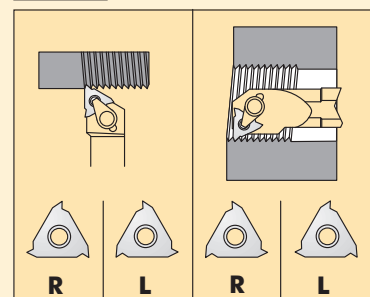
1

	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



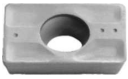





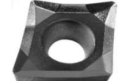

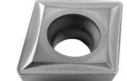
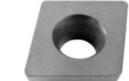
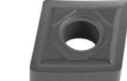

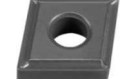
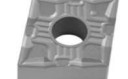
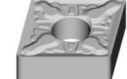

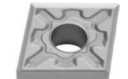
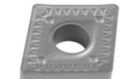


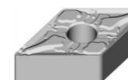
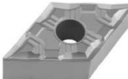
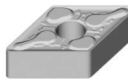




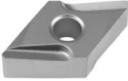
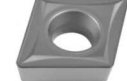

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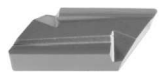



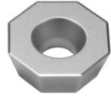



















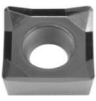











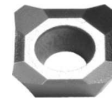



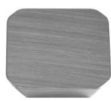







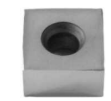





























	mm.	TPI
	A	0,5-1,5 48-16
	AG	0,5-3,0 48-8
	G	1,75-3,0 14-8
	N	3,5-5,0 7-5

p=mm. x 100
p=Inch x 10




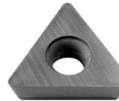
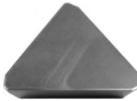

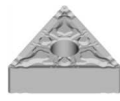

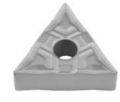


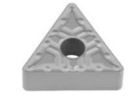
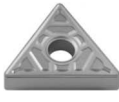


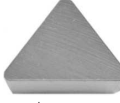
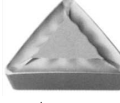











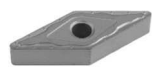

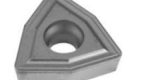
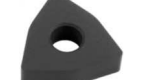
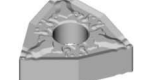



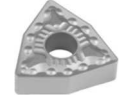
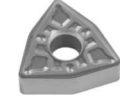




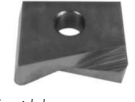




5

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 $\triangleleft 15^\circ$	ADMW  Rectangular Positive Page A.36 $\triangleleft 15^\circ$	ADMW-C  Rectangular Positive Page A.36 $\triangleleft 15^\circ$	ADMW-R  Rectangular Positive Page A.36 $\triangleleft 15^\circ$	APFT  Rectangular Positive Page A.36 $\triangleleft 11^\circ$	APHT-AL  Rectangular Positive Page A.36 $\triangleleft 11^\circ$	APKT  Rectangular Positive Page A.37 $\triangleleft 11^\circ$
Turning							
Automatic lathes	APKT-26  Rectangular Positive Page A.37 $\triangleleft 11^\circ$	APLT  Rectangular Positive Page A.37 $\triangleleft 11^\circ$	APLX  Rectangular Positive Page A.37 $\triangleleft 11^\circ$	APMT  Rectangular Positive Page A.37 $\triangleleft 11^\circ$	APMT-26  Rectangular Positive Page A.37 $\triangleleft 11^\circ$	APMW  Rectangular Positive Page A.38 $\triangleleft 11^\circ$	
Ceramic tools							
Parting & grooving	CCGT-AL  80° Rhombic Positive Page A.38 $\triangleleft 7^\circ$	CCGT-AP  80° Rhombic Positive Page A.38 $\triangleleft 7^\circ$	CCKT  80° Rhombic Positive Page A.38 $\triangleleft 7^\circ$	CCMT-03  80° Rhombic Positive Page A.38 $\triangleleft 7^\circ$	CCMW  80° Rhombic Positive Page A.38 $\triangleleft 7^\circ$	CNGP  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$	CNMA  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$
Threading	CNMG-CF  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$	CNMG-CFC  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$	CNMG-CFM  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$	CNMG-CM  80° Rhombic Negative Page A.39 $\triangleleft 0^\circ$	CNMG-CMC  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$	CNMG-CMF  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$	CNMG-CMR  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$
Drills							
Cartridges	CNMG-CR  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$	CNMG-CS  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$	CNMM  80° Rhombic Negative Page A.40 $\triangleleft 0^\circ$				
Brazed tools	DCGT-AL  55° Rhombic Positive Page A.41 $\triangleleft 7^\circ$	DCGT-AP  55° Rhombic Positive Page A.41 $\triangleleft 7^\circ$	DCMT-03  55° Rhombic Positive Page A.41 $\triangleleft 7^\circ$	DCMW  55° Rhombic Positive Page A.41 $\triangleleft 7^\circ$	DNGP  55° Rhombic Negative Page A.41 $\triangleleft 0^\circ$	DNMA  55° Rhombic Negative Page A.41 $\triangleleft 0^\circ$	DNMG-CF  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$
Milling cutters							
Solid carbide	DNMG-CFC  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$	DNMG-CFM  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$	DNMG-CM  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$	DNMG-CMC  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$	DNMG-CMF  55° Rhombic Negative Page A.42 $\triangleleft 0^\circ$	DNMG-CMR  55° Rhombic Negative Page A.43 $\triangleleft 0^\circ$	DNMG-CS  55° Rhombic Negative Page A.43 $\triangleleft 0^\circ$
Boring heads	DNMX  55° Rhombic Negative Page A.43 $\triangleleft 0^\circ$			ECMT  75° Rhombic Positive Page A.43 $\triangleleft 7^\circ$	EPMT  75° Rhombic Positive Page A.43 $\triangleleft 11^\circ$	EPMW  75° Rhombic Positive Page A.43 $\triangleleft 11^\circ$	EPMX  75° Rhombic Positive Page A.44 $\triangleleft 11^\circ$
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 	

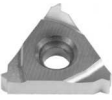
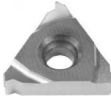


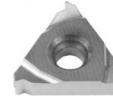
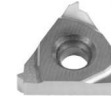

- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

Inserts	<p>TCGT-AL</p>  <p>Triangular Positive Page A.51 $\angle 7^\circ$</p>	<p>TCMT-03</p>  <p>Triangular Positive Page A.52 $\angle 7^\circ$</p>	<p>TCMT-39</p>  <p>Triangular Positive Page A.52 $\angle 7^\circ$</p>	<p>TCMW</p>  <p>Triangular Positive Page A.52 $\angle 7^\circ$</p>	<p>TEKN</p>  <p>Triangular Positive Page A.52 $\angle 20^\circ$</p>	<p>TNMA</p>  <p>Triangular Negative Page A.52 $\angle 0^\circ$</p>	<p>TNMG-CF</p>  <p>Triangular Negative Page A.52 $\angle 0^\circ$</p>
Turning							
Automatic lathes	<p>TNMG-CFC</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CFM</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CM</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CMC</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CMF</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CMR</p>  <p>Triangular Negative Page A.53 $\angle 0^\circ$</p>	<p>TNMG-CS</p>  <p>Triangular Negative Page A.54 $\angle 0^\circ$</p>
Ceramic tools	<p>TNMX</p>  <p>Triangular Positive Page A.54 $\angle 11^\circ$</p>	<p>TPKN</p>  <p>Triangular Positive Page A.54 $\angle 11^\circ$</p>	<p>TPKR</p>  <p>Triangular Positive Page A.54 $\angle 11^\circ$</p>	<p>TPMN</p>  <p>Triangular Positive Page A.54 $\angle 11^\circ$</p>	<p>TPMR-33</p>  <p>Triangular Positive Page A.54 $\angle 11^\circ$</p>	<p>TPUN</p>  <p>Triangular Positive Page A.55 $\angle 11^\circ$</p>	<p>TPUX</p>  <p>Triangular Negative Page A.55 $\angle 11^\circ$</p>
Parting & grooving							
Threading	<p>VBMT</p>  <p>35° Rhombic Positive Page A.55 $\angle 5^\circ$</p>	<p>VCGT-AL</p>  <p>35° Rhombic Positive Page A.55 $\angle 7^\circ$</p>	<p>VCGT-AL</p>  <p>35° Rhombic Positive Page A.55 $\angle 7^\circ$</p>	<p>VCGT-AP</p>  <p>35° Rhombic Positive Page A.55 $\angle 7^\circ$</p>	<p>VCGT-AP</p>  <p>35° Rhombic Positive Page A.55 $\angle 7^\circ$</p>	<p>VCMT-03</p>  <p>35° Rhombic Positive Page A.56 $\angle 7^\circ$</p>	<p>VNGP</p>  <p>35° Rhombic Negative Page A.56 $\angle 0^\circ$</p>
Drills	<p>VNMG</p>  <p>35° Rhombic Negative Page A.56 $\angle 0^\circ$</p>	<p>VNMG-CMC</p>  <p>35° Rhombic Negative Page A.56 $\angle 0^\circ$</p>	<p>WCMX</p>  <p>80° Trigon Positive Page A.56 $\angle 7^\circ$</p>	<p>WNMA</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>	<p>WNMG-CF</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>	<p>WNMG-CFM</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>	<p>WNMG-CM</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>
Cartridges	<p>WNMG-CMC</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>	<p>WNMG-CMF</p>  <p>80° Trigon Negative Page A.57 $\angle 0^\circ$</p>	<p>WNMG-CMR</p>  <p>80° Trigon Negative Page A.58 $\angle 0^\circ$</p>	<p>WNMG-CS</p>  <p>80° Trigon Negative Page A.58 $\angle 0^\circ$</p>			
Brazed tools							
Milling cutters							
Solid carbide	<p>HPR</p>  <p>Round Positive Page A.44 $\angle 11^\circ$</p>	<p>INT</p>  <p>Positive ball nose insert Page A.44</p>	<p>INW</p>  <p>Positive ball nose insert Page A.45</p>	<p>MTK</p>  <p>Toroidal insert Page A.45</p>	<p>RPR</p>  <p>Round Positive Page A.47 $\angle 11^\circ$</p>	<p>WPR</p>  <p>Round Positive Page A.58 $\angle 11^\circ$</p>	
Boring heads	<p>XDKW</p>  <p>High feed Page A.58 $\angle 15^\circ$</p>	<p>XPMT</p>  <p>Positive insert Page A.58</p>					
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>	
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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>
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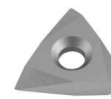
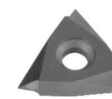
UNIFIED (full form) ASME / ANSI B1.1

<p>ER-UN</p>  <p>Triangular Negative Page A.63</p>	<p>NR-UN</p>  <p>Triangular Negative Page A.63</p>					
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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>	
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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>
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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>		
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- Inserts
- Turning
- Automatic lathes
- Ceramic tools
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- Threading
- Drills
- Cartridges
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Parting & grooving inserts - Plaquettes pour tronçonner et rainurer - Wendeschneidplatten zum Stechen und Nuteneinstechen

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

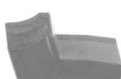


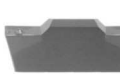



Brazed tools

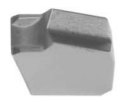
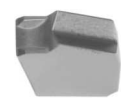
Milling cutters

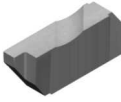
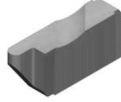
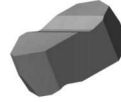
Solid carbide


Boring heads

Arbors & adaptors

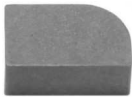


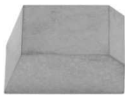



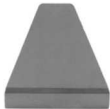
MRCN  Single-ended Page A.67	MRCR/L  Single-ended Page A.67	MTE  Single-ended Page A.67	MTC  Double-ended Page A.67	MTCJ  Double-ended Page A.67	MTR  Double-ended Page A.67	MTRJ  Double-ended Page A.68
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PTNT  Single-ended Page A.68	PTR/LT  Single-ended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

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				
--	---	--	--	--	--	--

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

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






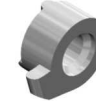


Inserts

Turning

GISG	GIGP	GIGR	GIGW	GIST	GISC	
						
Standard grooving inserts Page A.72	Grooving and cut-off inserts Page A.72	Full radius grooving inserts Page A.72	Threading inserts Page A.72	Turning inserts Page A.72	Copying inserts Page A.72	

Automatic lathes

Ceramic tools

L	R	L	R	L	L	R
						
Insert for turning Page A.73	Insert for turning Page A.73	Insert for grooving with radius Page A.73	Insert for grooving with radius Page A.73	Insert for threading Page A.74	Insert for grooving Page A.74	Insert for threading Page A.75
R						
						
Insert for grooving Page A.75						

Threading

Drills

Cartridges

Brazed tools




Milling cutters

Solid carbide


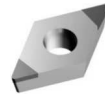
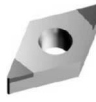
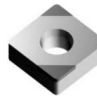
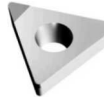

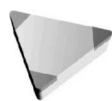
Boring heads

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

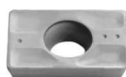
Boring heads

Arbors & adaptors

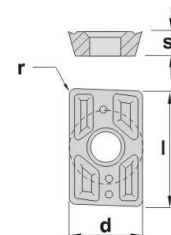
Inserts

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	-		●					●			

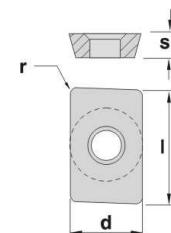


Automatic lathes

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	●									○



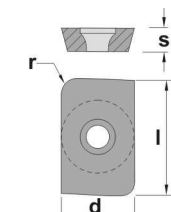
Ceramic tools

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							●			



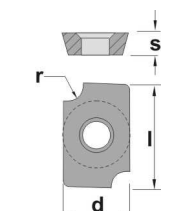
Threading

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							●			



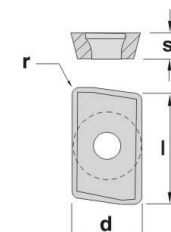
Cartridges

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	-		●					●			



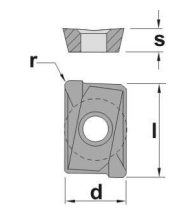
Milling cutters

Solid carbide

APHT-AL




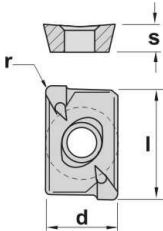
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
APHT 1003PDFR-AL	9,52	3,18	6,35	-	●									●
APHT 1604PDFR-AL	17,00	4,76	9,52	-	●									●




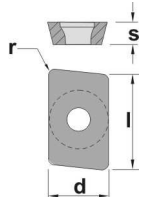
Boring heads


Arbors & adaptors

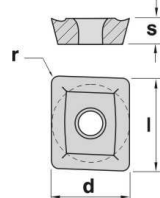
APKT	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	TIC28	T40L	Z10R
	APKT 1003PDR	9,52	3,18	6,35	0,4								•		
	APKT 1003PDTR	9,52	3,18	6,35	0,4	•					•	•			
	APKT 1604PDR	16,00	4,76	9,52	0,8						•	•	•		
	APKT 160416	16,00	4,76	9,52	1,6									•	




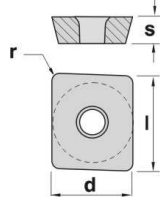
APKT-26	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
	APKT 160408E-26	16,66	4,76	9,52	0,8						•	•			




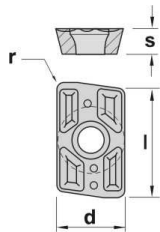
APLT	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
	APLT 1504ZZR	15,87	4,76	12,70	0,8		•					•			




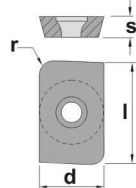
APLX	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
	APLX 1504ZZR	15,87	4,76	12,70	0,8	◦	•					•			



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

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Automatic lathes

Ceramic tools

Parting & grooving

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Cartridges

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Milling cutters

Solid carbide

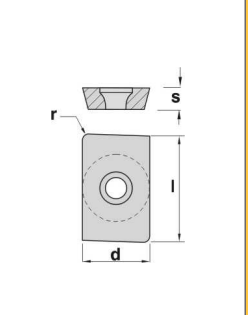
Boring heads

Arbors & adaptors

APMW



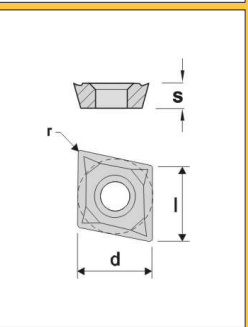
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
APMW 200408E	20,00	4,76	12,70	0,8	•						•		•	
APMW 200408F	20,00	4,76	12,70	0,8	○									



CCGT-AL



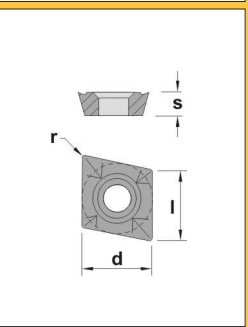
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
CCGT 060202-AL	6,45	2,38	6,35	0,2	•									○
CCGT 060204-AL	6,45	2,38	6,35	0,4	•									○
CCGT 09T302-AL	9,65	3,97	9,52	0,2	•									○
CCGT 09T304-AL	9,65	3,97	9,52	0,4	•									○
CCGT 09T308-AL	9,65	3,97	9,52	0,8	•									○
CCGT 120402-AL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



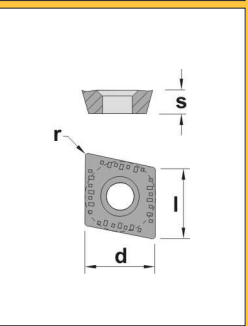
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CCGT 060202-AP	6,45	2,38	6,35	0,2	•									○
CCGT 060204-AP	6,45	2,38	6,35	0,4	•									○
CCGT 09T302-AP	9,65	3,97	9,52	0,2	•									○
CCGT 09T304-AP	9,65	3,97	9,52	0,4	•									○
CCGT 09T308-AP	9,65	3,97	9,52	0,8	•									○
CCGT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



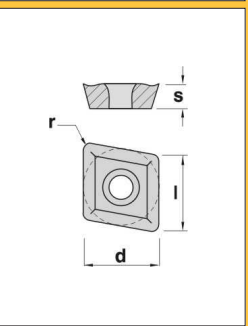
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
CCKT 060204	6,45	2,38	6,35	0,4						•	•			
CCKT 080308	8,05	3,18	7,94	0,8						•	•			
CCKT 09T308	9,65	4,00	9,52	0,8						•	•			
CCKT 120408	12,90	4,76	12,70	0,8						•	•			



CCMT-03



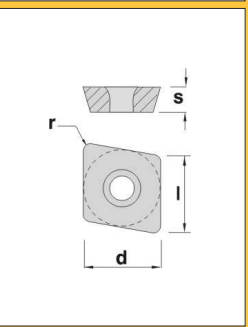
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC15	TIC17	TIC25	TIC30	TIC35	Z10R
CCMT 060202-03	6,45	2,38	6,35	0,2		•	•		•						
CCMT 060204-03	6,45	2,38	6,35	0,4	•	•		•	•			•	•	•	
CCMT 080304-03	8,05	3,18	7,94	0,4	•	•		•	•			•	•	•	
CCMT 080308-03	8,05	3,18	7,94	0,8	•	•		•	•			•	•	•	
CCMT 09T304-03	9,65	3,97	9,52	0,4	•	•		•	•			•	•	•	
CCMT 09T308-03	9,65	3,97	9,52	0,8	•	•		•	•			•	•	•	
CCMT 120408-03	12,90	4,76	12,70	0,8	•	•		•	•			•	•	•	



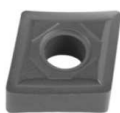
CCMW



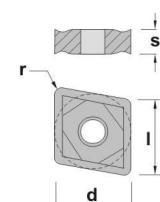
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
CCMW 060202	6,45	2,38	6,35	0,2		•						○		
CCMW 060204	6,45	2,38	6,35	0,4		•						○		
CCMW 080304	8,05	3,18	7,94	0,4		•						○		
CCMW 09T304	9,65	3,97	9,52	0,4		•						○		
CCMW 09T308	9,65	3,97	9,52	0,8		•						○		
CCMW 120408	12,90	4,76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




CNGP



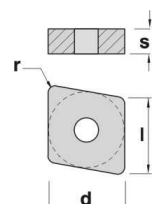
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CNGP 120404	12,90	4,76	12,70	0,4						●				
CNGP 120408	12,90	4,76	12,70	0,8						●				



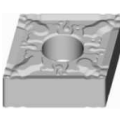
CNMA



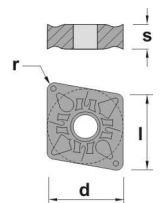
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CNMA 120408	12,90	4,76	12,70	0,8	●					●				
CNMA 120412	12,90	4,76	12,70	1,2						○				




CNMG-CF



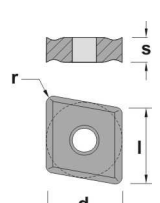
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CNMG 120404-CF	12,90	4,76	12,70	0,4					●			●		



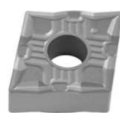
CNMG-CFC



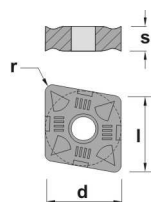
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CNMG 120404-CFC	12,90	4,76	12,70	0,4					●					



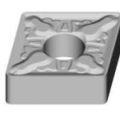
CNMG-CFM



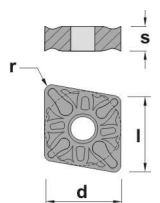
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
CNMG 120404-CFM	12,90	4,76	12,70	0,4					●					



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					●			●		


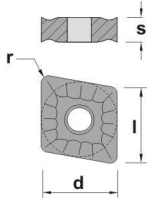

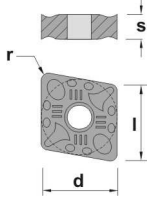

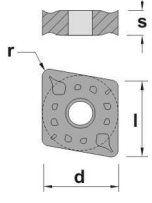

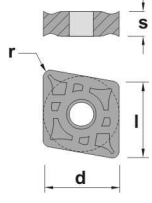
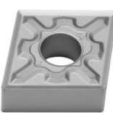
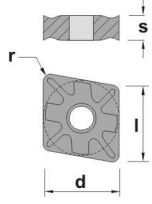

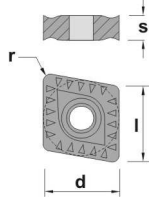


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

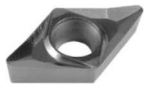
● Normally available for immediate delivery

○ Only available in a limited quantity

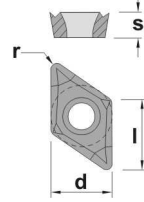
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

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					•							
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					•			•				
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								•				
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									○			
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										•		
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											○	

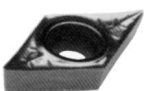
DCGT-AL



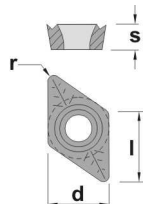
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DCGT 070202-AL	7,75	2,38	6,35	0,2	●									○
DCGT 070204-AL	7,75	2,38	6,35	0,4	●									○
DCGT 11T302-AL	11,60	3,97	9,52	0,2	●									○
DCGT 11T304-AL	11,60	3,97	9,52	0,4	●									○
DCGT 11T308-AL	11,60	3,97	9,52	0,8	●									○



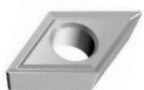
DCGT-AP



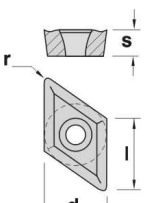
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DCGT 070202-AP	7,75	2,38	6,35	0,2	●									○
DCGT 070204-AP	7,75	2,38	6,35	0,4	●									○
DCGT 11T302-AP	11,60	3,97	9,52	0,2	●									○
DCGT 11T304-AP	11,60	3,97	9,52	0,4	●									○
DCGT 11T308-AP	11,60	3,97	9,52	0,8	●									○



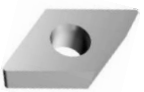
DCMT-03



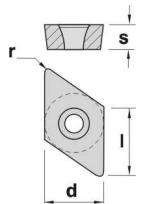
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DCMT 070204-03	7,75	2,38	6,35	0,4	○	●		●	●			●	●	
DCMT 11T304-03	11,60	3,97	9,52	0,4	○	●		●	●			●	●	
DCMT 11T308-03	11,60	3,97	9,52	0,8	○	●		●	●			●	●	
DCMT 150408-03	15,50	4,76	12,70	0,8	○				○					




DCMW



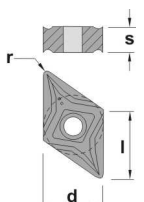
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DCMW 11T304	11,60	3,97	9,52	0,4	●									
DCMW 11T308	11,60	3,97	9,52	0,8	●									
DCMW 150408	15,50	4,76	12,70	0,8	●									




DNGP



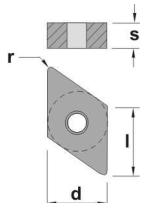
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DNGP 150404	15,50	4,76	12,70	0,4						●				
DNGP 150408	15,50	4,76	12,70	0,8						●				



DNMA



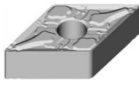
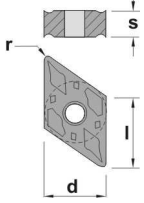
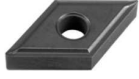
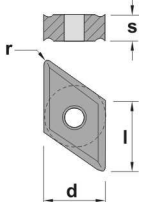
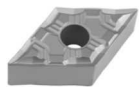
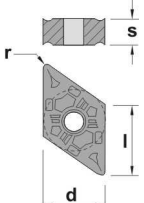
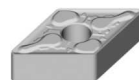
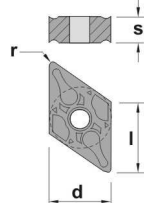
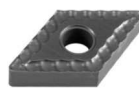
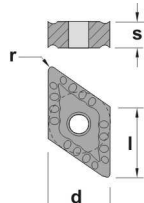

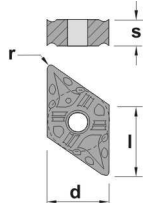
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DNMA 150608	15,50	6,35	12,70	0,8						○				
DNMA 150612	15,50	6,35	12,70	1,2						○				



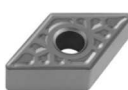
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
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- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

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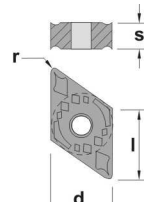
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors

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



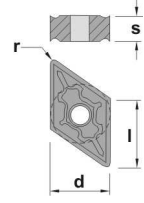
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DNMG 110404-CMR	11,60	4,76	9,52	0,4					●					
DNMG 110408-CMR	11,60	4,76	9,52	0,8							●			
DNMG 150408-CMR	15,50	4,76	12,70	0,8							●			
DNMG 150608-CMR	15,50	6,35	12,70	0,8							●	●		
DNMG 150612-CMR	15,50	6,35	12,70	1,2					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



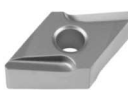
DNMG-CS



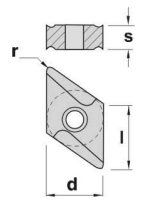
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DNMG 110404-CS	11,60	4,76	9,52	0,4									●	
DNMG 110408-CS	11,60	4,76	9,52	0,8									●	
DNMG 150604-CS	15,50	6,35	12,70	0,4									●	
DNMG 150608-CS	15,50	6,35	12,70	0,8									●	




DNMX



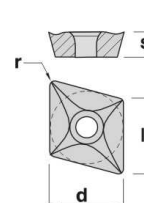
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
DNMX 150604R-22	6,57	2,38	6,35	0,4					●			●		
DNMX 150608R-22	8,20	3,18	7,93	0,4					●			●		




ECMT



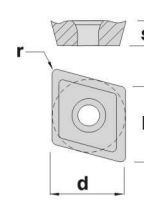
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
ECMT 060204	6,57	2,38	6,35	0,4					●					
ECMT 080304	8,20	3,18	7,93	0,4					●					
ECMT 120404	12,40	4,00	12,00	0,4		○			●					
ECMT 120408	12,40	4,00	12,00	0,8		○			●					
ECMT 120412	12,40	4,00	12,00	1,2		○			●					




EPMT



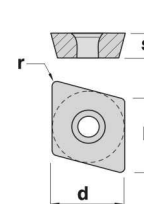
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
EPMT 080302-30	8,28	3,00	8,00	0,2		○								
EPMT 080304-30	8,28	3,00	8,00	0,4		●			●					
EPMT 080308-30	8,28	3,00	8,00	0,8					●					



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

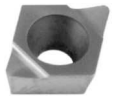
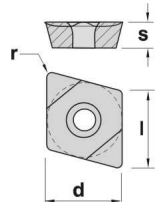
Arbors & adaptors

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

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


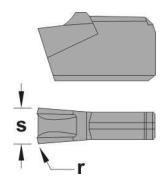
EPMX

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	•									


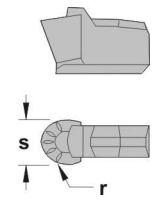
FRC

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										•


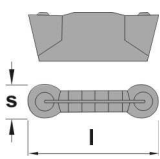
FRCR

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							•			•


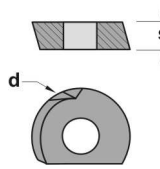
GXGP-AL

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	•									○


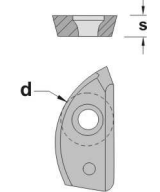
HPR

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

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

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	-			○									


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	-									•	•		

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	-											•

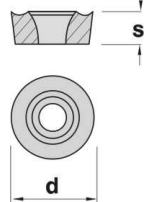
RDMW		REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R	
		RDMW 1003MO	-	3,18	10,00	-										•	
		RDMW 12T3MO	-	3,97	12,00	-										•	•
		RDMW 1204MO	-	4,76	12,00	-		•						•			•
		RDMW 1604MO	-	4,76	16,00	-											•

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	-									○		


RPMT



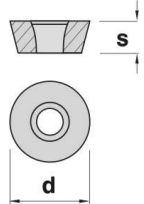
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
RPMT 120400-39	-	4,76	12,70	-	•						•			
RPMT 1204MO	-	4,76	12,70	-	•				•	•			•	




RPMW



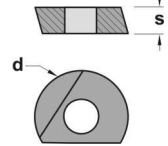
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
RPMW 0802MO	-	2,38	8,00	-	•						•		•	
RPMW 1003MO	-	3,18	10,00	-	•						•		•	
RPMW 1204MO	-	4,76	12,00	-	•						•		•	
RPMW 1204MOT	-	4,76	12,00	-	•				•	•			•	




RPR



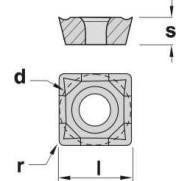
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	TL10	T40L	Z10R
RPR 10	-	2,60	10,00	-									•	
RPR 12	-	3,00	12,00	-									•	
RPR 16	-	4,00	16,00	-									•	
RPR 20	-	5,00	20,00	-									•	
RPR 25	-	6,00	25,00	-									•	
RPR 32	-	7,00	32,00	-									•	




SCGT-AL



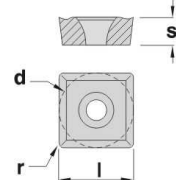
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
SCGT 09T304-AL	9,52	3,97	9,52	0,4	•									○
SCGT 09T308-AL	9,52	3,97	9,52	0,8	•									○
SCGT 120408-AL	12,70	4,76	12,70	0,8	•									○




SCMT-03



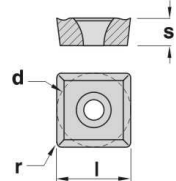
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
SCMT 09T304-03	9,52	3,97	9,52	0,4	○	•			○					
SCMT 09T308-03	9,52	3,97	9,52	0,8	○	•			○					
SCMT 120408-03	12,70	4,76	12,70	0,8		•			•					
SCMT 120412-03	12,70	4,76	12,70	1,2		•			○					



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
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- Cartridges
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Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters


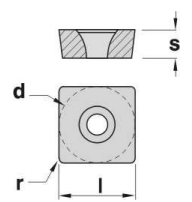
Solid carbide

Boring heads

Arbors & adaptors


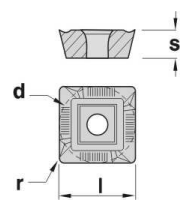
SCMW

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	○						○			


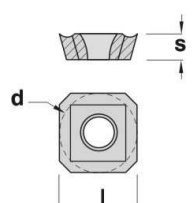
SDMT

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								●		


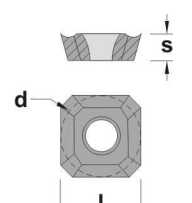
SEHT

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


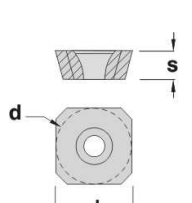
SEHT-AL

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

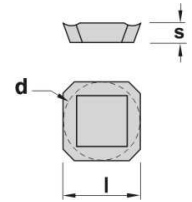
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
SEHW 1204AFEN001	12,70	4,76	12,70	-	●									
SEHW 1204AFSN151	12,70	4,76	12,70	-		●				●	●			

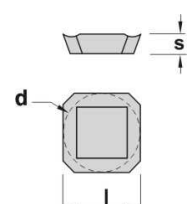



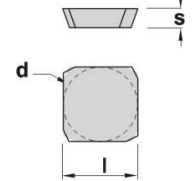
SEKN

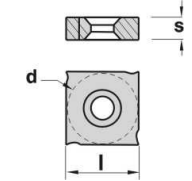
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
SEKN 1203AFEN-3A	12,70	3,18	12,70	-	●									
SEKN 1203AFSN-3D	12,70	3,18	12,70	-		●	●		●	●	●			
SEKN 1204AFEN-3A	12,70	4,76	12,70	-	○									
SEKN 1204AFSN-3D	12,70	4,76	12,70	-		●					●		●	
SEKN 1504AFEN-4A	15,88	4,76	15,88	-	○				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

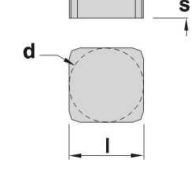


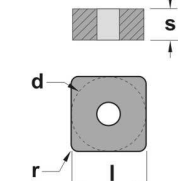

SEKR	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	TIC28	T40L	Z10R	
	SEKR 1203AFN	12,70	3,18	12,70	-								•			
	SEKR 1203AFTN-94	12,70	3,18	12,70	-						•	•				

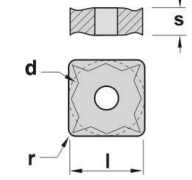
SEMT	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	TIC28	T40L	Z10R	
	SEMT 1204FTN	12,70	4,76	12,70	-								•			

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

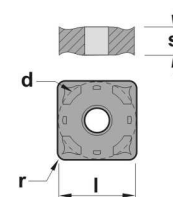
Inserts

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	○						●	●		

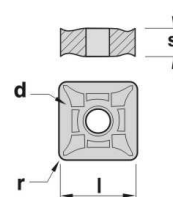


Automatic lathes

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								○		



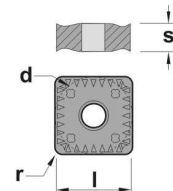
Ceramic tools

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									○	



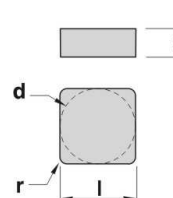
Threading

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		●								



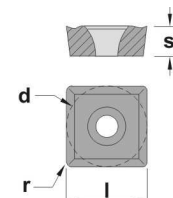
Cartridges

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		●								



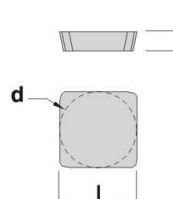
Milling cutters

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	-									●	



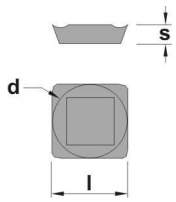
Boring heads

Arbors & adaptors


SPKR



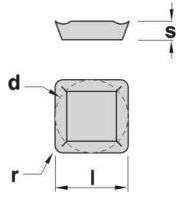
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	TIC28	T40L	Z10R
SPKR 1203EDR	12,70	3,18	12,70	-								•		
SPKR 1203EDSR	12,70	3,18	12,70	-							•			




SPMR-33



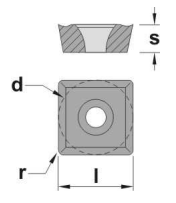
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
SPMR 090304-33	9,52	3,18	9,52	0,4					•					
SPMR 090308-33	9,52	3,18	9,52	0,8							•			
SPMR 120304-33	12,70	3,18	12,70	0,4					•					
SPMR 120308-33	12,70	3,18	12,70	0,8	•						•			




SPMT



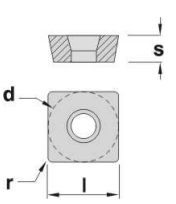
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC25	TIC30	TIC35	T40L
SPMT 060304	6,35	3,18	6,35	0,4										•
SPMT 070308	7,94	3,18	7,94	0,8										•
SPMT 090308	9,52	3,18	9,52	0,8										•
SPMT 120408	12,70	4,76	12,70	0,8										•




SPMW



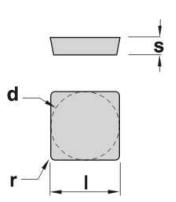
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
SPMW 120408	12,70	4,76	12,70	0,8	○	•					•		•	




SPUN



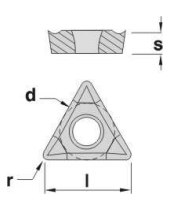
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
SPUN 090304E	9,52	3,18	9,52	0,4		○					○			
SPUN 090308E	9,52	3,18	9,52	0,8		•					•			
SPUN 090308F	9,52	3,18	9,52	0,8	○									
SPUN 120304E	12,70	3,18	12,70	0,4		•					•			
SPUN 120308E	12,70	3,18	12,70	0,8		•					•			
SPUN 120308F	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	•									○



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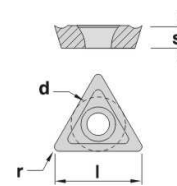
Inserts

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	○									

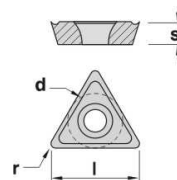


Automatic lathes

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		●					●			



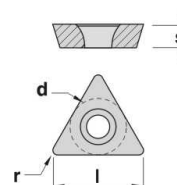
Ceramic tools

Parting & grooving

TCMW



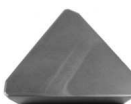
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
TCMW 110204	11,00	2,38	6,35	0,4	○	●								
TCMW 16T304	16,50	3,97	9,52	0,4	●									
TCMW 16T308	16,50	3,97	9,52	0,8	●	●								



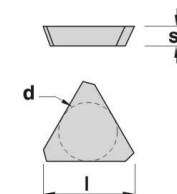
Threading

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	-	●	●					○			



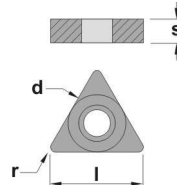
Cartridges

Brazed tools

TNMA



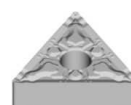
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
TNMA 160404	16,50	4,76	9,52	0,4						○				
TNMA 160408	16,50	4,76	9,52	0,8						○				
TNMA 160412	16,50	4,76	9,52	1,2						○				
TNMA 220408	22,00	4,76	12,70	0,8						○				
TNMA 220412	22,00	4,76	12,70	1,2						○				
TNMA 220416	22,00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



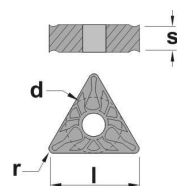
Milling cutters

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					●		●			


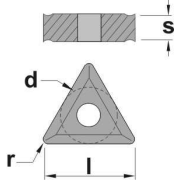


Boring heads

Arbors & adaptors


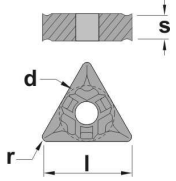
TNMG-CFC

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					•					


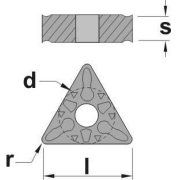
TNMG-CFM

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					•					

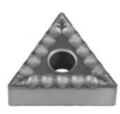
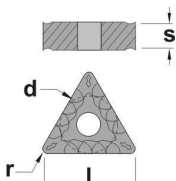
TNMG-CM

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					•			•		

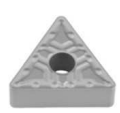
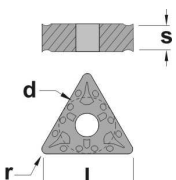
TNMG-CMC

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					•					

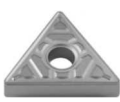
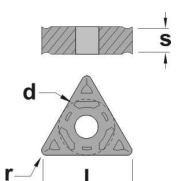
TNMG-CMF

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

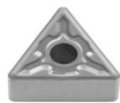
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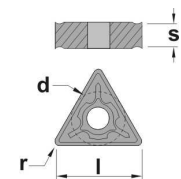
Inserts

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									•	



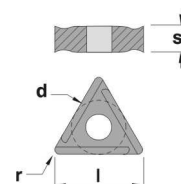
Automatic lathes

Ceramic tools

TNMX



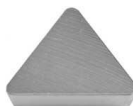
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
TNMX 160404 R	16,50	4,76	9,52	0,4				•						
TNMX 160408 R	16,50	4,76	9,52	0,8				•						
TNMX 160404 L	16,50	4,76	9,52	0,4				•						
TNMX 160408 L	16,50	4,76	9,52	0,8				•						



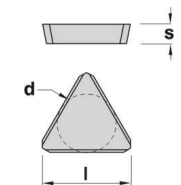
Parting & grooving

Threading

TPKN



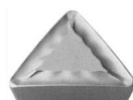
REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC21	TIC25	T20L	T40L	Z10R
TPKN 1103PPSN-1C	11,00	3,18	6,35	-		•					○			
TPKN 1603PDER-1A	16,50	3,18	9,52	-	•									
TPKN 1603PDSR-1C	16,50	3,18	9,52	-		•					•		•	
TPKN 2204PDER-1A	22,00	4,76	12,70	-	•									
TPKN 2204PDSR-1F	22,00	4,76	12,70	-		•								•



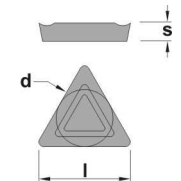
Drills

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

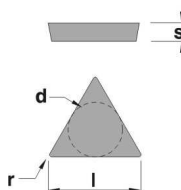
Milling cutters

Solid carbide

TPMN



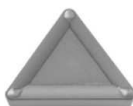
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
TPMN 160308	16,50	3,18	9,52	0,8				•						



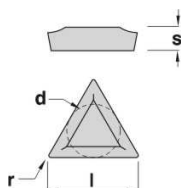
Boring heads

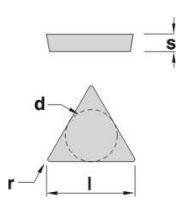
Arbors & adaptors

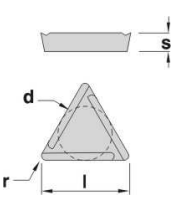
TPMR-33

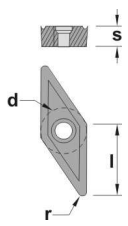


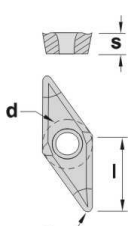
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
TPMR 090204-33	9,62	2,38	5,55	0,4						•				
TPMR 110304-33	11,00	3,18	6,35	0,4		•								
TPMR 110308-33	11,00	3,18	6,35	0,8		•								
TPMR 160304-33	16,50	3,18	9,52	0,4		•					•			
TPMR 160308-33	16,50	3,18	9,52	0,8		•			○			•		

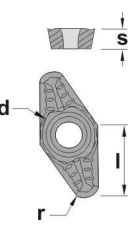


TPUN	REF.	l	s	d	r	K15K	P25K	P40K	CK40	TK30	TIC15	TIC25	T20L	T40L	Z10R	
	TPUN 110204E	11,00	2,38	6,35	0,4		●					●				
	TPUN 110204F	11,00	2,38	6,35	0,4	○										
	TPUN 110208E	11,00	2,38	6,35	0,8		●					●				
	TPUN 110304E	11,00	3,18	6,35	0,4		●					●				
	TPUN 110308E	11,00	3,18	6,35	0,8		●					●				
	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

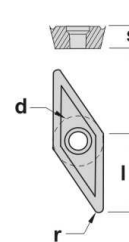
○ Only available in a limited quantity

Inserts

VCMT-03



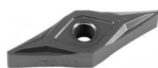
REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
VCMT 110304-03	11,00	3,18	6,35	0,4					•					
VCMT 130304-03	13,00	3,18	8,00	0,4					•					
VCMT 160404-03	16,50	4,76	9,52	0,4					•					
VCMT 160408-03	16,50	4,76	9,52	0,8							•		•	



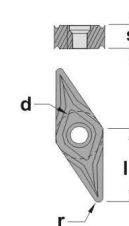
Turning

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							•			



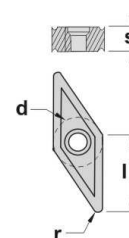
Ceramic tools

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							•			



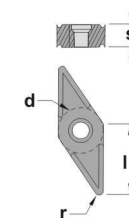
Threading

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					•					



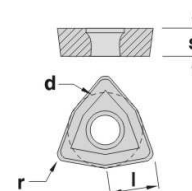
Cartridges

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								•	•	


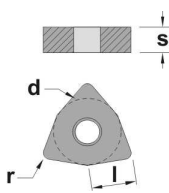
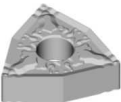
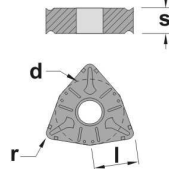
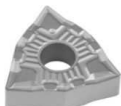
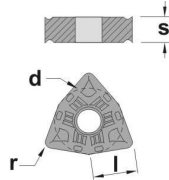
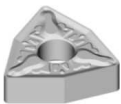
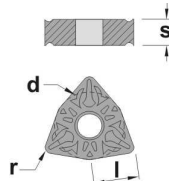
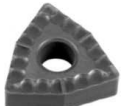
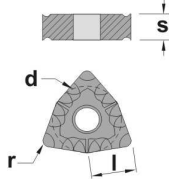

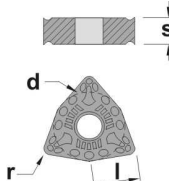


Milling cutters

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

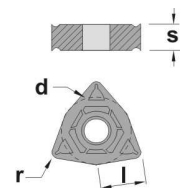
○ Only available in a limited quantity

Inserts

WNMG-CMR

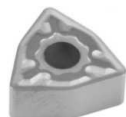


REF.	l	s	d	r	K15K	P25K	P40K	CK30	TIC15	TIC17	TIC20	TIC30	TIC35	Z10R
WNMG 060404-CMR	6,45	4,76	9,52	0,4					•					
WNMG 060408-CMR	6,45	4,76	9,52	0,8							•			
WNMG 080408-CMR	8,14	4,76	12,70	0,8							•	•		
WNMG 080412-CMR	8,14	4,76	12,70	1,2							•			

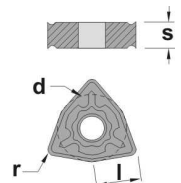


Turning

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									•	



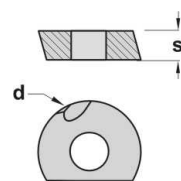
Automatic lathes

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	-		•					•		•	



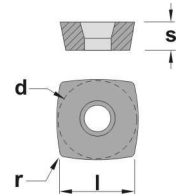
Parting & grooving

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							•			



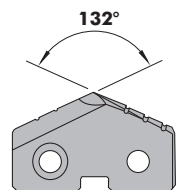
Drills

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

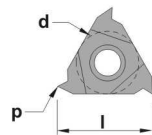
Milling cutters

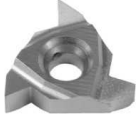
Solid carbide

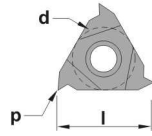
Boring heads


Arbors & adaptors

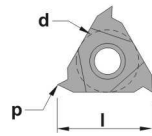
ER-60°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	11ER-A60	11,00	6,35	60°			○		
	16ER-A60	16,00	9,52	60°			○		
	16ER-AG60	16,00	9,52	60°			●	○	
	16ER-G60	16,00	9,52	60°			●	○	
	22ER-N60	22,00	12,70	60°			●	○	
	27ER-S60	27,00	15,87	60°			○		




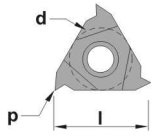
EL-60°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	11EL-A60	11,00	6,35	60°			○		
	16EL-A60	16,00	9,52	60°			○		
	16EL-AG60	16,00	9,52	60°			○		
	16EL-G60	16,00	9,52	60°			○		
	22EL-N60	22,00	12,70	60°			○		
	27EL-S60	27,00	15,87	60°			○		

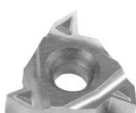


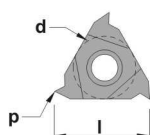
ER-55°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	11ER-A55	11,00	6,35	55°				○	
	16ER-A55	16,00	9,52	55°				○	
	16ER-AG55	16,00	9,52	55°		●	●	○	
	16ER-G55	16,00	9,52	55°				○	
	22ER-N55	22,00	12,70	55°				○	
	27ER-S55	27,00	15,87	55°				○	




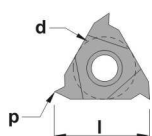
EL-55°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	11EL-A55	11,00	6,35	55°				○	
	16EL-A55	16,00	9,52	55°				○	
	16EL-AG55	16,00	9,52	55°				○	
	16EL-G55	16,00	9,52	55°				○	
	22EL-N55	22,00	12,70	55°				○	
	27EL-S55	27,00	15,87	55°				○	



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°			○		




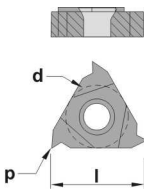
- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Milling cutters
- Solid carbide
- Boring heads
- Arbors & adaptors


● Normally available for immediate delivery

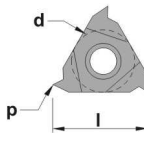
○ Only available in a limited quantity


- Inserts
- Turning
- Automatic lathes
- Ceramic tools
- Parting & grooving
- Threading
- Drills
- Cartridges
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- Milling cutters
- Solid carbide
- Boring heads
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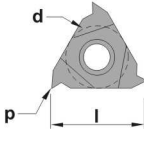
NR-60°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	06NR-A60	6,00	3,96	60°			○		
	08NR-A60	8,00	4,76	60°			○		
	11NR-A60	11,00	6,35	60°			●	○	
	16NR-A60	16,00	9,52	60°			○		
	16NR-AG60	16,00	9,52	60°			●	○	
	16NR-G60	16,00	9,52	60°			○		
	22NR-N60	22,00	12,70	60°			●	○	
	27NR-S60	27,00	15,87	60°			○		




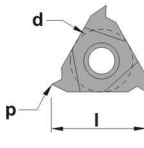
NL-60°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	06NL-A60	6,00	3,96	60°				○	
	08NL-A60	8,00	4,76	60°				○	
	11NL-A60	11,00	6,35	60°				○	
	16NL-A60	16,00	9,52	60°				○	
	16NL-AG60	16,00	9,52	60°				○	
	16NL-G60	16,00	9,52	60°				○	
	22NL-N60	22,00	12,70	60°				○	
	27NL-S60	27,00	15,87	60°				○	




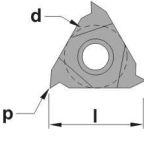
NR-55°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	06NR-A55	6,00	3,96	55°				○	
	08NR-A55	8,00	4,76	55°				○	
	11NR-A55	11,00	6,35	55°				○	
	16NR-A55	16,00	9,52	55°				○	
	16NR-AG55	16,00	9,52	55°			●	○	
	16NR-G55	16,00	9,52	55°				○	
	22NR-N55	22,00	12,70	55°				○	
	27NR-S55	27,00	15,87	55°				○	




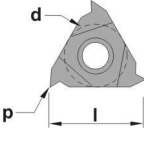
NL-55°		REF.	l	d	p	K15K	P25K	TIC25	T20L
	06NL-A55	6,00	3,96	55°					
	08NL-A55	8,00	4,76	55°					
	11NL-A55	11,00	6,35	55°				○	
	16NL-A55	16,00	9,52	55°				○	
	16NL-AG55	16,00	9,52	55°				○	
	16NL-G55	16,00	9,52	55°				○	
	22NL-N55	22,00	12,70	55°				○	
	27NL-S55	27,00	15,87	55°				○	

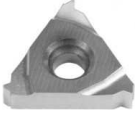


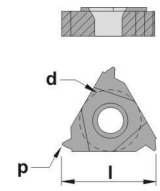
NR-60° TD		REF.	l	d	p	K15K	P25K	TIC25	T20L
	16NR-A60 TD	16,00	9,52	60°				○	
	16NR-AG60 TD	16,00	9,52	60°			●	○	
	16NR-G60 TD	16,00	9,52	60°				○	

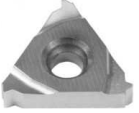


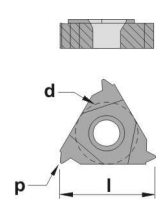
NR-55° TD		REF.	l	d	p	K15K	P25K	TIC25	T20L
	16NR-A55 TD	16,00	9,52	55°				○	
	16NR-AG55 TD	16,00	9,52	55°			●	○	
	16NR-G55 TD	16,00	9,52	55°				○	




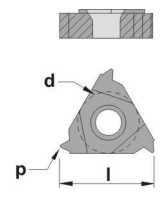
ER-ISO	REF.	l	d	p	K15K	P25K	TIC25	T20L
	11ER-030ISO	11,00	6,35	0,30			o	
	11ER-040ISO	11,00	6,35	0,40			o	
	11ER-045ISO	11,00	6,35	0,45			o	
	11ER-050ISO	11,00	6,35	0,50			o	
	11ER-060ISO	11,00	6,35	0,60			o	
	11ER-070ISO	11,00	6,35	0,70			o	
	11ER-075ISO	11,00	6,35	0,75			o	
	11ER-080ISO	11,00	6,35	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	




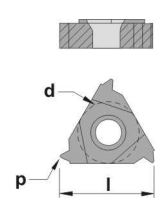
EL-ISO	REF.	l	d	p	K15K	P25K	TIC25	T20L
	16EL-100ISO	16,00	9,52	1,00			o	
	16EL-125ISO	16,00	9,52	1,25			o	
	16EL-150ISO	16,00	9,52	1,50			o	
	16EL-175ISO	16,00	9,52	1,75			o	
	16EL-200ISO	16,00	9,52	2,00			o	
	16EL-250ISO	16,00	9,52	2,50			o	
	16EL-300ISO	16,00	9,52	3,00			o	
	22EL-400ISO	22,00	12,70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

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Arbors & adaptors

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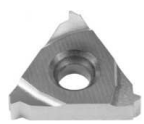
Milling cutters

Solid carbide

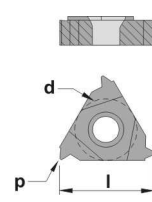
Boring heads

Arbors & adaptors

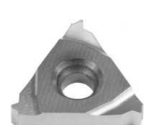
NR-ISO



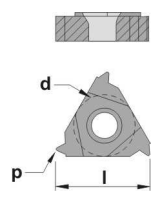
REF.	l	d	p	K15K	P25K	TIC25	T20L
06NR-050ISO	6,00	3,96	0,50			○	
06NR-075ISO	6,00	3,96	0,75			○	
06NR-100ISO	6,00	3,96	1,00			○	
06NR-125ISO	6,00	3,96	1,25			○	
08NR-050ISO	8,00	4,76	0,50			○	
08NR-075ISO	8,00	4,76	0,75			○	
08NR-100ISO	8,00	4,76	1,00			○	
08NR-125ISO	8,00	4,76	1,25			○	
08NR-150ISO	8,00	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			○	



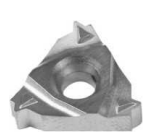
NL-ISO



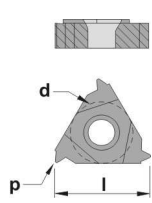
REF.	l	d	p	K15K	P25K	TIC25	T20L
06NL-050ISO	6,00	3,96	0,50				
06NL-075ISO	6,00	3,96	0,75				
06NL-100ISO	6,00	3,96	1,00				
06NL-125ISO	6,00	3,96	1,25				
08NL-050ISO	8,00	4,76	0,50				
08NL-075ISO	8,00	4,76	0,75				
08NL-100ISO	8,00	4,76	1,00				
08NL-125ISO	8,00	4,76	1,25				
08NL-150ISO	8,00	4,76	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			○	



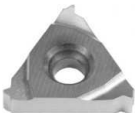
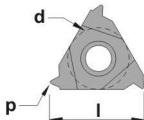
NR-ISO TD



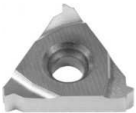
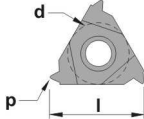
REF.	l	d	p	K15K	P25K	TIC25	T20L
16NR-100ISO TD	16,50	9,52	1,00			●	
16NR-125ISO TD	16,50	9,52	1,25			●	
16NR-150ISO TD	16,50	9,52	1,50			●	
16NR-175ISO TD	16,50	9,52	1,75			●	
16NR-200ISO TD	16,50	9,52	2,00			●	
16NR-250ISO TD	16,50	9,52	2,50			●	
16NR-300ISO TD	16,50	9,52	3,00			●	




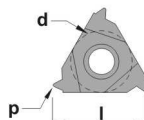
ER-UN	REF.	l	d	p	K15K	P25K	TIC25	T20L
	16ER-11UN	16,00	9,52	11,0			o	
	16ER-14UN	16,00	9,52	14,0			o	
	16ER-18UN	16,00	9,52	18,0			o	


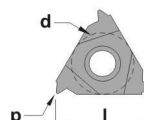
NR-UN	REF.	l	d	p	K15K	P25K	TIC25	T20L
	16NR-20UN	16,00	9,52	20,0			o	
	16NR-24UN	16,00	9,52	24,0			o	

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

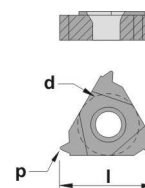
• Normally available for immediate delivery o Only available in a limited quantity

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	



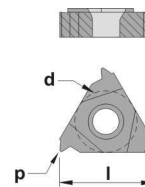
Turning

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

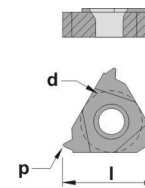
Milling cutters

Solid carbide

NL-W


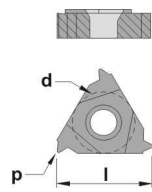
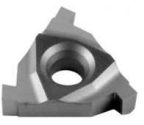
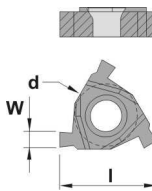
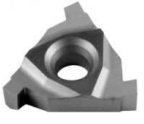
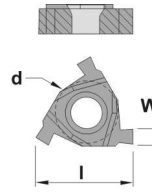

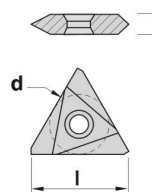
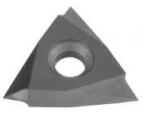
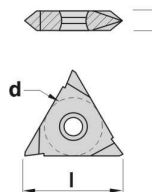

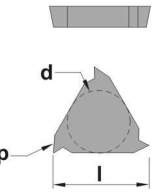


REF.	l	d	p	K15K	P25K	TIC25	T20L
06NL-18W	6,00	3,96	18,0			o	
06NL-20W	6,00	3,96	20,0			o	
06NL-22W	6,00	3,96	22,0			o	
06NL-26W	6,00	3,96	26,0			o	
08NL-16W	8,00	4,76	16,0			o	
08NL-18W	8,00	4,76	18,0			o	
08NL-19W	8,00	4,76	19,0			o	
08NL-20W	8,00	4,76	20,0			o	
08NL-24W	8,00	4,76	24,0			o	
08NL-28W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

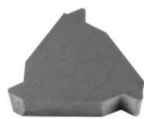
NR-W TD		REF.	l	d	p	K15K	P25K	TIC25	T20L		
	16NR-8W TD	16,50	9,52	8,0			○				
	16NR-9W TD	16,50	9,52	9,0			○				
	16NR-10W TD	16,50	9,52	10,0			○				
	16NR-11W TD	16,50	9,52	11,0			●	○			
	16NR-12W TD	16,50	9,52	12,0			○				
	16NR-14W TD	16,50	9,52	14,0			●	○			
	16NR-16W TD	16,50	9,52	16,0			○				
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

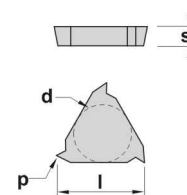
● Normally available for immediate delivery ○ Only available in a limited quantity

Inserts

R166G-ISO



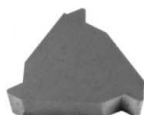
REF.	l	s	d	p	K15K	P25K	TIC25	T20L
R166G-3BA075	16,50	3,18	9,52	0,75		o		
R166G-3BA100	16,50	3,18	9,52	1,00		o		
R166G-3BA125	16,50	3,18	9,52	1,25		o		
R166G-3BA150	16,50	3,18	9,52	1,50		o		
R166G-3BA175	16,50	3,18	9,52	1,75		o		
R166G-3BA200	16,50	3,18	9,52	2,00		o		
R166G-3BA250	16,50	3,18	9,52	2,50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



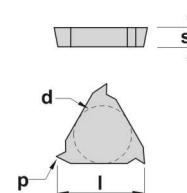
Turning

Automatic lathes

R166G-B



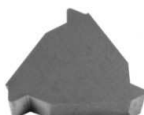
REF.	l	s	d	p	K15K	P25K	TIC25	T20L
R166G-3BK080	16,50	3,18	9,52	08		o		
R166G-3BK160	16,50	3,18	9,52	16		o		



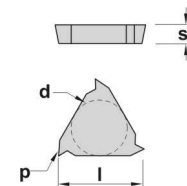
Ceramic tools

Parting & grooving

L166L-ISO



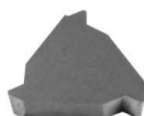
REF.	l	s	d	p	K15K	P25K	TIC25	T20L
L166L-3BA150	16,50	3,18	9,52	1,50		o		
L166L-3BA175	16,50	3,18	9,52	1,75		o		
L166L-3BA200	16,50	3,18	9,52	2,00		o		
L166L-3BA250	16,50	3,18	9,52	2,50		o		
L166L-3BA300	16,50	3,18	9,52	3,00		o		



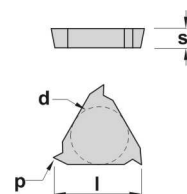
Threading

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


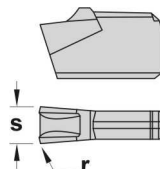
Brazed tools


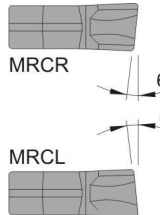
Milling cutters


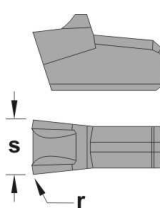
Solid carbide

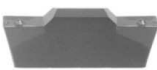
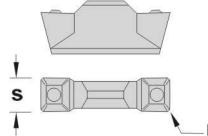
Boring heads


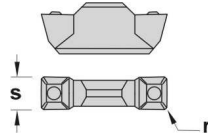
Arbors & adaptors


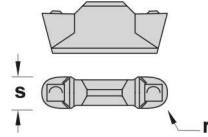
MRCN	REF.	s	r	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC30	Z10R	T40L	 
				○	○	○	○	○	○	○	○	○	
	MRCN 1.6	1,6	0,15	○	○					●			
	MRCN 2.2	2,2	0,20	○	●					●		○	
	MRCN 3.0	3,0	0,20	○	●					●		○	
	MRCN 4.0	4,0	0,20	○	●					●		○	
	MRCN 5.0	5,0	0,30	○	○					●		○	
	MRCN 6.0	6,0	0,40							●		○	

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

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

MTC	REF.	s	r	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC30	Z10R	 
				○	○	○	○	○	○	○	○	
	MTC 3.0	3,0	0,15	●	●					○		
	MTC 4.0	4,0	0,20	●	●					●		

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

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

Brazed tools

Milling cutters

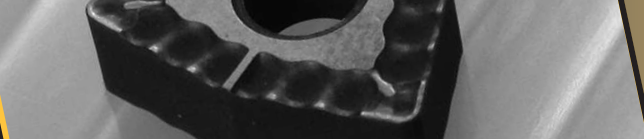
Solid carbide

Boring heads

Arbors & adaptors

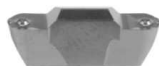
● Normally available for immediate delivery

○ Only available in a limited quantity

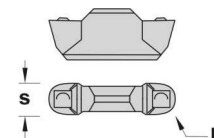


Inserts

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							○	



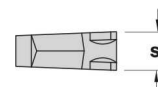
Turning

Automatic lathes

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		○						



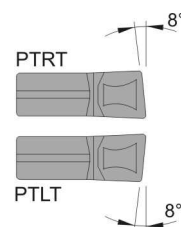
Ceramic tools

Parting & grooving

PTR/LT



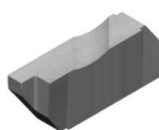
REF.	s	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC30	Z10R
PTRT 03 R8	3,0							○	
PTRT 04 R8	4,0							○	
PTLT 03 R8	3,0							○	
PTLT 04 R8	4,0							○	



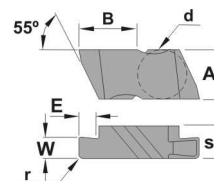
Threading

Drills

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							○	



Cartridges

Brazed tools

Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

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

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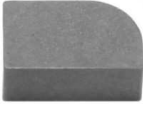
Milling cutters

Solid carbide

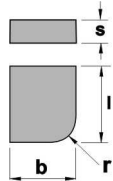
Boring heads

Arbors & adaptors


AB



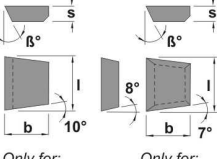
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
AB 6	6,00	2,50	4,00	2,00	-	•								
AB 8	8,00	3,00	5,00	3,00	-	•								



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°	•	•							



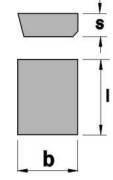
Only for:
-ABC 10
-ABC 12
-ABC 20
-ABC 25

Only for:
-ABC 12
-ABC 16


C



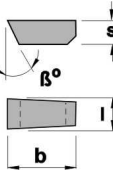
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
C 7	7,00	2,50	5,00	-	0°	•	•							
C 8	8,00	3,25	5,00	-	0°	•	•							
C 10	10,00	4,00	6,00	-	18°	•	•							
C 12	12,00	5,00	8,00	-	18°	•	•							
C 16	16,00	6,00	10,00	-	18°	•	•							
C 20	20,00	7,00	12,00	-	18°	•	•							
C 25	25,00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



D



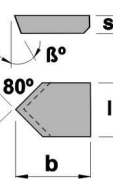
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
D 3	3,00	3,00	8,00	-	0°	•	•							
D 4	4,00	4,00	10,00	-	14°	•	•							
D 5	5,00	5,00	12,00	-	14°	•	•							
D 6	6,00	6,00	14,00	-	14°	•	•							
D 8	8,00	8,00	16,00	-	14°	•	•							
D 10	10,00	10,00	18,00	-	14°	•	•							




E



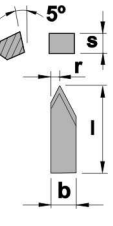
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
E 5	5,00	3,00	12,00	-	9°	•	•							
E 6	6,00	4,00	14,00	-	9°	•	•							
E 8	8,00	4,00	16,00	-	9°	•	•							
E 10	10,00	5,00	18,00	-	9°	•	•							
E 12	12,00	6,00	20,00	-	9°	•	•							




FIL



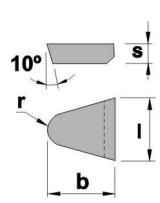
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
FIL 3,5	12,00	3,50	3,50	1,00	5°	•	•							
FIL 4	14,00	4,00	4,00	1,20	5°	•	•							
FIL 5	16,00	5,00	5,00	1,50	5°	•	•							
FIL 6	18,00	6,00	6,00	1,80	5°	•	•							



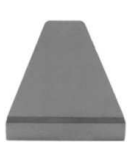
PR



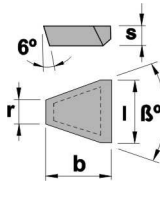
REF.	l	s	b	r	β°	K15K	P25K	P40K	TIC15	TIC17	TIC20	TIC25	TIC30	Z10R
PR 8	8,00	4,00	12,00	1,00	30°	•								
PR 10	10,00	4,00	14,00	1,50	30°	•								
PR 12	12,00	5,00	17,00	2,50	30°	•								



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
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- Threading
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- Milling cutters
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- Arbors & adaptors

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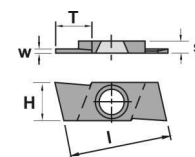
Boring heads

Arbors & adaptors

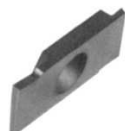
GISG



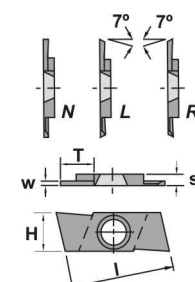
REF.	l	s	H	T	w	K15K	P25K	TIC25	T20L
GISG05R-L	17,00	2,00	7,00	2,54	0,50			•	
GISG07R-L	17,00	2,00	7,00	2,54	0,70			•	
GISG08R-L	17,00	2,00	7,00	2,54	0,80			•	
GISG09R-L	17,00	2,00	7,00	2,54	0,90			•	
GISG11R-L	17,00	2,00	7,00	6,00	1,10			•	
GISG13R-L	17,00	2,00	7,00	6,00	1,30			•	
GISG16R-L	17,00	2,00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



GIGP



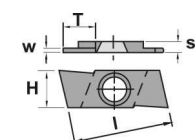
REF.	l	s	H	T	w	K15K	P25K	TIC25	T20L
GIGP10RN	17,00	2,00	7,00	6,00	1,00			•	
GIGP10RR	17,00	2,00	7,00	6,00	1,00			•	
GIGP10LN	17,00	2,00	7,00	6,00	1,00			•	
GIGP10LL	17,00	2,00	7,00	6,00	1,00			•	
GIGP15RN	17,00	2,00	7,00	6,00	1,50			•	
GIGP15RR	17,00	2,00	7,00	6,00	1,50			•	
GIGP15LN	17,00	2,00	7,00	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



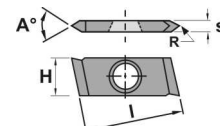
REF.	l	s	H	T	w	K15K	P25K	TIC25	T20L
GIGR10R-L	17,00	2,00	7,00	6,00	1,00			•	
GIGR15R-L	17,00	2,00	7,00	6,00	1,50			•	
GIGR20R-L	17,00	2,00	7,00	6,00	2,00			•	



GIGW



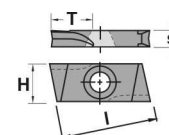
REF.	l	s	H	R	A°	K15K	P25K	TIC25	T20L
GIGW55R-L	17,00	2,00	7,00	0,10	55°			•	
GIGW60R-L	17,00	2,00	7,00	0,10	60°			•	



GIST



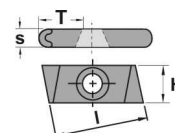
REF.	l	s	H	T	w	K15K	P25K	TIC25	T20L
GIST3R-L	17,00	3,17	7,00	6,00	-			•	




GISC



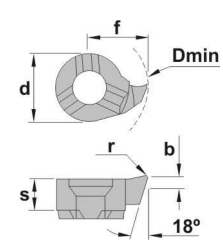
REF.	l	s	H	T	w	K15K	P25K	TIC25	T20L
GISC3R-L	17,00	3,17	7,00	6,00	-			•	




L



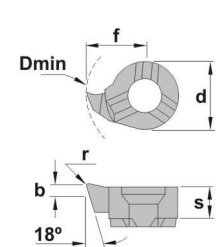
REF.	Dmin	b	f	s	d	r	K15K	P25K	TIC25	T20L
LS08.1846.02	7,8	3,3	4,65	3,5	6,0	0,2				•
LS11.1855.02	9,8	3,9	5,50	4,2	8,0	0,2				•
LS11.1867.02	11,0	3,9	6,70	4,2	8,0	0,2				•
LS14.1867.02	13,8	5,0	8,70	5,1	9,0	0,2				•
LS16.1897.02	15,5	5,0	9,70	5,4	11,0	0,2				•




R



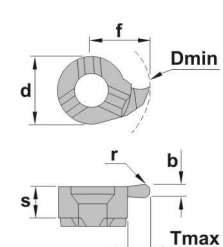
REF.	Dmin	b	f	s	d	r	K15K	P25K	TIC25	T20L
RS08.1846.02	7,8	3,3	4,65	3,5	6,0	0,2				•
RS11.1855.02	9,8	3,9	5,50	4,2	8,0	0,2				•
RS11.1867.02	11,0	3,9	6,70	4,2	8,0	0,2				•
RS14.1867.02	13,8	5,0	8,70	5,1	9,0	0,2				•
RS16.1897.02	15,5	5,0	9,70	5,4	11,0	0,2				•




L



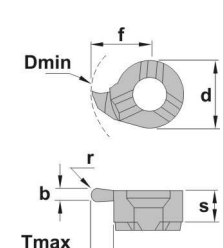
REF.	Dmin	b	r	f	s	d	tmax	K15K	P25K	TIC25	T20L
LS08.008R04	8,0	0,8	0,4	4,8	3,3	6,0	1,0				•
LS08.012R06	8,0	1,2	0,6	4,8	3,3	6,0	1,0				•
LS08.018R09	8,0	1,8	0,9	4,8	3,3	6,0	1,0				•
LS11.008R04	11,0	0,8	0,4	6,7	4,2	8,0	2,3				•
LS11.012R06	11,0	1,2	0,6	6,7	4,2	8,0	2,3				•
LS11.018R09	11,0	1,8	0,9	6,7	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



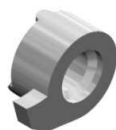
Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills



Cartridges

Brazed tools

Milling cutters

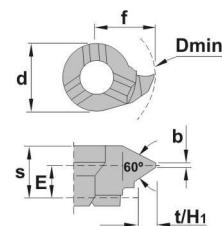
Solid carbide

Boring heads

Arbors & adaptors

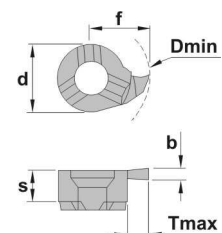
L

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

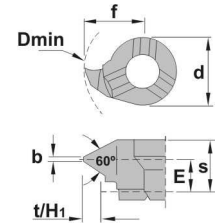
REF.	Dmin	b	f	s	d	tmax	K15K	P25K	TIC25	T20L
LS008.0070	8,0	0,73	4,8	3,3	6,0	1,0				•
LS008.0080	8,0	0,83	4,8	3,3	6,0	1,0				•
LS008.0090	8,0	0,93	4,8	3,3	6,0	1,0				•
LS008.0110	8,0	1,20	4,8	3,3	6,0	1,0				•
LS008.0130	8,0	1,40	4,8	3,3	6,0	1,0				•
LS008.0160	8,0	1,70	4,8	3,3	6,0	1,0				•
LS008.0100	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



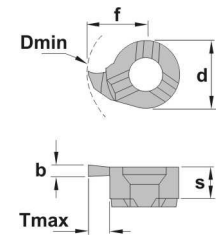
REF.	Dmin	pitch.	t/H1	f	E	s	b	d	K15K	P25K	TIC25	T20L
RS08.0815.01	8,0	1,5/1,75	0,95	4,8	2,5	3,5	0,18	6,0				•
RS11.1020.01	11,0	2,0	1,08	6,7	3,0	4,3	0,25	8,0				•
RS11.1325.01	11,0	2,5	1,35	6,7	3,0	4,3	0,31	8,0				•
RS14.1020.01	14,0	2,0	1,08	9,0	4,2	5,4	0,25	9,0				•
RS14.1325.01	14,0	2,5	1,35	9,0	4,7	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

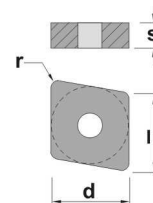
Arbors & adaptors

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	•		•	•



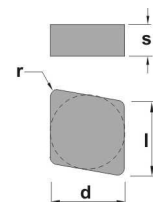
Turning

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

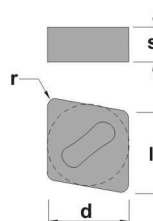
Threading

Drills

CNGX



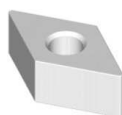
REF.	l	s	d	r	KX1	KC1	KC2	KC4
CNGX 120708	12,90	7,94	12,70	0,8	•			
CNGX 120712	12,90	7,94	12,70	1,2	•			
CNGX 120716	12,90	7,94	12,70	1,6	○			
CNGX 160708	16,10	7,94	15,87	0,8	○			
CNGX 160712	16,10	7,94	15,87	1,2	○			
CNGX 160716	16,10	7,94	15,87	1,6	○			



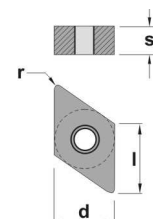
Cartridges

Brazed tools

DNGA



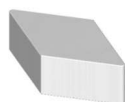
REF.	l	s	d	r	KX1	KC1	KC2	KC4
DNGA 150404	12,90	4,76	12,70	0,4		•		
DNGA 150408	12,90	4,76	12,70	0,8	•	•	•	•
DNGA 150412	12,90	4,76	12,70	1,2	•	•	•	•



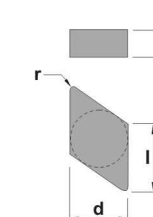
Milling cutters

Solid carbide

DNGN

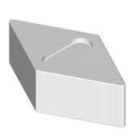


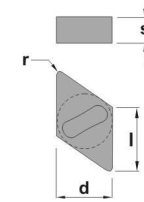
REF.	l	s	d	r	KX1	KC1	KC2	KC4
DNGN 150708	15,50	7,94	12,70	0,8			•	
DNGN 150712	15,50	7,94	12,70	1,2			•	
DNGN 150716	15,50	7,94	12,70	1,6			•	




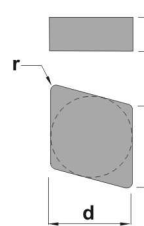
Boring heads


Arbors & adaptors

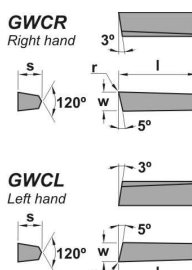
DNGX	REF.	l	s	d	r	KX1	KC1	KC2	KC4
	DNGX 120708	12,20	7,94	10,00	0,8	○			
	DNGX 120712	12,20	7,94	10,00	1,2	○			
	DNGX 120716	12,20	7,94	10,00	1,6	○			
	DNGX 150708	15,50	7,94	12,70	0,8	●			
	DNGX 150712	15,50	7,94	12,70	1,2	●			
	DNGX 150716	15,50	7,94	12,70	1,6	○			

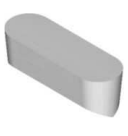


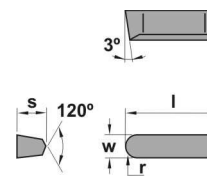
ENGN	REF.	l	s	d	r	KX1	KC1	KC2	KC4
	ENGN 130708	13,15	7,94	12,70	0,8			●	
	ENGN 130712	13,15	7,94	12,70	1,2			●	
	ENGN 130716	13,15	7,94	12,70	1,6			●	
	ENGN 130720	13,15	7,94	12,70	2,0			●	




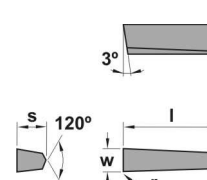
GWC R/L	REF.	l	s	w	r	KX1	KC1	KC2	KC4
	GWC 06R	15,00	7,50	6,00	0,6		○		
	GWC 08R	15,00	7,50	8,00	0,6		○		
	GWC 06L	15,00	7,50	6,00	0,6		○		
	GWC 08L	15,00	7,50	8,00	0,6		○		




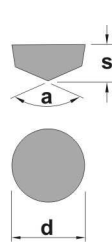
GWF	REF.	l	s	w	r	KX1	KC1	KC2	KC4
	GWF 04 M	12,00	5,00	4,00	2,0		○		
	GWF 05 M	12,00	5,00	5,00	2,5		○		
	GWF 06 M	15,00	7,50	6,00	3,0		○		
	GWF 07	15,00	7,50	7,00	3,5		○		
	GWF 08	15,00	7,50	8,00	4,0		○		
	GWF 10	15,00	7,50	10,00	5,0		○		



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

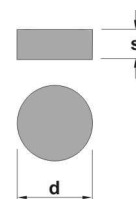
Inserts

Turning

RNGN

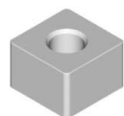


REF.	s	d	KX1	KC1	KC2	KC4
RNGN 120400	4,76	12,70	•		•	
RNGN 120700	7,94	12,70			•	

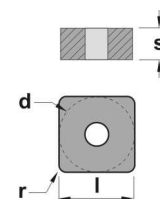


Automatic lathes

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	•			



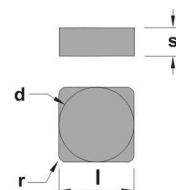
Ceramic tools

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

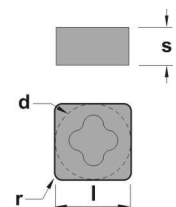
Cartridges

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


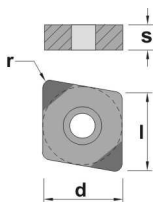
Arbors & adaptors

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

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


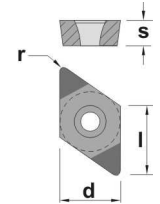
CNGA

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	○	


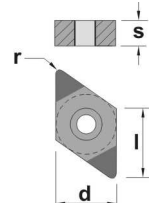
DCMW

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	•	

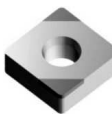
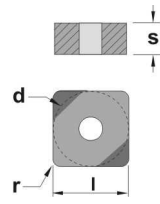
DNGA

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	○	

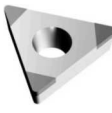
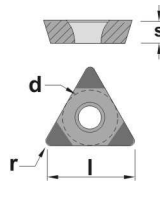
SNGA

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	○	


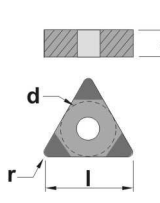
TCMW

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	○	

TNGA

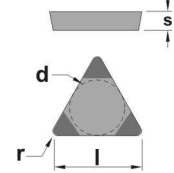
REF.	l	s	d	r	CBN	PKD
TNGA 160404	16,50	4,76	9,52	0,4	•	
TNGA 160408	16,50	4,76	9,52	0,8	•	
TNGA 160412	16,50	4,76	9,52	1,2	○	

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	•	



Inserts

Turning

Automatic lathes

Ceramic tools

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Solid carbide

Boring heads

Arbors & adaptors

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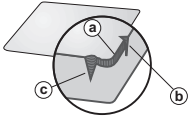
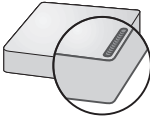
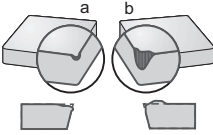
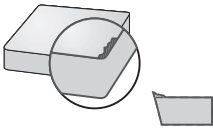
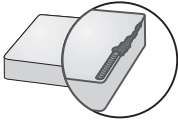
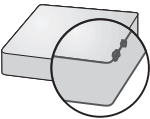
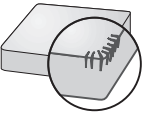
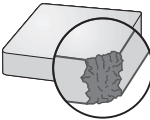
Milling cutters

Solid carbide

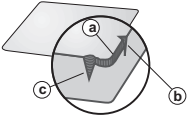
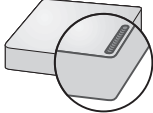
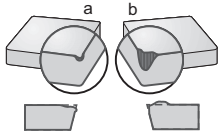
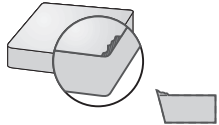
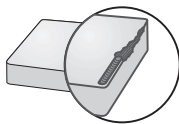
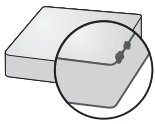
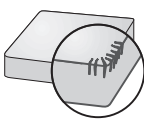
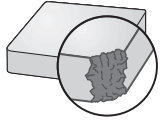
Boring heads

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: -low cutting speed. -relative cutting geometry. -"sticky" material, e.g. certain stainless steels and pure aluminium.</p> <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 (chattering) 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: -Intermittent machining. -Varying coolant supply.</p> <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 revêtue Al_2O_3 pour usiner l'acier Pour les matériaux 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 revêtue 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>

Inserts

Turning

Automatic lathes

Ceramic tools

Parting & grooving

Threading

Drills

Cartridges

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Milling cutters

Solid carbide

Boring heads

Arbors & adaptors

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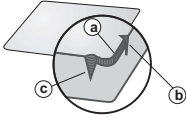
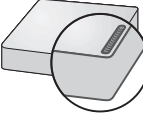
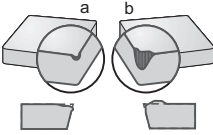
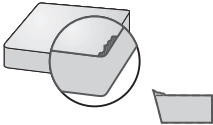
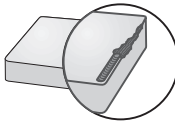
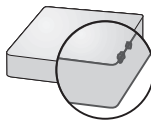
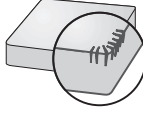
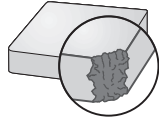
Milling cutters

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 Bohrstanze 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>

