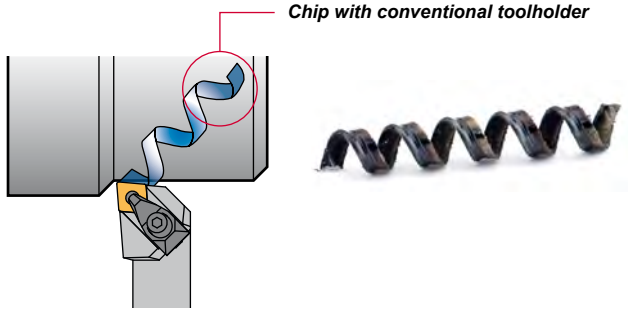
Flow-master

The Flow-Master coolant system works by delivering the machine coolant with maximum efficiency. The volume and speed of coolant coming out direct to the insert cutting edge improves machining performance.
Flow-Master tooling is extremely effective removing heat from the cutting edge, cooling the chips rapidly and helping to break them faster. Chips with poor heat removal are malleable and flexible, not breaking properly and adding extra heat to the cutting edge.

Chip with Flow-Master toolholder

Chip with conventional toolholder

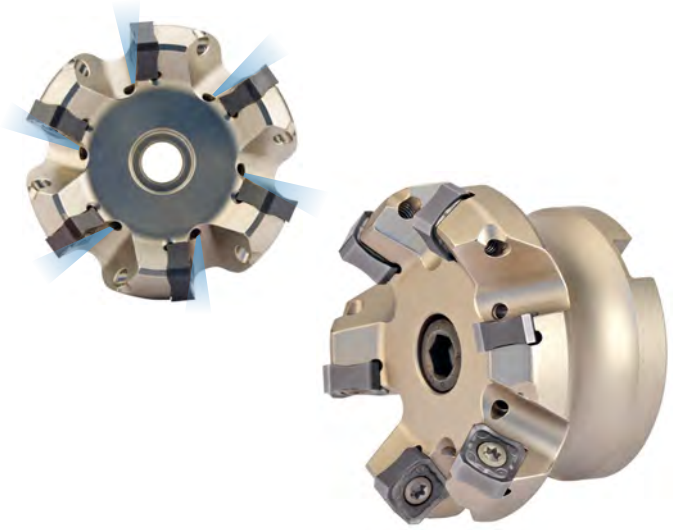


MILLING
Highlights

Ecomill 45º

The Ecomill series features a highly effective 45 degree face mill with very strong square inserts with positive cutting angles. The result is effective machining and lower costs thank to its 8-cornered inserts. Diameter range of 2.00-5.00 inches.

For more information see pages G32



Ecomill 90º

Ecomill is a highly efficient double-sided 90-degree shoulder face mill with negative inserts, but with positive cutting angles. This is a low cutting force cutter, where both sides of the insert can be used to benefit the overall economy.

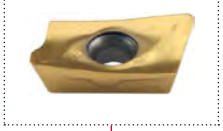
For more information see pages G18 to G20

Mill-Plus

The Mill-Plus insert features a high helix sharp cutting edge, which in turn provides fast metal removal.
Mill-Plus milling cutters can be used for very steep helical interpolations for penetration into deep cavities.

Chamfer-Plus

Chamfers, V-cuts, undercuts, preparation for welding, and deburring operations along the workpiece edges are frequent operations. Depending upon the type of machine and set-up, these operations can be performed in a variety of ways. Chamfer-Plus is suitable when a long edge cutter is needed.



PSC

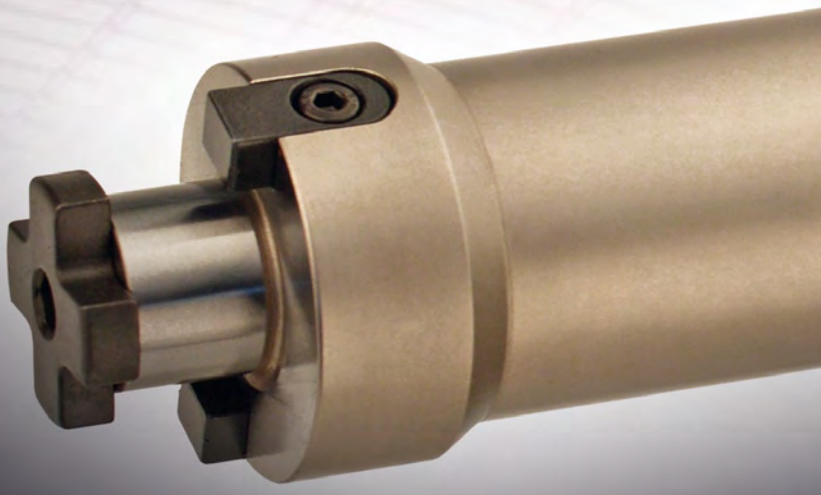
Highlights

PSC ISO 26623-1

Canela presents its range of PSC tools and holders. These tools are widely used for the most productive machining operations on lathes with either manual or automatic tool changers, multitask machining centers and vertical turn-mill machines. Both quick change adaptation systems include integral shank tools and a wide variety of stationary and rotating machine turret and spindle adapters, extensions, reducers and toolholders.

TOOLING
Highlights

mexin
Member of CANELA Group



CAT 50

Characteristics:
Cylindrical antivibratory shell mill adaptors. CAT 50

Special for mould and die makers

Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

For more information see pages F04 to F05

A14.160

JIS B 6339-BT

Antivibratory shell mill adaptors

HSK DIN 69893-1

Characteristics:
Cylindrical antivibratory shell mill adaptors. HSK DIN 69893-1
For cutters with driving slot DIN 138.
Special for mold and die makers.

PSC ISO 26623-1

MATERIAL:
- Chromium-manganese carburized steel 1.7131 (16MnCr5).

EXECUTION:
- Carburized, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburized layer minimum 0,5 mm.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

ACCURACY:
- Taper according to DIN 254
- Taper angle: tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0,001 mm.

For more information see pages E84 to E116

SOLID CARBIDE

ALBERG
Member of CANELA Group

HIGH PERFORMANCE

6230 6240 6440 6054 6064 6164 6022 6023

6043 6143 6243 6342 6343 6322 6323 6324 6325

SOLID CARBIDE

6510 6610 6520 6530 6640 6020 6021 6030 6031 6040 6041 6320 6321

DRILLS

7320 7520 7323 7523

OTHERS

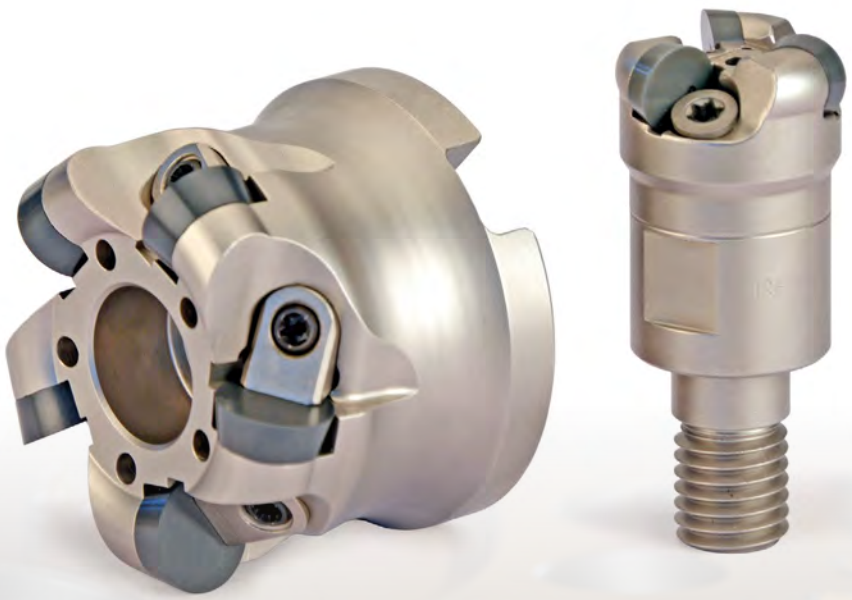
84 86 87 88

CERAMIC

Highlights

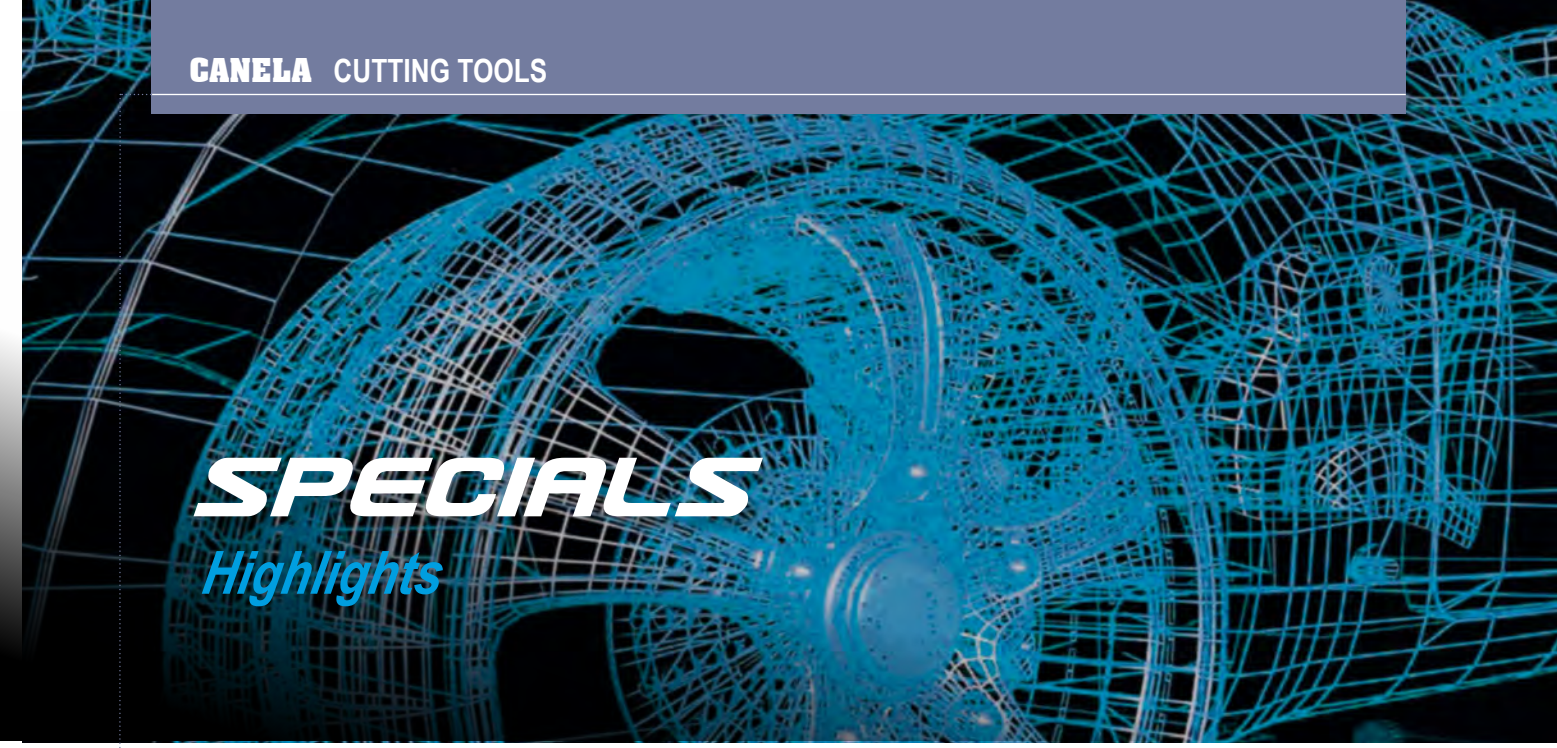
Ceramic milling cutters

Ceramic inserts run faster than carbide inserts, so productivity is highly increased in high-temperature machining.



Ceramic tool systems

Canela ceramic clamping systems enable productive turning of cast iron, steel, hardened steels and other difficult to machine materials.
Three proven clamping systems support customers in all machining tasks.

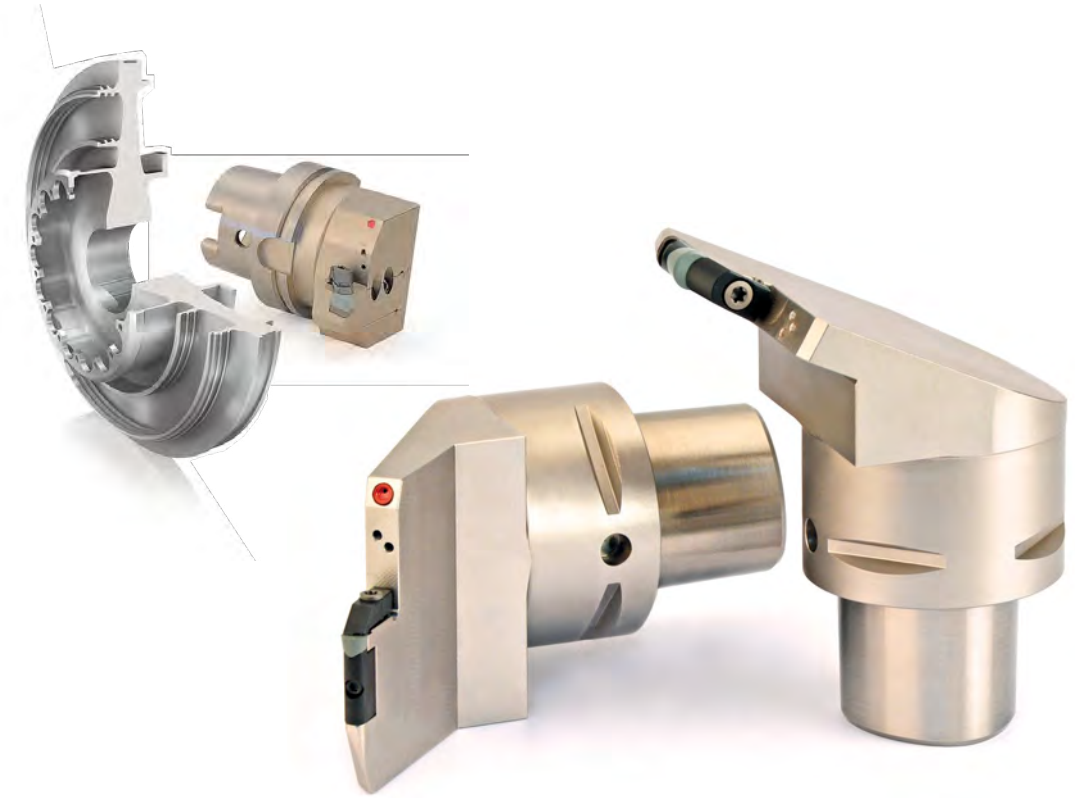


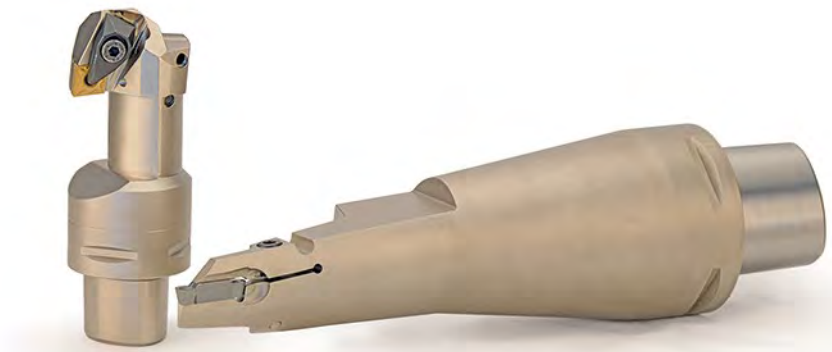
SPECIALS

Highlights

AEROSPACE

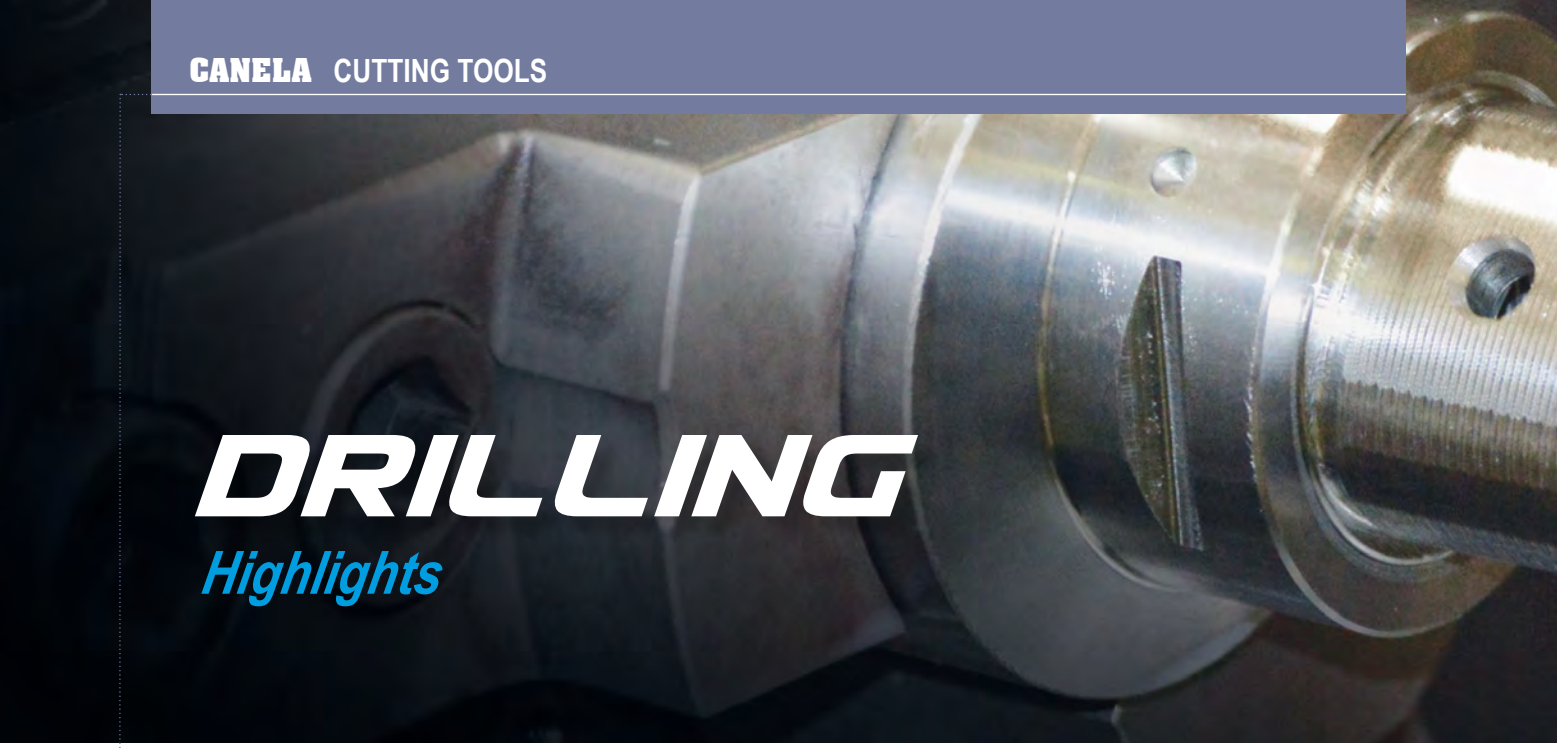
Canela develops innovative tooling solutions for aerospace. The range includes tools for lighter materials that reduce airframe weight, materials such as high temperature alloys, composite materials, and aluminum alloys. Canela produces tooling products for a variety of applications uniquely suited for high efficiency machining of super alloys as well as other difficult-to-machine aerospace materials.





AUTOMOTIVE

Canela supplies special tools for all machining needs, taking into consideration the characteristics of machine tool, workpiece and cycle time. Our cutting tools specialists support initial tooling set-up, test periods and analyze machining processes in existing machine lines.



DRILLING

Highlights

Drills

Brand new square insert design for maximum drilling efficiency. Excellent cutting performance and chip control due to the optimized geometry and chip breaker of the inserts, central and peripheral.

PSC

Canela has enhanced its drill program with the addition of the PSC clamping system for indexable inserts. The 45.. drills range in diameter from 0.591 to 1.693 inches with a depth of cut of 3xD.

For more information see pages E77 to E79

Trepanning drills

Trepanning is used for larger hole diameters and where machine power is limited, because it is not as power consuming as solid drilling. The trepanning tool does not machine the whole diameter, only a ring at the periphery. Instead of removing all the material in the form of chips, a core is left in the center of the hole – consequently, this method is for through-hole applications.

TURNING

Geometries and grades

Turning inserts

Toolholders

Boring bars

TURNING

Cartridges

PARTING AND GROOVING

Parting and grooving

THREADING

Threading tools

CERAMIC TOOLS

Ceramic tools

A

PSC

Toolholders

Boring bars

Threading

Parting and grooving

Drills

Arbors and adaptors

TOOLING SYSTEMS

Antivibratory adaptors

Mill adaptors

MILLING

Grades

Milling inserts

Facing square shoulder cutters

Face and chamfering

Slot cutters

MILLING

Profile milling

DRILLS

Drills

SPARE PARTS FOR TURNING AND MILLING

Turning spare parts

Milling spare parts

TECHNICAL INFORMATION

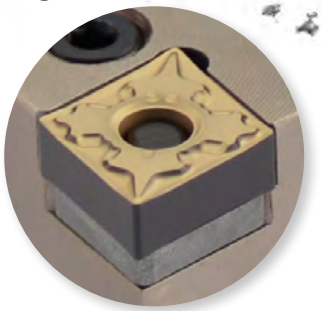
Technical information

A

INSERTS

Turning *line*

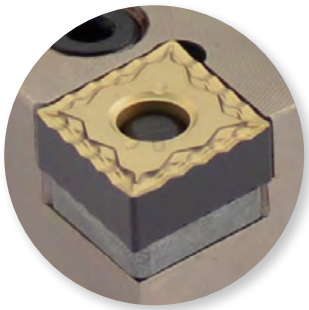
-FC



Recommendation for light cutting of carbon steel, alloy steel and stainless steel.

Double sided chipbreaker.
Can be used at low depth of cuts and high feed rates.
The curved edge allows smooth chip discharge.
Recommended for workpieces in the 160-250HB range.

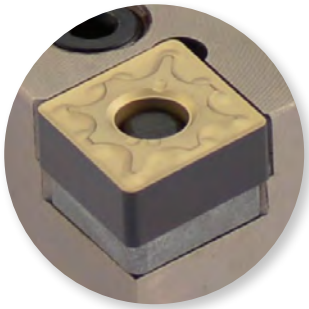
-FMC



Alternative breaker for light cutting of carbon steel and alloy steel.

Double sided chipbreaker.
Superior chip control at small depth of cuts.
Covers copying and back turning with wavy edge.
Recommended for workpieces in the 200-300HB range.

-MC



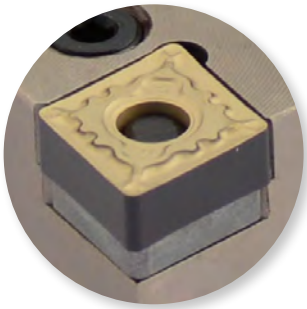
Recommendation for medium cutting of carbon steel and alloy steel.
First recommendation for finish to light cutting of cast iron.

Double sided chipbreaker.
Positive land provides sharp cutting action.

Available in

TN15, TN20, TN30 and TN35

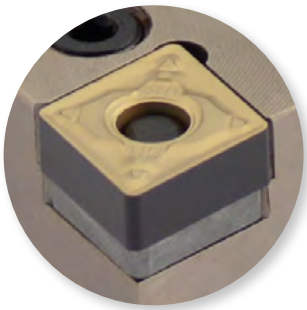
-MFC



Alternative breaker for medium cutting of carbon steel and alloy steel.

Double sided chipbreaker.
Suitable for medium to light cutting.
Breaker geometry appropriate for copying and back turning.
Good balance of sharpness and strength.

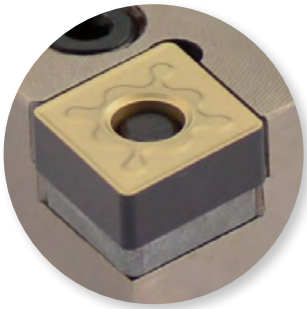
-MHC



Recommendation for medium-heavy cutting of mild steel.
Alternative breaker for medium cutting of carbon steel and alloy steel.

Double sided chipbreaker.
Flat land offers high edge strength.
A wide chip pocket prevents chip jamming at large depth of cut.

-RC



Recommendation for rough cutting of carbon steel, alloy steel and stainless steel.

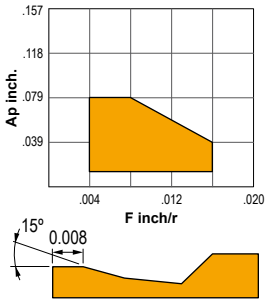
Double sided chipbreaker.
For interrupted cut and removing scale.
A combination of wide land and large chip pocket allows high feeds.

Geometries

-FC

Recommendation for light cutting of carbon steel, alloy steel and stainless steel.

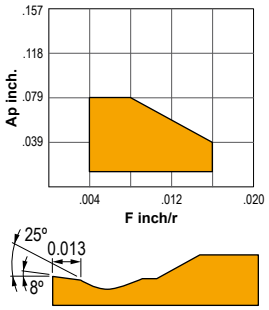
Double sided chipbreaker.
Can be used at low depth of cuts and high feed rates.
The curved edge allows smooth chip discharge.
Recommended for workpieces in the 160-250HB range.



-FMC

Alternative breaker for light cutting of carbon steel and alloy steel.

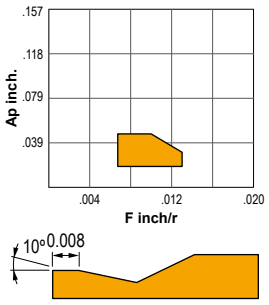
Double sided chipbreaker.
Superior chip control at small depth of cuts.
Covers copying and back turning with wavy edge.
Recommended for workpieces in the 200-300HB range.



-CC

Recommendation for light cutting of mild steel.

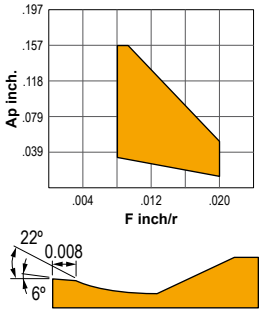
Double sided chipbreaker.
Effectively controls chips.
Recommended for workpieces in the 200-300HB range.



-MC

Recommendation for medium cutting of carbon steel and alloy steel.
First recommendation for finish to light cutting of cast iron.

Double sided chipbreaker.
Positive land provides sharp cutting action.

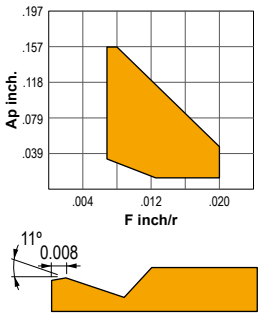


Geometries

-MFC

Alternative breaker for medium cutting of carbon steel and alloy steel.

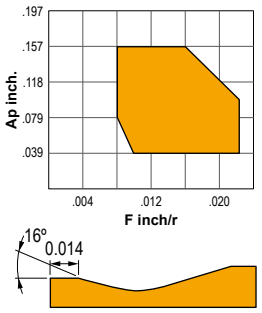
Double sided chipbreaker.
Suitable for medium to light cutting.
Breaker geometry appropriate for copying and back turning.
Good balance of sharpness and strength.



-MHC

Recommendation for medium-heavy cutting of mild steel.
Alternative breaker for medium cutting of carbon steel and alloy steel.

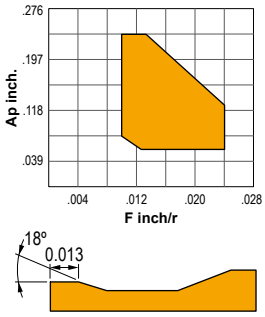
Double sided chipbreaker.
Flat land offers high edge strength.
A wide chip pocket prevents chip jamming at large depth of cut.



-RC

Recommendation for rough cutting of carbon steel, alloy steel and stainless steel.

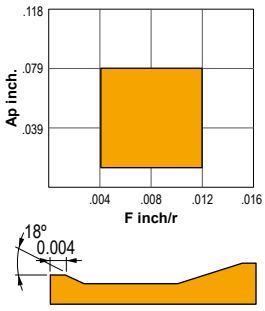
Double sided chipbreaker.
For interrupted cut and removing scale.
A combination of wide land and large chip pocket allows high feeds.



-KC

Recommendation for medium cutting of cast iron.

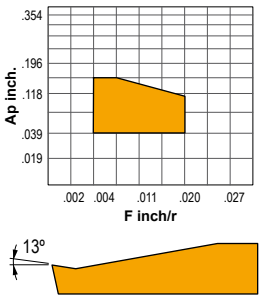
Optimum balance between sharpness and high edge strength for general use.



Geometries

-TC

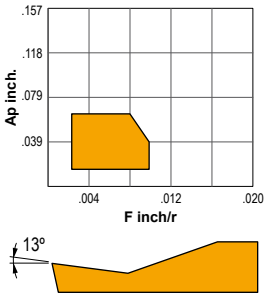
First recommendation for medium cutting of stainless and mild steel and for light cutting of difficult-to-cut materials. Double-sided chipbreaker. The sharp cutting edge gives best performance.



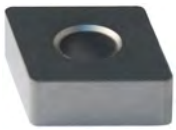
..NGP

Light cutting of difficult-to-cut materials.
Ideal for heat-resistant alloy and titanium alloy.

The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal.
The high rake angle is highly suitable for finish- light cutting difficult to cut materials.

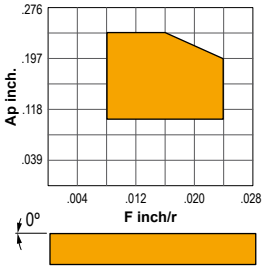


..NMA



Recommendation for rough cutting of cast iron.

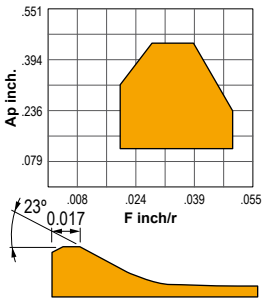
Double sided flat insert.
Most effective in unstable machining i.e. interrupted cuts due to high edge strength and stable fitting on the shim.



..NMM

Recommendation for heavy cutting of carbon steel and alloy steel.

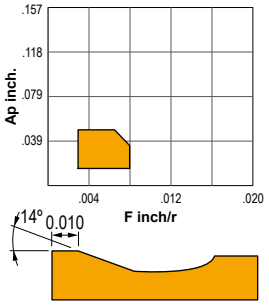
Single sided chipbreaker.
Appropriate for the medium range of the heavy cutting region.
The flat edge and chamfer provide a balance of sharpness and strength.
Variable land and a wavy chipbreaker for good chip control.



..NMX

Light cutting.

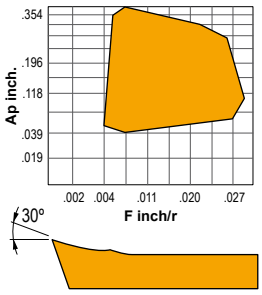
Double sided chipbreaker.
Parallel chipbreaker.
Excellent chip control at low to medium feed rates.



Geometries

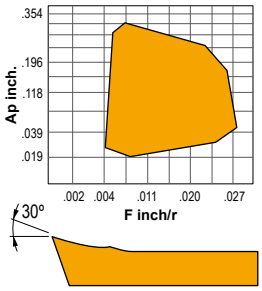
-AL

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



-AP

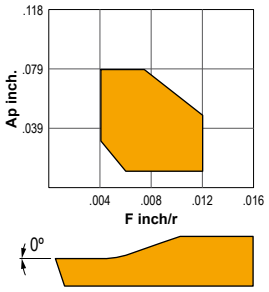
Suitable for aluminium, light alloys, non ferrous materials, high-melting metals, plastics, glass fiber, reinforced plastics, laminated board, carbon and fine ceramics.



..MR

Light to medium cutting of carbon steel, alloy steel and stainless steel.

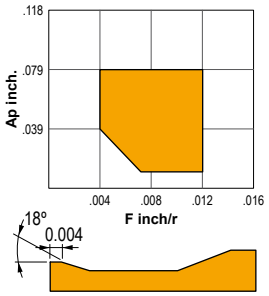
Standard, general purpose chipbreaker.



..MT

Recommendation for medium cutting of carbon and alloy steel.

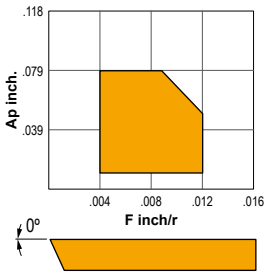
The small flat land at cutting edge provides an excellent balance of wear and fracture resistance.
The wide chip gullet decreases cutting resistance, reduces vibration and chip jamming in elevated depth of cut applications.



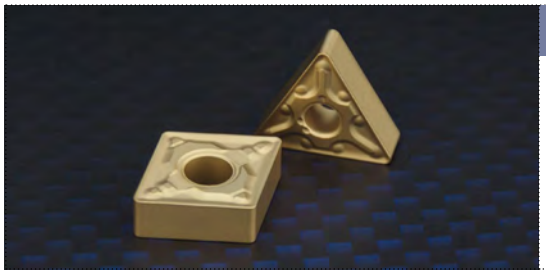
..MW

For cast iron.

Most effective in unstable machining due to high edge strength.



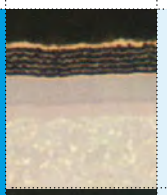
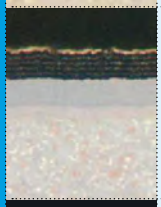
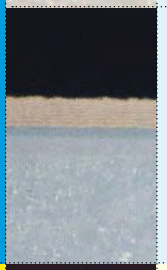
CVD



CVD coated carbide

The CVD coatings are generated by a chemical reaction at high temperatures (1292-1922 ºF). All CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.
CVD coatings are the first choice in a large turning range where wear resistance is important.

Features of CVD coated carbide

Material		Grade	Colour	Coating composition	Definition
P Steel		***TN15***		$TiCN+Al_2O_3+TiN$	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.
		***TN20***		$TiCN+Al_2O_3+TiN$	General purpose wear resistant grade. It has an enriched substrate that 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 TN15.
		***TN30***		$TiCN+Al_2O_3+TiN$	General purpose wear resistant turning grade. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel at lower speeds thanTN15. This turning grade is for demanding metal removal operations, including cutting through scale at low speeds through heavy interruption, and problem machining of stainless steel at low speed and poor rigidity.
M Stainless		***TN35***		$TiCN+Al_2O_3+TiN$	New coated grade developed to machine stainless steel and heat-resistance alloys. This grade is only used in combination with the MC chipbreaker. First choice for stainless steel applications.
K Cast iron		***TK15***		$TiCN+Al_2O_3$	CVD grade for gray, ductile nodular cast iron with excellent balance of wear and fracture resistance. The smooth coating prevents insert failure such as welding and chipping, providing a consistent cutting perfomance.

Grade characteristics

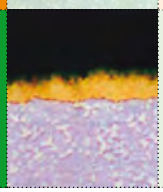
Grade	Substrate			Coating Layer	
	Hardness (HRA)	T.R.S (GPa)	Surface	Composition	Thickness
TN15	90.3	2.0	Tough	Accumulated TiCN-Al_2O_3+Ti Compound	Thick
TN20	90.3	2.0	Tough	Accumulated TiCN-Al_2O_3+Ti Compound	Thick
TN30	90.0	2.2	Tough	Accumulated TiCN-Al_2O_3+Ti Compound	Thick
TN35	89.0	2.6	-	Ti Compound	Thin
TK15	91.0	2.2	-	TiCN-Al_2O_3 Compound	Thick

PVD

PVD coated carbide

PVD coatings offer wear resistance due to their hardness. The coating process involves the evaporation of metal, which reacts with nitrogen to form a hard nitride coating. The full process is made at relatively low temperatures (752-1112 ºF). PVD coatings are recommended when sharp cutting edges are needed.

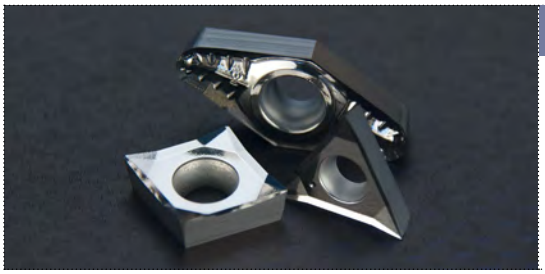
Features of PVD coated carbide

Material		Grade	Colour	Coating composition	Definition
P Steel		***TL20***	●	TiAlN	Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel.
		***TIN25***	●	TiN-TiC-TiN	Coated with TiN-TiC-TiN. The coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant.
M Stainless		***TS15***	●	TiAlN	Coated TiAlN grade in the K20 range. It is used on cast iron, aluminium and heat-resistant alloys. It works well on cobalt based alloys and synthetic materials, and is suitable for finishing on heat-resistant alloys.
S Heat resistant alloys		***TS20***	●	TiN+TiAlN+TiN	Coated TiN+TiAlN+TiN grade for machining super alloys. It has a fine grain of 0.8 µm and a hardness of HV30 1820 and it offers an excellent rupture and heat resistance.
N Non ferrous materials		***ZR10***	●	TiB_2	Micrograin grade with an extremely hard single TiB_2 layer for machining aluminium, copper alloys and plastics.

Grade characteristics

Grade	Substrate		Coating Layer	
	Hardness (HRA)	T.R.S (GPa)	Composition	Thickness
TL20	91.5	2.5	(Al,Ti)N	Thin
TIN25	90.5	2.0	TiN	Thin
TS15	91.5	2.5	(Al,Ti)N	Thin
TS20	90.5	2.5	(Al,Ti)N-Ti Compound	Thin
ZR10	99.2	2.8	TiB_2	Thin

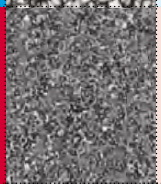
UNCOATED CARBIDE



UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

Features of UNCOATED CARBIDE

Material		Grade	Colour	Composition	Definition
P Steel		***PM25***		WC+TiC+TaC+Co	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. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications.
		***PM40***		WC+TiC+TaC+Co	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.
K Cast iron		***KM15***		WC+Co	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.

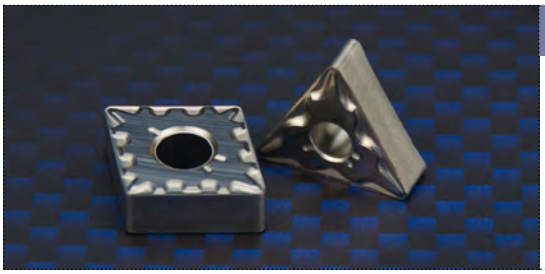
Application

ISO	Composition	Features	Workpiece
P	WC+TiC+TaC+Co	Heat resistance, excellent plastic deformation resistance.	Carbon steel, alloy steel, stainless steel.
M	WC+TiC+TaC+Co	General tools stable heat resistance with strength.	Carbon steel, alloy steel, stainless steel, cast steel.
K	WC+Co	High strength and superior wear resistance.	Carbon iron, non-ferrous metal, plastic, etc.

Properties

Grade	Hardness (HRA)	TRS (Kgf/mm^2)	Young's modulus ($103Kgf/mm^2$)	Thermal expansion coefficient ($10^{-6}/^oC$)	Thermal conductivity ($cal/cm \cdot sec \cdot ^oC$)
KM15	90.9	250	63	-	105
PM25	91.9	200	56	5.2	45
PM40	91.3	230	53	5.2	-

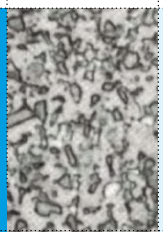
CERMET



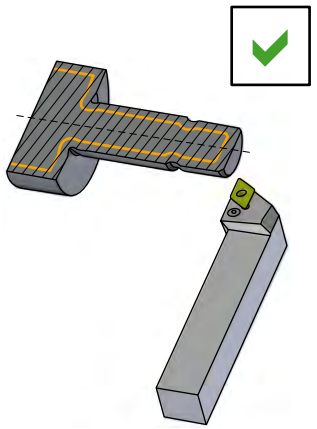
CERMET

- Maximum heat and wear resistance.
- Excellent resistance to oxidation.
- For very high cutting speeds.
- Ideal for finishing.
- Universal application.

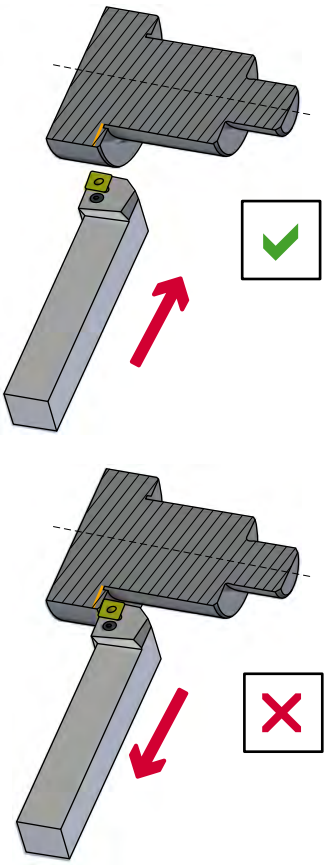
Features of CERMET

Material		Grade	Colour	Composition	Definition
P Steel		***NC25***		Ti+W+Ta/Nb	NC25 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.

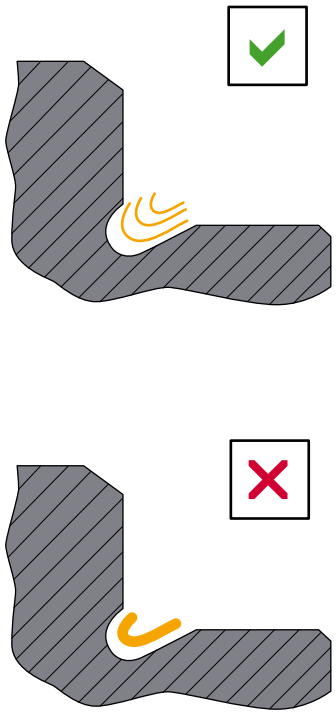
Application recommendations



It is required to prerough following the profile precisely.

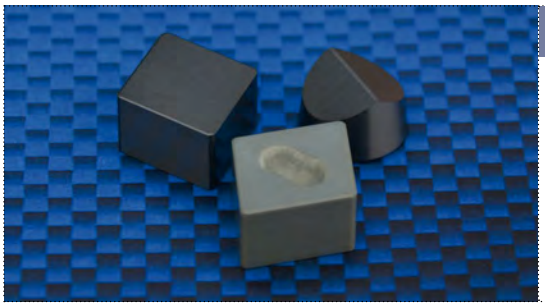


Use conventional approach for face turning.



Several cuts are required for deep applications.

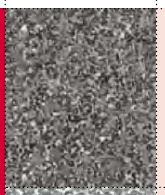
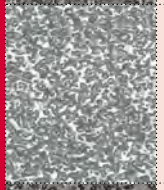
CERAMIC



CERAMIC

Ceramic grades are able of running at high speeds, thus reducing expensive machining time. Ceramic inserts are recommended for hard turning of 38HRC to 64HRC hardened steel, or for roughing and finishing of cast iron.
Ceramic maintains good surface finishes due to its low affinity to workpiece materials.

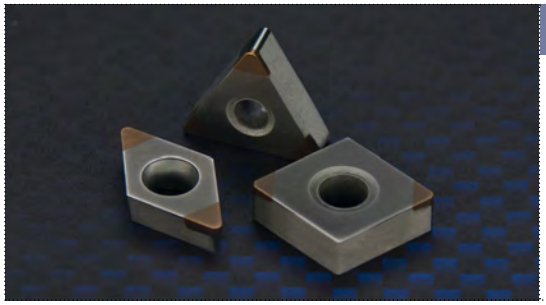
Features of CERAMIC

Material		Grade	Colour	Composition	Definition
K Cast iron		***CX9***		Al_2O_3	CX9 is a highly wear-resistant tool that has been formed into microstructure by adding a trace amount of zirconia (ZrO_2) to highly pure alumina (Al_2O_3), the main component of this tool material.
		***CC2***		Al_2O_3+TiC	This material is well-balanced between wear resistance and fracture resistance, and it works well in a wide range of cutting cast iron and in the turning of hard materials.
		***CX6***		SiAlON	CX6 is an ultimate silicon-nitride material that has been developed to improve the notch wear of the conventional ceramics that contain silicon nitride. It reduces notch wear amount in machining gray cast iron.
S Heat resistant alloys		***CW1***		Al_2O_3-based	CW1 is a whisker-reinforced composite ceramic material with silicon-carbide whisker added to alumina. Excellent wear resistance with high toughness and crack resistance for heat-resistant alloys and high-hardened mill rolls.
P Steel		***CC7***		Al_2O_3+TiC	Since it has the finest grain size particle with a high melting point, the composite CC7 improves both hardness and strength, and it shows superior performance as a special material for machining high-hardened materials.

Ceramic main application areas

			
Cast iron	Aerospace	Roll turning	Hardened materials

CBN / PCD



CBN

- High thermal conductivity, which provides stable cutting.
- Suitable for high speed cutting of cast iron and sintered steel.
- Superior wear resistance when cutting hardened materials.

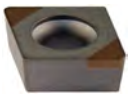
PCD

- Applicable for turning and milling of non-ferrous materials and non-metals.
- Long tool life due to extreme hardness.
- High cutting speeds and increased cutting productivity.

Features of CBN / PCD

Material		Grade	Colour	Composition	Definition
H Hard materials		***CB10***	●	$TiCN+Al_2O_3+TiN$	These CBN are formed with a special ceramic binder based on CBN (Cubic Boron Nitride) particles, and the CBN sintered layer increases the thickness of the 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.

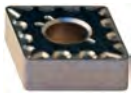
	Materials to be machined with polycrystalline boron nitride **Material**	Vc = m/min.	Infeed f = inch./U	Depth of cut ap=inch.
CBN	- Hardened materials and nitriding steels.	60-120	0.001-0.007	0.039
	- High temperature and corrosion resistant alloys with high nickel or cobalt content.	70-150	0.001-0.006	0.039
	- Gray cast iron, especially hard and abrasion resistant types.	300-600	0.004-0.020	0.118
	- High speed steel (HSS).	60-120	0.001-0.004	0.039
	- Metal powder spraying.	60-120	0.078	0.039

Material		Grade	Colour	Composition	Definition
N Non ferrous materials		***PD10***	●	$TiCN+Al_2O_3+TiN$	PCD consists of a 0.019 inches thick diamond layer, which is inseparably connected to a carbide base. This polycrystalline diamond layer originates at a pressing operation by bonding of the smallest diamond grains, supported by a metallic bonding agent. This cutting material has also a very long tool life.

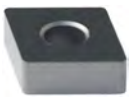
	Materials to be machined with polycrystalline diamond **Material**	Vc = m/min.	Infeed f = inch./U	Depth of cut ap=inch.
PCD	- Aluminium alloys under 3% SIC	200-2000	0.002-0.015	up to the whole diamond cutting edge
	- Aluminium alloys up to 12% SIC	150-1000	0.002-0.015	
	- Aluminium alloys up to approx. 21% SIC	100-800	0.002-0.015	
	- Brass, magnesium, zinc alloys.	200-2000	0.002-0.015	
	- Copper, bronze, lead alloys.	200-1000	0.002-0.015	
	- Duro and thermoplastics with and without fillers e.g. epoxy resin.	100-1000	0.002-0.007	
	- Hard papers.	200-600	0.004-0.011	
	- Hard and soft rubber with and without fillers.	100-500	0.004-0.011	
	- Graphite and pre-sintered carbide.	100-500	0.004-0.015	
	- Aluminium oxide, silicon, tungsten.	50-180	0.004	27.55

Insert selection

● Main application
○ Extended application

		Machining type		Material	Continuous ●	Slight interruption ◔	Interruption ✣
- FC		Finishing	●	●	TN15	TN15	TN30
		Medium	○	○	TN15	-	-
		Roughing		○	TN15	-	-
- FMC		Finishing	●	●	TN15	TN15	-
		Medium	○		-	-	-
		Roughing			-	-	-
- CC		Finishing	●	●	NC25	NC25	-
		Medium			-	-	-
		Roughing		●	NC25	-	-
- MC		Finishing	●	●	TN15	TN15	TN30
		Medium	●	●	TN35	TN35	TN35
		Roughing		○	TN15	-	-
- MFC		Finishing	○	●	TN15	TN15	TN30
		Medium	●		-	-	-
		Roughing	○		-	-	-
- MHC		Finishing		●	TN15	TN20	TN30
		Medium	●		-	-	-
		Roughing	●		-	-	-
- RC		Finishing		●	TN15	TN15	TN30
		Medium	○	○	-	-	TN30
		Roughing	●		-	-	-
- TC		Finishing	●	●	TS20	TS20	-
		Medium	●		-	-	-
		Roughing	●	●	TS20	TS20	-
- KC		Finishing	●		-	-	-
		Medium	●		-	-	-
		Roughing	●	●	TK15	TK15	TK15

● Main application
○ Extended application

		Machining type		Material	Continuous ●	Slight interruption ◔	Interruption ✣
..NGP		Finishing	●	●	TS15	TS15	-
		Medium	●	○	TS15	TS15	-
		Roughing		●	TS15	-	-
..NMA		Finishing	●		-	-	-
		Medium	●		-	-	-
		Roughing	●	●	TK15	TK15	TK15
..NMM		Finishing		●	-	TN15	TN30
		Medium		○	-	-	TN30
		Roughing	●		-	-	-
..NMX		Finishing	●	●	NC25	NC25	-
		Medium	○		-	-	-
		Roughing		○	NC25	-	-
- AL		Finishing	●		-	-	-
		Medium	●	●	KM15 - ZR10	KM15 - ZR10	KM15 - ZR10
		Roughing	●	○	KM15 - ZR10	-	-
- AP		Finishing	●		-	-	-
		Medium	●	●	KM15 - ZR10	KM15 - ZR10	KM15 - ZR10
		Roughing	○	○	KM15 - ZR10	-	-
..MR		Finishing	●	●	TN15	TN30	TN30
		Medium	●	○	TN15	TN30	-
		Roughing	○	○	TN15	-	-
..MT		Finishing	●	●	TN15	TN15	TN30
		Medium	●	●	TN35	TN35	TN35
		Roughing		●	TN15	-	-
..MW		Finishing	●	●	PM25	PM25	PM25
		Medium	●		-	-	-
		Roughing		●	KM15	KM15	KM15

Grade chart

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	P05													
	P10													
	P15													
	P20													
	P25													
	P30													
	P35													
	P40													
	P45													
	P50													
M	M05													
	M10													
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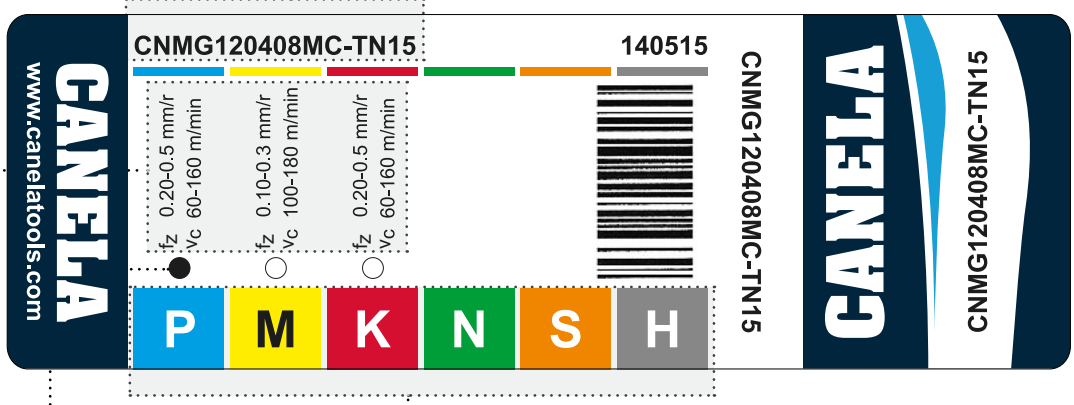
	N30													
S	S05													
	S10													
	S15													
	S20													
	S25													
	S30													
H	H05													
	H10													
	H15													
	H20													
	H25													
	H30													

Label designation system

Code key

Shape	Tolerances	Inscribed circle		Corner chamfer/nose radius		Grade
C	N	M	G	12	04	08	MC	TN15
				4	3	2		
	Side clearance angle		Type		Thickness		Chipbreaker	



Material group

Application area

- ● Main application
- ○ Extended application

Cutting data

fz: Feed
vc: Speed

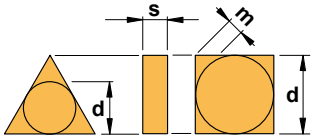
P	**Blue: Steel** Machining, cementation, tempered and constructional steels.
M	**Yellow: Stainless steel** Machining, cementation, tempered and constructional steels.
K	**Red: Cast iron** Cast iron, grey cast iron, tempered iron, spheroidal cast iron, CGI, sintered iron.
N	**Green: Non ferrous materials** Al wrought and Al cast alloys, copper, copper alloys, non metal materials.
S	**Orange: Heat-resistant alloys / titanium** Ni/Co-base alloys, Ti alloys.
H	**Grey: Hard materials** Hardened steels (≥ 45 HRC), chilled castings, hard cast irons.

ISO Code key

INSERT SHAPE		
V	Rhombic 35º	
D	Rhombic 55º	
E	Rhombic 75º	
C	Rhombic 80º	
M	Rhombic 86º	
K	Parallelogram 55º	
B	Parallelogram 82º	
A	Parallelogram 85º	
L	Rectangular 90º	
P	Pentagonal 108º	
H	Hexagonal 120º	
O	Octagonal 135º	
R	Round	
S	Square 90º	
T	Triangular 60º	
W	Trigon 80º	
X	Special design	

TOLERANCES

	m	Ø d	s
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.013
J	±0.005	±0.05 - ±0.15	±0.025
K	±0.013	±0.05 - ±0.15	±0.025
L	±0.025	±0.05 - ±0.15	±0.025
M	±0.08 - ±0.20	±0.05 - ±0.15	±0.13
N	±0.08 - ±0.20	±0.05 - ±0.15	±0.025
U	±0.13 - ±0.38	±0.08 - ±0.25	±0.13

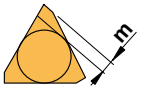


Detail of M Class insert tolerance (Tolerance of nose height **m**)

D.I.C	△	□	80º	55º	35º	○
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	-
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	-
12.70	±0.13	±0.13	±0.13	±0.15	-	-
15.875	±0.15	±0.15	±0.15	±0.18	-	-
19.05	±0.15	±0.15	±0.15	±0.18	-	-
25.40	-	±0.18	-	-	-	-
31.75	-	±0.20	-	-	-	-

Detail of M Class insert tolerance (Tolerance of inscribed circle **d**)

D.I.C	△	□	80º	55º	35º	○
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	-
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.70	±0.08	±0.08	±0.08	±0.08	-	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	-	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	-	±0.10
25.40	-	±0.13	-	-	-	±0.13
31.75	-	±0.15	-	-	-	±0.15



Triangular insert with a facet (Secondary cutting edge)

C N M G

CLEARANCE ANGLE	
A	3º
B	5º
C	7º
D	15º
E	20º
F	25º
G	30º
N	0º
P	11º

SYMBOL FOR FIXING AND/OR FOR CHIPBREAKER (Metric)

	Hole	Hole configuration	Chipbreaker	Figure
N	Without hole	-	No	
R	Without hole	-	One-sided	
F	Without hole	-	Double-sided	
A	With hole	Cylindrical hole	No	
M	With hole	Cylindrical hole	One-sided	
G	With hole	Cylindrical hole	Double-sided	
W	With hole	Cylindrical hole + One countersink (40-60º)	No	
T	With hole		One-sided	
Q	With hole	Cylindrical hole + Double countersink (40-60º)	No	
U	With hole		Double-sided	
B	With hole	Cylindrical hole + One countersink (70-90º)	No	
H	With hole		One-sided	
C	With hole	Cylindrical hole + Double countersink (70-90º)	No	
J	With hole		Double-sided	
X	-	-	-	Special

SYMBOL FOR INSERT SIZE								
V	D	C	S	T	W	R		
	04	03	03	06			5/32	3,97
08	05	04	04	08				4,76
09	06	05	05	09	03		7/32	5,56
						06		6,00
11	07	06	06	11	04		1/4	6,35
13	09	08	07	13	05			7,94
						08		8,00
16	11	09	09	16	06		3/8	9,52
						10		10,00
						12		12,00
22	15	12	12	22	08		1/2	12,70
	19	16	15	27	10		5/8	15,87
						16		16,00
	23	19	19	33	13		3/4	19,00
						20		20,00
	27	22	22	38				22,22
						25		25,00
	31	25	25	44			1	25,40
	38	32	31	54				31,75
						32		32,00

SYMBOL FOR INSERT SIZE (inch.)	
2	1/4
3	3/8
4	1/2
5	5/8
6	3/4
8	1

INSERT CORNER			
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

SECONDARY CUTTING EDGE			
A	45°	F	85°
D	60°	P	90°
E	75°		

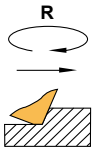
χ_r

CLEARANCE ANGLE			
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°	Z	Special

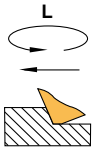
α_o

CUTTING DIRECTION

R



L



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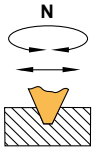
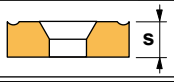
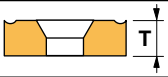


12	04	08	E	N	FC
4	3	2			

SYMBOL FOR INSERT THICKNESS		
	inch.	mm
01	1/16	1,59
02	3/32	2,38
03	1/8	3,18
T3	5/32	3,97
04	3/16	4,76
05	7/32	5,56
06	1/4	6,35
07	5/16	7,94
09	3/8	9,52



SYMBOL FOR INSERT THICKNESS (inch.)	
1	1/16
2	1/8
3	3/16
4	1/4
5	5/16
6	3/8

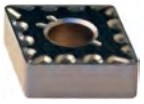


SYMBOL FOR CUTTING EDGE CONDITION	
SYMBOL	CUTTING EDGE
F	Sharp
E	Honed
T	Chamfered
S	Chamfered and honed
K	Double-chamfered
P	Double-chamfered and honed

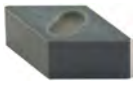
For special forms of the chip grove in the 10° position, manufacturer specific chip grooves and designations can be indicated.

SYMBOL FOR CHIPBREAKER		
AL	AP	CC
FC	FMC	KC
MC	MFC	MHC
MR	MT	MW
NGP	NMA	NMM
NMX	RC	TC

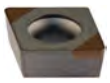
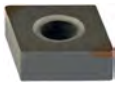
A

CCGT-AL  Page A23 7°	**CCGT-AP**  Page A23 7°	**CCMT**  Page A23 7°	**CCMW**  Page A23 7°	**CNGP**  Page A24 0°	**CNMA**  Page A24 0°
CNMG-CC  Page A24 0°	**CNMG-FC**  Page A24 0°	**CNMG-FMC**  Page A25 0°	**CNMG-KC**  Page A25 0°	**CNMG-MC**  Page A25 0°	**CNMG-MFC**  Page A25 0°
CNMG-MHC  Page A26 0°	**CNMG-RC**  Page A26 0°	**CNMG-TC**  Page A26 0°	**CNMM**  Page A26 0°		
DCGT-AL  Page A27 7°	**DCGT-AP**  Page A27 7°	**DCMT**  Page A27 7°	**DCMW**  Page A27 7°	**DNGP**  Page A28 0°	**DNMA**  Page A28 0°
DNMG-FC  Page A28 0°	**DNMG-FMC**  Page A28 0°	**DNMG-KC**  Page A29 0°	**DNMG-MC**  Page A29 0°	**DNMG-MFC**  Page A29 0°	**DNMG-MHC**  Page A29 0°
DNMG-TC  Page A30 0°	**DNMX**  Page A30 0°				
KNUX  Page A30 0°					
RCGT-AL  Page A31 7°	**RCGT-AP**  Page A31 7°	**RCMT**  Page A31 7°	**RNMG**  Page A31 0°		

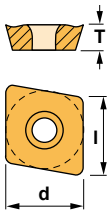
Ceramic inserts

CNGA  Page A45 0°	**CNGN**  Page A45 0°	**CNGX**  Page A45 0°	**DNGA**  Page A45 0°	**DNGN**  Page A46 0°	**DNGX**  Page A46 0°
RCGX  Page A46 7°	**RNGN**  Page A47 0°	**RPGN**  Page A47 0°	**SNGA**  Page A47 0°	**SNGN**  Page A47 0°	**SNGN**  Page A48 0°
SNGX  Page A48 0°	**TNGA**  Page A48 0°	**TNGN**  Page A48 0°	**VNGA**  Page A49 0°	**WNGA**  Page A49 0°	

CBN/PCD Inserts

CCMW  Page A50 7°	**CNGA**  Page A50 0°	**DCMW**  Page A50 7°	**DNGA**  Page A50 0°	**SNGA**  Page A51 0°	**TCMW**  Page A51 7°
TNGA  Page A51 0°	**TPMN**  Page A51 11°				

80º Rhombic inserts / Positive

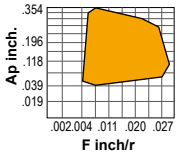


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

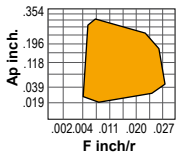
CCGT-AL



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CCGT21.50-AL	0.254	0.094	0.250	0.008	●												○
CCGT21.51-AL	0.254	0.094	0.250	0.016	●												○
CCGT32.50-AL	0.380	0.156	0.375	0.008	●												○
CCGT32.51-AL	0.380	0.156	0.375	0.016	●												○
CCGT32.52-AL	0.380	0.156	0.375	0.031	●												○
CCGT430-AL	0.508	0.187	0.500	0.008	●												○
CCGT431-AL	0.508	0.187	0.500	0.016	●												○
CCGT432-AL	0.508	0.187	0.500	0.031	●												○

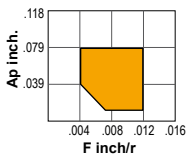
CCGT-AP



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CCGT21.50-AP	0.254	0.094	0.250	0.008	●												○
CCGT21.51-AP	0.254	0.094	0.250	0.016	●												○
CCGT32.50-AP	0.380	0.156	0.375	0.008	●												○
CCGT32.51-AP	0.380	0.156	0.375	0.016	●												○
CCGT32.52-AP	0.380	0.156	0.375	0.031	●												○
CCGT430-AP	0.508	0.187	0.500	0.008	●												○
CCGT431-AP	0.508	0.187	0.500	0.016	●												○
CCGT432-AP	0.508	0.187	0.500	0.031	●												○

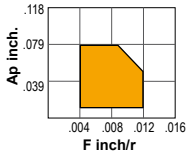
CCMT



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CCMT21.50	0.254	0.094	0.250	0.008		●			●								
CCMT21.51	0.254	0.094	0.250	0.016		●		●	●		●	●				●	
CCMT32.51	0.380	0.156	0.375	0.016		●		●	●		●	●				●	
CCMT32.52	0.380	0.156	0.375	0.031		●		●	●		●	●				●	
CCMT432	0.508	0.187	0.500	0.031		●			●		●					●	

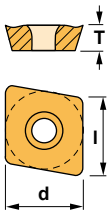
CCMW



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CCMW21.50	0.254	0.094	0.250	0.008												○	
CCMW21.51	0.254	0.094	0.250	0.016		●										○	
CCMW32.51	0.380	0.156	0.375	0.016		●										○	
CCMW32.52	0.380	0.156	0.375	0.031		●										○	
CCMW432	0.508	0.187	0.500	0.031		●										○	

80º Rhombic inserts / Negative



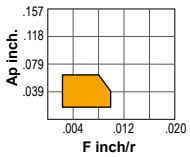
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

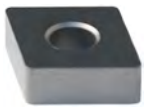
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

CNGP

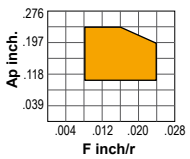
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNGP431	0.508	0.187	0.500	0.016										●			
CNGP432	0.508	0.187	0.500	0.031										●			



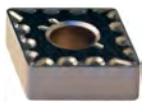
CNMA



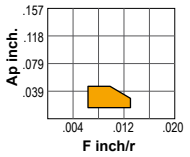
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMA432	0.508	0.187	0.500	0.031									●				
CNMA433	0.508	0.187	0.500	0.047									○				



CNMG-CC

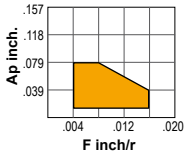


Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMG431CC	0.508	0.187	0.500	0.016				●									
CNMG432CC	0.508	0.187	0.500	0.031				●									



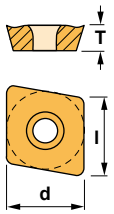
CNMG-FC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMG321FC	0.380	0.125	0.375	0.016					●								
CNMG322FC	0.380	0.125	0.375	0.031					●								
CNMG431FC	0.508	0.187	0.500	0.016					●		●						



A

80º Rhombic inserts / Negative



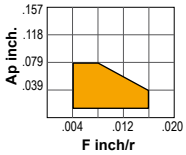
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

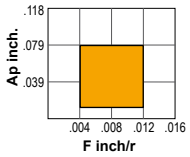
CNMG-FMC

Reference	l	T	d	r
CNMG431FMC	0.508	0.187	0.500	0.016



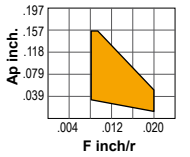
CNMG-KC

Reference	l	T	d	r
CNMG432KC	0.508	0.187	0.500	0.031
CNMG433KC	0.508	0.187	0.500	0.047



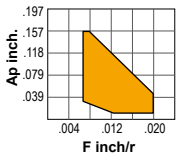
CNMG-MC

Reference	l	T	d	r
CNMG322MC	0.380	0.125	0.375	0.031
CNMG431MC	0.508	0.187	0.500	0.016
CNMG432MC	0.508	0.187	0.500	0.031

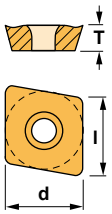


CNMG-MFC

Reference	l	T	d	r
CNMG432MFC	0.508	0.187	0.500	0.031



80º Rhombic inserts / Negative



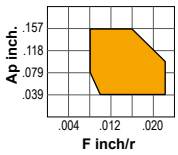
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

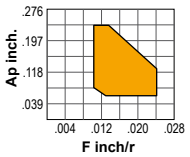
CNMG-MHC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMG432MHC	0.508	0.187	0.500	0.031					●		●						
CNMG433MHC	0.508	0.187	0.500	0.047						●							



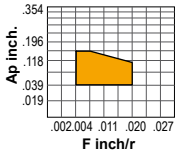
CNMG-RC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMG432RC	0.508	0.187	0.500	0.031					●		●						
CNMG433RC	0.508	0.187	0.500	0.047					●		●						
CNMG542RC	0.630	0.250	0.625	0.031							○						
CNMG543RC	0.630	0.250	0.625	0.047							○						
CNMG643RC	0.760	0.250	0.750	0.047							○						



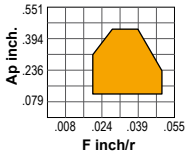
CNMG-TC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMG431TC	0.508	0.187	0.500	0.016											●		
CNMG432TC	0.508	0.187	0.500	0.031											●		



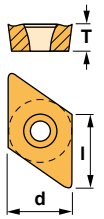
CNMM

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
CNMM432	0.508	0.187	0.500	0.031							○						
CNMM543	0.630	0.250	0.620	0.047							○						
CNMM643	0.760	0.250	0.750	0.047							○						



A

55º Rhombic inserts / Positive

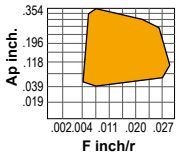


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

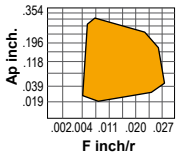
DCGT-AL



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DCGT21.50-AL	0.305	0.094	0.250	0.008	●												○
DCGT21.51-AL	0.305	0.094	0.250	0.016	●												○
DCGT32.50-AL	0.457	0.156	0.375	0.008	●												○
DCGT32.51-AL	0.457	0.156	0.375	0.016	●												○
DCGT32.52-AL	0.457	0.156	0.375	0.031	●												○

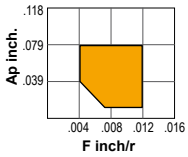
DCGT-AP



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DCGT21.50-AP	0.305	0.094	0.250	0.008	●												○
DCGT21.51-AP	0.305	0.094	0.250	0.016	●												○
DCGT32.50-AP	0.457	0.156	0.375	0.008	●												○
DCGT32.51-AP	0.457	0.156	0.375	0.016	●												○
DCGT32.52-AP	0.457	0.156	0.375	0.031	●												○

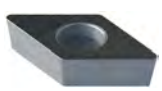
DCMT

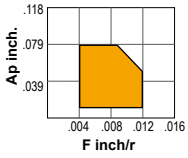


7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DCMT21.51	0.305	0.094	0.250	0.016		●		●	●		●	●					
DCMT32.51	0.457	0.156	0.375	0.016				●	●		●	●					
DCMT32.52	0.457	0.156	0.375	0.031				●	●		●	●					

DCMW

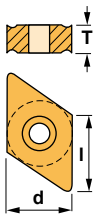




7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DCMW32.51	0.457	0.156	0.375	0.016	●												
DCMW32.52	0.457	0.156	0.375	0.031	●												

55º Rhombic inserts / Negative

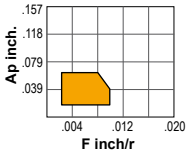


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

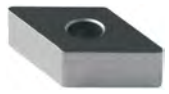
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

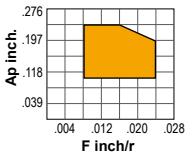
DNGP



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNGP431	0.610	0.187	0.500	0.016										●			
DNGP432	0.610	0.187	0.500	0.031										●			

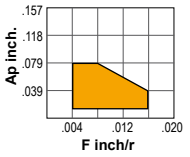
DNMA





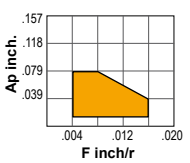
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMA442	0.610	0.250	0.500	0.031									○				
DNMA443	0.610	0.250	0.500	0.047									○				

DNMG-FC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG331FC	0.457	0.187	0.375	0.016					●			●					
DNMG332FC	0.457	0.187	0.375	0.031					●								
DNMG431FC	0.610	0.187	0.500	0.016					●								
DNMG441FC	0.610	0.250	0.500	0.016					●		●						

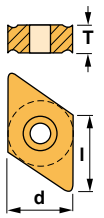
DNMG-FMC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG431FMC	0.610	0.187	0.500	0.016					●								
DNMG441FMC	0.610	0.250	0.500	0.016					●								

A

55º Rhombic inserts / Negative

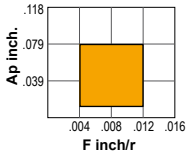


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

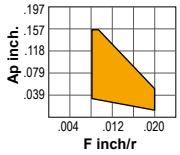
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

DNMG-KC



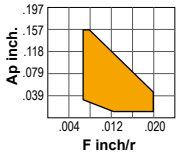
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG442KC	0.610	0.250	0.500	0.031									●				
DNMG443KC	0.610	0.250	0.500	0.047									●				

DNMG-MC



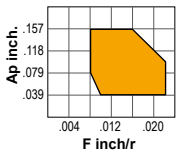
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG332MC	0.457	0.187	0.375	0.031								●					
DNMG432MC	0.610	0.187	0.500	0.031					●			●					
DNMG442MC	0.610	0.250	0.500	0.031					●		●	●					

DNMG-MFC



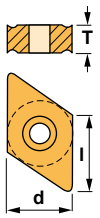
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG442MFC	0.610	0.250	0.500	0.031					●		●						

DNMG-MHC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG432MHC	0.610	0.187	0.500	0.031						●							
DNMG442MHC	0.610	0.250	0.500	0.031						●	●						
DNMG443MHC	0.610	0.250	0.500	0.047							●						

55º Rhombic inserts / Negative

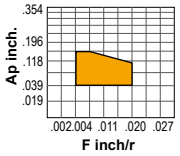


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

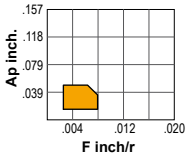
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

DNMG-TC



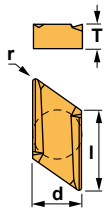
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMG442TC	0.610	0.250	0.500	0.031											●		

DNMX



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
DNMX441R-22	0.610	0.250	0.500	0.016					●								
DNMX442R-22	0.610	0.250	0.500	0.031					●								

KNUX inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

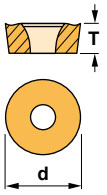
AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

KNUX

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
KNUX160405L-21	0.630	0.187	0.375	0.020					●		●						
KNUX160405R-21	0.630	0.187	0.375	0.020					●		●						
KNUX160405R-32	0.630	0.187	0.375	0.020					●								
KNUX160410L-21	0.630	0.187	0.375	0.039							●						
KNUX160410R-21	0.630	0.187	0.375	0.039					●		●						
KNUX160410R-32	0.630	0.187	0.375	0.039							●						

Round inserts / Positive

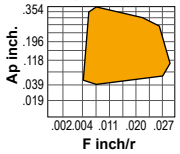


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

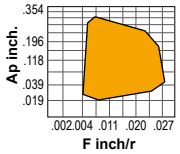
RCGT-AL



7°

Reference	T	d	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
RCGT0803M0-AL	0.125	0.315	●												○
RCGT1003M0-AL	0.125	0.394	●												○

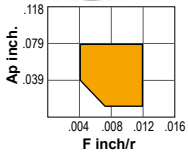
RCGT-AP



7°

Reference	T	d	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
RCGT0803M0-AP	0.125	0.315	●												○

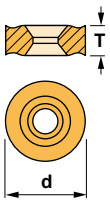
RCMT



7°

Reference	T	d	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
RCMT0602M0	0.094	0.236					●								
RCMT0803M0	0.125	0.315					●								
RCMT1003M0	0.125	0.394					●								
RCMT10T3M0	0.156	0.394		●			●							●	
RCMT1204M0	0.187	0.472		●			●							●	

Round inserts / Negative

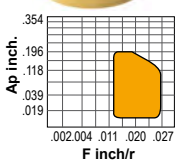


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

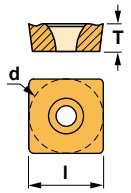
RNMG



Reference	T	d	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
RNMG32	0.125	0.375						○							
RNMG43	0.187	0.500						○							
RNMG54	0.250	0.625							○						
RNMG64	0.250	0.750							○						
RNMG86	0.375	1.000							○						

A

Square inserts / Positive

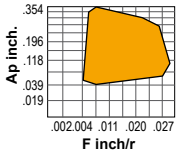


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◕	✣					✣	
M	Stainless		✣		●				◕					
K	Cast iron	◕	✣		●					◕				
N	Non ferrous materials	◕												◕
S	Heat-resistant alloys										◕	✣		
H	Hard materials													

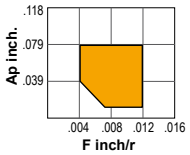
SCGT-AL



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SCGT32.51-AL	0.375	0.156	0.375	0.016	●												○
SCGT32.52-AL	0.375	0.156	0.375	0.031	●												○
SCGT432-AL	0.500	0.187	0.500	0.031	●												○

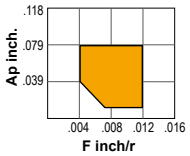
SCMT



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SCMT32.51	0.375	0.156	0.375	0.016					●								
SCMT32.52	0.375	0.156	0.375	0.031					●								
SCMT432	0.500	0.187	0.500	0.031					●								

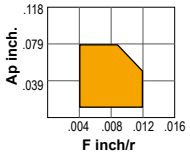
SCMT-39



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SCMT32.51-39	0.375	0.156	0.375	0.016		●										●	
SCMT32.52-39	0.375	0.156	0.375	0.031	○	●										●	
SCMT432-39	0.500	0.187	0.500	0.031	○	●										●	
SCMT433-39	0.500	0.187	0.500	0.047		●										●	

SCMW

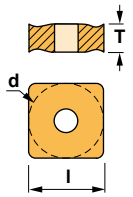


7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SCMW32.52	0.375	0.156	0.375	0.031		●										○	
SCMW432	0.500	0.187	0.500	0.031	○	○										○	
SCMW433	0.500	0.187	0.500	0.047		○										○	

A

Square inserts / Negative

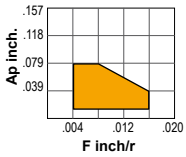


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

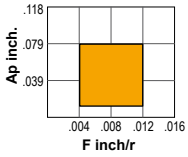
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

SNMG-FMC



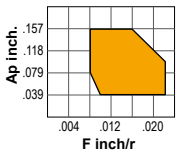
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMG431FMC	0.500	0.187	0.500	0.016					●								

SNMG-KC



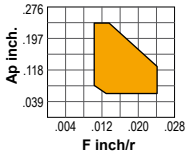
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMG432KC	0.500	0.187	0.500	0.031									●				

SNMG-MHC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMG432MHC	0.500	0.187	0.500	0.031						●	●						

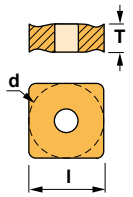
SNMG-RC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMG433RC	0.500	0.187	0.500	0.047							●						
SNMG543RC	0.625	0.250	0.625	0.047							●						
SNMG644RC	0.750	0.250	0.750	0.063							●						

A

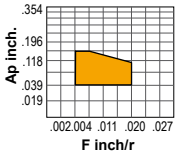
Square inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

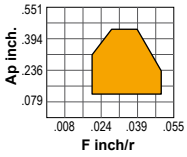
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													



SNMG-TC

Reference	l	T	d	r
SNMG432TC	0.500	0.187	0.500	0.031

	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMG432TC											●		

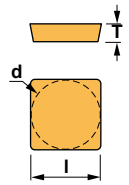


SNMM

Reference	l	T	d	r
SNMM644	0.750	0.250	0.750	0.063
SNMM856	1.000	0.312	1.000	0.094

	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SNMM644							○						
SNMM856							○						

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

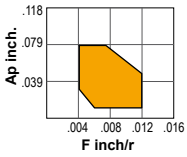
AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

SPMR

11°

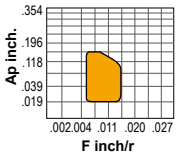
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SPMR322	0.375	0.125	0.375	0.031						●							
SPMR421	0.500	0.125	0.500	0.016					●								
SPMR422	0.500	0.125	0.500	0.031		●				●							



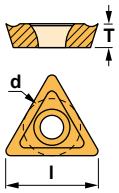
SPUN

11°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
SPUN321E	0.375	0.125	0.375	0.016		●										●	
SPUN322E	0.375	0.125	0.375	0.031		●										●	
SPUN421E	0.500	0.125	0.500	0.016		●										●	
SPUN422E	0.500	0.125	0.500	0.031		●										●	
SPUN422F	0.500	0.125	0.500	0.031	●												
SPUN423E	0.500	0.125	0.500	0.047		●										●	
SPUN432E	0.500	0.187	0.500	0.031		○											
SPUN532E	0.625	0.187	0.625	0.031		●											
SPUN533E	0.625	0.187	0.625	0.047		○											
SPUN632E	0.750	0.187	0.750	0.047		○											



Triangular inserts / Positive

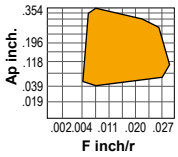


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

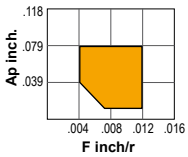
TCGT-AL



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TCGT21.50-AL	0.433	0.094	0.250	0.008	●												○
TCGT21.51-AL	0.433	0.094	0.250	0.016	●												○
TCGT32.50-AL	0.650	0.156	0.375	0.008	●												○
TCGT32.51-AL	0.650	0.156	0.375	0.016	●												○
TCGT32.52-AL	0.650	0.156	0.375	0.031	●												○

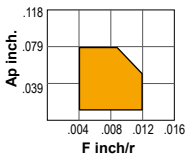
TCMT



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TCMT090204	0.379	0.094	0.218	0.016					●								
TCMT21.51	0.433	0.094	0.250	0.016		●		●	●			●				●	
TCMT32.51	0.650	0.156	0.375	0.016		●			●		●	●					
TCMT32.52	0.650	0.156	0.375	0.031		●		●	●		●	●					
TCMT432	0.866	0.187	0.500	0.031		○											
TCMT433	0.866	0.187	0.500	0.047		○											

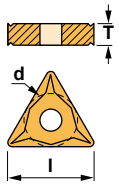
TCMW



7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TCMW21.51	0.433	0.094	0.250	0.016	●	●											
TCMW32.51	0.650	0.156	0.375	0.016	●												
TCMW32.52	0.650	0.156	0.375	0.031	●	●											

Triangular inserts / Negative

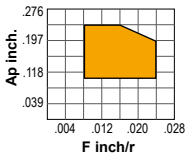


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

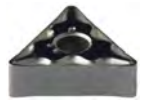
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

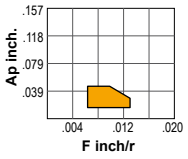
TNMA



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMA332	0.650	0.187	0.375	0.031									○				
TNMA432	0.866	0.187	0.500	0.031									○				
TNMA433	0.866	0.187	0.500	0.047									○				
TNMA434	0.866	0.187	0.500	0.063									○				

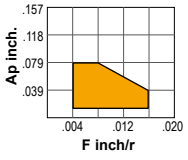
TNMG-CC





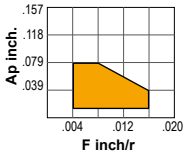
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG331CC	0.650	0.187	0.375	0.016				●									
TNMG332CC	0.650	0.187	0.375	0.031				●									

TNMG-FC



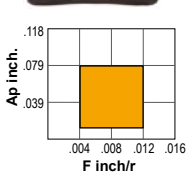
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG331FC	0.650	0.187	0.375	0.016					●		●						
TNMG431FC	0.866	0.187	0.500	0.016					●								

TNMG-FMC



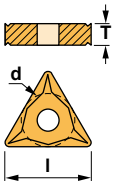
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG331FMC	0.650	0.187	0.375	0.016					●								

TNMG-KC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG332KC	0.650	0.187	0.375	0.031									●				
TNMG333KC	0.650	0.187	0.375	0.047									●				
TNMG432KC	0.866	0.187	0.500	0.031									●				

Triangular inserts / Negative

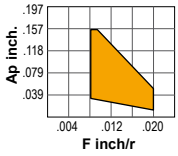


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

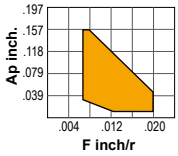
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

TNMG-MC



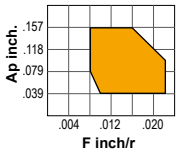
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG331MC	0.650	0.187	0.375	0.016								●					
TNMG332MC	0.650	0.187	0.375	0.031					●		●	●					
TNMG432MC	0.866	0.187	0.500	0.031					●		●						
TNMG433MC	0.866	0.187	0.500	0.047					●								

TNMG-MFC



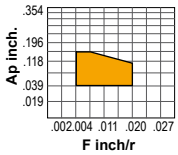
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG332MFC	0.650	0.187	0.375	0.031					●		●						

TNMG-MHC



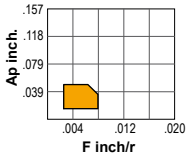
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG332MHC	0.650	0.187	0.375	0.031						●	●						
TNMG333MHC	0.650	0.187	0.375	0.047							●						
TNMG432MHC	0.866	0.187	0.500	0.031							●						
TNMG433MHC	0.866	0.187	0.500	0.047							●						

TNMG-TC



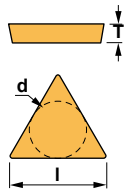
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMG332TC	0.650	0.187	0.375	0.031											●		

TNMX



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TNMX331R	0.650	0.187	0.375	0.016				●									
TNMX332R	0.650	0.187	0.375	0.031				●									
TNMX331L	0.650	0.187	0.375	0.016				●									
TNMX332L	0.650	0.187	0.375	0.031				●									

Triangular inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

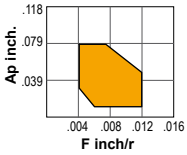
AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

TPMN

11°

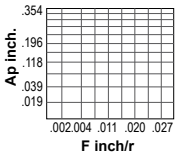
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TPMN322	0.650	0.125	0.375	0.031				●									



TPMR

11°

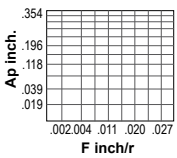
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TPMR090204	0.379	0.094	0.218	0.016					●								
TPMR221	0.433	0.125	0.250	0.016					●								
TPMR222	0.433	0.125	0.250	0.031						●							
TPMR321	0.650	0.125	0.375	0.016					●		●						
TPMR322	0.650	0.125	0.375	0.031					●		●						



TPUN

11°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TPUN21.51E	0.433	0.094	0.250	0.016		●										●	
TPUN21.51F	0.433	0.094	0.250	0.016	○												
TPUN21.52E	0.433	0.094	0.250	0.031		●										●	
TPUN221E	0.433	0.125	0.250	0.016		●										●	
TPUN222E	0.433	0.125	0.250	0.031		●										●	
TPUN321E	0.650	0.125	0.375	0.016		●										●	
TPUN321F	0.650	0.125	0.375	0.016	●												
TPUN322T	0.650	0.125	0.375	0.031		●										●	
TPUN322E	0.650	0.125	0.375	0.031		●										●	
TPUN322F	0.650	0.125	0.375	0.031	●												
TPUN323E	0.650	0.125	0.375	0.047		●										●	
TPUN323F	0.650	0.125	0.375	0.047	○												
TPUN432E	0.866	0.187	0.500	0.031		●										●	
TPUN432F	0.866	0.187	0.500	0.031	●												
TPUN433E	0.866	0.187	0.500	0.047		●										●	

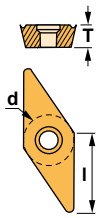


TPUX

11°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
TPUX221L	0.433	0.125	0.250	0.016	○	●										●	
TPUX221R	0.433	0.125	0.250	0.016	○	●										●	
TPUX321L	0.650	0.125	0.375	0.016	○	●										●	
TPUX321R	0.650	0.125	0.375	0.016	○	●										●	
TPUX322L	0.650	0.125	0.375	0.031	○	●										●	
TPUX322R	0.650	0.125	0.375	0.031	○	●										●	
TPUX432L	0.866	0.187	0.500	0.031		○											
TPUX432R	0.866	0.187	0.500	0.031	○	○											

35º Rhombic inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

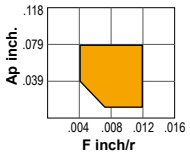
AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

VBMT

5°

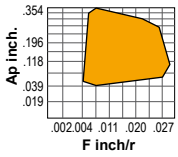
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VBMT331	0.650	0.187	0.375	0.016					●								
VBMT332	0.650	0.187	0.375	0.031					●								



VCGT-AL

7°

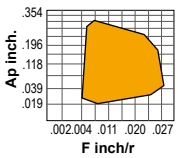
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VCGT331-AL	0.650	0.187	0.375	0.016	●												○
VCGT332-AL	0.650	0.187	0.375	0.031	●												○
VCGT333-AL	0.650	0.187	0.375	0.047	●												○
VCGT220530-AL	0.870	0.219	0.500	0.118	●												○



VCGT-AP

7°

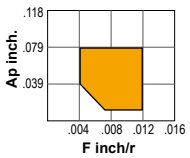
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VCGT331-AP	0.650	0.187	0.375	0.016	●												○
VCGT332-AP	0.650	0.187	0.375	0.031	●												○
VCGT333-AP	0.650	0.187	0.375	0.047	●												○
VCGT220530-AP	0.870	0.219	0.500	0.118	●												○



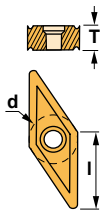
VCMT

7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VCMT221	0.433	0.125	0.250	0.016					●								
VCMT331	0.650	0.187	0.375	0.016					●			●					
VCMT332	0.650	0.187	0.375	0.031						●		●					



35º Rhombic inserts / Negative



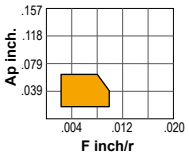
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

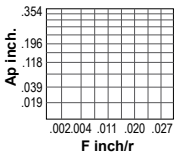
VNGP

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VNGP331	0.650	0.187	0.375	0.016										●			
VNGP332	0.650	0.187	0.375	0.031										●			



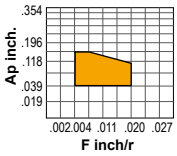
VNMG

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VNMG332	0.650	0.187	0.375	0.031					●								

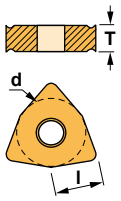


VNMG-TC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VNMG332TC	0.650	0.187	0.375	0.031											●		



80º Trigon inserts / Negative



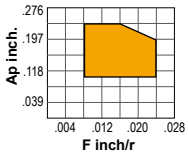
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

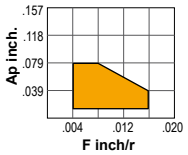
WNMA

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMA432	0.320	0.187	0.500	0.031									○				



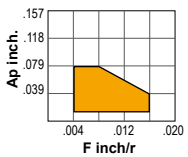
WNMG-FC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG431FC	0.320	0.187	0.500	0.016					●		●						



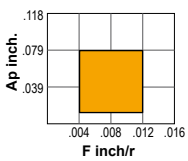
WNMG-FMC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG431FMC	0.320	0.187	0.500	0.016					●								

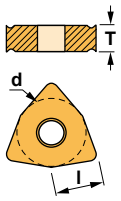


WNMG-KC

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG432KC	0.320	0.187	0.500	0.031									●				
WNMG433KC	0.320	0.187	0.500	0.047									●				



80º Trigon inserts / Negative

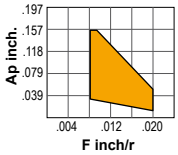


USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

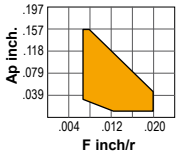
		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

WNMG-MC



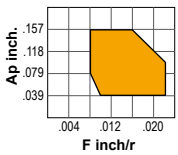
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG331MC	0.241	0.187	0.375	0.016					●			●					
WNMG332MC	0.241	0.187	0.375	0.031					●			●					
WNMG432MC	0.320	0.187	0.500	0.031					●		●	●					

WNMG-MFC



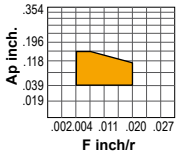
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG432MFC	0.320	0.187	0.500	0.031					●								

WNMG-MHC



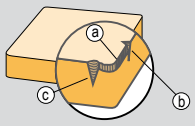
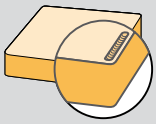
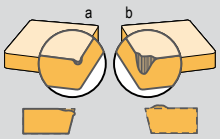
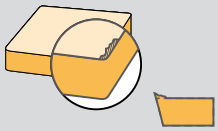
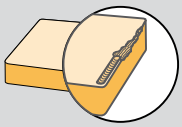
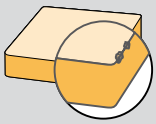
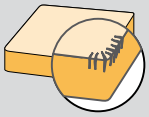
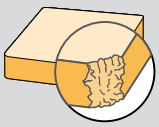
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG432MHC	0.320	0.187	0.500	0.031						●	●						
WNMG433MHC	0.320	0.187	0.500	0.047						●							

WNMG-TC



Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
WNMG432TC	0.320	0.187	0.500	0.031											●		

Turning insert wear and tool life

	Problem	Cause and remedy
Flank and notch wear 	▼ Rapid flank wear causing poor surface finish or out of tolerance (a). ▼ Notch wear causing poor surface finish and risk of edge breakage.	▲ A too high cutting speed or insufficient wear resistance (a). ▲ Oxidation or excessive attrition wear caused by a hard surface (b,c). Reduce the cutting speed. Select a more wear resistant grade. Select an Al_2O_3 coated grade for steel machining. For work hardening materials select a larger lead angle or a more wear resistant grade.
Crater wear 	▼ Excessive crater wear causing a weakened edge. Cutting edge break through on the trailing edge causes poor surface finish.	▲ Diffusion wear due to too high cutting temperatures on the rake face. Select an Al_2O_3 coated grade. Select a positive insert geometry. Obtain a lower temperature by reducing the feed and speed.
Plastic deformation 	▼ 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.	▲ A too high cutting temperature in combination with a high pressure. Select a harder grade with better resistance to plastic deformation. (a) Reduce cutting speed. (b) Reduce feed.
Built-up edge 	▼ Built-up edge (B.U.E.) causing poor surface finish and cutting edge frittering when the B.U.E. is torn away.	▲ Workpiece material is welded to the insert due to: - low cutting speed. - negative cutting geometry. - "sticky" material, e.g. certain stainless steels and pure aluminium. Increase cutting speed. Select a positive geometry. Increase cutting speed drastically. If tool life turns out to be short,apply coolant in large quantities.
Chip hammering 	▼ 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.	▲ The chips are of an excessive length and are deflected against the cutting edge. Change the feed slightly. Select an alternative insert geometry. Change the lead angle of the holder.
Frittering 	▼ Small cutting edge fractures (frittering) causing poor surface finish and excessive flank wear.	▲ Grade too brittle. ▲ Insert geometry too weak. ▲ Built-up edge. Select a tougher grade. Select an insert with a stronger geometry. Increase cutting speed or select a positive geometry.
Thermal cracks 	▼ Small cracks perpendicular to the cutting edge causing frittering and poor surface finish.	▲ Thermal cracks due to temperature variations caused by: - Intermittent machining. - Varying coolant supply. Select a tougher grade with better resistant to thermal shocks. Coolant should be applied copiously or not at all.
Insert breakage 	▼ Insert breakage that damages not only the insert but also the shim and workpiece.	▲ Grade too brittle. ▲ Excessive load on the insert. ▲ Insert geometry too weak. ▲ Insert size is too small. 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.

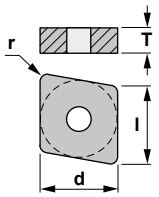
A

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

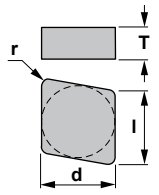
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



CNGA

80° rhombic negative insert.

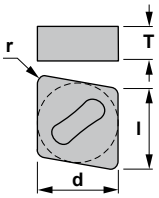
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGA431	0.508	0.187	0.500	0.016				●	
CNGA432	0.508	0.187	0.500	0.031	●			●	
CNGA433	0.508	0.187	0.500	0.047	●			●	



CNGN

80° rhombic negative insert.

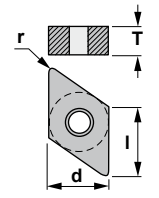
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGN432	0.508	0.187	0.500	0.031			●		●
CNGN433	0.508	0.187	0.500	0.047			●		●
CNGN452	0.508	0.312	0.500	0.031			●		●
CNGN453	0.508	0.312	0.500	0.047			●		●
CNGN454	0.508	0.312	0.500	0.063					●



CNGX

80° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGX452	0.508	0.312	0.500	0.031	●	●			
CNGX453	0.508	0.312	0.500	0.047	●	●			
CNGX454	0.508	0.312	0.500	0.063	●	●			
CNGX553	0.634	0.312	0.625	0.047	●				
CNGX554	0.634	0.312	0.625	0.063	●	●			



DNGA

55° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGA431	0.508	0.187	0.500	0.016				●	
DNGA432	0.508	0.187	0.500	0.031	●			●	
DNGA433	0.508	0.187	0.500	0.047	●			●	

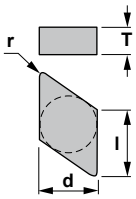
A

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

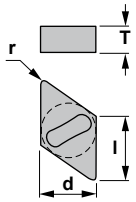
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



DNGN

55° rhombic negative insert.

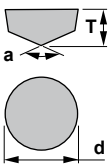
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGN452	0.610	0.312	0.500	0.031			●		●
DNGN453	0.610	0.312	0.500	0.047			●		●
DNGN454	0.610	0.312	0.500	0.063			●		



DNGX

55° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGX452	0.610	0.312	0.500	0.031	●				
DNGX453	0.610	0.312	0.500	0.047	●	●			
DNGX454	0.610	0.312	0.500	0.063	●	●			



RCGX

Round positive insert.

Reference	T	d	a	CX6	CX9	CC2	CC7	CW1
RCGX060700	0.312	0.250	120°			●		●
RCGX090700	0.312	0.375	120°		●	●		●
RCGX120700	0.312	0.500	120°		●	●		●
RCGX151000	0.394	0.625	120°			●		●
RCGX191000	0.394	0.750	120°		●	●		●
RCGX251200	0.472	1.000	140°			●		

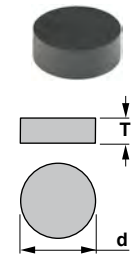
A

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

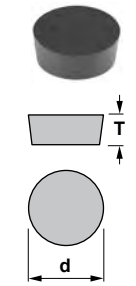
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



RNGN

Round negative inserts.

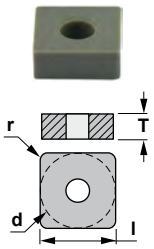
Reference	T	d	CX6	CX9	CC2	CC7	CW1
RNGN43	0.187	0.500		●		●	●
RNGN45	0.312	0.500		●		●	●



RPGN

Round negative inserts.

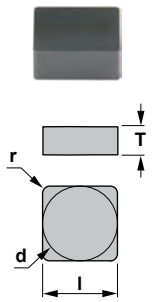
Reference	T	d	CX6	CX9	CC2	CC7	CW1
RPGN060200	0.094	0.250		●			
RPGN090300	0.125	0.375		●			
RPGN120400	0.187	0.500		●			



SNGA

Square negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGA432	0.500	0.187	0.500	0.031				●	
SNGA433	0.500	0.187	0.500	0.047	●			●	
SNGA434	0.500	0.187	0.500	0.063	●			●	



SNGN

Square negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGN431	0.500	0.187	0.500	0.016			●		
SNGN432	0.500	0.187	0.500	0.031			●		
SNGN433	0.500	0.187	0.500	0.047			●		
SNGN434	0.500	0.187	0.500	0.063			●		
SNGN435	0.500	0.187	0.500	0.078			○		
SNGN436	0.500	0.187	0.500	0.094			○		
SNGN452	0.500	0.312	0.500	0.031		●	●		●
SNGN453	0.500	0.312	0.500	0.047		●	●		●
SNGN454	0.500	0.312	0.500	0.063		●	●		●
SNGN455	0.500	0.312	0.500	0.078			○		

Ceramic inserts

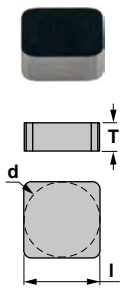
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2	●		
		CX6	●	●	●
		CW1	●	●	
S	Heat-resistant alloys	CX9	●	●	●
		CW1	●	●	
H	Hard materials	CC7	●		

SNGN

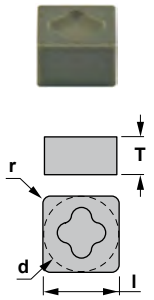
Square negative insert.



Reference	l	T	d	CX6	CX9	CC2	CC7	CW1
SNGN1204ENT	0.500	0.187	0.500		●			

SNGX

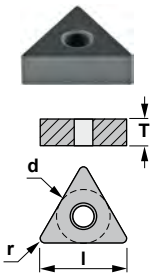
Square negative insert.



Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGX452	0.500	0.312	0.500	0.031	●				
SNGX453	0.500	0.312	0.500	0.047	●				
SNGX454	0.500	0.312	0.500	0.063	●				
SNGX552	0.625	0.312	0.625	0.031	○				
SNGX553	0.625	0.312	0.625	0.047	●	●			
SNGX554	0.625	0.312	0.625	0.063	●	●			

TNGA

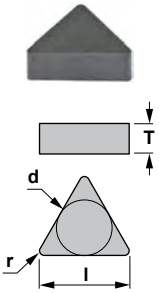
Triangular negative insert.



Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
TNGA331	0.650	0.187	0.375	0.016				●	
TNGA332	0.650	0.187	0.375	0.031				●	
TNGA333	0.650	0.187	0.375	0.047				●	
TNGA334	0.650	0.187	0.375	0.063				○	

TNGN

Triangular negative insert.



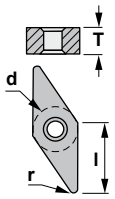
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
TNGN332	0.650	0.187	0.375	0.031			●		
TNGN333	0.650	0.187	0.375	0.047			●		
TNGN334	0.650	0.187	0.375	0.063			●		
TNGN352	0.650	0.312	0.375	0.031			●		
TNGN353	0.650	0.312	0.375	0.047			○		

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

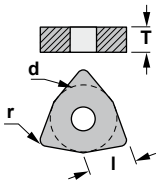
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



VNGA

35º rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
VNGA331	0.650	0.187	0.375	0.016				●	
VNGA332	0.650	0.187	0.375	0.031				●	
VNGA333	0.650	0.187	0.375	0.047				●	



WNGA

80º trigon negative insert.

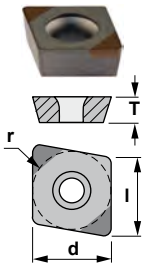
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
WNGA432	0.320	0.187	0.500	0.031	●			●	
WNGA433	0.320	0.187	0.500	0.047	●			●	

CBN/PCD Inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

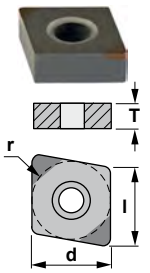
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CBN			
H	Hard materials	CBN			
N	Non ferrous materials	PCD			



CCMW

80° rhombic positive insert.

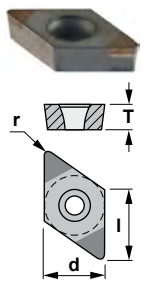
Reference	l	T	d	r	CBN	PCD
CCMW21.50	0.255	0.094	0.250	0.008	○	
CCMW21.51	0.255	0.094	0.250	0.016	●	
CCMW32.51	0.381	0.156	0.375	0.016	●	
CCMW32.52	0.381	0.156	0.375	0.031	●	



CNGA

80° rhombic negative insert.

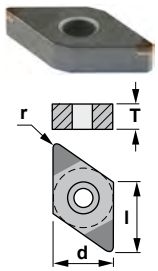
Reference	l	T	d	r	CBN	PCD
CNGA431	0.508	0.187	0.500	0.016	●	
CNGA432	0.508	0.187	0.500	0.031	●	
CNGA433	0.508	0.187	0.500	0.047	○	



DCMW

55° rhombic positive insert.

Reference	l	T	d	r	CBN	PCD
DCMW21.50	0.307	0.094	0.250	0.008	○	
DCMW21.51	0.307	0.094	0.250	0.016	●	
DCMW32.50	0.457	0.156	0.375	0.008	○	
DCMW32.51	0.457	0.156	0.375	0.016	●	
DCMW32.52	0.457	0.156	0.375	0.031	●	



DNGA

55° rhombic negative insert.

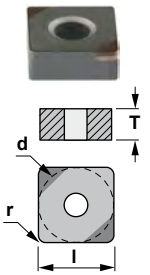
Reference	l	T	d	r	CBN	PCD
DNGA431	0.610	0.187	0.500	0.016	●	
DNGA432	0.610	0.187	0.500	0.031	●	
DNGA433	0.610	0.187	0.500	0.047	○	

CBN/PCD Inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

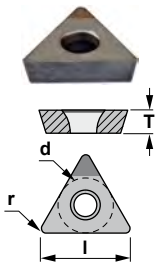
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CBN			
H	Hard materials	CBN			
N	Non ferrous materials	PCD			



SNGA

Square negative insert.

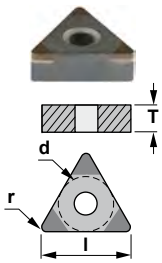
Reference	l	T	d	r	CBN	PCD
SNGA431	0.500	0.187	0.500	0.016	○	
SNGA432	0.500	0.187	0.500	0.031	○	
SNGA433	0.500	0.187	0.500	0.047	○	



TCMW

Triangular positive insert.

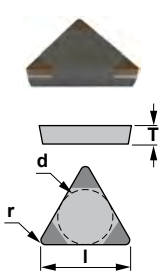
Reference	l	T	d	r	CBN	PCD
TCMW21.51	0.433	0.094	0.250	0.016	●	
TCMW32.51	0.650	0.156	0.375	0.016	●	
TCMW32.52	0.650	0.156	0.375	0.031	●	



TNGA

Triangular negative insert.

Reference	l	T	d	r	CBN	PCD
TNGA331	0.650	0.187	0.375	0.016	●	
TNGA332	0.650	0.187	0.375	0.031	●	
TNGA333	0.650	0.187	0.375	0.047	○	



TPMN

Triangular positive insert.

Reference	l	T	d	r	CBN	PCD
TPMN221	0.433	0.125	0.250	0.016	●	
TPMN222	0.433	0.125	0.250	0.031	●	
TPMN321	0.650	0.125	0.375	0.016	●	
TPMN322	0.650	0.125	0.375	0.031	●	
TPMN323	0.650	0.125	0.375	0.047	●	

Improve your productivity

The Flow-Master coolant system works by delivering the machine coolant with maximum efficiency. The volume and speed of coolant coming out direct to the insert cutting edge improves machining performance.

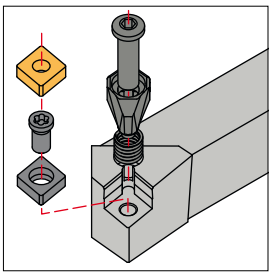
Flow-Master tooling is extremely effective removing heat from the cutting edge, cooling the chips rapidly and helping to break it faster. Chips with poor heat removal are malleable and flexible, not breaking properly and adding extra heat to the cutting edge.

Performance improvement up to 50% with 70 bar pressure

Main Benefits

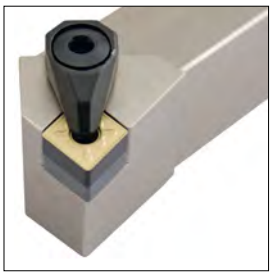
· Increased speeds and feeds
· Extended tool life
· Improved surface finish
· Better chip control and evacuation
· Easy system without spare parts

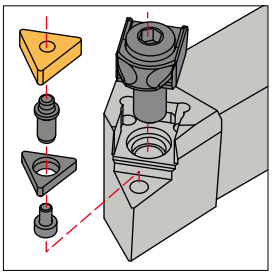
TOOLHOLDERS



(D) Dimple lock

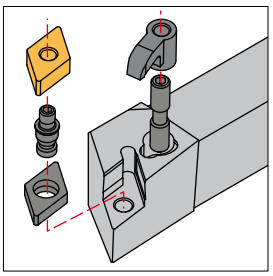
The “D” clamping system avoids insert movement during high feed or heavily interrupted machining, due to its accurate indexing that holds the insert securely clamped.





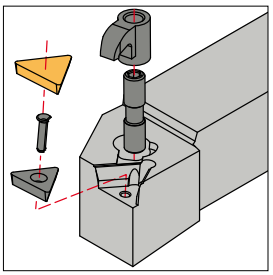
(W) Wedge clamp

Negative inserts require good clamping force for heavy duty work, for this purpose we have designed our “W” system, one of the strongest and safest available.



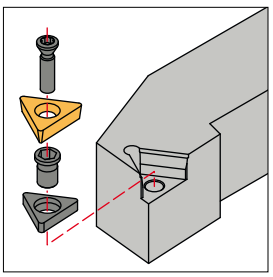
(M) Double lock

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



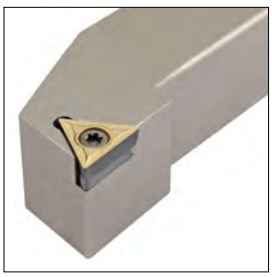
(C) Top clamp

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



(S) Center screw

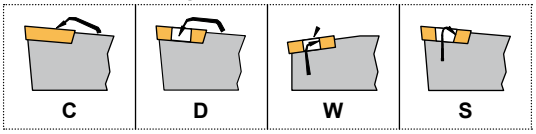
Since the advent of the TORX screw it has been possible to hold with complete safety positive inserts with center hole. Our range covers all the screw fixing permutations.



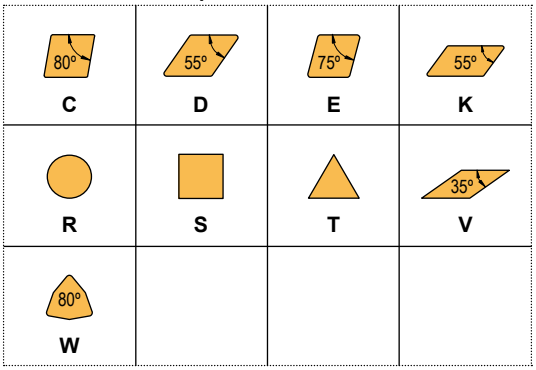
Code system (ISO)

M	C	F	N	R	12	4	C
1	2	3	4	5	6-7	8	9

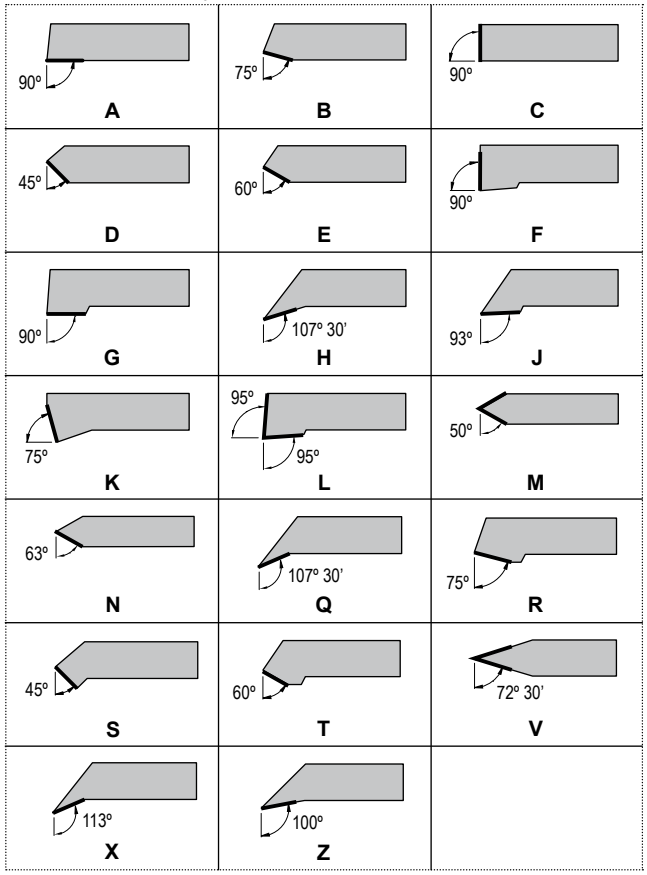
1 Clamping method of insert



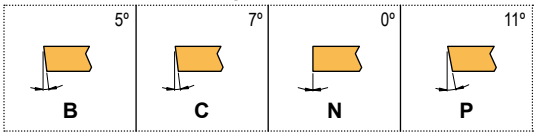
2 Insert shape



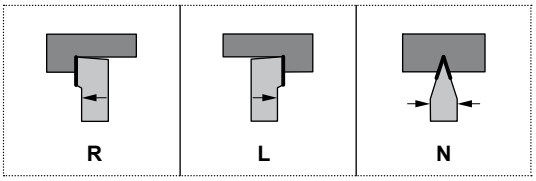
3 Holder style



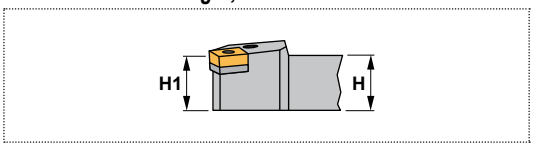
4 Clearance angle of insert



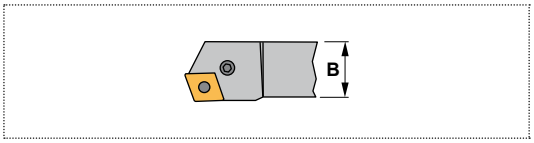
5 Hand



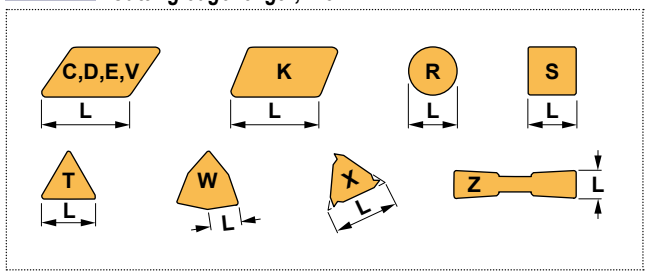
6 Shank height, inch.



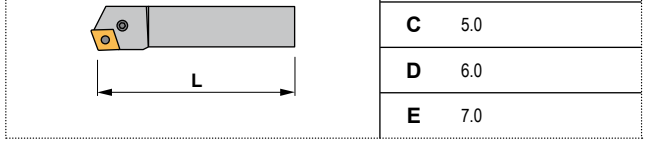
7 Shank width, inch.



8 Cutting edge length, inch.



9 Tool length, inch.

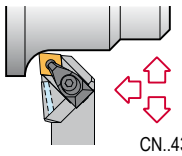


B	4.5
C	5.0
D	6.0
E	7.0

NEGATIVE TOOLHOLDERS

Dimple lock toolholders (with internal coolant)

DCLN 95º-AN



CN..43..
CN..54..
CN..64..

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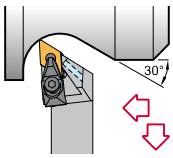
DDJN 93º-AN



DN..43..

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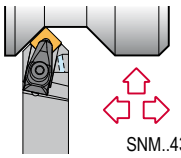
DSDN 45º-AN



SNM..43..
SNM..54..
SNM..64..

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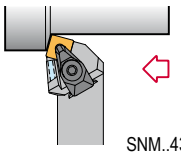
DSRN 75º-AN



SNM..43..
SNM..54..
SNM..64..

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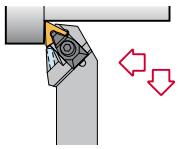
DTJN 93º-AN



TNM..33..
TNM..43..

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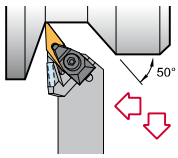
DVJN 93º-AN



VN..33..

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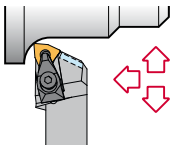
DWLN 95º-AN



WNMG43..

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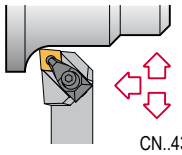
Dimple lock toolholders (without internal coolant)

DCLN 95º-N



CN..43..
CN..54..
CN..64..

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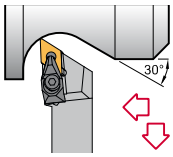
DDJN 93º-N



DN..43..

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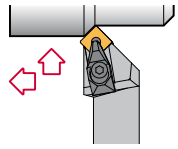
DSSN 45º-N



SNM..43..
SNM..64..

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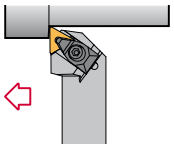
DTGN 90º-N



TNM..33..
TNM..43..

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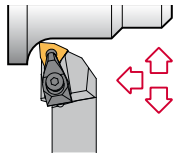
DWLN 95º-N



WNMG43..

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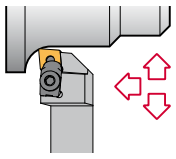
Wedge clamp

WCLN 95º



CN..43..
CN..64..

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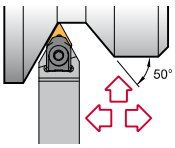
WTENNS 60º



TNM..33..
TNM..43..

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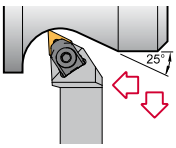
WTJNS 93º



TNM..33..
TNM..43..

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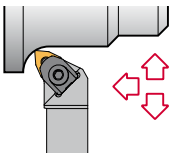
WWLN 95º



WNM..43..

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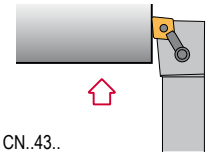
A

NEGATIVE TOOLHOLDERS

Double lock toolholders

MCFN 90º



CN..43..
CN..54..
CN..64..

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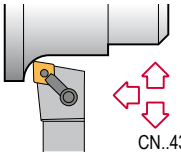
MCGN 90º



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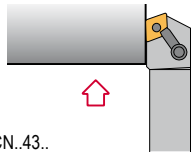
CN..43..
CN..54..
CN..64..

MCKN 75º



CN..43..
CN..54..
CN..64..

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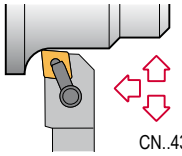
MCLN 95º



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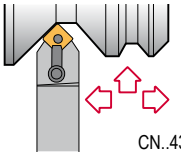
CN..43..
CN..54..
CN..64..

MCMN 50º



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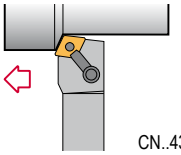
CN..43..
CN..54..
CN..64..

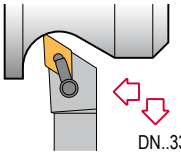
MCRN 75º



CN..43..
CN..54..
CN..64..

Page A81

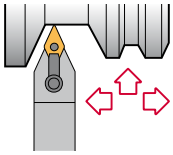
MDJN 93º



Page A82

DN..33..
DN..43..
DN..54..

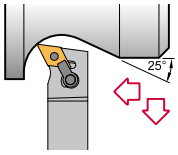
MDPN 62º30'



Page A83

DN..43..
DN..54..

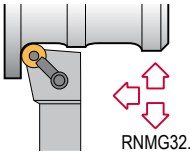
MDQN 107º30'



Page A84

DN..43..

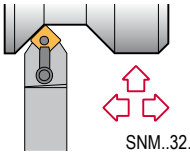
MRGN



RNMG32..
..
RNMG86..

Page A85

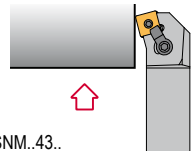
MSDN 45º



SNM..32..
..
SNM..64..

Page A86

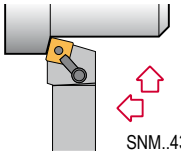
MSKN 75º



SNM..43..
..
SNM..64..

Page A87

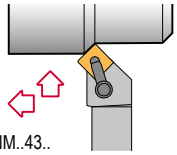
MSRN 75º



SNM..43..
..
SNM..85..

Page A88

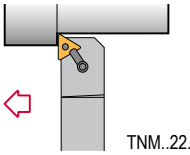
MSSN 45º



SNM..43..
..
SNM..64..

Page A89

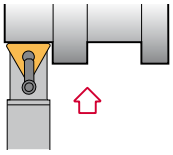
MTAN 90º



TNM..22..
..
TNM..54..

Page A90

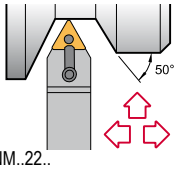
MTCN 90º



TNM..33..
TNM..43..

Page A91

MTENNS 60º



TNM..22..
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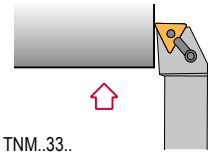
TNM..66..

Page A92

MTFN 90º



TNM..33..
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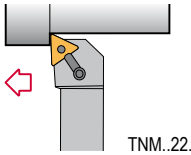
TNM..54..

Page A93

MTGN 90º



TNM..22..
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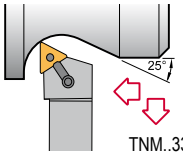
TNM..66..

Page A94

MTJNS 93º



TNM..33..
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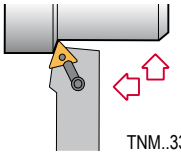
TNM..66..

Page A95

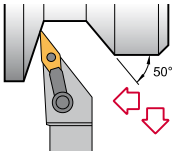
MTRN 75º



TNM..33..
..
TNM..54..

Page A96

MVJN 93º



VN..33..
VN..43..

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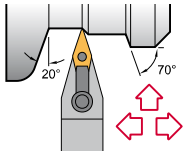
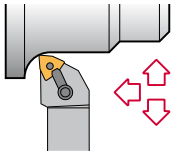
MVVN 72º30'



VN..33..
VN..43..

Page A98

MWLN 95º



WNM..33..
WNM..43..

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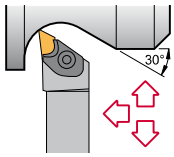
POSITIVE TOOLHOLDERS

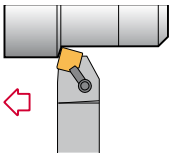
Top clamp toolholders

CKJN 93º



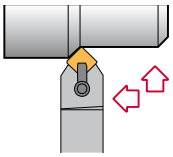
Page A100 KNUX1604..

CSBP 75º



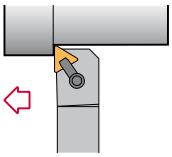
Page A101 SP..32.. SP..42..

CSDP 45º



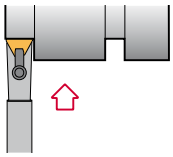
Page A102 SP..32.. SP..42..

CTAP 90º



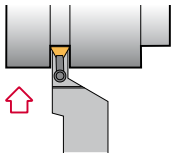
Page A103 TP..22.. TP..32..

CTCO 90º



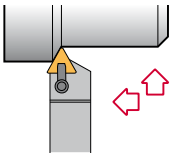
Page A104 TP..32.. TP..43..

CTCP 90º



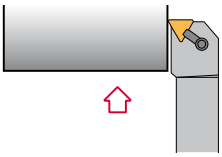
Page A105 TP..32.. TP..43..

CTEP 60º



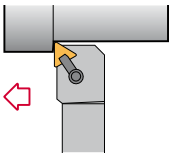
Page A106 TP..22.. TP..32..

CTFP 90º



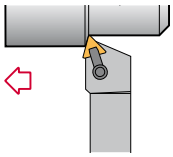
Page A107 TP..32..

CTGP 90º



Page A108 TP..22.. TP..32..

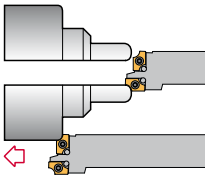
CTRP 75º



Page A109 TP..22.. TP..32..

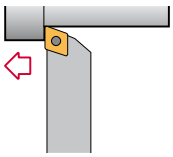
Center screw toolholders

SAGD 90º



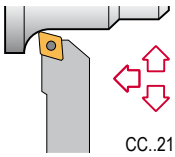
Page A110 ADMW1503..

SCAC 90º



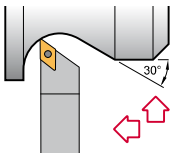
Page A111 CC..21.5.. CC..32.5..

SCLC 95º



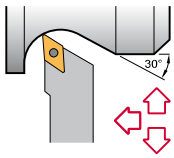
Page A112-113 CC..21.5.. CC..32.5.. CC..43..

SDAC 90º



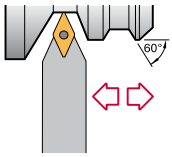
Page A114 DC..21.5.. DC..32.5..

SDJC 93º



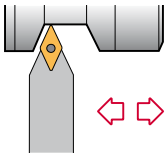
Page A115-116 DC..21.5.. DC..32.5..

SDNC 62º 30'



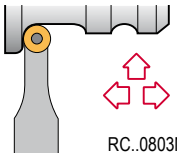
Page A117 DC..21.5.. DC..32.5..

SDPC 62º 30'



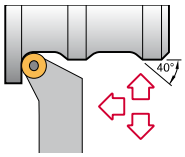
Page A118 DC..21.5.. DC..32.5..

SRDC



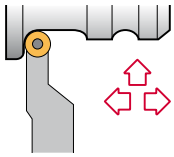
Page A119 RC..0803M0 .. RC..1204M0

SRGC



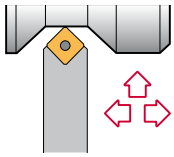
Page A120 RC..10T3M0 RC..1204M0

SRSC



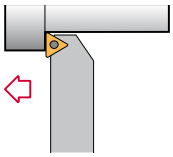
Page A121 RC..10T3M0 RC..1204M0

SSDC 45º



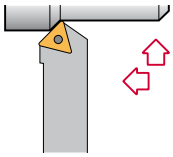
Page A122 SC..32.5.. SC..43..

STAC 90º



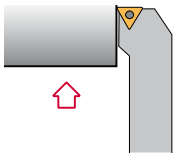
Page A123 TC..21.5.. TC..32.5..

STDC 45º



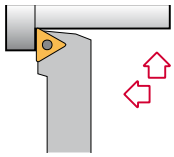
Page A124 TC..21.5.. TC..32.5..

STFC 90º



TC..21.5.. TC..32.5.. *Page A125*

STGC 90º

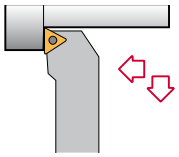


Page A126 TC..21.5.. TC..32.5..

POSITIVE TOOLHOLDERS

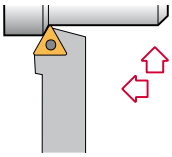
Center screw toolholders

STJC 93º



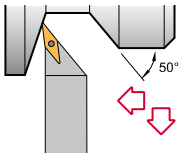
Page A127 TC..21.5..

STTC 60º



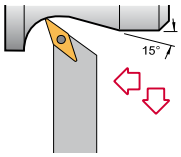
Page A128 TC..32.5..

SVAC 90º



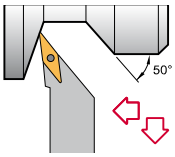
Page A129 VC..22.. VC..33..

SVHC 107º30'



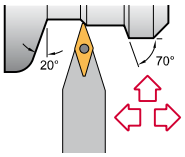
Page A130 VC..33..

SVJC 93º

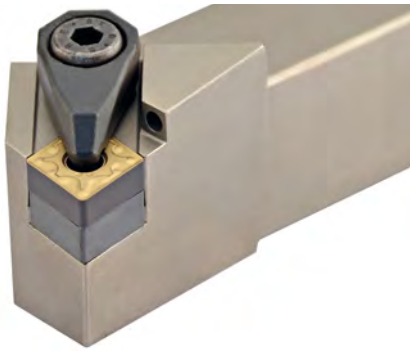


Page A131-132 VC..22.. VC..33..

SVVC 72º30'

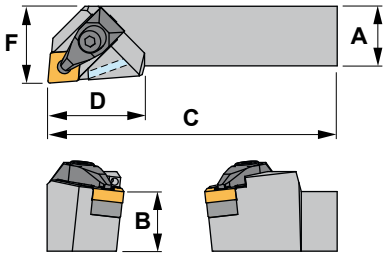


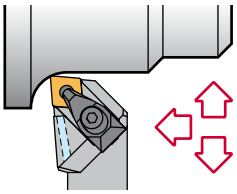
Page A133 VC..33..



Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A112).

Axial -6.5º
Radial -6.5º





DCLN 95°-AN

Reference	A	B	C	D	F	Insert size	lbs
DCLNR/L124BAN	0.750	0.750	4.50	1.250	1.000	CN..43..	0.880
DCLNR/L164DAN	1.000	1.000	6.00	1.250	1.250	CN..43..	1.540
DCLNR/L204DAN	1.250	1.250	6.00	1.250	1.500	CN..43..	2.755
DCLNR/L205DAN	1.250	1.250	6.00	1.375	1.500	CN..54..	2.755
DCLNR/L245EAN	1.500	1.500	7.00	1.375	2.000	CN..54..	6.615
DCLNR/L206DAN	1.250	1.250	6.00	1.653	1.500	CN..64..	2.755
DCLNR/L246EAN	1.500	1.500	7.00	1.653	2.000	CN..64..	6.615

Reference							Nm
DCLNR/L124BAN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L164DAN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L204DAN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L205DAN	ICSN-533	1768	2716	1696	4295	5004	3.5
DCLNR/L245EAN	ICSN-533	1768	2716	1696	4295	5004	3.5
DCLNR/L206DAN	ICSN-633	1770	2719	1696	4295	5004	3.5
DCLNR/L246EAN	ICSN-633	1770	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

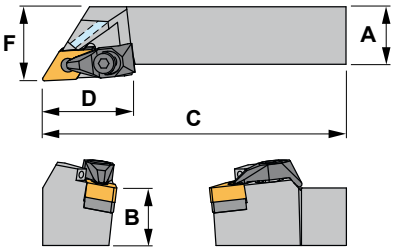
Reference			1			2	Nm¹	Nm²
MCLN...43..AN	2613	1086	5003	ICSN-442	1657	5025	3.0	2.0
MCLN...54..AN	2614	1086	5003	ICSN-533	1673	5003	3.0	3.0
MCLN...64..AN	2614	1086	5003	ICSN-633	1674	5004	3.0	3.5

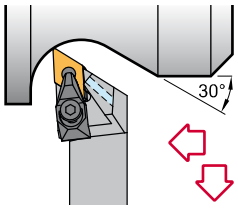
C CLAMPING

Reference							Nm
CCLN...43..AN	1766	ICSN-442	9414	2713	1086	5004	3.5
CCLN...45..AN	1766	ICSN-422	9414	2713	1086	5004	3.5
CCLN...54..AN	1768	ICSN-523	9414	2713	1086	5004	3.5
CCLN...64..AN	1770	ICSN-623	9414	2713	1086	5004	3.5

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A115).

Axial 6.25º
Radial -6.75º





DDJN 93°-AN

Reference	A	B	C	D	F	Insert size	lbs
DDJNR/L124BAN	0.750	0.750	4.50	1.535	1.000	DN..43..	0.880
DDJNR/L164DAN	1.000	1.000	6.00	1.535	1.250	DN..43..	1.540
DDJNR/L204DAN	1.250	1.250	6.00	1.535	1.500	DN..43..	2.755
DDJNR/L244EAN	1.500	1.500	7.00	1.535	2.000	DN..43..	6.615

Reference							Nm
DDJNR/L124BAN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L164DAN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L204DAN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L244EAN	IDSN-442	1766	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

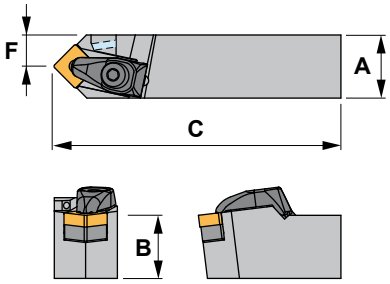
Reference			1			2	Nm¹	Nm²
MDJN...43..AN	2613	1086	5003	IDSN-432	1657	5025	3.0	2.0

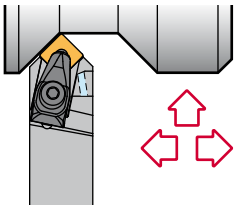
C CLAMPING

Reference							Nm
CDJN...43..AN	1766	IDSN-422	9416	2717	1086	5003	3.0

Characteristics:
Toolholder for specific operations equipped with square negative inserts and strong cutting edges.
For low powered machines and small pieces choose toolholder Ref. SSDC (Page: A122).

Axial -7º
Radial 0º





DSDN 45º-AN

Reference	A	B	C	F	Insert size	lbs
DSDNN124BAN	0.750	0.750	4.50	0.375	SNM..43..	0.880
DSDNN164DAN	1.000	1.000	6.00	0.500	SNM..43..	1.540
DSDNN205DAN	1.250	1.250	6.00	0.625	SNM..54..	2.755
DSDNN206DAN	1.250	1.250	6.00	0.625	SNM..64..	2.755
DSDNN246EAN	1.500	1.500	7.00	0.750	SNM..64..	6.615

Reference							Nm
DSDNN124BAN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSDNN164DAN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSDNN205DAN	ISSN-533	1768	2716	1696	4295	5004	3.5
DSDNN206DAN	ISSN-633	1770	2719	1696	4295	5004	3.5
DSDNN246EAN	ISSN-633	1770	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

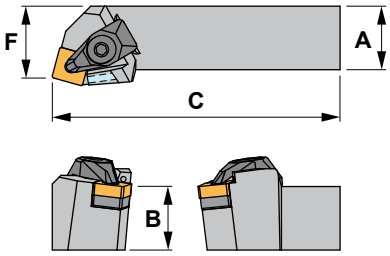
Reference			1			2	Nm[1]	Nm[2]
MSDN...43..AN	2613	1086	5003	ISSN-442	1657	5025	3.0	2.0
MSDN...54..AN	2614	1086	5003	ISSN-533	1673	5003	3.0	3.0
MSDN...64..AN	2614	1086	5003	ISSN-633	1674	5004	3.0	3.5

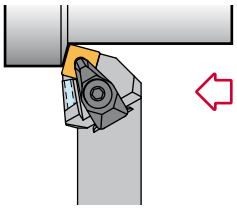
C CLAMPING

Reference							Nm
CSDN...43..AN	1766	ISSN-442	9414	2713	1086	5003	3.0
CSDN...45..AN	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for specific operations equipped with square negative inserts and strong cutting edges. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -6º
Radial -6º





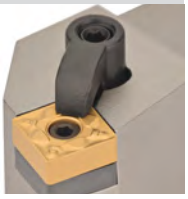
DSRN 75º-AN

Reference	A	B	C	D	F	Insert size	lbs
DSRNR/L124BAN	0.750	0.750	4.50	1.375	0.880	SNM..43..	0.880
DSRNR/L164DAN	1.000	1.000	6.00	1.375	1.130	SNM..43..	1.540
DSRNR/L205DAN	1.250	1.250	6.00	1.375	1.353	SNM..54..	2.755
DSRNR/L206DAN	1.250	1.250	6.00	1.375	1.321	SNM..64..	2.755

Reference							Nm
DSRNR/L124BAN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSRNR/L164DAN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSRNR/L205DAN	ISSN-533	1768	2716	1696	4295	5004	3.5
DSRNR/L206DAN	ISSN-633	1770	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING



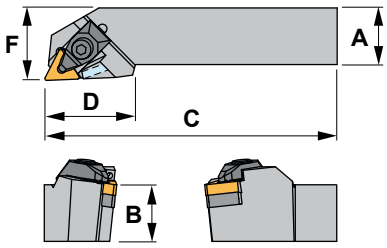
Reference			1			2	Nm[1]	Nm[2]
MSRN...43..AN	2613	1086	5003	ISSN-442	1657	5025	3.0	2.0
MSRN...54..AN	2614	1086	5003	ISSN-533	1673	5003	3.0	3.0
MSRN...64..AN	2614	1086	5003	ISSN-633	1674	5004	3.0	3.5

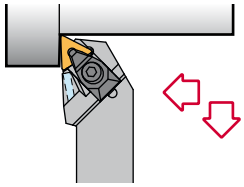
C CLAMPING

Reference							Nm
CSRN...43..AN	1766	ISSN-442	9414	2713	1086	5003	3.0
CSRN...45..AN	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Multipurpose toolholder equipped with triangular negative double-sided inserts (angle 60°).
For specific applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -6°





DTJN 93°-AN

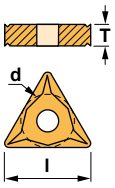
Reference	A	B	C	D	F	Insert size	lbs
DTJNR/L123BAN	0.750	0.750	4.50	1.250	1.000	TNM..33..	0.880
DTJNR/L163DAN	1.000	1.000	6.00	1.250	1.250	TNM..33..	1.540
DTJNR/L164DAN	1.000	1.000	6.00	1.375	1.250	TNM..43..	1.540
DTJNR/L204DAN	1.250	1.250	6.00	1.250	1.500	TNM..43..	2.755
DTJNR/L244EAN	1.500	1.500	7.00	1.375	2.000	TNM..43..	6.615

Reference							Nm
DTJNR/L123BAN	ITSN-342	1764	2708	1695	4294	5004	3.5
DTJNR/L163DAN	ITSN-342	1764	2708	1695	4294	5004	3.5
DTJNR/L164DAN	ITSN-433	1766	2712	1696	4295	5004	3.5
DTJNR/L204DAN	ITSN-433	1766	2712	1696	4295	5004	3.5
DTJNR/L244EAN	ITSN-433	1766	2712	1696	4295	5004	3.5

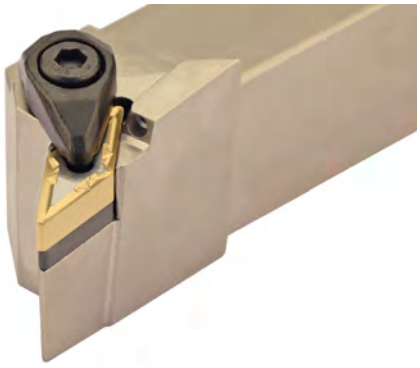
TNM..

Triangular negative inserts. A37-38

Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

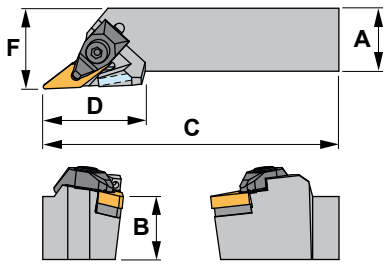


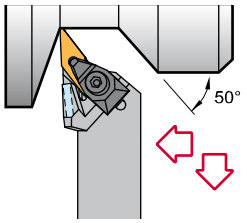
TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				



Characteristics: Toolholder for very specific operations equipped with rhombic negative inserts (angle 35º).
For low powered or poor rigid machines and small pieces, it is recommended to choose toolholder Ref. SVJC (Page: A131).

Axial -13º
Radial -4º





DVJN 93°-AN

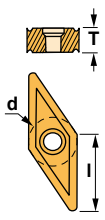
Reference	A	B	C	D	F	Insert size	lbs
DVJNR/L123BAN	0.750	0.750	4.50	1.750	1.000	VN..33..	0.880
DVJNR/L163DAN	1.000	1.000	6.00	1.750	1.250	VN..33..	1.540
DVJNR/L203DAN	1.250	1.250	6.00	1.750	1.500	VN..33..	2.755
DVJNR/L243EAN	1.500	1.500	7.00	1.750	2.000	VN..33..	6.615

Reference							Nm
DVJNR/L123BAN	IVSN-322	1764	2708	1695	4294	5004	3.5
DVJNR/L163DAN	IVSN-322	1764	2708	1695	4294	5004	3.5
DVJNR/L203DAN	IVSN-322	1764	2708	1695	4294	5004	3.5
DVJNR/L243EAN	IVSN-322	1764	2708	1695	4294	5004	3.5

VN..

35º rhombic negative inserts. A41

Reference	l	T	d
VN..33..	0.650	0.187	0.375



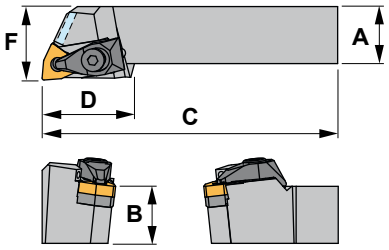
VNGP

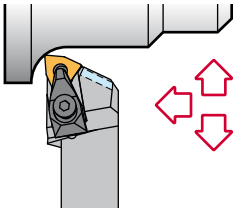
VNMG

VNMG-TC

Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).
For top clamp toolholder see Ref. MWLN (Page: A99) or WWLN (Page: A75).

Axial -6º
Radial -6º





DWLN 95°-AN

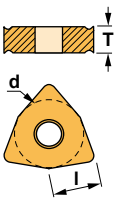
Reference	A	B	C	D	F	Insert size	lbs
DWLNR/L124BAN	0.750	0.750	4.50	1.250	1.000	WNMG43..	0.880
DWLNR/L164DAN	1.000	1.000	6.00	1.250	1.250	WNMG43..	1.540
DWLNR/L204DAN	1.250	1.250	6.00	1.250	1.500	WNMG43..	2.755
DWLNR/L244EAN	1.500	1.500	7.00	1.250	2.000	WNMG43..	6.615

Reference							Nm
DWLNR/L124BAN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L164DAN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L204DAN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L244EAN	IWSN-433	1766	2712	1696	4295	5004	3.5

WNMG

80º trigon negative inserts. A42-43

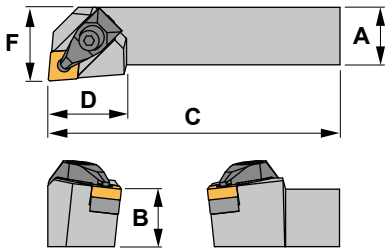
Reference	l	T	d
WNMG43..	0.320	0.187	0.500

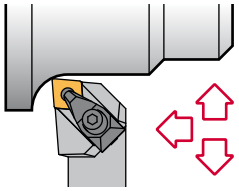


WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A112).

Axial -6,5º
Radial -6,5º





DCLN 95°-N

Reference	A	B	C	D	F	Insert size	lbs
DCLNR/L124BN	0.750	0.750	4.50	1.250	1.000	CN..43..	0.880
DCLNR/L164DN	1.000	1.000	6.00	1.250	1.250	CN..43..	1.540
DCLNR/L204DN	1.250	1.250	6.00	1.250	1.500	CN..43..	2.755
DCLNR/L205DN	1.250	1.250	6.00	1.375	1.500	CN..54..	2.755
DCLNR/L245EN	1.500	1.500	7.00	1.375	2.000	CN..54..	6.615
DCLNR/L206DN	1.250	1.250	6.00	1.653	1.500	CN..64..	2.755
DCLNR/L246EN	1.500	1.500	7.00	1.653	2.000	CN..64..	6.615

Reference							Nm
DCLNR/L124BN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L164DN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L204DN	ICSN-442	1766	2712	1696	4295	5004	3.5
DCLNR/L205DN	ICSN-533	1768	2716	1696	4295	5004	3.5
DCLNR/L245EN	ICSN-533	1768	2716	1696	4295	5004	3.5
DCLNR/L206DN	ICSN-633	1770	2719	1696	4295	5004	3.5
DCLNR/L246EN	ICSN-633	1770	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

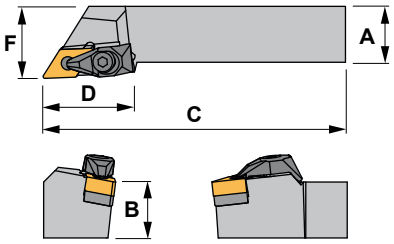
Reference			1			2	Nm^1	Nm^2
MCLN...43..N	2613	1086	5003	ICSN-442	1657	5025	3.0	2.0
MCLN...54..N	2614	1086	5003	ICSN-533	1673	5003	3.0	3.0
MCLN...64..N	2614	1086	5003	ICSN-633	1674	5004	3.0	3.5

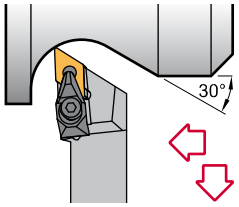
C CLAMPING

Reference							Nm
CCLN...43..N	1766	ICSN-442	9414	2713	1086	5004	3.5
CCLN...45..N	1766	ICSN-422	9414	2713	1086	5004	3.5
CCLN...54..N	1768	ICSN-523	9414	2713	1086	5004	3.5
CCLN...64..N	1770	ICSN-623	9414	2713	1086	5004	3.5

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A115).

Axial 6.25º
Radial -6.75º





DDJN 93°-N

Reference	A	B	C	D	F	Insert size	lbs
DDJNR/L124BN	0.750	0.750	4.50	1.535	1.000	DN..43..	0.880
DDJNR/L164DN	1.000	1.000	6.00	1.535	1.250	DN..43..	1.540
DDJNR/L204DN	1.250	1.250	6.00	1.535	1.500	DN..43..	2.755
DDJNR/L244EN	1.500	1.500	7.00	1.535	2.000	DN..43..	6.615

Reference							Nm
DDJNR/L124BN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L164DN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L204DN	IDSN-442	1766	2712	1696	4295	5004	3.5
DDJNR/L244EN	IDSN-442	1766	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

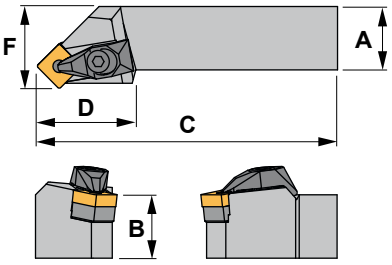
Reference			1			2	Nm¹	Nm²
MDJN...43..N	2613	1086	5003	IDSN-432	1657	5025	3.0	2.0

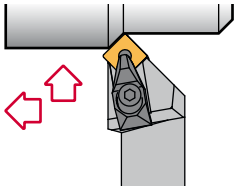
C CLAMPING

Reference							Nm
CDJN...43..N	1766	IDSN-422	9416	2717	1086	5003	3.0

Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
The dimple lock ensures good rigidity and chip flow in roughing applications.

Axial -5.75°
Radial -5.75°





DSSN 45°-N

Reference	A	B	C	D	F	Insert size	lbs
DSSNR/L124BN	0.750	0.750	4.50	1.457	1.000	SNM..43..	0.800
DSSNR/L164DN	1.000	1.000	6.00	1.457	1.250	SNM..43..	1.550
DSSNR/L204DN	1.250	1.250	6.00	1.457	1.500	SNM..43..	2.200
DSSNR/L206DN	1.250	1.250	6.00	1.772	1.500	SNM..64..	2.850
DSSNR/L246EN	1.500	1.500	7.00	1.772	2.000	SNM..64..	6.800

Reference							Nm
DSSNR/L124BN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSSNR/L164DN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSSNR/L204DN	ISSN-442	1766	2712	1696	4295	5004	3.5
DSSNR/L206DN	ISSN-633	1770	2719	1696	4295	5004	3.5
DSSNR/L246EN	ISSN-633	1770	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

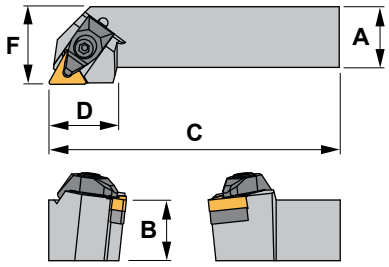
Reference			1			2	Nm¹	Nm²
MSSN...43..N	2613	1086	5003	ISSN-442	1657	5025	3.0	2.0
MSSN...54..N	2614	1086	5003	ISSN-533	1673	5003	3.0	3.0
MSSN...64..N	2614	1086	5003	ISSN-633	1674	5004	3.0	3.5

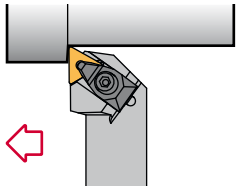
C CLAMPING

Reference							Nm
CSSN...43..N	1766	ISSN-442	9414	2713	1086	5003	3.0
CSSN...45..N	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
For low powered machines and small pieces choose toolholder Ref. CTGP (Page: A108) or STGC (Page: A126).

Axial -6º
Radial -6º





DTGN 90°-N

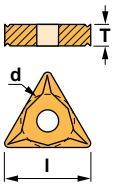
Reference	A	B	C	D	F	Insert size	lbs
DTGNR/L123BN	0.750	0.750	4.50	1.102	1.000	TNM..33..	0.900
DTGNR/L163DN	1.000	1.000	6.00	1.102	1.250	TNM..33..	1.650
DTGNR/L164DN	1.000	1.000	6.00	1.338	1.250	TNM..43..	1.650
DTGNR/L204DN	1.250	1.250	6.00	1.338	1.500	TNM..43..	2.900

Reference							Nm
DTGNR/L123BN	ITSN-342	1764	2708	1695	4294	5004	3.5
DTGNR/L163DN	ITSN-342	1764	2708	1695	4294	5004	3.5
DTGNR/L164DN	ITSN-433	1766	2712	1696	4295	5004	3.5
DTGNR/L204DN	ITSN-433	1766	2712	1696	4295	5004	3.5

TNM..

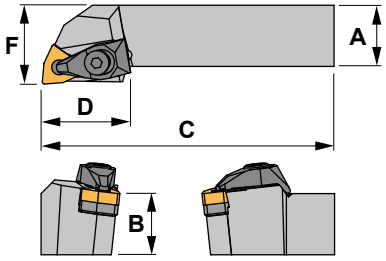
Triangular negative inserts. A37-38

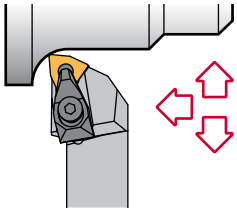
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500



Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).
For top clamp toolholder see Ref. MWLN (Page: A99) or WWLN (Page: A75).

Axial -6°
Radial -6°





DWLN 95°-N

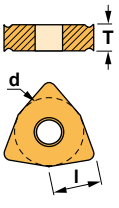
Reference	A	B	C	D	F	Insert size	lbs
DWLNR/L124BN	0.750	0.750	4.50	1.250	1.000	WNMG43..	0.880
DWLNR/L164DN	1.000	1.000	6.00	1.250	1.250	WNMG43..	1.540
DWLNR/L204DN	1.250	1.250	6.00	1.250	1.500	WNMG43..	2.755
DWLNR/L244EN	1.500	1.500	7.00	1.250	2.000	WNMG43..	6.615

Reference							Nm
DWLNR/L124BN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L164DN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L204DN	IWSN-433	1766	2712	1696	4295	5004	3.5
DWLNR/L244EN	IWSN-433	1766	2712	1696	4295	5004	3.5

WNMG

80° trigon negative inserts. A42-43

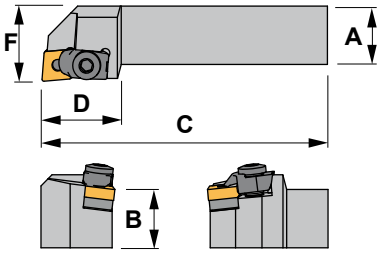
Reference	l	T	d
WNMG43..	0.320	0.187	0.500

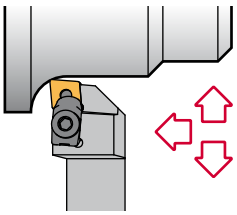


WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A112).

Axial -8º
Radial -6.5º





WCLN 95º

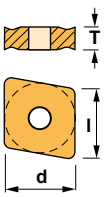
Reference	A	B	C	D	F	Insert size	lbs
WCLNR/L124B	0.750	0.750	4.50	1.130	1.000	CN..43..	0.990
WCLNR/L164D	1.000	1.000	6.00	1.130	1.250	CN..43..	1.760
WCLNR/L204D	1.250	1.250	6.00	1.130	1.500	CN..43..	2.640
WCLNR/L166D	1.000	1.000	6.00	1.510	1.250	CN..64..	1.760
WCLNR/L206D	1.250	1.250	6.00	1.510	1.500	CN..64..	2.640
WCLNR/L246D	1.500	1.500	6.00	1.510	2.000	CN..64..	6.820

Reference						Nm
WCLNR/L124B	2019	5105	ICSN-432	1661	1394	4.0
WCLNR/L164D	2019	5105	ICSN-432	1661	1394	4.0
WCLNR/L204D	2019	5105	ICSN-432	1661	1394	4.0
WCLNR/L166D	2029	5105	3619	1682	1296	4.0
WCLNR/L206D	2029	5105	3619	1682	1296	4.0
WCLNR/L246D	2029	5105	3619	1682	1296	4.0

CN..

80° rhombic negative inserts. A24-26

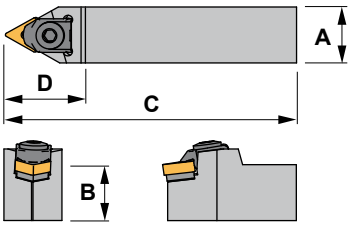
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..64..	0.760	0.250	0.750

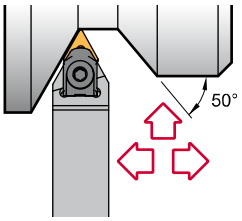


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
CNMG-MFC	CNMG-MHC	CNMG-RC	CNMG-TC	CNMM

Characteristics:
Profiling toolholder equipped with triangular negative double-sided insert (angle 60°).
For general applications, roughing, semi-finishing and finishing.

Axial -8.25°
Radial -2.25°





WTENNS 60°

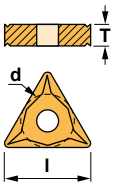
Reference	A	B	C	D	Insert size	lbs
WTENNS123B	0.750	0.750	4.50	1.300	TNM..33..	0.990
WTENNS163D	1.000	1.000	6.00	1.300	TNM..33..	1.760
WTENNS164D	1.000	1.000	6.00	1.500	TNM..43..	1.760
WTENNS204D	1.250	1.250	6.00	1.500	TNM..43..	2.640

Reference						Nm
WTENNS123B	2013	5105	3414	1642	1393	4.0
WTENNS163D	2013	5105	3414	1642	1393	4.0
WTENNS164D	2029	5105	ITSN-433	1661	1394	4.0
WTENNS204D	2029	5105	ITSN-433	1661	1394	4.0

TNM..

Triangular negative inserts. A37-38

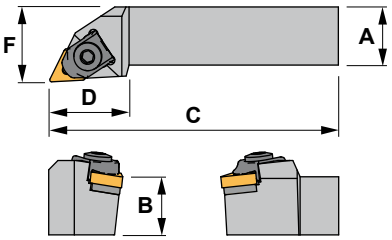
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

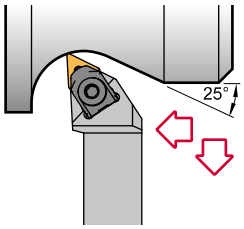


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
TNMG-MC	TNMG-MFC	TNMG-MHC	TNMG-TC	TNMX-R/L

Characteristics:
Turning and profiling toolholder equipped with triangular negative double-sided insert. The center pin and top clamp ensure good rigidity and stability in roughing applications.

Axial -6°
Radial -6°





WTJNS 93°

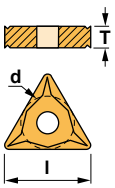
Reference	A	B	C	D	F	Insert size	lbs
WTJNRS/LS123B	0.750	0.750	4.50	1.030	1.000	TNM..33..	0.990
WTJNRS/LS163D	1.000	1.000	6.00	1.030	1.250	TNM..33..	1.760
WTJNRS/LS164D	1.000	1.000	6.00	1.250	1.250	TNM..43..	1.760
WTJNRS/LS204D	1.250	1.250	6.00	1.250	1.500	TNM..43..	2.640

Reference						Nm
WTJNRS/LS123B	2013	5105	3414	1642	1393	4.0
WTJNRS/LS163D	2013	5105	3414	1642	1393	4.0
WTJNRS/LS164D	2029	5105	ITSN-433	1661	1394	4.0
WTJNRS/LS204D	2029	5105	ITSN-433	1661	1394	4.0

TNM..

Triangular negative inserts. A37-38

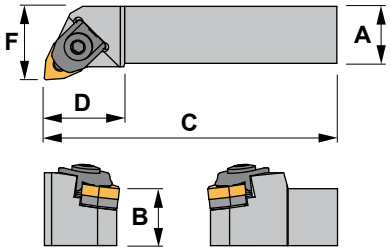
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

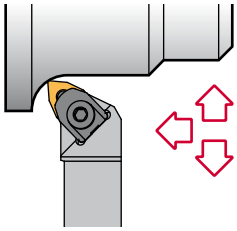


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
TNMG-MC	TNMG-MFC	TNMG-MHC	TNMG-TC	TNMX-R/L

Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80°).
Not suitable for cermet, ceramic or K10 and P10 grade inserts.

Axial -6.5°
Radial -6.5°





WWLN 95°

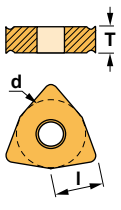
Reference	A	B	C	D	F	Insert size	lbs
WWLNR/L124B	0.750	0.750	4.50	1.070	1.000	WNMG43..	0.990
WWLNR/L164D	1.000	1.000	6.00	1.070	1.250	WNMG43..	1.760
WWLNR/L204D	1.250	1.250	6.00	1.070	1.500	WNMG43..	2.640
WWLNR/L244E	1.500	1.500	7.00	1.070	2.000	WNMG43..	6.615

Reference						Nm
WWLNR/L124B	2012	5105	IWSN-433	1661	1394	4.0
WWLNR/L164D	2012	5105	IWSN-433	1661	1394	4.0
WWLNR/L204D	2012	5105	IWSN-433	1661	1394	4.0
WWLNR/L244E	2012	5105	IWSN-433	1661	1394	4.0

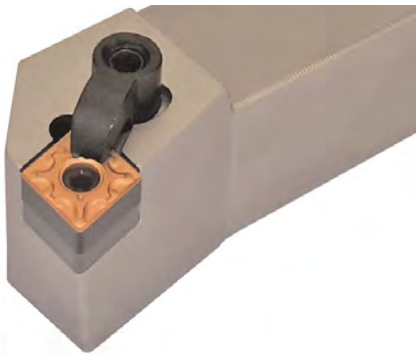
WNMG

80° trigon negative inserts. A42-43

Reference	l	T	d
WNMG43..	0.320	0.187	0.500

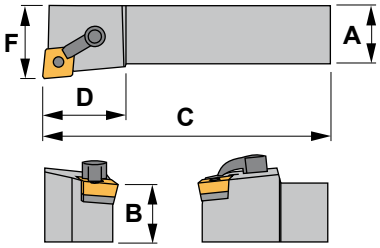


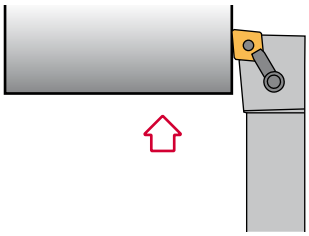
WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			



Characteristics:
Face turning toolholder equipped with rhombic negative double-sided inserts (angle 80°) with strong cutting edge. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -6°
Radial -6°





MCFN 90°

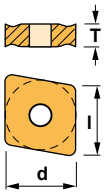
Reference	A	B	C	D	F	Insert size	lbs
MCFNR/L124B	0.750	0.750	4.50	1.120	1.000	CN..43..	0.880
MCFNR/L164D	1.000	1.000	6.00	1.120	1.250	CN..43..	1.540
MCFNR/L204D	1.250	1.250	6.00	1.120	1.500	CN..43..	2.755
MCFNR/L854D	1.000	1.250	6.00	1.120	1.250	CN..43..	2.200
MCFNR/L165D	1.000	1.000	6.00	1.250	1.250	CN..54..	1.540
MCFNR/L205D	1.250	1.250	6.00	1.250	1.500	CN..54..	2.755
MCFNR/L245D	1.500	1.500	6.00	1.250	2.000	CN..54..	6.615
MCFNR/L166D	1.000	1.000	6.00	1.310	1.250	CN..64..	1.540
MCFNR/L206D	1.250	1.250	6.00	1.310	1.500	CN..64..	2.755
MCFNR/L246D	1.500	1.500	6.00	1.310	2.000	CN..64..	6.615

Reference			1			2	Nm¹	Nm²
MCFNR/L124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCFNR/L164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCFNR/L204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCFNR/L854D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCFNR/L165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCFNR/L205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCFNR/L245D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCFNR/L166D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCFNR/L206D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCFNR/L246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5103	3.5	3.0

CN..

80° rhombic negative inserts. A24-26

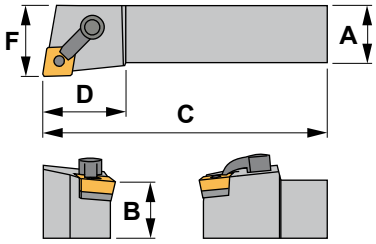
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

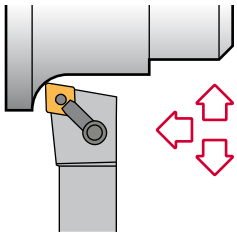


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Profiling toolholder equipped with rhombic negative double-sided inserts (angle 80°) with strong cutting edge. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -6°
Radial -6°





MCGN 90°

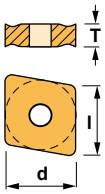
Reference	A	B	C	D	F	Insert size	lbs
MCGNR/L124B	0.750	0.750	4.50	1.120	1.000	CN..43..	0.880
MCGNR/L164D	1.000	1.000	6.00	1.120	1.250	CN..43..	1.540
MCGNR/L204D	1.250	1.250	6.00	1.120	1.500	CN..43..	2.755
MCGNR/L244D	1.500	1.500	6.00	1.250	2.000	CN..43..	2.200
MCGNR/L165D	1.000	1.000	6.00	1.500	1.250	CN..54..	1.540
MCGNR/L205D	1.250	1.250	6.00	1.500	1.500	CN..54..	2.755
MCGNR/L245D	1.500	1.500	6.00	1.500	2.000	CN..54..	6.615
MCGNR/L206D	1.250	1.250	6.00	1.650	1.500	CN..64..	2.755
MCGNR/L246D	1.500	1.500	6.00	1.650	2.000	CN..64..	6.615

Reference			1			2	Nm¹	Nm²
MCGNR/L124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCGNR/L164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCGNR/L204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCGNR/L244D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCGNR/L165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCGNR/L205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCGNR/L245D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCGNR/L206D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCGNR/L246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

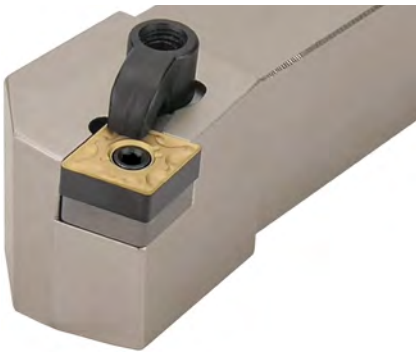
80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750



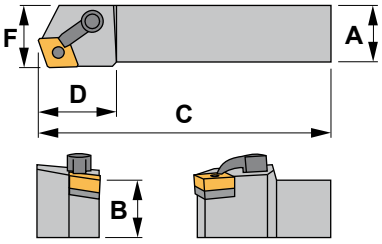
CNMG-CC CNMG-FC CNMG-FMC CNMG-KC CNMG-MC

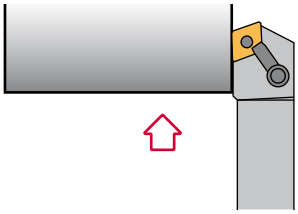
CNMG-MFC CNMG-MHC CNMG-RC CNMG-TC CNMM



Characteristics:
Face turning toolholder equipped with rhombic negative double-sided inserts (angle 80°) with strong cutting edge. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -4°
Radial -7°





MCKN 75º

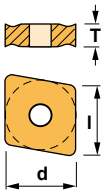
Reference	A	B	C	D	F	Insert size	lbs
MCKNR/L124B	0.750	0.750	4.50	1.200	1.000	CN..43..	0.880
MCKNR/L164D	1.000	1.000	6.00	1.200	1.250	CN..43..	1.540
MCKNR/L204D	1.250	1.250	6.00	1.200	1.500	CN..43..	2.755
MCKNR/L165D	1.000	1.000	6.00	1.350	1.250	CN..54..	1.540
MCKNR/L205D	1.250	1.250	6.00	1.350	1.500	CN..54..	2.755
MCKNR/L166D	1.000	1.000	6.00	1.470	1.250	CN..64..	1.540
MCKNR/L206D	1.250	1.250	6.00	1.470	1.500	CN..64..	2.755
MCKNR/L246D	1.500	1.500	6.00	1.470	2.000	CN..64..	6.615

Reference			1			2	Nm¹	Nm²
MCKNR/L124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCKNR/L164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCKNR/L204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCKNR/L165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCKNR/L205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCKNR/L166D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCKNR/L206D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCKNR/L246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

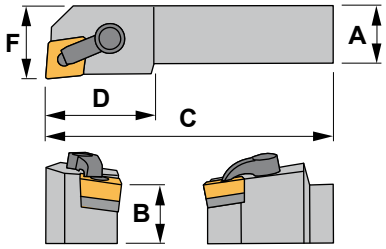


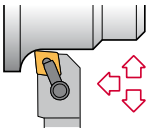
CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC

CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose toolholder Ref. SCLC (Page: A112).

Axial -8º
Radial -6.25º





MCLN 95º

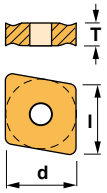
Reference	A	B	C	D	F	Insert size	lbs
MCLNR/L124B	0.750	0.750	4.50	1.130	1.000	CN..43..	0.880
MCLNR/L164D	1.000	1.000	6.00	1.130	1.250	CN..43..	1.540
MCLNR/L204D	1.250	1.250	6.00	1.130	1.500	CN..43..	2.755
MCLNR/L854D	1.000	1.250	6.00	1.130	1.250	CN..43..	2.200
MCLNR/L165D	1.000	1.000	6.00	1.470	1.250	CN..54..	1.540
MCLNR/L205D	1.250	1.250	6.00	1.470	1.500	CN..54..	2.755
MCLNR/L245D	1.500	1.500	6.00	1.470	2.000	CN..54..	6.615
MCLNR/L166D	1.000	1.000	6.00	1.510	1.250	CN..64..	1.540
MCLNR/L206D	1.250	1.250	6.00	1.510	1.500	CN..64..	2.755
MCLNR/L246D	1.500	1.500	6.00	1.510	2.000	CN..64..	6.615
MCLNR/L246E	1.500	1.500	7.00	1.500	2.000	CN..64..	6.615
MCLNR/L856D	1.000	1.250	6.00	1.510	1.250	CN..64..	2.200
MCLNR/L866E	1.000	1.500	7.00	1.510	1.250	CN..64..	3.100

Reference			1			2	Nm¹	Nm²
MCLNR/L124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCLNR/L164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCLNR/L204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCLNR/L854D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCLNR/L165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCLNR/L205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCLNR/L245D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCLNR/L166D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCLNR/L206D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCLNR/L246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCLNR/L246E	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCLNR/L856D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCLNR/L866E	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

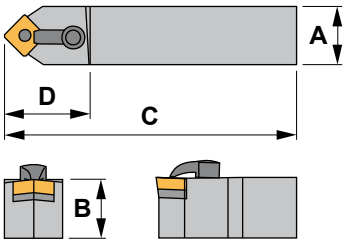


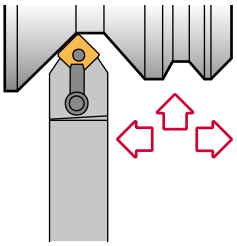
CNMG-CC CNMG-FC CNMG-FMC CNMG-KC CNMG-MC

CNMG-MFC CNMG-MHC CNMG-RC CNMG-TC CNMM

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided inserts (angle 80°) with strong cutting edge. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -7°
Radial 0°





MCMN 50º

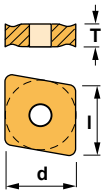
Reference	A	B	C	D	Insert size	lbs
MCMNN124B	0.750	0.750	4.50	1.280	CN..43..	0.880
MCMNN164D	1.000	1.000	6.00	1.280	CN..43..	1.540
MCMNN204D	1.250	1.250	6.00	1.390	CN..43..	2.755
MCMNN854D	1.000	1.250	6.00	1.280	CN..43..	2.200
MCMNN165D	1.000	1.000	6.00	1.750	CN..54..	1.540
MCMNN205D	1.250	1.250	6.00	1.610	CN..54..	2.755
MCMNN245D	1.500	1.500	6.00	1.610	CN..54..	6.615
MCMNN246D	1.500	1.500	6.00	1.670	CN..64..	6.615

Reference			1			2	Nm¹	Nm²
MCMNN124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCMNN164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCMNN204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCMNN854D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCMNN165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCMNN205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCMNN245D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCMNN246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5103	3.5	3.0

CN..

80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

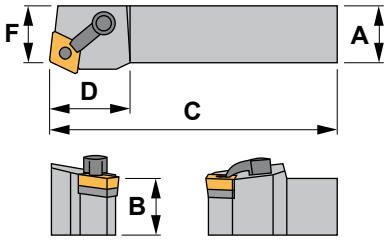


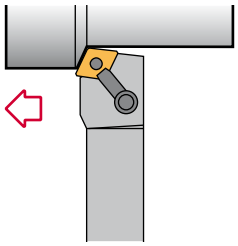
CNMG-CC | CNMG-FC | CNMG-FMC | CNMG-KC | CNMG-MC

CNMG-MFC | CNMG-MHC | CNMG-RC | CNMG-TC | CNMM

Characteristics:
External turning toolholder equipped with rhombic negative double-sided inserts (angle 80°) with strong cutting edge. The double clamping (pin + clamp) ensures good rigidity and stability in roughing applications.

Axial -6°
Radial -6°





MCRN 75°

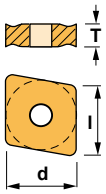
Reference	A	B	C	D	F	Insert size	lbs
MCRNR/L124B	0.750	0.750	4.50	1.180	0.878	CN..43..	0.880
MCRNR/L164D	1.000	1.000	6.00	1.180	1.128	CN..43..	1.540
MCRNR/L204D	1.250	1.250	6.00	1.180	1.318	CN..43..	2.755
MCRNR/L165D	1.000	1.000	6.00	1.101	1.101	CN..54..	1.540
MCRNR/L205D	1.250	1.250	6.00	1.351	1.351	CN..54..	2.755
MCRNR/L206D	1.250	1.250	6.00	1.318	1.318	CN..64..	2.755
MCRNR/L246D	1.500	1.500	6.00	1.818	1.818	CN..64..	6.615

Reference			1			2	Nm¹	Nm²
MCRNR/L124B	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCRNR/L164D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCRNR/L204D	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
MCRNR/L165D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCRNR/L205D	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
MCRNR/L206D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
MCRNR/L246D	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

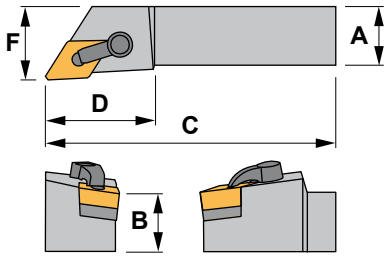


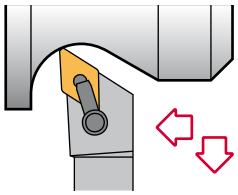
CNMG-CC CNMG-FC CNMG-FMC CNMG-KC CNMG-MC

CNMG-MFC CNMG-MHC CNMG-RC CNMG-TC CNMM

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A115).

Axial -6º
Radial -7º





MDJN 93°

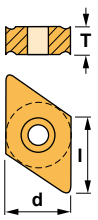
Reference	A	B	C	D	F	Insert size	lbs
MDJNR/L083A	0.500	0.500	4.00	1.062	0.625	DN..33..	0.155
MDJNR/L103B	0.625	0.625	4.50	1.250	0.875	DN..33..	0.440
MDJNR/L124B	0.750	0.750	4.50	1.500	1.000	DN..43..	0.880
MDJNR/L164D	1.000	1.000	6.00	1.500	1.250	DN..43..	1.540
MDJNR/L204D	1.250	1.250	6.00	1.500	1.500	DN..43..	2.755
MDJNR/L244D	1.500	1.500	6.00	1.500	2.000	DN..43..	6.615
MDJNR/L854D	1.000	1.250	6.00	1.500	1.250	DN..43..	2.200
MDJNR/L165D	1.000	1.000	6.00	1.440	1.250	DN..54..	1.540
MDJNR/L205D	1.250	1.250	6.00	1.440	1.500	DN..54..	2.755
MDJNR/L245D	1.500	1.500	6.00	1.440	2.000	DN..54..	6.615
MDJNR/L855D	1.000	1.250	6.00	1.440	1.250	DN..54..	2.200

Reference							Nm¹	Nm²
MDJNR/L083A	CL-7	XNS-36	5124	-	NL-33L	5102	3.5	1.4
MDJNR/L103B	CL-7	XNS-36	5124	-	NL-33L	5102	3.5	1.4
MDJNR/L124B	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDJNR/L164D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDJNR/L204D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDJNR/L244D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDJNR/L854D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDJNR/L165D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDJNR/L205D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDJNR/L245D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDJNR/L855D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0

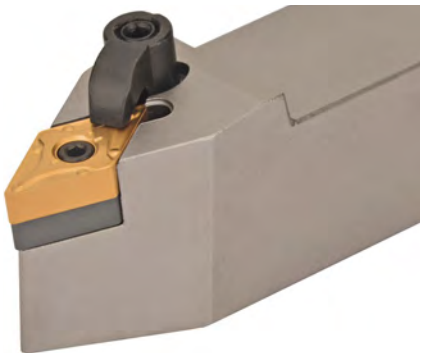
DN..

55º rhombic negative inserts. A28-30

Reference	l	T	d
DN..33..	0.457	0.187	0.375
DN..43..	0.610	0.187	0.500
DN..54..	0.764	0.250	0.625

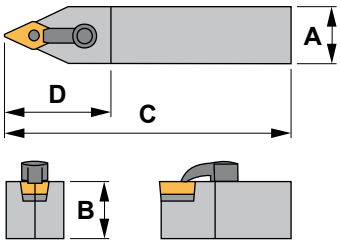


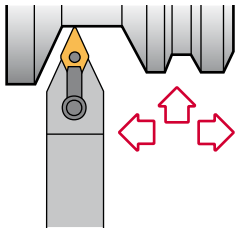
DNMA	DNMG-FC	DNMG-FMC	DNMG-KC
			
DNMG-MC	**DNMG-MHC**	**DNMG-TC**	**DNMX**
			



Characteristics:
Copying toolholder equipped with rhombic negative double-sided inserts (angle 55°) with strong cutting edge.
For low powered machines and small pieces choose toolholder Ref. SDPC (Page: A118).

Axial -8°
Radial 0°





MDPN 62º30'

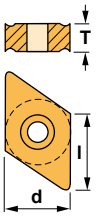
Reference	A	B	C	D	Insert size	lbs
MDPNN124B	0.750	0.750	4.50	1.620	DN..43..	0.880
MDPNN164D	1.000	1.000	6.00	1.620	DN..43..	1.540
MDPNN204D	1.250	1.250	6.00	1.620	DN..43..	2.755
MDPNN165D	1.000	1.000	6.00	1.880	DN..54..	1.540
MDPNN205D	1.250	1.250	6.00	1.880	DN..54..	2.755
MDPNN245E	1.500	1.500	7.00	1.880	DN..54..	6.615
MDPNN855D	1.000	1.250	6.00	1.880	DN..54..	2.200
MDPNN865D	1.000	1.500	6.00	1.880	DN..54..	3.100

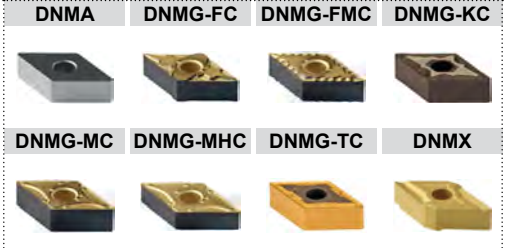
Reference			1			2	Nm¹	Nm²
MDPNN124B	CL-22	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDPNN164D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDPNN204D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDPNN165D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDPNN205D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDPNN245E	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDPNN855D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
MDPNN865D	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0

DN..

55º rhombic negative inserts. A28-30

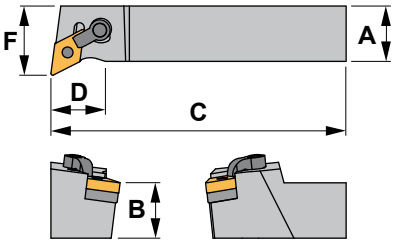
Reference	l	T	d
DN..43..	0.610	0.187	0.500
DN..54..	0.764	0.250	0.625

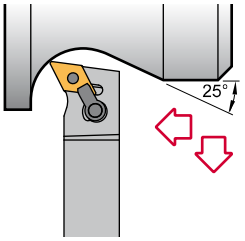




Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 55º).
For low powered machines and small pieces choose toolholder Ref. SDJC (Page: A115).

Axial -6º
Radial -6º





MDQN 107º30'

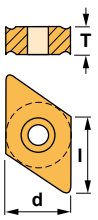
Reference	A	B	C	D	F	Insert size	lbs
MDQNR/L124B	0.750	0.750	4.50	1.370	1.000	DN..43..	0.880
MDQNR/L164D	1.000	1.000	6.00	1.370	1.250	DN..43..	1.540
MDQNR/L204D	1.250	1.250	6.00	1.370	1.500	DN..43..	2.755
MDQNR/L244E	1.500	1.500	7.00	1.370	2.000	DN..43..	6.615

Reference			1			2	Nm¹	Nm²
MDQNR/L124B	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDQNR/L164D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDQNR/L204D	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
MDQNR/L244E	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5

DN..

55º rhombic negative inserts. A28-30

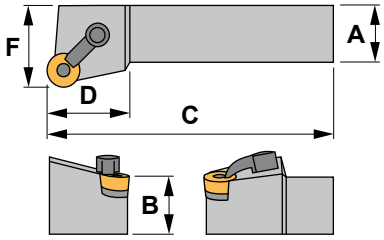
Reference	l	T	d
DN..43..	0.610	0.187	0.500

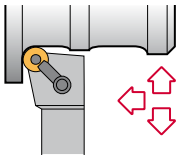


DNMA	DNMG-FC	DNMG-FMC	DNMG-KC
DNMG-MC	DNMG-MHC	DNMG-TC	DNMX

Characteristics:
Toolholder equipped with round negative inserts with strong cutting edge.
For low powered machines and small pieces choose toolholder Ref. SRGC (Page: A120).

Axial -7°
Radial -7°





MRGN

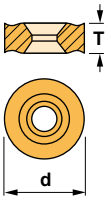
Reference	A	B	C	D	F	Insert size	lbs
MRGNR/L123B	0.750	0.750	4.50	0.810	1.000	RNMG32..	0.880
MRGNR/L124B	0.750	0.750	4.50	1.060	1.000	RNMG43..	0.880
MRGNR/L164D	1.000	1.000	6.00	1.060	1.250	RNMG43..	1.540
MRGNR/L204D	1.250	1.250	6.00	1.060	1.500	RNMG43..	2.755
MRGNR/L854D	1.000	1.250	6.00	1.060	1.250	RNMG43..	2.200
MRGNR/L864D	1.000	1.500	6.00	1.060	1.250	RNMG43..	3.100
MRGNR/L165D	1.000	1.000	6.00	1.250	1.250	RNMG54..	1.540
MRGNR/L205D	1.250	1.250	6.00	1.250	1.500	RNMG54..	2.755
MRGNR/L166D	1.000	1.000	6.00	1.380	1.250	RNMG64..	1.540
MRGNR/L206D	1.250	1.250	6.00	1.380	1.500	RNMG64..	2.755
MRGNR/L246E	1.500	1.500	7.00	1.380	2.000	RNMG64..	6.615
MRGNR/L248E	1.500	1.500	7.00	1.440	2.000	RNMG86..	6.615

Reference							Nm[1]	Nm[2]
MRGNR/L123B	CL-20	XNS-48	5103	-	NL-33	5102	3.0	1.4
MRGNR/L124B	CL-20	XNS-48	5103	IRSN-43	NL-46	5124	3.0	3.5
MRGNR/L164D	CL-20	XNS-48	5103	IRSN-43	NL-46	5124	3.0	3.5
MRGNR/L204D	CL-20	XNS-48	5103	IRSN-43	NL-46	5124	3.0	3.5
MRGNR/L854D	CL-20	XNS-48	5103	IRSN-43	NL-46	5124	3.0	3.5
MRGNR/L864D	CL-20	XNS-48	5103	IRSN-43	NL-46	5124	3.0	3.5
MRGNR/L165D	CL-12	XNS-510	5004	IRSN-53	NL-58	5103	3.5	3.0
MRGNR/L205D	CL-12	XNS-510	5004	IRSN-53	NL-58	5103	3.5	3.0
MRGNR/L166D	CL-12	XNS-510	5004	IRSN-63	NL-68	5135	3.5	4.0
MRGNR/L206D	CL-12	XNS-510	5004	IRSN-63	NL-68	5135	3.5	4.0
MRGNR/L246E	CL-12	XNS-510	5004	IRSN-63	NL-68	5135	3.5	4.0
MRGNR/L248E	CL-30	XNS-510	5004	IRSN-84	NL-810	5004	3.5	3.5

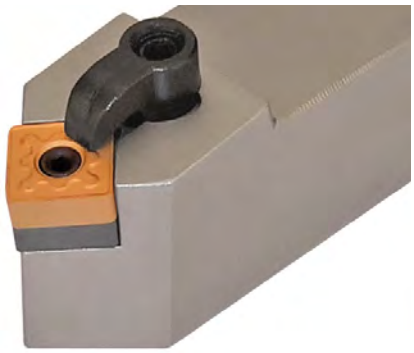
RNMG

Round negative insert. A31

Reference	T	d
RNMG32..	0.125	0.375
RNMG43..	0.187	0.500
RNMG54..	0.250	0.625
RNMG64..	0.250	0.750
RNMG86..	0.375	1.000

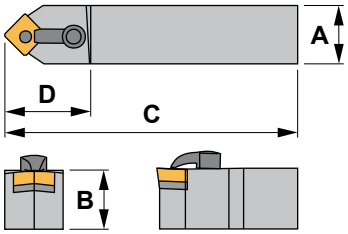


RNMG



Characteristics:
Toolholder for specific operations equipped with square negative inserts and strong cutting edges.
For low powered machines and small pieces choose toolholder Ref. SSDC (Page: A122).

Axial -7º
Radial 0º



MSDN 45º

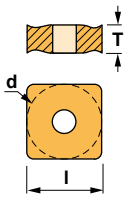
Reference	A	B	C	D	Insert size	lbs
MSDNN083A	0.500	0.500	4.00	1.000	SNM..32..	0.155
MSDNN103B	0.625	0.625	4.50	1.000	SNM..32..	0.440
MSDNN124B	0.750	0.750	4.50	1.300	SNM..43..	0.880
MSDNN164D	1.000	1.000	6.00	1.300	SNM..43..	1.540
MSDNN854D	1.000	1.250	6.00	1.300	SNM..43..	2.200
MSDNN165D	1.000	1.000	6.00	1.500	SNM..54..	1.540
MSDNN205D	1.250	1.250	6.00	1.500	SNM..54..	2.755
MSDNN855D	1.000	1.250	6.00	1.500	SNM..54..	2.200
MSDNN166D	1.000	1.000	6.00	1.730	SNM..64..	1.540
MSDNN206D	1.250	1.250	6.00	1.750	SNM..64..	2.755
MSDNN246E	1.500	1.500	7.00	1.750	SNM..64..	6.615
MSDNN856D	1.000	1.250	6.00	1.750	SNM..64..	2.200

Reference			1			2	Nm¹	Nm²
MSDNN083A	CL-6	XNS-36	5124	ISSN-322	NL-34	5102	3.5	1.4
MSDNN103B	CL-6	XNS-36	5124	ISSN-322	NL-34	5102	3.5	1.4
MSDNN124B	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSDNN164D	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSDNN854D	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSDNN165D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSDNN205D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSDNN855D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSDNN166D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSDNN206D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSDNN246E	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSDNN856D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0

SNM..

Square negative inserts. A33-34

Reference	l	T	d
SNM..32..	0.375	0.125	0.375
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750



SNMG-FMC

SNMG-KC

SNMG-MHC

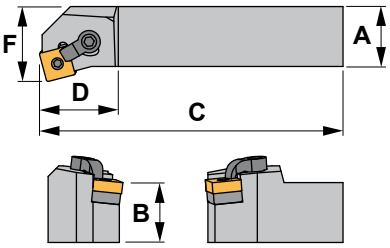
SNMG-RC

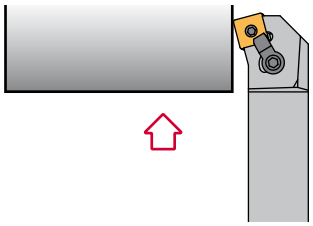
SNMG-TC

SNMM

Characteristics:
Toolholder for specific operations equipped with square negative inserts and strong cutting edges. Face turning toolholder for general applications, roughing, semi-finishing and finishing.

Axial -4°
Radial -7°





MSKN 75°

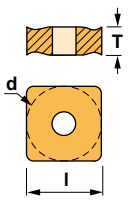
Reference	A	B	C	D	F	Insert size	lbs
MSKNR/L124B	0.750	0.750	4.50	1.220	1.000	SNM..43..	0.880
MSKNR/L164D	1.000	1.000	6.00	1.220	1.250	SNM..43..	1.540
MSKNR/L165D	1.000	1.000	6.00	1.410	1.250	SNM..54..	1.540
MSKNR/L205D	1.250	1.250	6.00	1.410	1.500	SNM..54..	2.755
MSKNR/L855D	1.000	1.250	6.00	1.410	1.250	SNM..54..	2.200
MSKNR/L206D	1.250	1.250	6.00	1.500	1.500	SNM..64..	2.755
MSKNR/L246E	1.500	1.500	7.00	1.500	2.000	SNM..64..	6.615

Reference			1			2	Nm¹	Nm²
MSKNR/L124B	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSKNR/L164D	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSKNR/L165D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSKNR/L205D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSKNR/L855D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSKNR/L206D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSKNR/L246E	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0

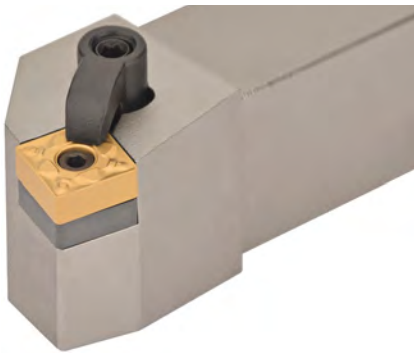
SNM..

Square negative inserts. A33-34

Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750

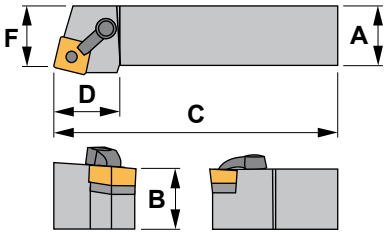


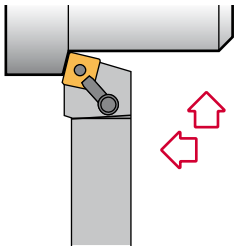
SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		



Characteristics:
Toolholder for specific operations equipped with square negative inserts and strong cutting edges.
External toolholder for general applications, roughing, semi-finishing and finishing.

Axial -7º
Radial -5º





MSRN 75º

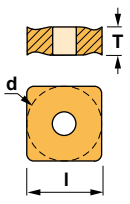
Reference	A	B	C	D	F	Insert size	lbs
MSRNR/L124B	0.750	0.750	4.50	1.250	0.880	SNM..43..	0.880
MSRNR/L164D	1.000	1.000	6.00	1.250	1.130	SNM..43..	1.540
MSRNR/L165D	1.000	1.000	6.00	1.500	1.103	SNM..54..	1.540
MSRNR/L205D	1.250	1.250	6.00	1.500	1.353	SNM..54..	2.755
MSRNR/L206D	1.250	1.250	6.00	1.590	1.321	SNM..64..	2.755
MSRNR/L246E	1.500	1.500	7.00	1.590	1.821	SNM..64..	6.615
MSRNR/L248E	1.500	1.500	7.00	1.890	1.770	SNM..85..	6.750

Reference			1			2	Nm¹	Nm²
MSRNR/L124B	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSRNR/L164D	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSRNR/L165D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSRNR/L205D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSRNR/L206D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSRNR/L246E	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSRNR/L248E	CL-30	XNS-510	5004	ISSN-846	NL-810	5004	3.5	3.5

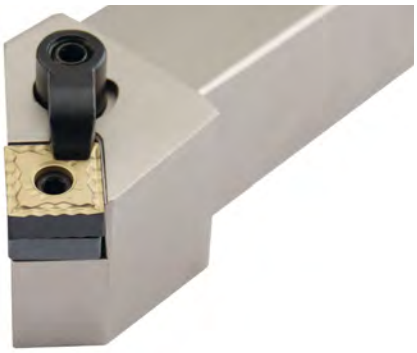
SNM..

Square negative inserts. A33-34

Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750
SNM..85..	1.000	0.312	1.000

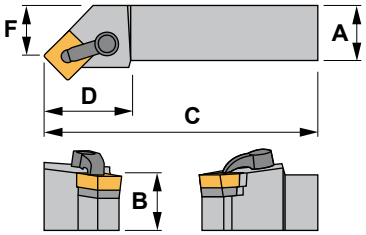


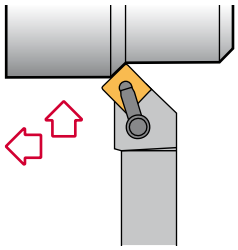
SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		



Characteristics: Toolholder for external turning and chamfering applications equipped with square negative inserts.
For low powered machines and small pieces choose toolholder Ref. SSDC (Page: A122).

Axial -6º
Radial -6º





MSSN 45°

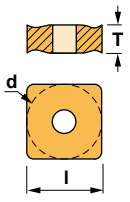
Reference	A	B	C	D	F	Insert size	lbs
MSSNR/L124B	0.750	0.750	4.50	1.230	0.675	SNM..43..	0.880
MSSNR/L164D	1.000	1.000	6.00	1.230	0.925	SNM..43..	1.540
MSSNR/L165D	1.000	1.000	6.00	1.380	0.847	SNM..54..	1.540
MSSNR/L205D	1.250	1.250	6.00	1.380	1.097	SNM..54..	2.755
MSSNR/L206D	1.250	1.250	6.00	1.470	1.011	SNM..64..	2.755
MSSNR/L246E	1.500	1.500	7.00	1.470	1.511	SNM..64..	6.615
MSSNR/L866E	1.000	1.500	7.00	1.470	0.761	SNM..64..	3.100

Reference			1			2	Nm¹	Nm²
MSSNR/L124B	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSSNR/L164D	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
MSSNR/L165D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSSNR/L205D	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
MSSNR/L206D	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSSNR/L246E	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
MSSNR/L866E	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0

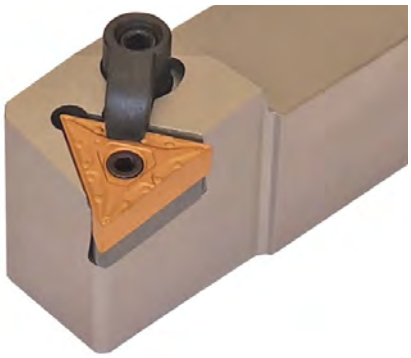
SNM..

Square negative inserts. A33-34

Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750

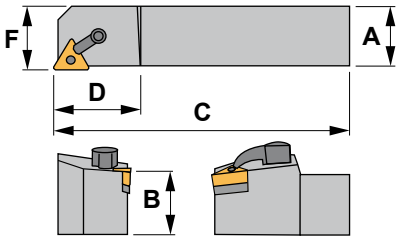


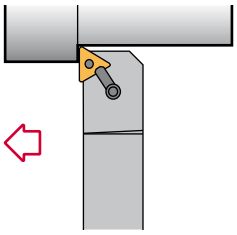
SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		



Characteristics:
Profiling toolholder equipped with negative double-sided inserts with strong cutting edges.
For low powered machines and small pieces choose toolholder Ref. STGC (Page: A126).

Axial -6°
Radial -6°





MTAN 90°

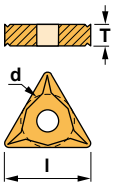
Reference	A	B	C	D	F	Insert size	lbs
MTANR/L082A	0.500	0.500	4.00	0.875	0.500	TNM..22..	0.155
MTANR/L123B	0.750	0.750	4.50	1.060	0.750	TNM..33..	0.880
MTANR/L163D	1.000	1.000	6.00	1.060	1.000	TNM..33..	1.540
MTANR/L164D	1.000	1.000	6.00	1.220	1.000	TNM..43..	1.540
MTANR/L205D	1.250	1.250	6.00	1.430	1.250	TNM..54..	2.755
MTANR/L245D	1.500	1.500	6.00	1.430	1.500	TNM..54..	6.615

Reference			1			2	Nm¹	Nm²
MTANR/L082A	CL-7	XNS-34	5124	-	NL-23	5100	3.5	
MTANR/L123B	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTANR/L163D	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTANR/L164D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTANR/L205D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTANR/L245D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0

TNM..

Triangular negative inserts. A37-38

Reference	l	T	d
TNM..22..	0.433	0.125	0.250
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625

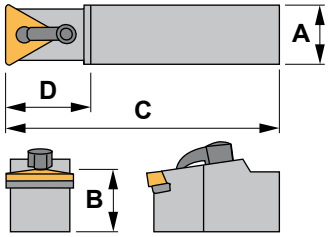


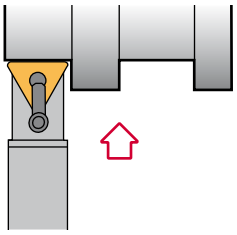
TNMA | TNMG-CC | TNMG-FC | TNMG-FMC | TNMG-KC

TNMG-MC | TNMG-MFC | TNMG-MHC | TNMG-TC | TNMX-R/L

Characteristics:
External toolholder for positive inserts. Toolholder for special applications equipped with triangular negative inserts with strong cutting edges. Profiling toolholder for general applications on all kind of materials.

Axial 6º
Radial 0º





MTCN 90º

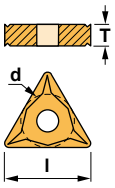
Reference	A	B	C	D	Insert size	lbs
MTCNN443F	0.500	1.000	8.00	1.000	TNM..33..	1.200
MTCNN124B	0.750	0.750	4.50	1.375	TNM..43..	0.800
MTCNN644F	0.750	1.000	8.00	1.375	TNM..43..	1.800
MTCNN664F	0.750	1.500	8.00	1.375	TNM..43..	2.600

Reference			1			2	Nm¹	Nm²
MTCNN443F	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTCNN124B	CL-12	XNS-58	5004	ITSN-433	NL-46	5124	3.5	3.5
MTCNN644F	CL-12	XNS-510	5004	ITSN-433	NL-46	5124	3.5	3.5
MTCNN664F	CL-12	XNS-510	5004	ITSN-433	NL-46	5124	3.5	3.5

TNM..

Triangular negative inserts. A37-38

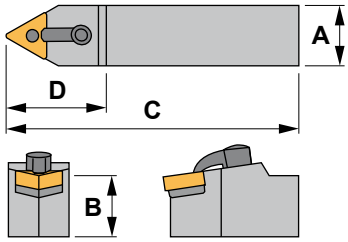
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

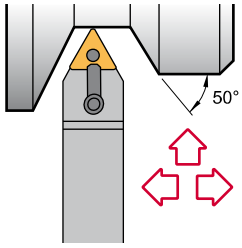


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Copying toolholder equipped with triangular negative double-sided inserts with strong cutting edges.
Copying toolholder for general applications, roughing, semi-finishing and finishing.

Axial -8º
Radial 0º





MTENNS 60º

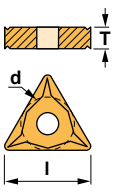
Reference	A	B	C	D	Insert size	lbs
MTENNS082A	0.500	0.500	4.00	1.000	TNM..22..	0.155
MTENNS103B	0.625	0.625	4.50	1.125	TNM..33..	0.440
MTENNS123B	0.750	0.750	4.50	1.300	TNM..33..	0.880
MTENNS163D	1.000	1.000	6.00	1.300	TNM..33..	1.540
MTENNS164D	1.000	1.000	6.00	1.500	TNM..43..	1.540
MTENNS205D	1.250	1.250	6.00	1.732	TNM..54..	2.755
MTENNS246E	1.500	1.500	7.00	2.086	TNM..66..	6.615

Reference			1			2	Nm¹	Nm²
MTENNS082A	CL-7	XNS-34	5124	-	NL-23	5100	3.5	
MTENNS103B	CL-6	XNS-36	5124	ITSN-322	NL-34L	5102	3.5	1.4
MTENNS123B	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTENNS163D	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTENNS164D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTENNS205D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTENNS246E	CL-12	XNS-510	5004	ITSN-637	NL-68L	5135	3.5	4.0

TNM..

Triangular negative inserts. A37-38

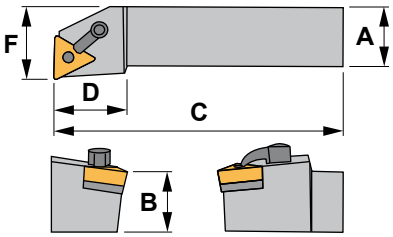
Reference	l	T	d
TNM..22..	0.433	0.125	0.250
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625
TNM..66..	1.300	0.375	0.750

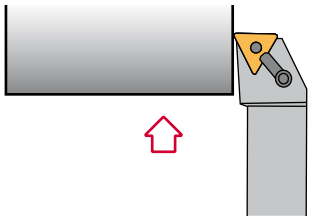


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Face turning toolholder equipped with triangular negative double-sided inserts with strong cutting edges.
For low powered machines and small pieces choose toolholder Ref. STFC (Page: A125).

Axial -6°
Radial -6°





MTFN 90°

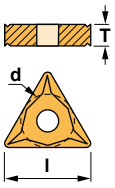
Reference	A	B	C	D	F	Insert size	lbs
MTFNR/L123B	0.750	0.750	4.50	1.000	1.000	TNM..33..	0.880
MTFNR/L163D	1.000	1.000	6.00	1.000	1.250	TNM..33..	1.540
MTFNR/L164D	1.000	1.000	6.00	1.000	1.250	TNM..43..	1.540
MTFNR/L204D	1.250	1.250	6.00	1.000	1.500	TNM..43..	2.755
MTFNR/L854D	1.000	1.250	6.00	1.000	1.250	TNM..43..	2.200
MTFNR/L864D	1.000	1.500	6.00	1.000	1.250	TNM..43..	3.100
MTFNR/L165D	1.000	1.000	6.00	1.440	1.250	TNM..54..	1.540
MTFNR/L205D	1.250	1.250	6.00	1.440	1.500	TNM..54..	2.755
MTFNR/L245E	1.500	1.500	7.00	1.440	2.000	TNM..54..	6.615
MTFNR/L855D	1.000	1.250	6.00	1.440	1.250	TNM..54..	2.200
MTFNR/L865D	1.000	1.500	6.00	1.440	1.250	TNM..54..	3.100

Reference							Nm¹	Nm²
MTFNR/L123B	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTFNR/L163D	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTFNR/L164D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTFNR/L204D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTFNR/L854D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTFNR/L864D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTFNR/L165D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTFNR/L205D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTFNR/L245E	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTFNR/L855D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTFNR/L865D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0

TNM..

Triangular negative inserts. A37-38

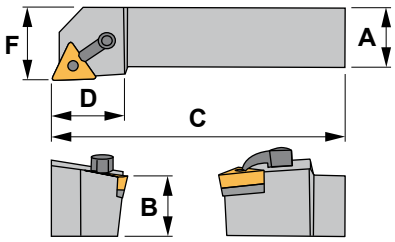
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625

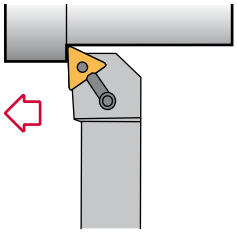


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Profiling toolholder equipped with triangular negative double-sided inserts with strong cutting edges.
For low powered machines and small pieces choose toolholder Ref. STGC (Page: A126).

Axial -6º
Radial -6º





MTGN 90º

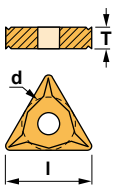
Reference	A	B	C	D	F	Insert size	lbs
MTGNR/L082A	0.500	0.500	4.00	0.875	0.625	TNM..22..	0.155
MTGNR/L103B	0.625	0.625	4.50	1.000	0.875	TNM..33..	0.440
MTGNR/L123B	0.750	0.750	4.50	1.060	1.000	TNM..33..	0.880
MTGNR/L163D	1.000	1.000	6.00	1.060	1.250	TNM..33..	1.540
MTGNR/L164C	1.000	1.000	5.00	1.375	1.250	TNM..43..	1.760
MTGNR/L164D	1.000	1.000	6.00	1.220	1.250	TNM..43..	1.540
MTGNR/L204D	1.250	1.250	6.00	1.220	1.250	TNM..43..	2.755
MTGNR/L854D	1.000	1.250	6.00	1.220	1.250	TNM..43..	2.200
MTGNR/L864D	1.000	1.500	6.00	1.220	1.250	TNM..43..	3.100
MTGNR/L165D	1.000	1.000	6.00	1.440	1.250	TNM..54..	1.540
MTGNR/L205D	1.250	1.250	6.00	1.440	1.500	TNM..54..	2.755
MTGNR/L245E	1.500	1.500	7.00	1.440	2.000	TNM..54..	6.615
MTGNR/L855D	1.000	1.250	6.00	1.440	1.250	TNM..54..	2.200
MTGNR/L865D	1.000	1.500	6.00	1.440	1.250	TNM..54..	3.100
MTGNR/L246E	1.500	1.500	7.00	1.500	2.000	TNM..66..	6.615

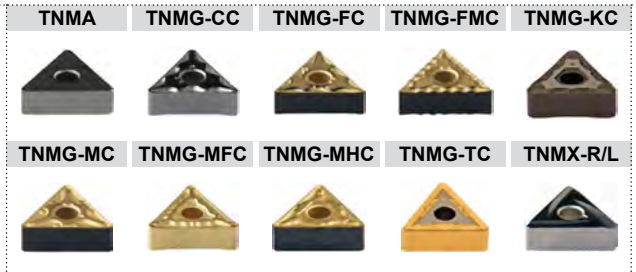
Reference			1			2	Nm¹	Nm²
MTGNR/L..2	CL-7	XNS-34	5124	-	NL-23	5100	3.5	
MTGNR/L..3	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTGNR/L..4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTGNR/L..5	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTGNR/L..6	CL-12	XNS-510	5004	ITSN-637	NL-68L	5135	3.5	4.0

TNM..

Triangular negative inserts. A37-38

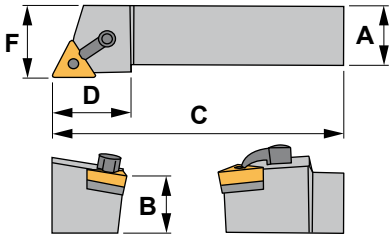
Reference	l	T	d
TNM..22..	0.433	0.125	0.250
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625
TNM..66..	1.300	0.375	0.750

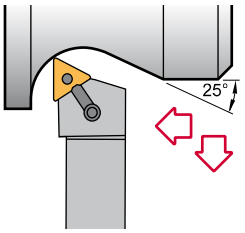




Characteristics:
Multipurpose toolholder equipped with triangular negative double-sided inserts with strong cutting edges. Profiling and copying toolholder for specific applications, roughing, semi-finishing and finishing.

Axial -6º
Radial -6º





MTJNS 93º

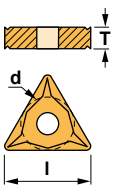
Reference	A	B	C	D	F	Insert size	lbs
MTJNRS/LS123B	0.750	0.750	4.50	1.030	1.000	TNM..33..	0.880
MTJNRS/LS163D	1.000	1.000	6.00	1.030	1.250	TNM..33..	1.540
MTJNRS/LS164D	1.000	1.000	6.00	1.250	1.250	TNM..43..	1.540
MTJNRS/LS204D	1.250	1.250	6.00	1.250	1.500	TNM..43..	2.755
MTJNRS/LS205D	1.250	1.250	6.00	1.440	1.500	TNM..54..	2.755
MTJNRS/LS246E	1.500	1.500	7.00	1.625	2.000	TNM..66..	6.615

Reference							Nm¹	Nm²
MTJNRS/LS123B	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTJNRS/LS163D	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTJNRS/LS164D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTJNRS/LS204D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTJNRS/LS205D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTJNRS/LS246E	CL-12	XNS-510	5004	ITSN-637	NL-68L	5135	3.5	4.0

TNM..

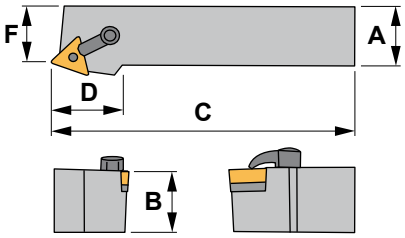
Triangular negative inserts. A37-38

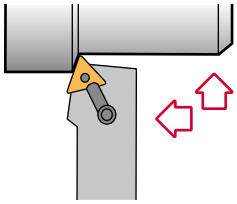
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625
TNM..66..	1.300	0.375	0.750



Characteristics:
Toolholder for specific operations equipped with triangular positive inserts and strong cutting edges.
External toolholder for general applications, roughing, semi-finishing and finishing.

Axial -6º
Radial -6º





MTRN 75º

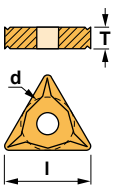
Reference	A	B	C	D	F	Insert size	lbs
MTRNR/L123B	0.750	0.750	4.50	1.160	0.855	TNM..33..	0.880
MTRNR/L163D	1.000	1.000	6.00	1.160	1.105	TNM..33..	1.540
MTRNR/L164D	1.000	1.000	6.00	1.380	1.048	TNM..43..	1.540
MTRNR/L204D	1.250	1.250	6.00	1.380	1.298	TNM..43..	2.755
MTRNR/L205D	1.250	1.250	6.00	1.560	1.252	TNM..54..	2.755
MTRNR/L245E	1.500	1.500	7.00	1.560	1.752	TNM..54..	6.615

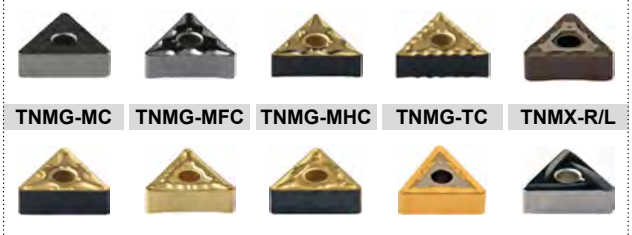
Reference							Nm¹	Nm²
MTRNR/L123B	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTRNR/L163D	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
MTRNR/L164D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTRNR/L204D	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
MTRNR/L205D	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0
MTRNR/L245E	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0

TNM..

Triangular negative inserts. A37-38

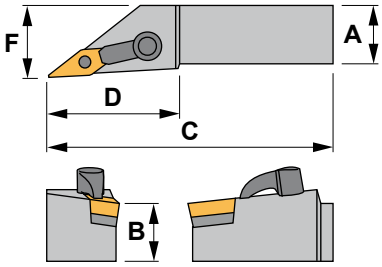
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625

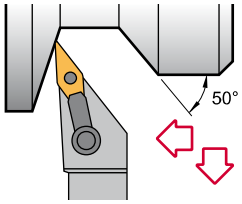




Characteristics:
External turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose toolholder Ref. SVJC (Page: A131).

Axial -6º
Radial -6º





MVJN 93°

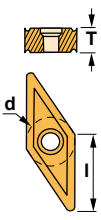
Reference	A	B	C	D	F	Insert size	lbs
MVJNR/L123B	0.750	0.750	4.50	1.620	1.000	VN..33..	0.880
MVJNR/L163D	1.000	1.000	6.00	1.620	1.250	VN..33..	1.540
MVJNR/L203D	1.250	1.250	6.00	1.620	1.500	VN..33..	2.755
MVJNR/L164D	1.000	1.000	6.00	1.880	1.250	VN..43..	1.540
MVJNR/L204D	1.250	1.250	6.00	1.880	1.500	VN..43..	2.755
MVJNR/L244E	1.500	1.500	7.00	1.880	2.000	VN..43..	6.615
MVJNR/L854D	1.000	1.250	6.00	1.880	1.250	VN..43..	2.200
MVJNR/L864D	1.000	1.500	6.00	1.880	1.250	VN..43..	3.100

Reference							Nm¹	Nm²
MVJNR/L123B	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVJNR/L163D	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVJNR/L203D	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVJNR/L164D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVJNR/L204D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVJNR/L244E	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVJNR/L854D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVJNR/L864D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5

VN..

35º rhombic negative inserts. A41

Reference	l	T	d
VN..33..	0.650	0.187	0.375
VN..43..	0.866	0.187	0.500



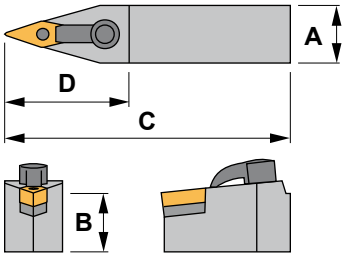
VNGP

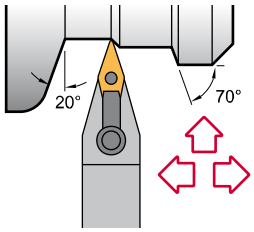
VNMG

VNMG-TC

Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose toolholder Ref. SVVC (Page: 133).

Axial 6º
Radial 0º





MVVN 72°30'

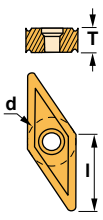
Reference	A	B	C	D	Insert size	lbs
MVVNN123B	0.750	0.750	4.50	1.620	VN..33..	0.880
MVVNN163D	1.000	1.000	6.00	1.620	VN..33..	1.540
MVVNN203D	1.250	1.250	6.00	1.620	VN..33..	2.755
MVVNN243E	1.500	1.500	7.00	1.620	VN..33..	6.615
MVVNN164D	1.000	1.000	6.00	2.060	VN..43..	1.540
MVVNN204D	1.250	1.250	6.00	2.060	VN..43..	2.755
MVVNN244E	1.500	1.500	7.00	2.060	VN..43..	6.615

Reference			1			2	Nm¹	Nm²
MVVNN123B	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVVNN163D	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVVNN203D	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVVNN243E	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
MVVNN164D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVVNN204D	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
MVVNN244E	CL-30	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5

VN..

35º rhombic negative inserts. A41

Reference	l	T	d
VN..33..	0.650	0.187	0.375
VN..43..	0.866	0.187	0.500



VNGP

VNMG

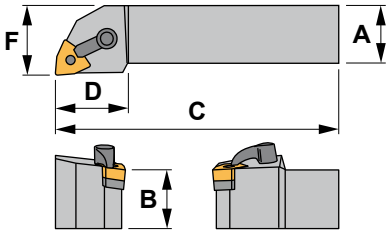
VNMG-TC

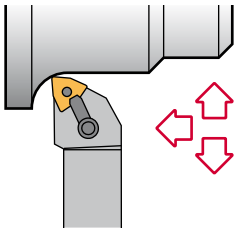
Characteristics:

Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).

External profiling toolholder for general applications, roughing, semi-finishing and finishing.

Axial -5.5º
Radial -6.5º





MWLN 95°

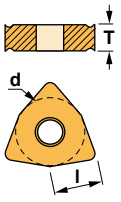
Reference	A	B	C	D	F	Insert size	lbs
MWLNR/L123B	0.750	0.750	4.50	1.000	1.000	WNMG33..	0.880
MWLNR/L163D	1.000	1.000	6.00	1.000	1.250	WNMG33..	1.540
MWLNR/L124B	0.750	0.750	4.50	1.070	1.000	WNMG43..	0.880
MWLNR/L164D	1.000	1.000	6.00	1.070	1.250	WNMG43..	1.540
MWLNR/L204D	1.250	1.250	6.00	1.070	1.500	WNMG43..	2.755
MWLNR/L244E	1.500	1.500	7.00	1.070	2.000	WNMG43..	6.615

Reference			1			2	Nm¹	Nm²
MWLNR/L123B	CL-6	XNS-36	5124	IWSN-322	NL-34L	5102	3.5	1.4
MWLNR/L163D	CL-6	XNS-36	5124	IWSN-322	NL-34L	5102	3.5	1.4
MWLNR/L124B	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.0
MWLNR/L164D	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5
MWLNR/L204D	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5
MWLNR/L244E	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5

WNMG

80º trigon negative inserts. A42-43

Reference	l	T	d
WNMG33..	0.254	0.187	0.375
WNMG43..	0.320	0.187	0.500



WNMG-FC

WNMG-FMC

WNMG-KC

WNMG-MFC

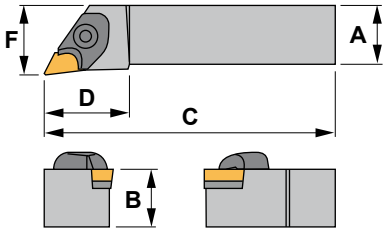
WNMG-MC

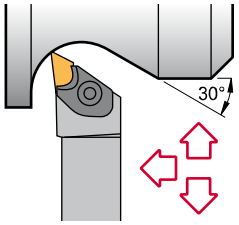
WNMG-MHC

WNMG-TC

Characteristics:
Toolholder for turning and profiling operations equipped with KNUX negative insert.
For semi-finishing and finishing operations.

Axial 0°
Radial -6°





CKJN 93°

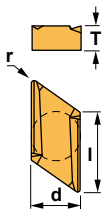
Reference	A	B	C	D	F	Insert size	lbs
CKJNR/L123B	0.750	0.750	5.00	1.340	1.000	KNUX1604..	0.858
CKJNR/L163D	1.000	1.000	6.00	1.340	1.250	KNUX1604..	1.540
CKJNR/L203E	1.250	1.250	7.00	1.340	1.500	KNUX1604..	2.200

Reference								Nm
CKJNR123B	2316	1614	5004	4295	4203	3226	4012	3.5
CKJNR163D	2316	1614	5004	4295	4204	3226	4012	3.5
CKJNR203E	2316	1614	5004	4295	4204	3226	4012	3.5
CKJNL123B	2326	1614	5004	4295	4203	3236	4012	3.5
CKJNL163D	2326	1614	5004	4295	4204	3236	4012	3.5
CKJNL203E	2326	1614	5004	4295	4204	3236	4012	3.5

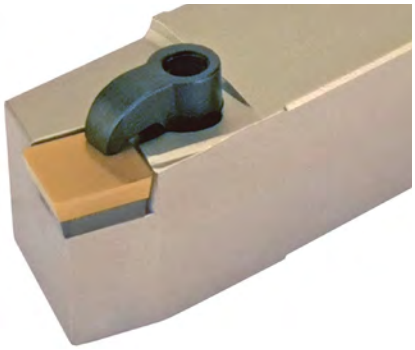
KNUX

KNUX negative insert. A30

Reference	l	T	d
KNUX1604..	0.630	0.187	0.375

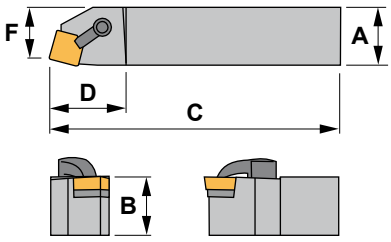


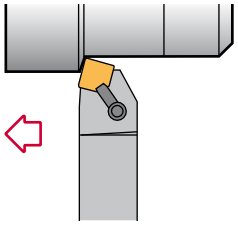
KNUX



Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 1.50º
Radial 5.75º





CSBP 75º

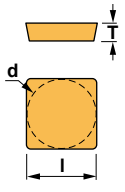
Reference	A	B	C	D	F	Insert size	lbs
CSBPR/L103	0.625	0.625	4.50	0.906	0.531	SP..32..	0.440
CSBPR/L123B	0.750	0.750	4.50	0.906	0.656	SP..32..	0.880
CSBPR/L124B	0.750	0.750	4.50	1.187	0.625	SP..42..	0.880
CSBPR/L164D	1.000	1.000	6.00	1.187	0.875	SP..42..	1.540

Reference						Nm
CSBPR/L103	CL-6	XNS-36	5124	3109	4002	3.5
CSBPR/L123B	CL-6	XNS-36	5124	3109	4002	3.5
CSBPR/L124B	CL-20	XNS-47	5103	3112	4002	3.0
CSBPR/L164D	CL-20	XNS-48	5103	3112	4002	3.0

SP..

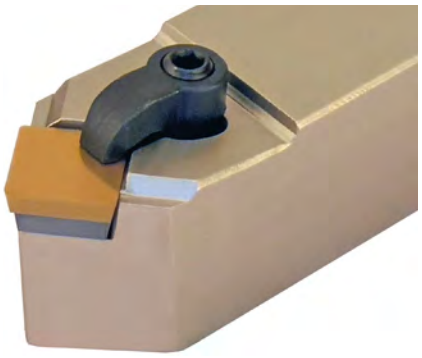
Square positive inserts with 11° clearance. A35

Reference	l	T	d
SP..32..	0.375	0.125	0.375
SP..42..	0.500	0.125	0.500



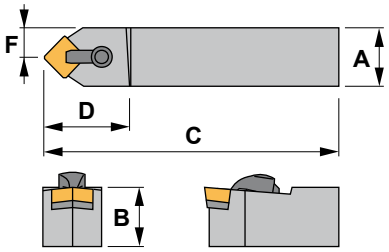
SPMR

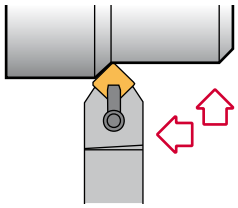
SPUN



Characteristics:
Toolholder for external turning applications equipped with square positive inserts.
For interrupted cut choose toolholder Ref. MSDN (Page: A86).

Axial 4.25º
Radial 4.25º





CSDP 45º

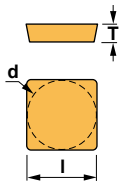
Reference	A	B	C	D	F	Insert size	lbs
CSDPN083	0.500	0.500	3.50	1.000	0.250	SP..32..	0.155
CSDPN103	0.625	0.625	4.50	1.000	0.312	SP..32..	0.440
CSDPN123B	0.750	0.750	4.50	1.000	0.375	SP..32..	0.880
CSDPN124B	0.750	0.750	4.50	1.312	0.375	SP..42..	0.880
CSDPN164D	1.000	1.000	6.00	1.312	0.500	SP..42..	1.540

Reference						Nm
CSDPN083	CL-7	XNS-34	5124	3109	4002	3.5
CSDPN103	CL-6	XNS-36	5124	3109	4002	3.5
CSDPN123B	CL-6	XNS-36	5124	3109	4002	3.5
CSDPN124B	CL-20	XNS-47	5103	3112	4002	3.0
CSDPN164D	CL-20	XNS-48	5103	3112	4002	3.0

SP..

Square positive inserts with 11° clearance. A35

Reference	l	T	d
SP..32..	0.375	0.125	0.375
SP..42..	0.500	0.125	0.500

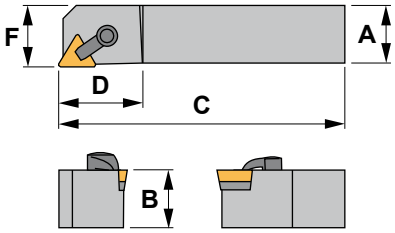


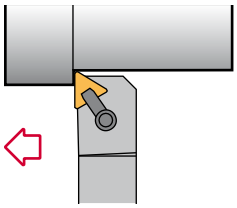
SPMR

SPUN

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 6º
Radial 0º





CTAP 90º

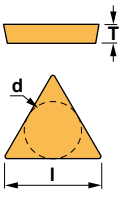
Reference	A	B	C	D	F	Insert size	lbs
CTAPR/L082	0.500	0.500	3.50	0.843	0.515	TP..22..	0.155
CTAPR/L102	0.625	0.625	4.50	0.843	0.641	TP..22..	0.440
CTAPR/L123B	0.750	0.750	4.50	1.062	0.756	TP..32..	0.880
CTAPR/L163D	1.000	1.000	6.00	1.062	1.016	TP..32..	1.540

Reference						Nm
CTAPR/L082	CL-7	XNS-34	5124	-	-	3.5
CTAPR/L102	CL-7	XNS-34	5124	-	-	3.5
CTAPR/L123B	CL-20	XNS-47	5103	3116	4002	3.0
CTAPR/L163D	CL-20	XNS-48	5103	3116	4002	3.0

TP..

Triangular positive inserts with 11º clearance. A39

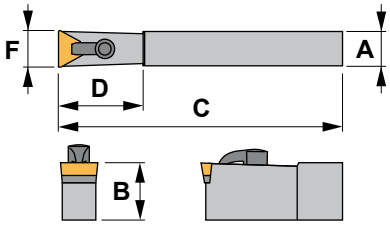
Reference	l	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375

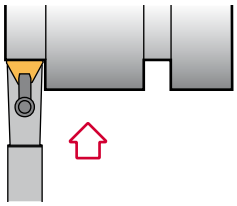


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 6º
Radial 0º





CTCO 90º

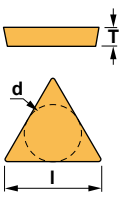
Reference	A	B	C	D	F	Insert size	lbs
CTCON083	0.500	0.500	3.50	1.016	0.627	TP..32..	0.155
CTCON443	0.500	1.000	8.00	1.016	0.627	TP..32..	0.310
CTCON124	0.750	0.750	4.50	1.375	0.843	TP..43..	0.880
CTCON644	0.750	1.000	8.00	1.375	0.843	TP..43..	1.200

Reference						Nm
CTCON083	CL-7	XNS-34	5124	3116	4002	3.5
CTCON443	CL-22	XNS-48	5103	3116	4002	3.0
CTCON124	CL-22	XNS-47	5004	3122	4012	3.5
CTCON644	CL-22	XNS-47	5004	3122	4012	3.5

TP..

Triangular positive inserts with 11º clearance. A39

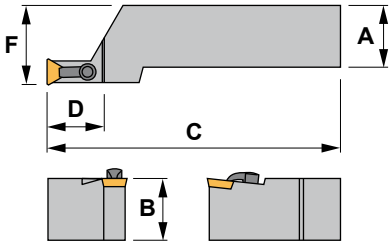
Reference	l	T	d
TP..32..	0.650	0.125	0.375
TP..43..	0.866	0.187	0.500

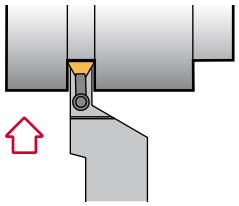


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for face turning and grooving applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 6º
Radial 0º





CTCP 90º

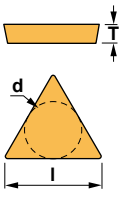
Reference	A	B	C	D	F	Insert size	lbs
CTCPR/L123B	0.750	0.750	4.50	1.125	1.000	TP..32..	0.880
CTCPR/L164D	1.000	1.000	6.00	1.375	1.250	TP..43..	1.540
CTCPR/L204D	1.250	1.250	6.00	1.375	1.500	TP..43..	2.755

Reference						Nm
CTCPR/L123B	CL-22	XNS-47	5103	3116	4002	3.0
CTCPR/L164D	CL-12	XNS-510	5004	3122	4012	3.5
CTCPR/L204D	CL-12	XNS-510	5004	3122	4012	3.5

TP..

Triangular positive inserts with 11º clearance. A39

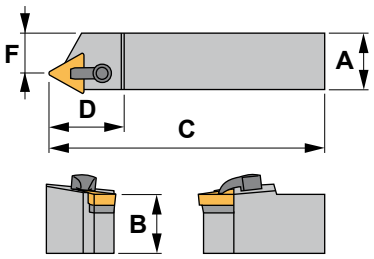
Reference	l	T	d
TP..32..	0.650	0.125	0.375
TP..43..	0.866	0.187	0.500

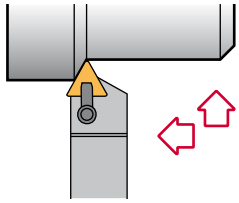


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 0º
Radial -1º





CTEP 60º

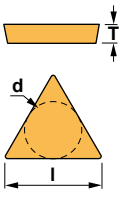
Reference	A	B	C	D	F	Insert size	lbs
CTEPR/L082	0.500	0.500	3.50	0.875	0.281	TP..22..	0.155
CTEPR/L102	0.625	0.625	4.50	0.875	0.406	TP..22..	0.440
CTEPR/L123B	0.750	0.750	4.50	1.250	0.437	TP..32..	0.880
CTEPR/L163D	1.000	1.000	6.00	1.250	0.719	TP..32..	1.540

Reference						Nm
CTEPR/L082	CL-7	XNS-34	5124	-	-	3.5
CTEPR/L102	CL-7	XNS-34	5124	-	-	3.5
CTEPR/L123B	CL-20	XNS-47	5103	3116	4002	3.0
CTEPR/L163D	CL-20	XNS-48	5103	3116	4002	3.0

TP..

Triangular positive inserts with 11º clearance. A39

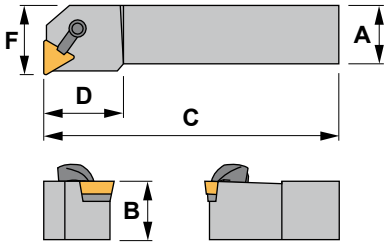
Reference	l	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375

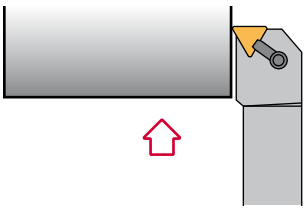


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for face turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. MTFN (Page: A93).

Axial 6º
Radial 0º





CTFP 90º

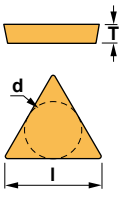
Reference	A	B	C	D	F	Insert size	lbs
CTFPR/L103	0.625	0.625	4.50	1.000	0.875	TP..32..	0.440
CTFPR/L123B	0.750	0.750	4.50	1.000	1.000	TP..32..	0.880
CTFPR/L163D	1.000	1.000	6.00	1.000	1.250	TP..32..	1.540

Reference						Nm
CTFPR/L103	CL-20	XNS-48	5103	-	-	3.0
CTFPR/L123B	CL-20	XNS-47	5103	3116	4002	3.0
CTFPR/L163D	CL-20	XNS-48	5103	3116	4002	3.0

TP..

Triangular positive inserts with 11º clearance. A39

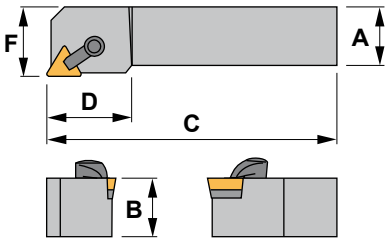
Reference	l	T	d
TP..32..	0.650	0.125	0.375

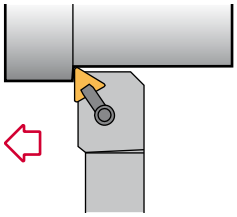


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. MTGN (Page: A94).

Axial 0º
Radial 6º





CTGP 90º

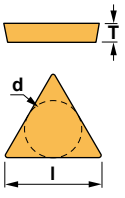
Reference	A	B	C	D	F	Insert size	lbs
CTGPR/L102	0.625	0.625	4.50	1.062	0.875	TP..22..	0.440
CTGPR/L103	0.625	0.625	4.50	1.062	0.875	TP..32..	0.440
CTGPR/L123B	0.750	0.750	4.50	1.062	1.000	TP..32..	0.880
CTGPR/L163D	1.000	1.000	6.00	1.250	1.250	TP..32..	1.540

Reference						Nm
CTGPR/L102	CL-7	XNS-34	5124	-	-	3.5
CTGPR/L103	CL-20	XNS-47	5103	3116	4002	3.0
CTGPR/L123B	CL-20	XNS-47	5103	3116	4002	3.0
CTGPR/L163D	CL-20	XNS-48	5103	3116	4002	3.0

TP..

Triangular positive inserts with 11º clearance. A39

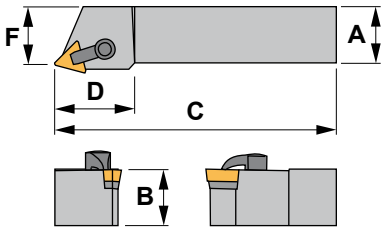
Reference	l	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375

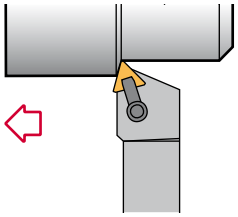


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For interrupted cut choose toolholder Ref. MTRN (Page: A96).

Axial 0º
Radial 6º





CTRP 75º

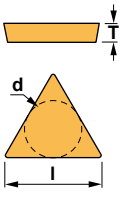
Reference	A	B	C	D	F	Insert size	lbs
CTRPR/L102	0.625	0.625	4.50	0.937	0.776	TP..22..	0.440
CTRPR/L123B	0.750	0.750	4.50	1.125	0.855	TP..32..	0.880
CTRPR/L163D	1.000	1.000	6.00	1.125	1.105	TP..32..	1.540

Reference						Nm
CTRPR/L102	CL-6	XNS-36	5124	-	-	3.5
CTRPR/L123B	CL-20	XNS-47	5103	3116	4002	3.0
CTRPR/L163D	CL-20	XNS-48	5103	3116	4002	3.0

TP..

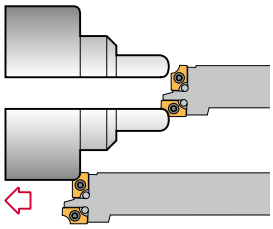
Triangular positive inserts with 11º clearance. A39

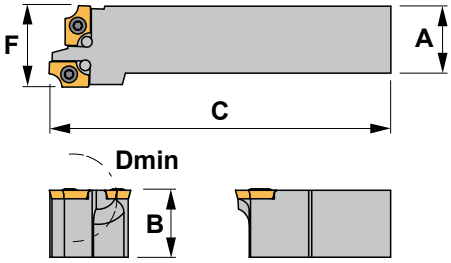
Reference	l	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375



TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Toolholder turning convex radius on internal and external diameters in manuals machines.





SAGD 90º

Reference	A	B	C	F	Dmin	Insert size	lbs
SAGDR103H15	0.625	0.625	4.00	1.181	0.787	ADMW1503..	0.575
SAGDR123K15	0.750	0.750	4.50	1.181	0.787	ADMW1503..	0.995
SAGDR163M15	1.000	1.000	6.00	1.181	0.787	ADMW1503..	1.435

Reference			Nm
SAGDR103H15	1240	5515	3.0
SAGDR123K15	1240	5515	3.0
SAGDR163M15	1240	5515	3.0

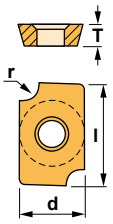
SET SAGD 90º

Reference	A	B	C	F	Dmin		
SET-SAGDR103H15	0.625	0.625	4.00	1.181	0.787	1240	5515
SET-SAGDR123K15	0.750	0.750	4.50	1.181	0.787	1240	5515
SET-SAGDR163M15	1.000	1.000	6.00	1.181	0.787	1240	5515

ADMW-R

Parallelogram positive inserts with 15º clearance. G07

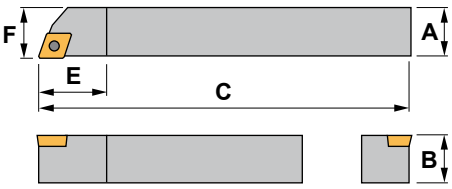
Reference	l	T	d	r
ADMW1503R0.031	0.590	0.125	0.375	1/32
ADMW1503R0.046	0.590	0.125	0.375	3/64
ADMW1503R0.062	0.590	0.125	0.375	1/16
ADMW1503R0.078	0.590	0.125	0.375	5/64
ADMW1503R0.093	0.590	0.125	0.375	3/32
ADMW1503R0.109	0.590	0.125	0.375	7/64
ADMW1503R0.125	0.590	0.125	0.375	1/8
ADMW1503R0.156	0.590	0.125	0.375	5/32
ADMW1503R0.171	0.590	0.125	0.375	11/64
ADMW1503R0.187	0.590	0.125	0.375	3/16

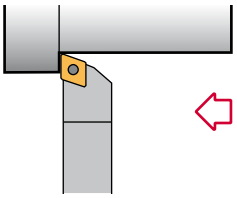


R0.031	R0.046	R0.062
R0.078	R0.093	R0.109
R0.125	R0.156	R0.171
R0.187		

Characteristics:
Toolholder for external turning applications equipped with rhombic positive inserts (angle 80°).
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°





SCAC 90° Automatic lathes

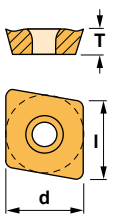
Reference	A	B	C	E	F	Insert size	lbs
SCACR/L4.5D	0.281	0.281	6.00	0.440	0.281	CC..21.5..	0.133
SCACR/L052D	0.312	0.312	6.00	0.440	0.312	CC..21.5..	0.154
SCACR/L062D	0.375	0.375	6.00	0.440	0.375	CC..21.5..	0.242
SCACR/L083D	0.500	0.500	6.00	0.500	0.500	CC..32.5..	0.330
SCACR/L103D	0.625	0.625	6.00	0.625	0.625	CC..32.5..	0.616

Reference			Nm
SCACR/L4.5D	1225	5507	0.9
SCACR/L052D	1225	5507	0.9
SCACR/L062D	1225	5507	0.9
SCACR/L083D	1240	5515	3.0
SCACR/L103D	1240	5515	3.0

CC..

80° rhombic positive inserts with 7° clearance. A23

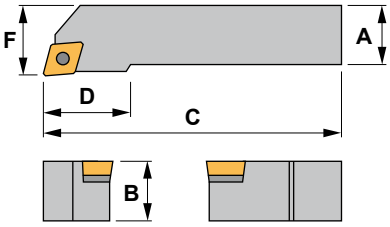
Reference	l	T	d
CC..21.5..	0.254	0.093	0.250
CC..32.5..	0.380	0.156	0.375

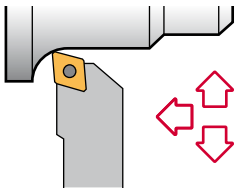


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
For toolholders with negative inserts see Ref. MCLN (Page: A79).

Axial 0°
Radial 0°





SCLC 95°

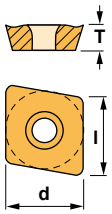
Reference	A	B	C	D	F	Insert size	lbs
SCLCR/L062	0.375	0.375	2.50	0.390	0.500	CC..21.5..	0.065
SCLCR/L083	0.500	0.500	3.50	0.630	0.625	CC..32.5..	0.155
SCLCR/L103	0.625	0.625	4.00	0.708	0.750	CC..32.5..	0.440
SCLCR/L123B	0.750	0.750	4.50	0.866	1.000	CC..32.5..	0.880
SCLCR/L163D	1.000	1.000	6.00	0.630	1.250	CC..32.5..	1.540
SCLCR/L124B	0.750	0.750	4.50	1.000	1.000	CC..43..	0.880
SCLCR/L164D	1.000	1.000	6.00	1.000	1.250	CC..43..	1.540
SCLCR/L204D	1.250	1.250	6.00	1.000	1.500	CC..43..	2.755

Reference					Nm
SCLCR/L062	1225	5507	-	-	0.9
SCLCR/L083	1240	5515	-	-	3.0
SCLCR/L103	1240	5515	-	-	3.0
SCLCR/L123B	1240	5515	-	-	3.0
SCLCR/L163D	1240	5515	-	-	3.0
SCLCR/L124B	1540	5517	3614	1760	3.0
SCLCR/L164D	1540	5517	3614	1760	3.0
SCLCR/L204D	1540	5517	3614	1760	3.0

CC..

80° rhombic positive inserts with 7° clearance. A23

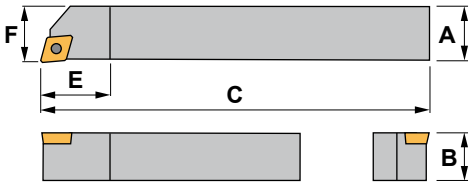
Reference	l	T	d
CC..21.5..	0.254	0.093	0.250
CC..32.5..	0.380	0.156	0.375
CC..43..	0.508	0.187	0.500

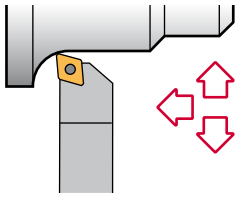


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80º).
For general applications, roughing, semi-finishing and finishing.

Axial 0º
Radial 0º





SCLC 95° Automatic lathes

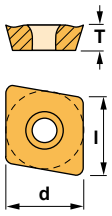
Reference	A	B	C	E	F	Insert size	lbs
SCLCR/L4.52D	0.281	0.281	6.00	0.500	0.281	CC..21.5..	0.133
SCLCR/L052D	0.312	0.312	6.00	0.500	0.312	CC..21.5..	0.154
SCLCR/L062D	0.375	0.375	6.00	0.500	0.375	CC..21.5..	0.242
SCLCR/L083D	0.500	0.500	6.00	0.620	0.500	CC..32.5..	0.330
SCLCR/L103D	0.625	0.625	6.00	0.787	0.625	CC..32.5..	0.616

Reference			Nm
SCLCR/L4.52D	1225	5507	
SCLCR/L052D	1225	5507	0.9
SCLCR/L062D	1225	5507	0.9
SCLCR/L083D	1240	5515	3.0
SCLCR/L103D	1240	5515	3.0

CC..

80º rhombic positive inserts with 7º clearance. A23

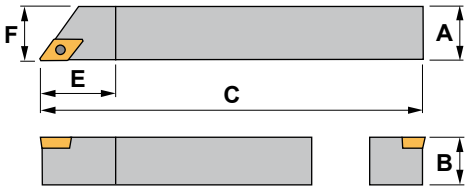
Reference	l	T	d
CC..21.5..	0.254	0.093	0.250
CC..32.5..	0.380	0.156	0.375

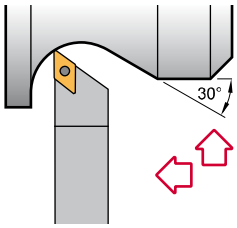


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°





SDAC 90° Automatic lathes

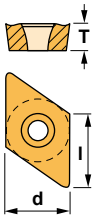
Reference	A	B	C	E	F	Insert size	lbs
SDACR/L062D	0.375	0.375	6.00	0.625	0.375	DC..21.5..	0.242
SDACR/L082D	0.500	0.500	6.00	0.625	0.500	DC..21.5..	0.330
SDACR/L083D	0.500	0.500	6.00	0.875	0.500	DC..32.5..	0.330
SDACR/L103D	0.625	0.625	6.00	0.875	0.625	DC..32.5..	0.616

Reference			Nm
SDACR/L062D	1225	5507	0.9
SDACR/L082D	1225	5507	0.9
SDACR/L083D	1240	5515	3.0
SDACR/L103D	1240	5515	3.0

DC..

55° rhombic positive inserts with 7° clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

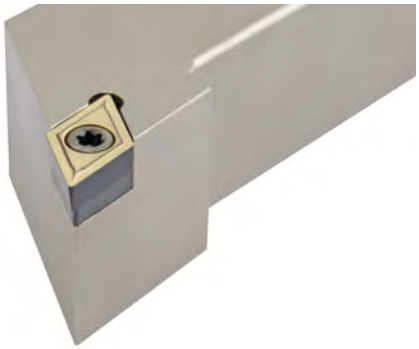


DCGT-AL

DCGT-AP

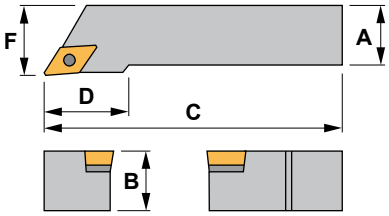
DCMT

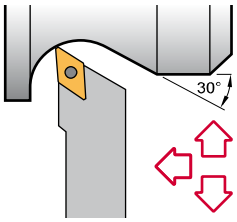
DCMW



Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55º).
For toolholders with negative inserts see Ref. MDJN (Page: A82).

Axial 0º
Radial 0º





SDJC 93°

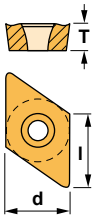
Reference	A	B	C	D	F	Insert size	lbs
SDJCR/L062	0.375	0.375	2.50	0.590	0.500	DC..21.5..	0.065
SDJCR/L082	0.500	0.500	3.50	0.670	0.625	DC..21.5..	0.155
SDJCR/L102	0.625	0.625	4.00	0.670	0.750	DC..21.5..	0.440
SDJCR/L122B	0.750	0.750	4.50	0.708	1.000	DC..21.5..	0.880
SDJCR/L123B	0.750	0.750	4.50	1.000	1.000	DC..32.5..	0.880
SDJCR/L163D	1.000	1.000	6.00	1.100	1.250	DC..32.5..	1.540

Reference					Nm
SDJCR/L062	1225	5507	-	-	0.9
SDJCR/L082	1225	5507	-	-	0.9
SDJCR/L102	1225	5507	-	-	0.9
SDJCR/L122B	1225	5507	-	-	0.9
SDJCR/L123B	1335	5516	3714	1750	3.0
SDJCR/L163D	1335	5516	3714	1750	3.0

DC..

55º rhombic positive inserts with 7º clearance. A27

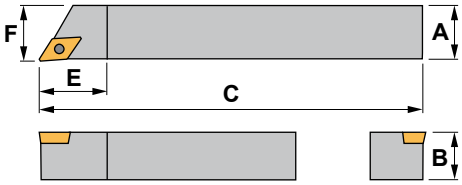
Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

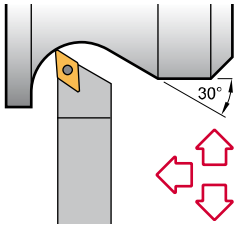


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°





SDJC 93° Automatic lathes

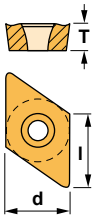
Reference	A	B	C	E	F	Insert size	lbs
SDJCR/L062D	0.375	0.375	6.00	0.625	0.375	DC..21.5..	0.242
SDJCR/L082D	0.500	0.500	6.00	0.625	0.500	DC..21.5..	0.330
SDJCR/L083D	0.500	0.500	6.00	0.750	0.500	DC..32.5..	0.330
SDJCR/L103D	0.625	0.625	6.00	0.750	0.625	DC..32.5..	0.616

Reference			Nm
SDJCR/L062D	1225	5507	0.9
SDJCR/L082D	1225	5507	0.9
SDJCR/L083D	1240	5515	3.0
SDJCR/L103D	1240	5515	3.0

DC..

55° rhombic positive inserts with 7° clearance. A27

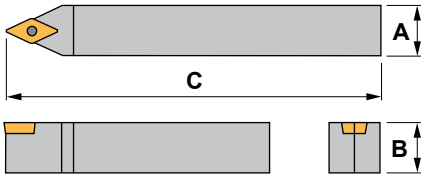
Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

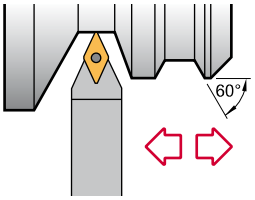


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Multipurpose external turning toolholder equipped with rhombic positive insert (angle 55º).
For general applications, roughing, semi-finishing and finishing.

Axial 0º
Radial 0º





SDNC 62°30’ Automatic lathes

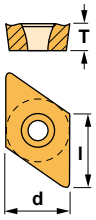
Reference	A	B	C	Insert size	lbs
SDNCN062D	0.375	0.375	6.00	DC..21.5..	0.220
SDNCN082D	0.500	0.500	6.00	DC..21.5..	0.308
SDNCN083D	0.500	0.500	6.00	DC..32.5..	0.308
SDNCN103D	0.625	0.625	6.00	DC..32.5..	0.594

Reference			Nm
SDNCN062D	1225	5507	0.9
SDNCN082D	1225	5507	0.9
SDNCN083D	1240	5515	3.0
SDNCN103D	1240	5515	3.0

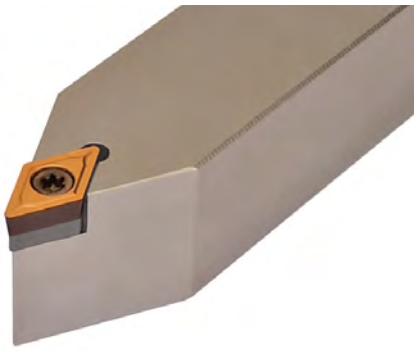
DC..

55º rhombic positive inserts with 7º clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

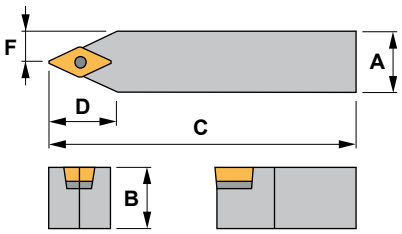


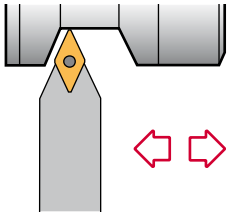
DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	



Characteristics:
External toolholder equipped with rhombic positive insert (angle 55º).
For interrupted cut and hard materials see Ref. MDPN (Page: A83).

Axial 0º
Radial 0º





SDPC 62º30'

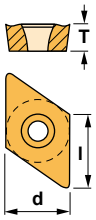
Reference	A	B	C	D	F	Insert size	lbs
SDPCN062	0.375	0.375	2.50	0.370	0.197	DC..21.5..	0.065
SDPCN082	0.500	0.500	3.50	0.492	0.260	DC..21.5..	0.155
SDPCN103	0.625	0.625	4.00	0.630	0.323	DC..32.5..	0.440
SDPCN123B	0.750	0.750	4.50	0.744	0.382	DC..32.5..	0.880
SDPCN163D	1.000	1.000	6.00	0.984	0.520	DC..32.5..	1.540

Reference					Nm
SDPCN062	1225	5507	-	-	0.9
SDPCN082	1225	5507	-	-	0.9
SDPCN103	1335	5516	3714	1750	3.0
SDPCN123B	1335	5516	3714	1750	3.0
SDPCN163D	1335	5516	3714	1750	3.0

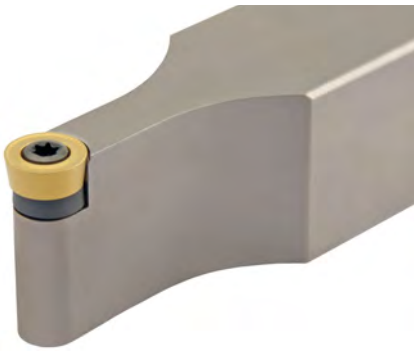
DC..

55º rhombic positive inserts with 7º clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

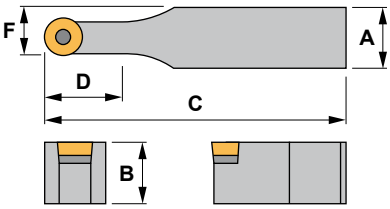


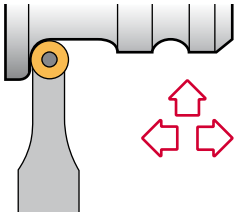
DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	



Characteristics:
Profiling toolholder equipped with round positive insert.
For semi-finishing and finishing operations on all kind of materials.

Axial 0°
Radial 0°





SRDC

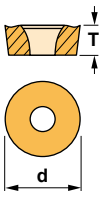
Reference	A	B	C	D	F	Insert size	lbs
SRDCN082	0.500	0.500	3.50	0.500	0.407	RC..0803M0	0.155
SRDCN103	0.625	0.625	4.00	0.630	0.510	RC..10T3M0	0.440
SRDCN123B	0.750	0.750	4.50	1.000	0.570	RC..10T3M0	0.880
SRDCN164D	1.000	1.000	6.00	1.000	0.736	RC..1204M0	1.540
SRDCN204D	1.250	1.250	6.00	1.000	0.861	RC..1204M0	2.755

Reference					Nm
SRDCN082	1230	5508	-	-	1.2
SRDCN103	1335	5516	3811	1750	3.0
SRDCN123B	1335	5516	3811	1750	3.0
SRDCN164D	1335	5516	3814	1750	3.0
SRDCN204D	1335	5516	3814	1750	3.0

RC..

Round positive inserts with 7° clearance. A31

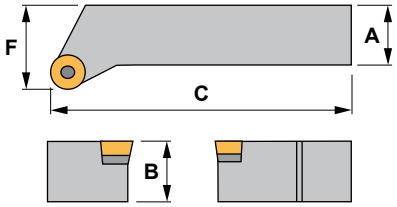
Reference	T	d
RC..0803M0	0.125	0.315
RC..10T3M0	0.156	0.394
RC..1204M0	0.187	0.472

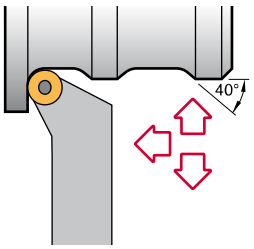


RCGT-AL	RCGT-AP
	
RCMT	
	

Characteristics:
External toolholder equipped with round positive insert.
For semi-finishing and finishing operations on all kind of materials.

Axial 0°
Radial 0°





SRGC

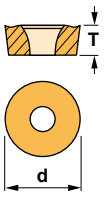
Reference	A	B	C	F	Insert size	lbs
SRGCR/L123B	0.750	0.750	4.50	1.000	RC..10T3M0	0.880
SRGCR/L163D	1.000	1.000	6.00	1.250	RC..10T3M0	1.540
SRGCR/L164D	1.000	1.000	6.00	1.250	RC..1204M0	1.540
SRGCR/L854D	1.000	1.250	6.00	1.250	RC..1204M0	2.200
SRGCR/L204D	1.250	1.250	6.00	1.500	RC..1204M0	2.755

Reference					Nm
SRGCR/L123B	1335	5516	3811	1750	3.0
SRGCR/L163D	1335	5516	3811	1750	3.0
SRGCR/L164D	1335	5516	3814	1750	3.0
SRGCR/L854D	1335	5516	3814	1750	3.0
SRGCR/L204D	1335	5516	3814	1750	3.0

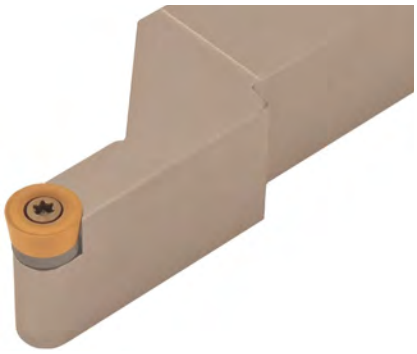
RC..

Round positive inserts with 7° clearance. A31

Reference	T	d
RC..10T3M0	0.156	0.394
RC..1204M0	0.187	0.472

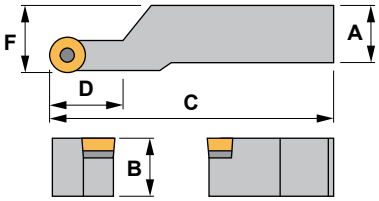


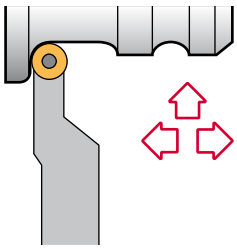
RCGT-AL	RCGT-AP
	
RCMT	
	



Characteristics:
External toolholder equipped with round positive insert.
For semi-finishing and finishing operations on all kind of materials.

Axial 0°
Radial 0°





SRSC

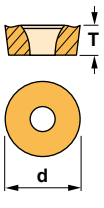
Reference	A	B	C	D	F	Insert size	lbs
SRSCR/L163D	1.000	1.000	6.00	0.750	1.250	RC..10T3M0	1.540
SRSCR/L203D	1.250	1.250	6.00	0.750	1.500	RC..10T3M0	2.755
SRSCR/L124B	0.750	0.750	4.50	0.750	1.000	RC..1204M0	0.880
SRSCR/L164D	1.000	1.000	6.00	1.000	1.250	RC..1204M0	1.540
SRSCR/L204D	1.250	1.250	6.00	1.000	1.500	RC..1204M0	2.755

Reference					Nm
SRSCR/L163D	1335	5516	3811	1750	3.0
SRSCR/L203D	1335	5516	3811	1750	3.0
SRSCR/L124B	1335	5516	3814	1750	3.0
SRSCR/L164D	1335	5516	3814	1750	3.0
SRSCR/L204D	1335	5516	3814	1750	3.0

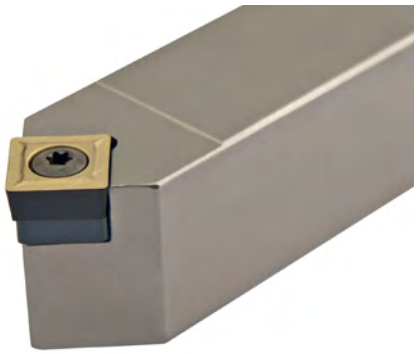
RC..

Round positive inserts with 7° clearance. A31

Reference	T	d
RC..10T3M0	0.156	0.394
RC..1204M0	0.187	0.472

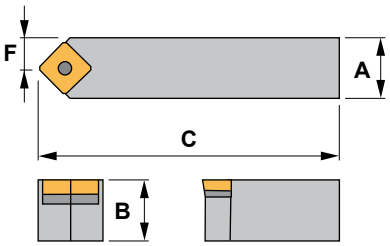


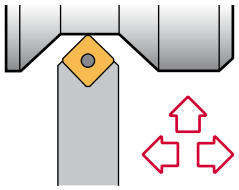
RCGT-AL	RCGT-AP
	
RCMT	
	



Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
For toolholders with negative inserts see Ref. MSSN (Page: A89).

Axial 0°
Radial 0°





SSDC 45°

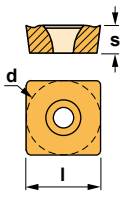
Reference	A	B	C	F	Insert size	lbs
SSDCN083	0.500	0.500	3.50	0.263	SC..32.5..	0.155
SSDCN103	0.625	0.625	4.00	0.325	SC..32.5..	0.440
SSDCN124B	0.750	0.750	4.50	0.388	SC..43..	0.880

Reference					Nm
SSDCN083	1240	5515	-	-	3.0
SSDCN103	1240	5515	-	-	3.0
SSDCN124B	1540	5517	3514	1760	3.0

SC..

Square positive inserts with 7° clearance. A32

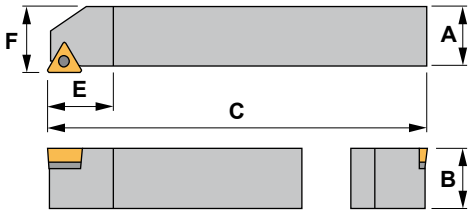
Reference	l	T	d
SC..32.5..	0.375	0.156	0.375
SC..43..	0.500	0.187	0.500

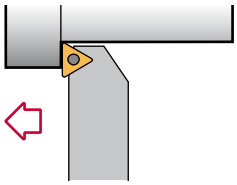


SCGT-AL	SCMT
	
SCMT-39	**SCMW**
	

Characteristics:
Toolholder for external turning and chamfering applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°





STAC 90° Automatic lathes

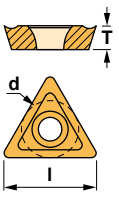
Reference	A	B	C	E	F	Insert size	lbs
STACR/L062D	0.375	0.375	6.00	0.625	0.375	TC..21.5..	0.220
STACR/L082D	0.500	0.500	6.00	0.625	0.500	TC..21.5..	0.308
STACR/L102D	0.625	0.625	6.00	0.625	0.625	TC..21.5..	0.616
STACR/L103D	0.625	0.625	6.00	0.750	0.625	TC..32.5..	0.594

Reference			Nm
STACR/L062D	1225	5507	0.9
STACR/L082D	1225	5507	0.9
STACR/L102D	1225	5507	0.9
STACR/L103D	1240	5515	3.0

TC..

Triangular positive inserts with 7° clearance. A36

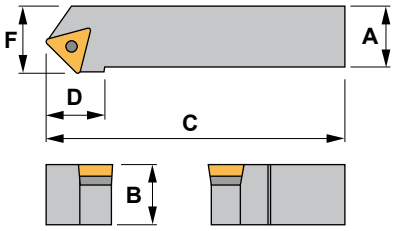
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375

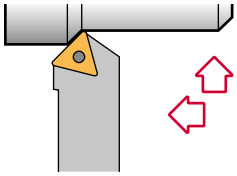


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Toolholder for external turning and chamfering applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. MTRN (Page: A96).

Axial 0°
Radial 0°





STDC 45°

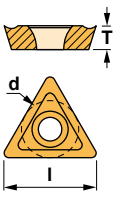
Reference	A	B	C	D	F	Insert size	lbs
STDCR/L062	0.375	0.375	2.50	0.410	0.433	TC..21.5..	0.065
STDCR/L082	0.500	0.500	3.50	0.570	0.512	TC..21.5..	0.155
STDCR/L103	0.625	0.625	4.00	1.000	0.669	TC..32.5..	0.440
STDCR/L123B	0.750	0.750	4.50	1.000	0.866	TC..32.5..	0.880
STDCR/L163D	1.000	1.000	6.00	1.000	1.063	TC..32.5..	1.540

Reference					Nm
STDCR/L062	1225	5507	-	-	0.9
STDCR/L082	1225	5507	-	-	0.9
STDCR/L103	1335	5516	3414	1750	3.0
STDCR/L123B	1335	5516	3414	1750	3.0
STDCR/L163D	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7° clearance. A36

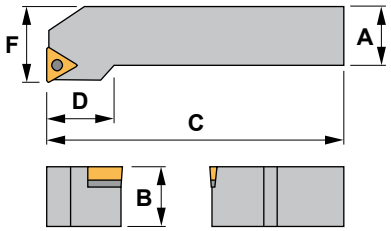
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375

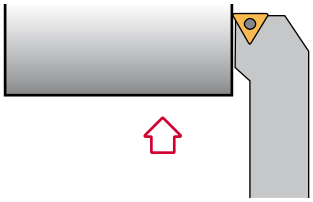


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Toolholder for face turning applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. MTFN (Page: A93).

Axial 0°
Radial 0°





STFC 90°

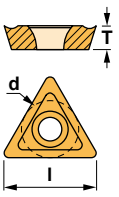
Reference	A	B	C	D	F	Insert size	lbs
STFCR/L062	0.375	0.375	2.5	0.400	0.500	TC..21.5..	0.065
STFCR/L082	0.500	0.500	3.5	0.689	0.625	TC..21.5..	0.155
STFCR/L103	0.625	0.625	4.0	1.000	0.750	TC..32.5..	0.440
STFCR/L123B	0.750	0.750	4.5	1.000	1.000	TC..32.5..	0.880
STFCR/L163D	1.000	1.000	6.0	1.000	1.250	TC..32.5..	1.540

Reference					Nm
STFCR/L062	1225	5507	-	-	0.9
STFCR/L082	1225	5507	-	-	0.9
STFCR/L103	1335	5516	3414	1750	3.0
STFCR/L123B	1335	5516	3414	1750	3.0
STFCR/L163D	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7° clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



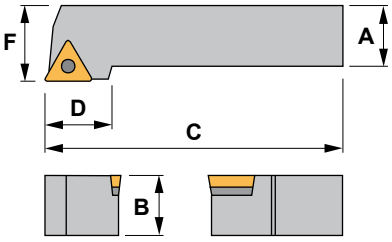
TCGT-AL

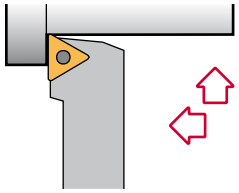
TCMT

TCMW

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. MTGN (Page: A94).

Axial 0º
Radial 0º





STGC 90°

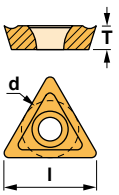
Reference	A	B	C	D	F	Insert size	lbs
STGCR/L062	0.375	0.375	2.50	0.500	0.500	TC..21.5..	0.065
STGCR/L082	0.500	0.500	3.50	0.560	0.625	TC..21.5..	0.155
STGCR/L103	0.625	0.625	4.00	1.000	0.750	TC..32.5..	0.440
STGCR/L123B	0.750	0.750	4.50	1.000	1.000	TC..32.5..	0.880
STGCR/L163D	1.000	1.000	6.00	1.000	1.250	TC..32.5..	1.540

Reference					Nm
STGCR/L062	1225	5507	-	-	0.9
STGCR/L082	1225	5507	-	-	0.9
STGCR/L103	1335	5516	3414	1750	3.0
STGCR/L123B	1335	5516	3414	1750	3.0
STGCR/L163D	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7º clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



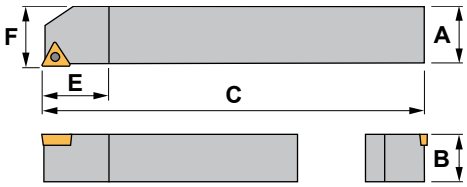
TCGT-AL

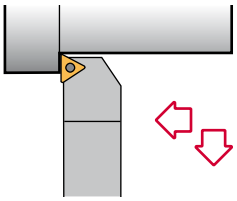
TCMT

TCMW

Characteristics:
Toolholder for external and face turning applications equipped with triangular positive inserts.
For all kind of materials. The workpiece should be stable.

Axial 0°
Radial 0°





STJC 93° Automatic lathes

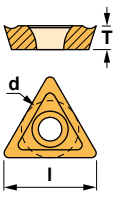
Reference	A	B	C	E	F	Insert size	lbs
STJCR/L062D	0.375	0.375	6.00	0.625	0.375	TC..21.5..	0.242
STJCR/L082D	0.500	0.500	6.00	0.625	0.500	TC..21.5..	0.330
STJCR/L102D	0.625	0.625	6.00	0.625	0.625	TC..21.5..	0.616

Reference			Nm
STJCR/L062D	1225	5507	0.9
STJCR/L082D	1225	5507	0.9
STJCR/L102D	1225	5507	0.9

TC..

Triangular positive inserts with 7° clearance. A36

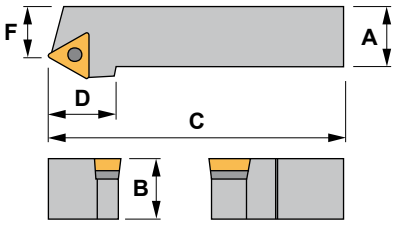
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250

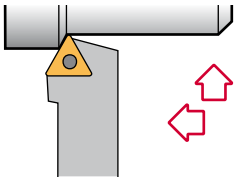


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Toolholder for external turning and chamfering applications equipped with triangular positive inserts.
For toolholders with negative inserts see Ref. MTRN (Page: A96).

Axial 0°
Radial 0°





STTC 60°

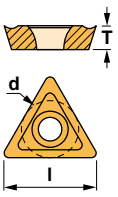
Reference	A	B	C	D	F	Insert size	lbs
STTCR/L123B	0.750	0.750	4.50	1.000	0.718	TC..32.5..	0.880
STTCR/L163D	1.000	1.000	6.00	1.000	0.860	TC..32.5..	1.540

Reference					Nm
STTCR/L123B	1335	5516	3414	1750	3.0
STTCR/L163D	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7° clearance. A36

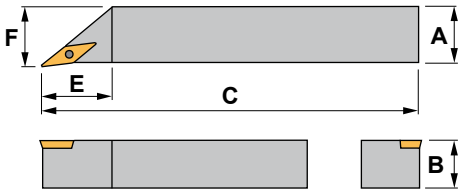
Reference	l	T	d
TC..32.5..	0.433	0.094	0.250

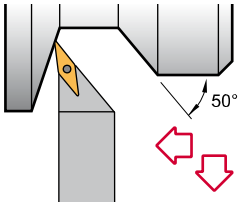


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°





SVAC 90° Automatic lathes

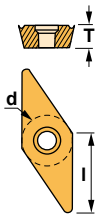
Reference	A	B	C	E	F	Insert size	lbs
SVACR/L062D	0.375	0.375	6.00	0.875	0.375	VC..22..	0.220
SVACR/L082D	0.500	0.500	6.00	0.875	0.500	VC..22..	0.308
SVACR/L103D	0.625	0.625	6.00	1.375	0.625	VC..33..	0.308

Reference			Nm
SVACR/L062D	1225	5507	0.9
SVACR/L082D	1225	5507	0.9
SVACR/L103D	1240	5515	3.0

VC..

35° rhombic positive inserts with 7° clearance. A40

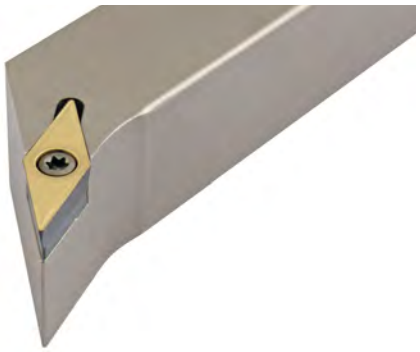
Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375



VCGT-AL

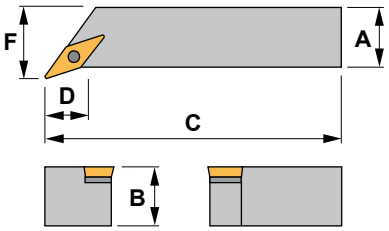
VCGT-AP

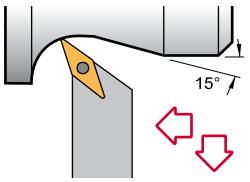
VCMT



Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, semi-finishing and finishing.

Axial 0°
Radial 0°





SVHC 107°30’

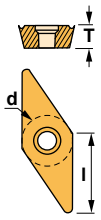
Reference	A	B	C	D	F	Insert size	lbs
SVHCR/L123B	0.750	0.750	4.50	0.740	1.000	VC..33..	0.880
SVHCR/L163D	1.000	1.000	6.00	0.756	1.250	VC..33..	1.540

Reference					Nm
SVHCR/L123B	1335	5516	3718	1750	3.0
SVHCR/L163D	1335	5516	3718	1750	3.0

VC..

35° rhombic positive inserts with 7° clearance. A40

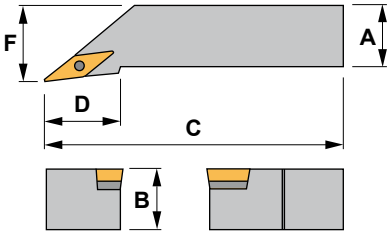
Reference	l	T	d
VC..33..	0.650	0.187	0.375

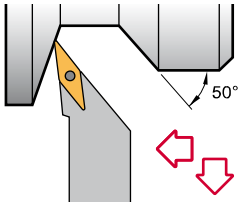


VCGT-AL	VCGT-AP
	
VCMT	
	

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVJN (Page: A97).

Axial 0°
Radial 0°





SVJC 93°

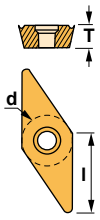
Reference	A	B	C	D	F	Insert size	lbs
SVJCR/L123B	0.750	0.750	4.50	1.614	1.000	VC..33..	0.880
SVJCR/L163D	1.000	1.000	6.00	1.614	1.250	VC..33..	1.540
SVJCR/L203D	1.250	1.250	6.00	1.614	1.500	VC..33..	2.755

Reference					Nm
SVJCR/L123B	1335	5516	3718	1750	3.0
SVJCR/L163D	1335	5516	3718	1750	3.0
SVJCR/L203D	1335	5516	3718	1750	3.0

VC..

35° rhombic positive inserts with 7° clearance. A40

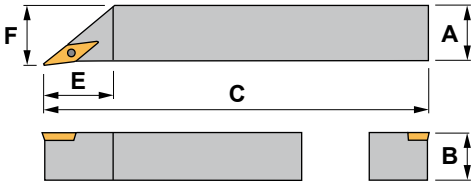
Reference	l	T	d
VC..33..	0.650	0.187	0.375

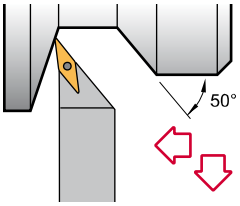


VCGT-AL	VCGT-AP
	
VCMT	
	

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For general applications, roughing, semi-finishing and finishing.

Axial 0°
Radial 0°





SVJC 93° Automatic lathes

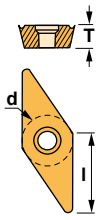
Reference	A	B	C	E	F	Insert size	lbs
SVJCR/L062D	0.375	0.375	6.00	0.940	0.375	VC..22..	0.220
SVJCR/L082D	0.500	0.500	6.00	0.940	0.500	VC..22..	0.308
SVJCR/L103D	0.625	0.625	6.00	1.440	0.625	VC..33..	0.308

Reference			Nm
SVJCR/L062D	1225	5507	0.9
SVJCR/L082D	1225	5507	0.9
SVJCR/L103D	1240	5515	3.0

VC..

35° rhombic positive inserts with 7° clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375



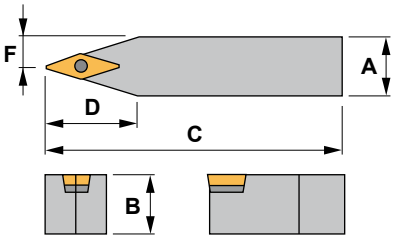
VCGT-AL

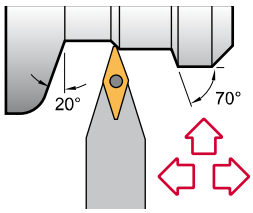
VCGT-AP

VCMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
For toolholders with negative inserts see Ref. MVVN (Page: A98).

Axial 0°
Radial 0°





SVVC 72°30'

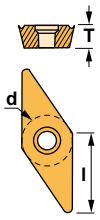
Reference	A	B	C	D	F	Insert size	lbs
SVVCN123B	0.750	0.750	4.50	1.212	0.398	VC..33..	0.880
SVVCN163D	1.000	1.000	6.00	1.610	0.523	VC..33..	1.540
SVVCN203D	1.250	1.250	6.00	2.008	0.648	VC..33..	2.755

Reference					Nm
SVVCN123B	1335	5516	3718	1750	3.0
SVVCN163D	1335	5516	3718	1750	3.0
SVVCN203D	1335	5516	3718	1750	3.0

VC..

35° rhombic positive inserts with 7° clearance. A40

Reference	l	T	d
VC..33..	0.650	0.187	0.375



VCGT-AL	VCGT-AP
	
VCMT	
	

A

Nominal cutting speed and feed values for toolholders

Material **P**	Type of treatment	Alloy	Hardness HB
Non alloyed steel	Annealed Annealed Tempered	≤ .15% C .15% - .45% C ≥ .45% C	125 150-250 300
Low alloyed steel	Annealed Tempered Tempered		180 250-300 350
High alloyed steel	Annealed Tempered		200 350
Corrosion-resistant steel	Annealed Tempered	ferritic martensitic	200 325
Material **M**	**Type of treatment**	**Alloy**	**Hardness HB**
Stainless steel	Annealed Quenched Quenched Hardened	ferritic / martensitic austenitic duplex martensitic / austenitic	200 180 230-260 330
Material **K**	**Type of treatment**	**Alloy**	**Hardness HB**
Gray cast iron		pearlitic / ferritic pearlitic / martensitic	180 260
Spheroidal cast iron		ferritic pearlitic	160 -
Malleable cast iron		ferritic pearlitic	130 230
Material **N**	**Type of treatment**	**Alloy**	**Hardness HB**
Aluminium wrought alloys	Non hardened Hardened		60 100
Aluminium cast alloys	Non hardened Hardened Non hardened	< 12% Si < 12% Si < 12% Si	80 90 130
Copper and copper alloys (bronze, brass)		machining alloy stock (1% Pb) brass, red bronze bronze lead-free copper and electrolytic copper	- 90 100 100
Non-metallic materials		thermosetting plastics fiber-reinforced plastics hard rubber	- - -
Material **S**	**Type of treatment**	**Alloy**	**Hardness HB**
Heat-resistant alloys	Annealed Hardened Annealed Hardened Cast	Fe-base Fe-base Ni or Co-base Ni or Co-base 30 - 58 HRC Ni or Co-base 1500 - 2200 N/mm^2	200 280 250 - -
Titanium alloys		pure titanium alpha + beta alloys	R_m 440* R_m 1050*
Material **H**	**Type of treatment**	**Alloy**	**Hardness HB**
Tempered steel	Hardened and tempered Hardened and tempered		55 HRC 60 HRC
Chilled castings	Cast		400
Tempered cast iron	Hardened and tempered		55 HRC

*** R_m = ultimate tensile strength, measured in MPa**

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	754-1476	853-1640	585-748	-	-	-	1312-1706
-	-	656-1115	722-1312	553-618	-	-	-	1148-1312
-	-	525-886	590-984	423-488	-	-	-	984-1148
-	-	656-1181	853-1312	553-618	-	-	-	1312-1440
-	-	492-951	656-1050	293-488	-	-	-	984-1180
-	-	426-853	492-918	228-423	-	-	-	820-984
-	-	492-951	590-1050	390-650	-	-	-	1017-1245
-	-	328-853	394-918	163-325	-	-	-	917-1312
-	-	525-951	656-1050	455-585	-	-	-	1148-1312
-	-	426-820	492-918	358-520	-	-	-	851-1017

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	-	722-984	455-650	140-200	492-656	423-715	820-1050
-	-	-	-	358-618	110-190	394-656	390-585	984-1148
-	-	-	-	260-488	80-150	294-525	163-293	-
-	-	-	-	179-244	55-75	197-263	-	689-820

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
394-525	455-656	492-1312	459-1214	-	-	394-525	-	1114-1573
294-458	328-525	590-1148	459-1082	-	-	294-425	-	853-1180
425-558	522-656	656-1476	623-1410	-	-	394-525	-	1181-1706
294-425	361-492	525-984	459-886	-	-	394-589	-	984-1312
458-656	525-722	656-1804	590-1706	-	-	458-722	-	1081-1640
394-525	458-589	525-1148	492-1082	-	-	361-525	-	589-1050

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
984-11480	984-9840	-	-	-	-	328-1968	-	-
656-6560	656-8200	-	-	-	-	328-1312	-	-
1312-4920	1312-6560	-	-	-	-	328-1968	-	-
1312-4920	1312-5904	-	-	-	-	328-1312	-	-
656-2624	656-3280	-	-	-	-	328-1312	-	-
820-1968	820-2624	-	-	-	-	328-1968	-	-
656-1968	656-2624	-	-	-	-	328-1968	-	-
492-1312	492-1968	-	-	-	-	328-1312	-	-
492-984	492-1312	-	-	-	-	328-1312	-	-
261-589	328-7216	-	-	-	-	-	-	-
197-492	263-656	-	-	-	-	-	-	-
328-820	328-656	-	-	-	-	-	-	-

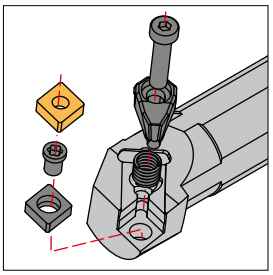
Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	115-164	-	-	-	-	66-164	260-390	-
-	82-130	-	-	-	-	66-164	195-325	-
-	82-130	-	-	-	-	48-130	114-293	-
-	66-97	-	-	-	-	66-115	98-163	-
-	48-82	-	-	-	-	33-82	98-146	-
-	261-458	-	-	-	-	261-455	228-390	-
-	130-328	-	-	-	-	82-145	130-228	-

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-


E04G-SCLCR 0305

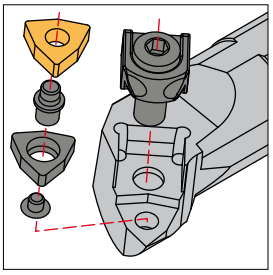
A

BORING BARS



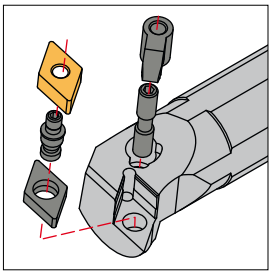
(D) Dimple lock

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



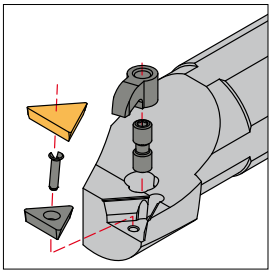
(W) Wedge clamp

Negative inserts require good clamping force for heavy duty work, for this purpose we have designed our "W" system, one of the strongest and safest available.



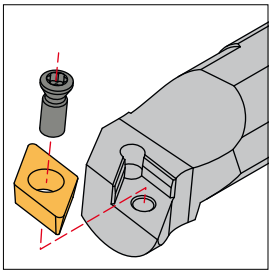
(M) Double lock

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



(C) Top clamp

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



(S) Center screw

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

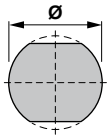
Code system (ISO)

S	20	U	S	D	U	C	R	3	-	X
1	2	3	4	5	6	7	8	9		10

1 Type of bar

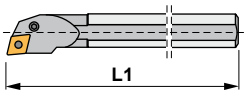
A	Steel shank with internal coolant.	
S	Steel shank	

2 Bar diameter, inch.



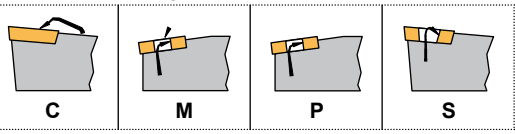
06	0.375	20	1.250
08	0.500	24	1.500
10	0.625	28	1.750
12	0.750	32	2.000
16	1.000	40	2.500

3 Bar length, inch.

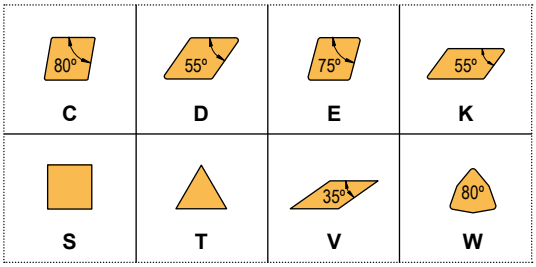


H	4.0	S	10.0
J	4.5	T	12.0
K	5.0	U	14.0
M	6.0	V	16.0
R	8.0		

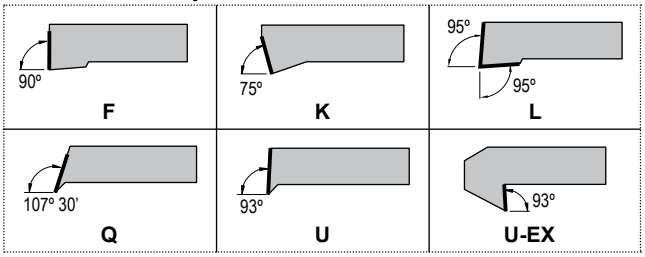
4 Clamping method of insert



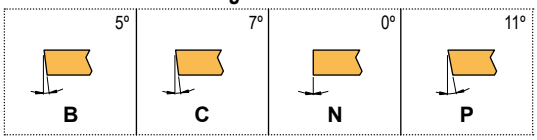
5 Insert shape



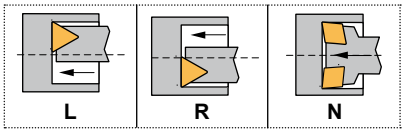
6 Holder style



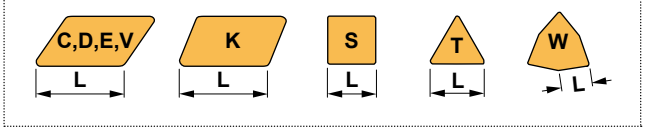
7 Clearance angle of insert



8 Hand



9 Cutting edge length, inch.



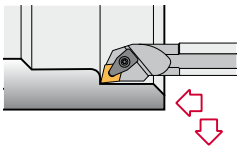
10

Manufacturer's option.

NEGATIVE BORING BARS

Dimple lock boring bars

DCLN 95º-N



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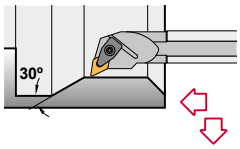
CN..43..

DDUN 93º-N



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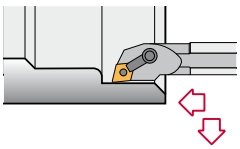
DN..43..

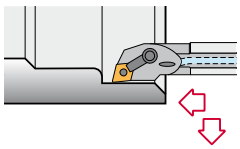
Double lock boring bars

MCLN 95º



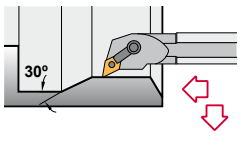
CN..43..
Page A144
CN..64..

A-MCLN 95º



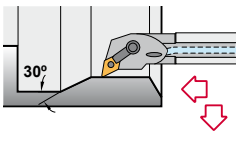
CN..43..
Page A145
CN..64..

MDUN 93º



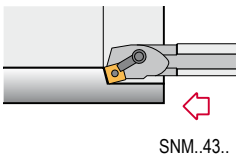
DN..43..
Page A146
DN..54..

A-MDUN 93º



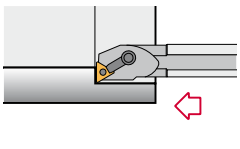
Page A147
DN..43..

MSKN 75º



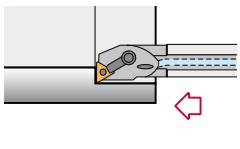
SNM..43..
SNM..54..
Page A148
SNM..64..

MTFN 90º



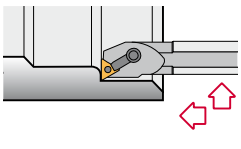
TNM..33..
Page A149
TNM..54..

A-MTFN 90º



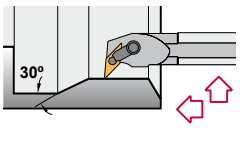
TNM..33..
Page A150
TNM..43..

MTUN 93º



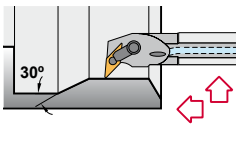
TNM..33..
Page A151
TNM..43..

MVUN 93º



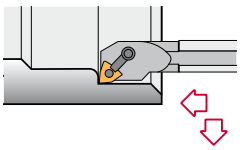
VN..33..
Page A152
VN..43..

A-MVUN 93º



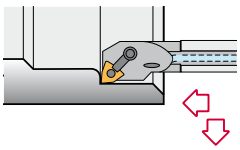
Page A153
VN..33..

MWLN 95º



Page A154
WNMG43..

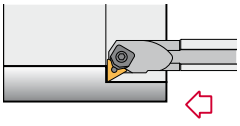
A-MWLN 95º



WNMG33..
Page A155
WNMG43..

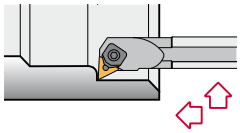
Wedge clamp

WTFN 90º



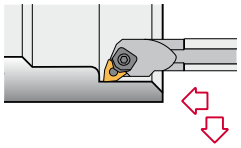
TNM..33..
Page A156
TNM..43..

WTUN 93º



TNM..33..
Page A157
TNM..43..

WWLN 95º

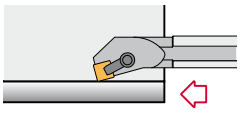


WNM..33..
Page A158
WNM..43..

POSITIVE BORING BARS

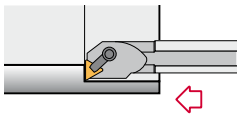
Top clamp boring bars

CSKP 75º



SP..42..
SP..63..
Page A159

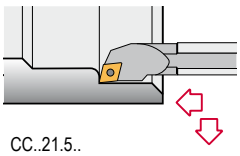
CTFP 90º



TP..32..
TP..43..
Page A160

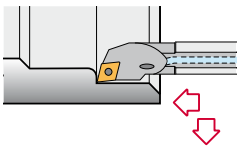
Center screw boring bars

SCLC 95º



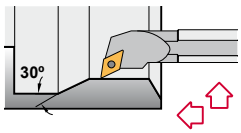
CC..21.5..
CC..32.5..
CC..43..
Page A161

A-SCLC 95º



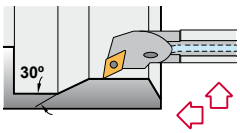
CC..21.5..
CC..32.5..
Page A162

SDUC 93º



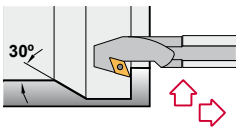
DC..21.5..
DC..32.5..
Page A163

A-SDUC 93º



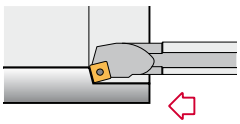
DC..21.5..
DC..32.5..
Page A164

SDUC 93º-EX



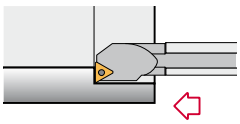
DC..21.5..
DC..32.5..
Page A165

SSKC 75º



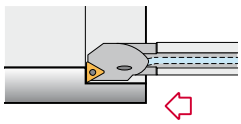
SC..32.5..
Page A166

STFC 90º



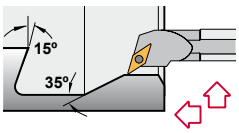
TC..21.5..
TC..32.5..
Page A167

A-STFC 90º



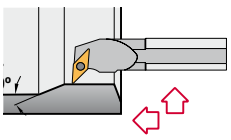
TC..21.5..
Page A168

SVQC 107º30'



VC..33..
Page A169

SVUC 93º



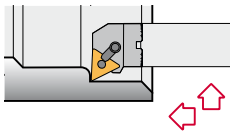
VC..22..
VC..33..
Page A170

Anti-vibration tools

J..

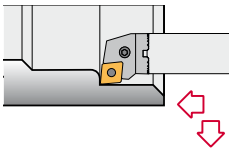
Page A175

MTUN 93º-N



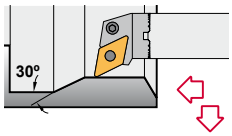
TNM..33..
TNM..43..
Page A176

PCLN 95º-N



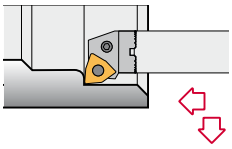
CN..43..
CN..54..
Page A177

PDUN 93º-N



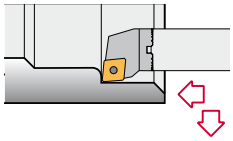
DN..43..
DN..44..
Page A178

PWLN 95º-N



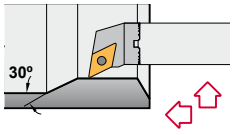
WNMG43..
Page A179

SCLC 95º-N



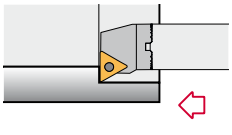
CC..32.5..
CC..43..
Page A180

SDUC 93º-N



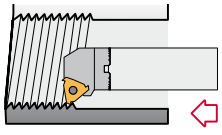
DC..32.5..
Page A181

STFC 90º-N



TC..32.5..
Page A182

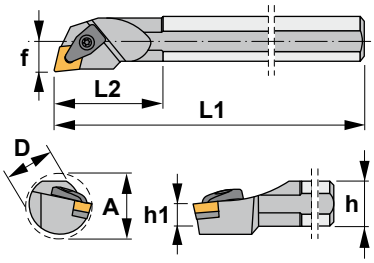
STXN 90º-N

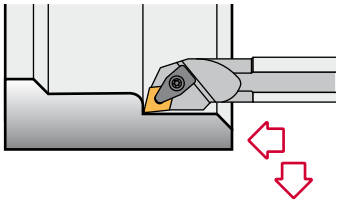


16NR/L..
22NR/L..
Page A183

Characteristics:
Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º).
For low powered machines and small pieces choose boring bars Ref. SCLC (Page: A161).

Axial -5º
Radial -13.5º





DCLN 95°-N

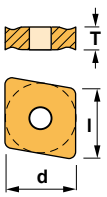
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-DCLNR/L4N	1.000	0.900	0.450	12.00	1.575	0.640	1.280	CN..43..	0.700
S20U-DCLNR/L4N	1.250	1.180	0.590	14.00	1.771	0.765	1.530	CN..43..	2.050
S24U-DCLNR/L4N	1.500	1.370	0.685	14.00	1.968	0.890	1.780	CN..43..	3.750

Reference							Nm
S16T-DCLNR/L4N	ICSN-422	1766	2712	1696	4295	5004	3.5
S20U-DCLNR/L4N	ICSN-442	1766	2712	1696	4295	5004	3.5
S24U-DCLNR/L4N	ICSN-442	1766	2712	1696	4295	5004	3.5

CN..

80° rhombic negative inserts. A24-26

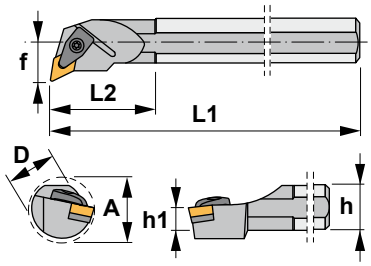
Reference	l	T	d
CN..43..	0.508	0.187	0.500

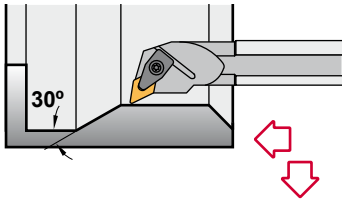


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
CNMG-MFC	CNMG-MHC	CNMG-RC	CNMG-TC	CNMM

Characteristics:
Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).
For low powered machines and small pieces choose boring bars Ref. SDUC (Page: A163).

Axial -6º
Radial -14º





DDUN 93°-N

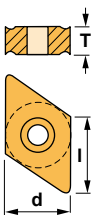
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S20U-DDUNR/L4N	1.250	1.180	0.590	14.00	1.771	0.765	1.530	DN..43..	2.050
S24U-DDUNR/L4N	1.500	1.370	0.685	14.00	1.968	0.890	1.780	DN..43..	3.750

Reference							Nm
S20U-DDUNR/L4N	IDSN-432	1766	2712	1696	4295	5004	3.5
S24U-DDUNR/L4N	IDSN-432	1766	2712	1696	4295	5004	3.5

DN..

55º rhombic negative inserts. A28-30

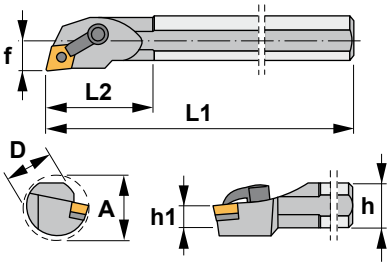
Reference	l	T	d
DN..43..	0.610	0.187	0.500

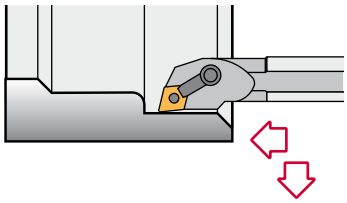


DNMA	DNMG-FC	DNMG-FMC	DNMG-KC
			
DNMG-MC	**DNMG-MHC**	**DNMG-TC**	**DNMX**
			

Characteristics:
Multipurpose boring bar equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose boring bars Ref. SCLC (Page: A161).

Axial -5º
Radial -13.5º





MCLN 95°

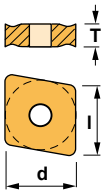
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MCLNR/L4	1.000	0.900	0.450	12.00	2.50	0.640	1.280	CN..43..	1.540
S20U-MCLNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	CN..43..	4.510
S24U-MCLNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	CN..43..	8.250
S28U-MCLNR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.030	CN..43..	9.300
S32V-MCLNR/L4	2.000	1.870	0.935	16.00	4.00	1.281	2.562	CN..43..	13.750
S40V-MCLNR/L4	2.500	2.380	1.190	16.00	4.00	1.531	3.062	CN..43..	21.800
S32V-MCLNR/L5	2.000	1.870	0.935	16.00	4.00	1.281	2.562	CN..54..	13.750
S40V-MCLNR/L5	2.500	2.380	1.190	16.00	4.00	1.531	3.062	CN..54..	21.800
S32V-MCLNR/L6	2.000	1.870	0.935	16.00	4.00	1.281	2.562	CN..64..	13.750
S40V-MCLNR/L6	2.500	2.380	1.190	16.00	4.00	1.531	3.062	CN..64..	21.800

Reference							Nm¹	Nm²
S16T-MCLNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
S20U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
S24U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
S28U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
S32V-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
S40V-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
S32V-MCLNR/L5	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
S40V-MCLNR/L5	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
S32V-MCLNR/L6	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0
S40V-MCLNR/L6	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

80° rhombic negative inserts. A24-26

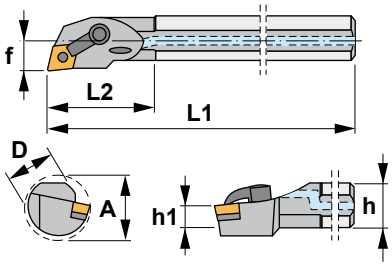
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

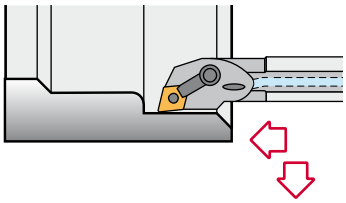


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Multipurpose boring bar equipped with rhombic negative double-sided insert (angle 80º).
For low powered machines and small pieces choose boring bars Ref. A-SCLC (Page: A162).

Axial -5º
Radial -13.5º





A-MCLN 95°

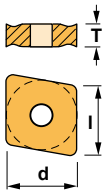
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A16T-MCLNR/L4	1.000	0.900	0.450	12.00	2.50	0.640	1.280	CN..43..	1.540
A20U-MCLNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	CN..43..	4.510
A24U-MCLNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	CN..43..	8.250
A28U-MCLNR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.030	CN..43..	9.300
A32V-MCLNR/L5	2.000	1.870	0.935	16.00	4.00	1.281	2.562	CN..54..	13.750
A32V-MCLNR/L6	2.000	1.870	0.935	16.00	4.00	1.281	2.562	CN..64..	13.750

Reference			1			2	Nm¹	Nm²
A16T-MCLNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
A20U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
A24U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
A28U-MCLNR/L4	CL-20	XNS-48	5103	ICSN-432	NL-46	5124	3.0	3.5
A32V-MCLNR/L5	CL-12	XNS-510	5004	ICSN-533	NL-58	5103	3.5	3.0
A32V-MCLNR/L6	CL-12	XNS-510	5004	ICSN-633	NL-68	5135	3.5	4.0

CN..

80° rhombic negative inserts. A24-26

Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750



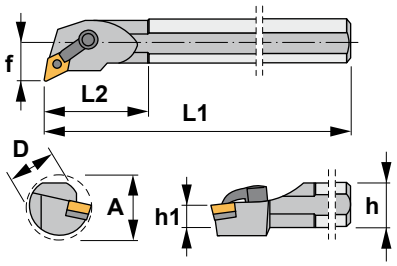
CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

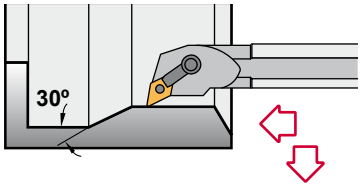
Characteristics:

Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 55º).

For low powered machines and small pieces choose boring bars Ref. SDUC (Page: A163).

Axial -6º
Radial -12º





MDUN 93°

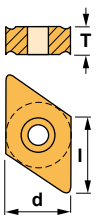
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MDUNR/L4	1.000	0.900	0.450	12.00	2.50	0.875	1.750	DN..43..	1.540
S20U-MDUNR/L4	1.250	1.180	0.590	14.00	3.00	1.000	2.000	DN..43..	4.510
S24U-MDUNR/L4	1.500	1.370	0.685	14.00	3.00	1.125	2.250	DN..43..	8.250
S32V-MDUNR/L4	2.000	1.870	0.935	16.00	4.00	1.375	3.000	DN..43..	13.750
S32V-MDUNR/L5	2.000	1.870	0.935	16.00	4.00	1.500	3.000	DN..54..	13.750
S40V-MDUNR/L5	2.500	2.380	1.190	16.00	4.00	1.750	3.500	DN..54..	21.800

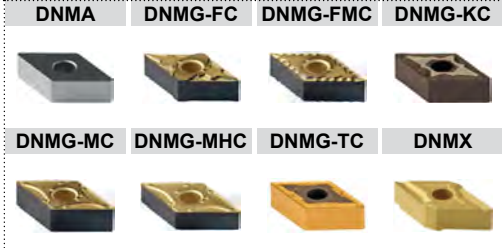
Reference							Nm¹	Nm²
S16T-MDUNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
S20U-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
S24U-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
S32V-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
S32V-MDUNR/L5	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0
S40V-MDUNR/L5	CL-12	XNS-510	5004	IDSN-533	NL-58	5103	3.5	3.0

DN..

55º rhombic negative inserts. A28-30

Reference	l	T	d
DN..43..	0.610	0.187	0.500
DN..54..	0.764	0.250	0.625



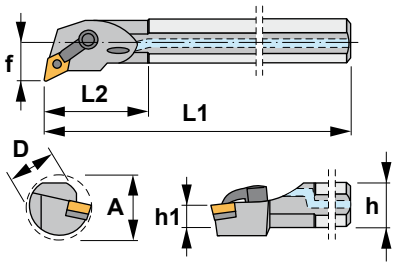


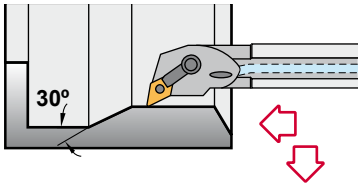
Characteristics:

Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 55º).

For low powered machines and small pieces choose boring bars Ref. A-SDUC (Page: A164).

Axial -6º
Radial -12º





A-MDUN 93°

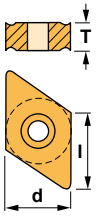
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A16T-MDUNR/L4	1.000	0.900	0.450	12.00	2.50	0.875	1.750	DN..43..	1.540
A20U-MDUNR/L4	1.250	1.180	0.590	14.00	3.00	1.000	2.000	DN..43..	4.510
A24U-MDUNR/L4	1.500	1.370	0.685	14.00	3.00	1.125	2.250	DN..43..	8.250
A32V-MDUNR/L4	2.000	1.870	0.935	16.00	4.00	1.375	3.000	DN..43..	13.750

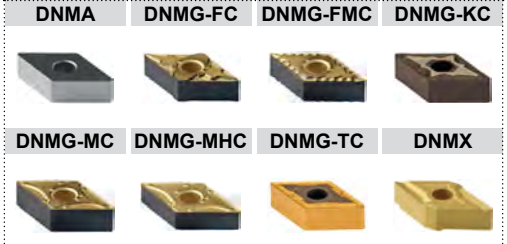
Reference			1			2	Nm¹	Nm²
A16T-MDUNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
A20U-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
A24U-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5
A32V-MDUNR/L4	CL-20	XNS-48	5103	IDSN-432	NL-46	5124	3.0	3.5

DN..

55º rhombic negative inserts. A28-30

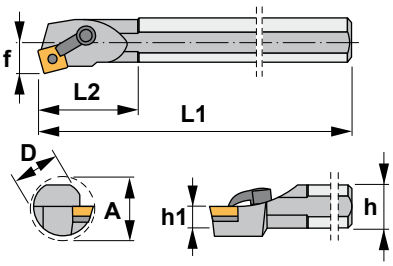
Reference	l	T	d
DN..43..	0.610	0.187	0.500

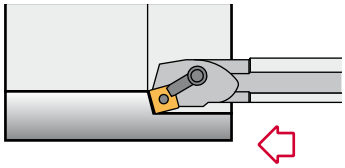




Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
For low powered machines and small pieces choose boring bars Ref. SSKC (Page: A166).

Axial -3.25º
Radial -11º





MSKN 75°

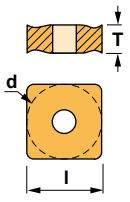
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S20U-MSKNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	SNM..43..	4.510
S24U-MSKNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	SNM..43..	8.250
S32V-MSKNR/L5	2.000	1.870	0.935	16.00	4.00	1.281	2.562	SNM..54..	13.750
S32V-MSKNR/L6	2.000	1.870	0.935	16.00	4.00	1.281	2.562	SNM..64..	13.750
S40V-MSKNR/L6	2.500	2.380	1.190	16.00	4.00	1.531	3.062	SNM..64..	21.800

Reference			1			2	Nm¹	Nm²
S20U-MSKNR/L4	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
S24U-MSKNR/L4	CL-20	XNS-48	5103	ISSN-432	NL-46	5124	3.0	3.5
S32V-MSKNR/L5	CL-12	XNS-510	5004	ISSN-533	NL-58	5103	3.5	3.0
S32V-MSKNR/L6	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0
S40V-MSKNR/L6	CL-12	XNS-510	5004	ISSN-633	NL-68	5135	3.5	4.0

SNM..

Square negative inserts. A33-34

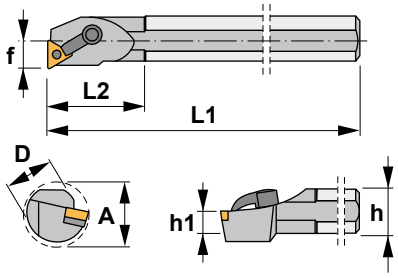
Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750

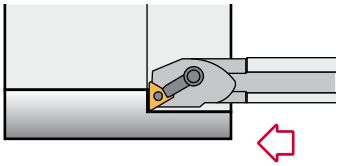


SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		

Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. STFC (Page: A167).

Axial -6°
Radial -11°





MTFN 90°

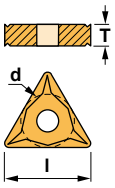
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MTFNR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.280	TNM..33..	1.540
S20U-MTFNR/L3	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..33..	4.510
S24U-MTFNR/L3	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..33..	8.250
S20U-MTFNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..43..	4.510
S24U-MTFNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..43..	8.250
S28U-MTFNR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.030	TNM..43..	9.000
S32V-MTFNR/L4	2.000	1.870	0.935	16.00	4.00	1.281	2.562	TNM..43..	13.450
S40V-MTFNR/L4	2.500	2.380	1.190	16.00	4.00	1.531	3.062	TNM..43..	21.500
S32V-MTFNR/L5	2.000	1.870	0.935	16.00	4.00	1.281	2.562	TNM..54..	13.450

Reference							Nm¹	Nm²
S16T-MTFNR/L3	CL-20	XNS-47	5103	-	NL-33L	5102	3.0	1.4
S20U-MTFNR/L3	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
S24U-MTFNR/L3	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
S20U-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
S24U-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
S28U-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
S32V-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
S40V-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
S32V-MTFNR/L5	CL-12	XNS-510	5004	ITSN-533	NL-58	5103	3.5	3.0

TNM..

Triangular negative inserts. A37-38

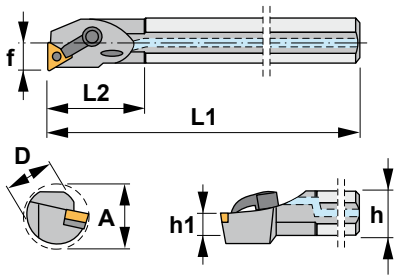
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500
TNM..54..	1.083	0.250	0.625

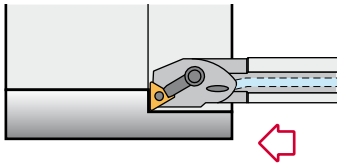


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. A-STFC (Page: A168).

Axial -6°
Radial -11°





A-MTFN 90°

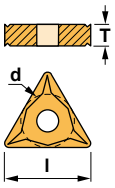
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A16T-MTFNR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.280	TNM..33..	1.540
A20U-MTFNR/L3	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..33..	4.510
A24U-MTFNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..43..	8.250
A28U-MTFNR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.030	TNM..43..	9.000
A32V-MTFNR/L4	2.000	1.870	0.935	16.00	4.00	1.281	2.562	TNM..43..	13.450

Reference			1			2	Nm¹	Nm²
A16T-MTFNR/L3	CL-20	XNS-47	5103	-	NL-33L	5102	3.0	1.4
A20U-MTFNR/L3	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
A24U-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
A28U-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5
A32V-MTFNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5

TNM..

Triangular negative inserts. A37-38

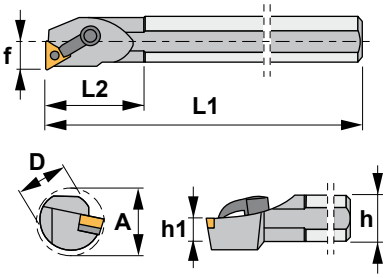
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

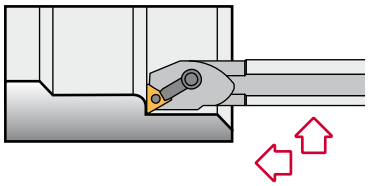


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
TNMG-MC	TNMG-MFC	TNMG-MHC	TNMG-TC	TNMX-R/L

Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. STFC (Page: A167).

Axial -6°
Radial -13°





MTUN 93°

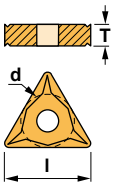
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MTUNR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.280	TNM..33..	1.540
S20U-MTUNR/L3	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..33..	4.510
S24U-MTUNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..43..	8.250

Reference			1			2	Nm¹	Nm²
S16T-MTUNR/L3	CL-20	XNS-47	5103	-	NL-33L	5102	3.0	1.4
S20U-MTUNR/L3	CL-20	XNS-48	5103	ITSN-322	NL-34L	5102	3.0	1.4
S24U-MTUNR/L4	CL-20	XNS-48	5103	ITSN-433	NL-46	5124	3.0	3.5

TNM..

Triangular negative inserts. A37-38

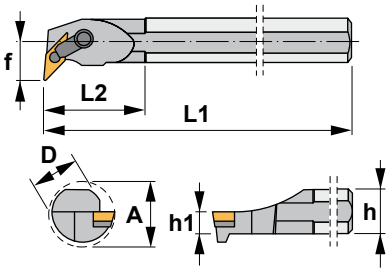
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

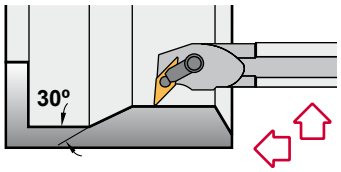


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose boring bars Ref. SVUC (Page: A170).

Axial -5º
Radial -15º





MVUN 93°

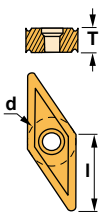
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MVUNR/L3	1.000	0.900	0.450	12.00	2.50	1.000	2.000	VN..33..	1.540
S20U-MVUNR/L3	1.250	1.180	0.590	14.00	3.00	1.125	2.250	VN..33..	4.510
S24U-MVUNR/L3	1.500	1.370	0.685	14.00	3.00	1.250	2.500	VN..33..	8.250
S32V-MVUNR/L4	2.000	1.870	0.935	16.00	4.00	1.500	3.250	VN..43..	13.750
S40V-MVUNR/L4	2.500	2.380	1.190	16.00	4.00	1.750	3.750	VN..43..	21.800

Reference			1			2	Nm¹	Nm²
S16T-MVUNR/L3	CL-22	XNS-47	5103	IVSN-322	NL-34L	5102	3.0	1.4
S20U-MVUNR/L3	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
S24U-MVUNR/L3	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
S32V-MVUNR/L4	CL-12	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5
S40V-MVUNR/L4	CL-12	XNS-510	5004	IVSN-432	NL-46	5124	3.5	3.5

VN..

35º rhombic negative inserts. A41

Reference	l	T	d
VN..33..	0.650	0.187	0.375
VN..43..	0.866	0.187	0.500



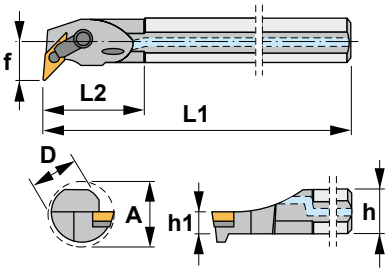
VNGP

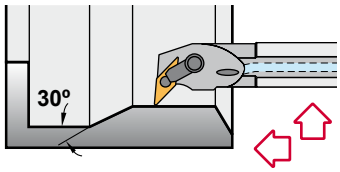
VNMG

VNMG-TC

Characteristics:
Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 35º).
For low powered machines and small pieces choose boring bars Ref. SVUC (Page: A170).

Axial -5º
Radial -15º





A-MVUN 93°

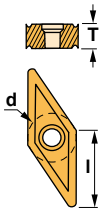
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A16T-MVUNR/L3	1.000	0.900	0.450	12.00	2.50	1.000	2.000	VN..33..	1.540
A20U-MVUNR/L3	1.250	1.180	0.590	14.00	3.00	1.125	2.250	VN..33..	4.510
A24U-MVUNR/L3	1.500	1.370	0.685	14.00	3.00	1.250	2.500	VN..33..	8.250

Reference			1			2	Nm¹	Nm²
A16T-MVUNR/L3	CL-22	XNS-47	5103	IVSN-322	NL-34L	5102	3.0	1.4
A20U-MVUNR/L3	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4
A24U-MVUNR/L3	CL-22	XNS-48	5103	IVSN-322	NL-34L	5102	3.0	1.4

VN..

35º rhombic negative inserts. A41

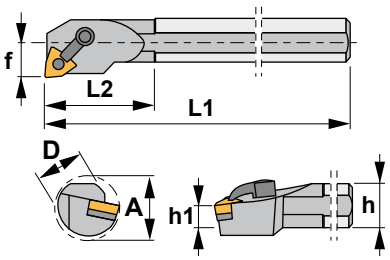
Reference	l	T	d
VN..33..	0.650	0.187	0.375

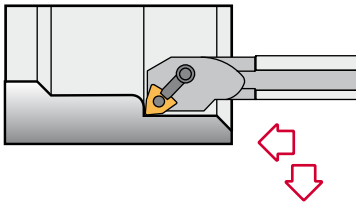


VNGP	VNMG
	
VNMG-TC	
	

Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80º).
Internal profiling boring bar for general applications, roughing, semi-finishing and finishing.

Axial -6º
Radial -14º





MWLN 95°

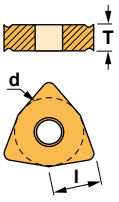
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-MWLNR/L4	1.000	0.900	0.450	12.00	2.50	0.640	1.280	WNMG43..	1.540
S20U-MWLNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	WNMG43..	4.510
S24U-MWLNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	WNMG43..	8.250

Reference			1			2	Nm¹	Nm²
S16T-MWLNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
S20U-MWLNR/L4	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5
S24U-MWLNR/L4	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5

WNMG

80º trigon negative inserts. A42-43

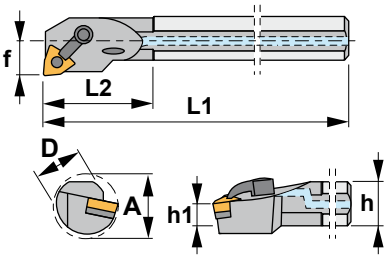
Reference	l	T	d
WNMG43..	0.320	0.187	0.500

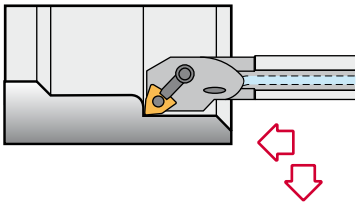


WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80º).
Internal profiling boring bar for general applications, roughing, semi-finishing and finishing.

Axial -6º
Radial -14º





A-MWLN 95°

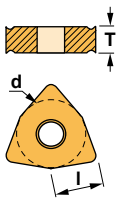
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A12S-MWLNR/L3	0.750	0.700	0.350	10.00	1.378	0.500	0.929	WNMG33..	0.850
A16T-MWLNR/L4	1.000	0.900	0.450	12.00	2.500	0.640	1.280	WNMG43..	1.540
A20U-MWLNR/L4	1.250	1.180	0.590	14.00	3.000	0.765	1.530	WNMG43..	4.510
A24U-MWLNR/L4	1.500	1.370	0.685	14.00	3.000	0.890	1.780	WNMG43..	8.250

Reference			1			2	Nm¹	Nm²
A12S-MWLNR/L3	CL-6	XNS-36	5102	-	NL-33L	5124	1.4	3.5
A16T-MWLNR/L4	CL-20	XNS-47	5103	-	NL-44	5124	3.0	3.5
A20U-MWLNR/L4	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5
A24U-MWLNR/L4	CL-20	XNS-48	5103	IWSN-433	NL-46	5124	3.0	3.5

WNMG

80º trigon negative inserts. A42-43

Reference	l	T	d
WNMG33..	0.241	0.187	0.375
WNMG43..	0.320	0.187	0.500



WNMG-FC

WNMG-FMC

WNMG-KC

WNMG-MFC

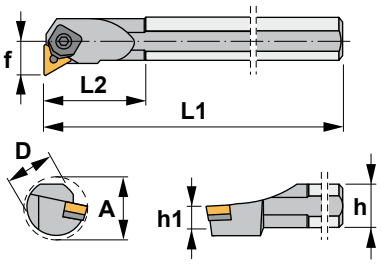
WNMG-MC

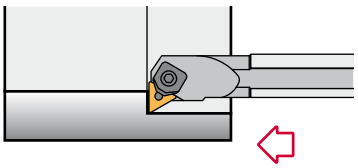
WNMG-MHC

WNMG-TC

Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
For low powered machines and small pieces choose boring bars Ref. CTFP (Page: A160) or STFC (page: A167).

Axial -6°
Radial -13°





WTFN 90°

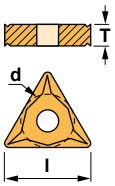
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-WTFNR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.280	TNM..33..	1.540
S20U-WTFNR/L3	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..33..	4.510
S24U-WTFNR/L3	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..33..	8.250
S20U-WTFNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	TNM..43..	1.540
S24U-WTFNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..43..	8.250
S28U-WTFNR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.030	TNM..43..	9.300
S32V-WTFNR/L4	2.000	1.870	0.935	16.00	4.00	1.281	2.562	TNM..43..	13.750
S40V-WTFNR/L4	2.500	2.380	1.180	16.00	4.00	1.531	3.062	TNM..43..	21.800

Reference						Nm
S16T-WTFNR/L3	2013	5105	3414	1644	1813	4.0
S20U-WTFNR/L3	2013	5105	3414	1644	1393	4.0
S24U-WTFNR/L3	2013	5105	3414	1644	1393	4.0
S20U-WTFNR/L4	2029	5105	ITSN-433	1661	1394	4.0
S24U-WTFNR/L4	2029	5105	ITSN-433	1661	1394	4.0
S28U-WTFNR/L4	2029	5105	ITSN-433	1661	1394	4.0
S32V-WTFNR/L4	2029	5105	ITSN-433	1661	1394	4.0
S40V-WTFNR/L4	2029	5105	ITSN-433	1661	1394	4.0

TNM..

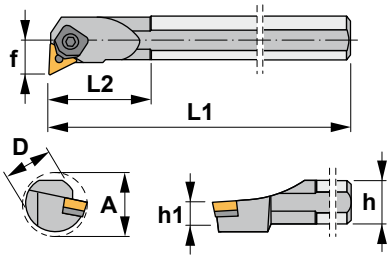
Triangular negative inserts. A37-38

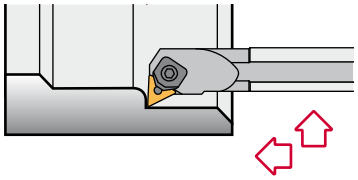
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500



Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
Multipurpose boring bar for specific applications, roughing, semi-finishing and finishing.

Axial -6°
Radial -13°





WTUN 93°

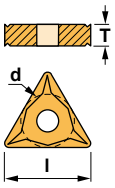
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-WTUNR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.280	TNM..33..	1.540
S24U-WTUNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	TNM..43..	8.250

Reference						Nm
S16T-WTUNR/L3	2013	5105	3414	1644	1813	4.0
S24U-WTUNR/L4	2029	5105	ITSN-433	1661	1394	4.0

TNM..

Triangular negative inserts. A37-38

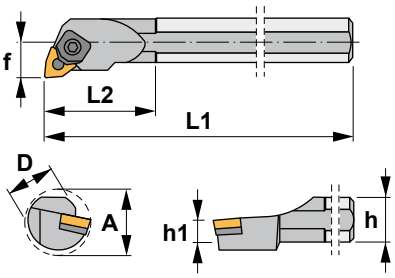
Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500

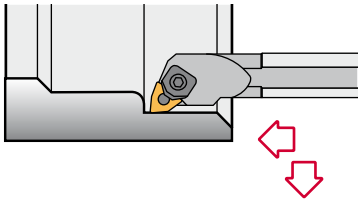


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
				
TNMG-MC	**TNMG-MFC**	**TNMG-MHC**	**TNMG-TC**	**TNMX-R/L**
				

Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80°).
Not suitable for cermet, ceramic or K10, P10 grade inserts.

Axial -5°
Radial -14°





WWLN 95°

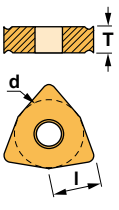
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S12S-WWLNR/L3	0.750	0.710	0.355	10.00	1.50	0.500	1.000	WNMG33..	1.210
S16T-WWLNR/L4	1.000	0.900	0.450	12.00	2.50	0.640	1.280	WNMG43..	1.540
S20U-WWLNR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.530	WNMG43..	4.510
S24U-WWLNR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.780	WNMG43..	8.250

Reference						Nm
S12S-WWLNR/L3	2007	5126	-	1643	1813	4.0
S16T-WWLNR/L4	2012	5105	-	1647	1814	4.0
S20U-WWLNR/L4	2012	5105	IWSN-433	1661	1814	4.0
S24U-WWLNR/L4	2012	5105	IWSN-433	1661	1814	4.0

WNMG

80° trigon negative inserts. A42-43

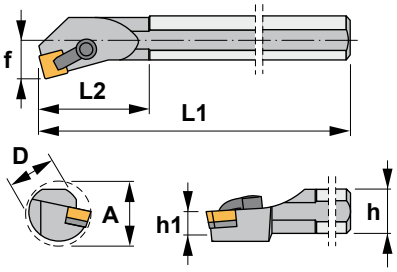
Reference	l	T	d
WNMG33..	0.254	0.187	0.375
WNMG43..	0.320	0.187	0.500

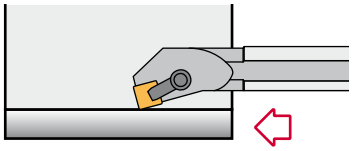


WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

Characteristics:
Boring bar for internal turning applications equipped with square positive inserts.
For interrupted cut choose boring bars Ref. MSKN (Page: A148).

Axial 5.75°
Radial 1.5°





CSKP 75°

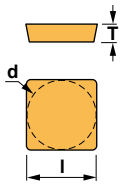
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-CSKPR/L4	1.000	0.900	0.450	12.00	2.50	0.640	1.180	SP..42..	2.310
S20U-CSKPR/L4	1.250	1.180	0.590	14.00	3.00	0.765	1.154	SP..42..	4.510
S24U-CSKPR/L4	1.500	1.370	0.685	14.00	3.00	0.890	1.800	SP..42..	8.030
S28U-CSKPR/L4	1.750	1.630	0.815	14.00	4.00	1.015	2.040	SP..42..	9.300
S24U-CSKPR/L6	1.500	1.370	0.685	14.00	3.00	0.890	2.060	SP..63..	8.030
S28U-CSKPR/L6	1.750	1.630	0.815	14.00	3.00	1.015	2.340	SP..63..	9.300
S32V-CSKPR/L6	2.000	1.870	0.935	16.00	4.00	1.281	2.580	SP..63..	13.750
S40V-CSKPR/L6	2.500	2.380	1.190	16.00	4.00	1.531	3.080	SP..63..	21.800

Reference						Nm
S16T-CSKPR/L4	CL-20	XNS-47	5103	-	-	3.0
S20U-CSKPR/L4	CL-20	XNS-47	5103	3112	4002	3.0
S24U-CSKPR/L4	CL-20	XNS-48	5103	3112	4002	3.0
S28U-CSKPR/L4	CL-20	XNS-48	5103	3112	4002	3.0
S24U-CSKPR/L6	CL-22	XNS-47	5004	3119	4012	3.5
S28U-CSKPR/L6	CL-22	XNS-48	5004	3119	4012	3.5
S32V-CSKPR/L6	CL-22	XNS-48	5004	3119	4012	3.5
S40V-CSKPR/L6	CL-22	XNS-48	5004	3119	4012	3.5

SP..

Square positive inserts with 11° clearance. A35

Reference	l	T	d
SP..42..	0.500	0.125	0.500
SP..63..	0.750	0.187	0.750

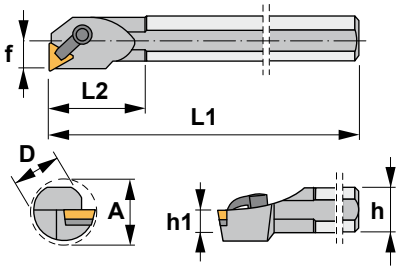


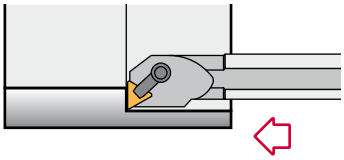
SPMR

SPUN

Characteristics:
Boring bar for internal turning applications equipped with triangular positive inserts.
For interrupted cut choose boring bars Ref. MTFN (Page: A149).

Axial 6°
Radial 0°





CTFP 90°

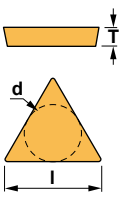
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-CTFPR/L3	1.000	0.900	0.450	12.00	2.50	0.640	1.220	TP..32..	1.540
S20U-CTFPR/L3	1.250	1.180	0.590	14.00	3.00	0.765	1.600	TP..32..	4.510
S24U-CTFPR/L3	1.500	1.370	0.685	14.00	3.00	0.890	1.840	TP..32..	8.250
S28U-CTFPR/L3	1.750	1.630	0.815	14.00	4.00	1.015	2.100	TP..32..	9.300
S24U-CTFPR/L4	1.500	1.370	0.685	14.00	3.00	0.890	2.120	TP..43..	8.030
S28U-CTFPR/L4	1.750	1.630	0.815	14.00	3.00	1.015	2.380	TP..43..	9.300
S32V-CTFPR/L4	2.000	1.870	0.935	16.00	4.00	1.281	2.620	TP..43..	13.750
S40V-CTFPR/L4	2.500	2.380	1.190	16.00	4.00	1.531	3.120	TP..43..	21.800

Reference						Nm
S16T-CTFPR/L3	CL-7	XNS-34	5124	-	-	3.5
S20U-CTFPR/L3	CL-7	XNS-34	5124	3116	4002	3.5
S24U-CTFPR/L3	CL-6	XNS-36	5124	3116	4002	3.5
S28U-CTFPR/L3	CL-6	XNS-36	5124	3116	4002	3.5
S24U-CTFPR/L4	CL-20	XNS-47	5103	3122	4012	3.0
S28U-CTFPR/L4	CL-20	XNS-48	5103	3122	4012	3.0
S32V-CTFPR/L4	CL-20	XNS-48	5103	3122	4012	3.0
S40V-CTFPR/L4	CL-20	XNS-48	5103	3122	4012	3.0

TP..

Triangular positive inserts with 11° clearance. A39

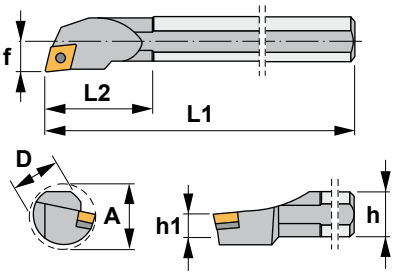
Reference	l	T	d
TP..32..	0.650	0.125	0.375
TP..43..	0.866	0.187	0.500

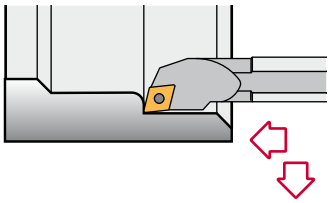


TPMN	TPMR	TPUN
		
TPUX-R	**TPUX-L**	
		

Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80º).
For boring bars with negative inserts see Ref. MCLN (Page: A144).

Axial 0º
Radial -9º





SCLC 95°

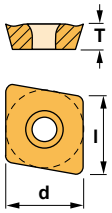
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S06M-SCLCR/L2	0.375	0.340	0.170	6.00	0.830	0.250	0.500	CC..21.5..	0.132
S08M-SCLCR/L2	0.500	0.460	0.230	6.00	0.910	0.312	0.625	CC..21.5..	0.330
S10R-SCLCR/L2	0.625	0.580	0.290	8.00	1.060	0.406	0.812	CC..21.5..	0.660
S08M-SCLCR/L3	0.500	0.460	0.230	6.00	0.984	0.312	0.625	CC..32.5..	0.330
S10R-SCLCR/L3	0.625	0.580	0.290	8.00	1.060	0.406	0.812	CC..32.5..	0.660
S12S-SCLCR/L3M	0.750	0.710	0.355	10.00	1.580	0.500	1.000	CC..32.5..	1.210
S16T-SCLCR/L3M	1.000	0.900	0.450	12.00	1.810	0.640	1.280	CC..32.5..	1.210
S16T-SCLCR/L4	1.000	0.900	0.450	12.00	3.000	0.640	1.280	CC..43..	1.540
S20U-SCLCR/L4	1.250	1.180	0.590	14.00	3.000	0.765	1.530	CC..43..	4.510
S24V-SCLCR/L4	1.500	1.370	0.685	15.75	3.000	0.890	1.780	CC..43..	8.250

Reference					Nm
S06M-SCLCR/L2	1425	5507	-	-	0.9
S08M-SCLCR/L2	1425	5507	-	-	0.9
S10R-SCLCR/L2	1425	5507	-	-	0.9
S08M-SCLCR/L3	1440	5515	-	-	3.0
S10R-SCLCR/L3	1440	5515	-	-	3.0
S12S-SCLCR/L3M	1440	5515	-	-	3.0
S16T-SCLCR/L3M	1440	5515	-	-	3.0
S16T-SCLCR/L4	1250	5520	-	-	4.0
S20U-SCLCR/L4	1540	5517	3614	1760	
S24V-SCLCR/L4	1540	5517	3614	1760	

CC..

80º rhombic positive inserts with 7º clearance. A23

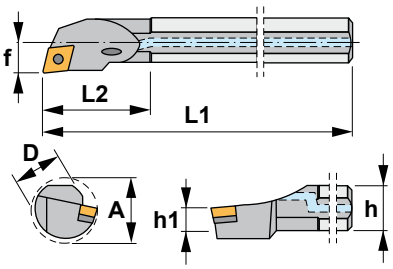
Reference	l	T	d
CC..21.5..	0.254	0.093	0.250
CC..32.5..	0.380	0.156	0.375
CC..43..	0.508	0.187	0.500

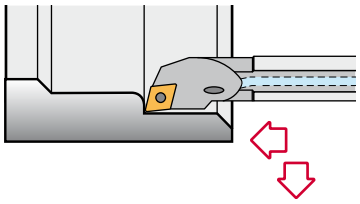


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80°).
For boring bars with negative inserts see Ref. MCLN (Page: A144).

Axial 0°
Radial -9°





A-SCLC 95°

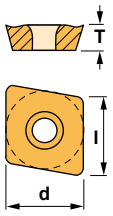
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A06M-SCLCR/L2	0.375	0.340	0.170	6.00	0.830	0.250	0.500	CC..21.5..	0.132
A08M-SCLCR/L2	0.500	0.460	0.230	6.00	0.910	0.312	0.625	CC..21.5..	0.330
A10R-SCLCR/L2	0.625	0.580	0.290	8.00	1.060	0.406	0.812	CC..21.5..	0.660
A10R-SCLCR/L3	0.625	0.580	0.290	8.00	1.060	0.406	0.812	CC..32.5..	0.660
A12S-SCLCR/L3M	0.750	0.710	0.355	10.00	1.580	0.500	1.000	CC..32.5..	1.210

Reference			Nm
A06M-SCLCR/L2	1425	5507	0.9
A08M-SCLCR/L2	1425	5507	0.9
A10R-SCLCR/L2	1425	5507	0.9
A10R-SCLCR/L3	1440	5515	3.0
A12S-SCLCR/L3M	1440	5515	3.0

CC..

80° rhombic positive inserts with 7° clearance. A23

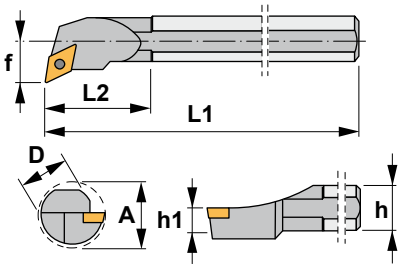
Reference	l	T	d
CC..21.5..	0.254	0.093	0.250
CC..32.5..	0.380	0.156	0.375

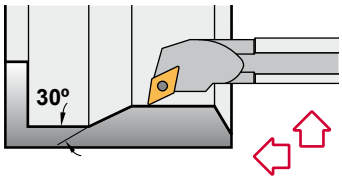


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
For boring bars with negative inserts see Ref. MDUN (Page: A146).

Axial 0°
Radial -8°





SDUC 93°

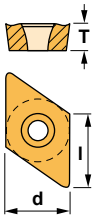
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S06M-SDUCR/L2	0.375	0.340	0.170	6.00	0.830	0.375	0.750	DC..21.5..	0.132
S08M-SDUCR/L2	0.500	0.460	0.230	6.00	0.910	0.438	0.875	DC..21.5..	0.330
S10R-SDUCR/L2	0.625	0.580	0.290	8.00	1.060	0.500	1.000	DC..21.5..	0.660
S12S-SDUCR/L3M	0.750	0.710	0.355	10.00	1.580	0.625	1.250	DC..32.5..	1.210
S16T-SDUCR/L3M	1.000	0.900	0.450	12.00	1.810	0.750	1.500	DC..32.5..	1.540
S20U-SDUCR/L3M	1.250	1.180	0.590	14.00	1.890	0.875	1.750	DC..32.5..	4.510

Reference					Nm
S06M-SDUCR/L2	1425	5507	-	-	0.9
S08M-SDUCR/L2	1225	5507	-	-	0.9
S10R-SDUCR/L2	1225	5507	-	-	0.9
S12S-SDUCR/L3M	1240	5515	-	-	3.0
S16T-SDUCR/L3M	1240	5515	-	-	3.0
S20U-SDUCR/L3M	1335	5516	3714	1750	3.0

DC..

55° rhombic positive inserts with 7° clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375



DCGT-AL

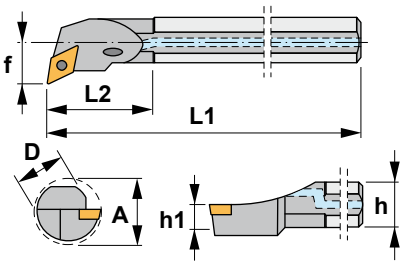
DCGT-AP

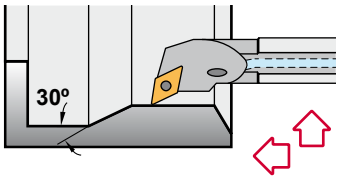
DCMT

DCMW

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55°).
For boring bars with negative inserts see Ref. A-MDUN (Page: A147).

Axial 0°
Radial -8°





A-SDUC 93°

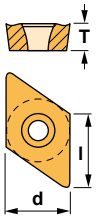
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A06M-SDUCR/L2	0.375	0.340	0.170	6.00	0.830	0.375	0.750	DC..21.5..	0.132
A08M-SDUCR/L2	0.500	0.460	0.230	6.00	0.910	0.438	0.875	DC..21.5..	0.330
A10R-SDUCR/L2	0.625	0.580	0.290	8.00	1.060	0.500	1.000	DC..21.5..	0.660
A12S-SDUCR/L3M	0.750	0.710	0.355	10.00	1.580	0.625	1.250	DC..32.5..	1.210

Reference			Nm
A06M-SDUCR/L2	1425	5507	0.9
A08M-SDUCR/L2	1225	5507	0.9
A10R-SDUCR/L2	1225	5507	0.9
A12S-SDUCR/L3M	1240	5515	3.0

DC..

55° rhombic positive inserts with 7° clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375



DCGT-AL

DCGT-AP

DCMT

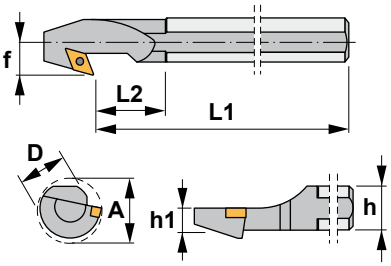
DCMW

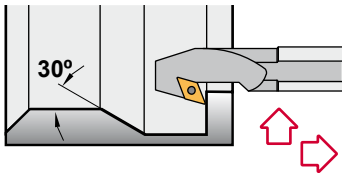
Characteristics:

Backwards multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).

Profiling and copying boring bar for semi-finishing and finishing operations.

Axial 0º
Radial -6º





SDUC 93°-EX

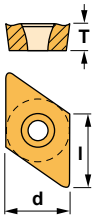
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S12S-SDUCR/L2EX	0.750	0.710	0.355	10.00	0.760	0.625	1.250	DC..21.5..	1.210
S16T-SDUCR/L2DX	1.000	0.900	0.450	12.00	1.000	0.750	1.500	DC..21.5..	1.540
S20U-SDUCR/L3X	1.250	1.180	0.590	14.00	1.270	0.765	1.750	DC..32.5..	4.510

Reference					Nm
S12S-SDUCR/L2EX	1225	5507	-	-	0.9
S16T-SDUCR/L2DX	1225	5507	-	-	0.9
S20U-SDUCR/L3X	1335	5516	3714	1750	3.0

DC..

55º rhombic positive inserts with 7º clearance. A27

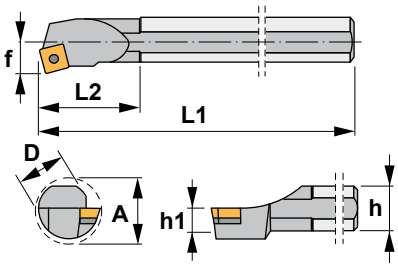
Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

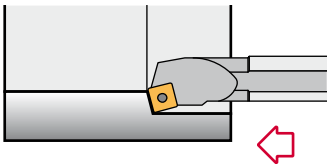


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Multipurpose boring bar equipped with square positive insert.
For boring bars with negative inserts see Ref. MSKN (Page: A148).

Axial 0°
Radial -7°





SSKC 75°

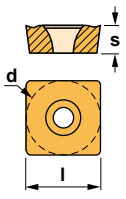
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S10R-SSKCR/L3	0.625	0.580	0.290	8.00	1.060	0.406	0.812	SC..32.5..	0.660
S12S-SSKCR/L3	0.750	0.710	0.355	10.00	1.580	0.500	1.000	SC..32.5..	1.210
S16T-SSKCR/L3	1.000	0.900	0.450	12.00	1.810	0.640	1.280	SC..32.5..	1.540

Reference			Nm
S10R-SSKCR/L3	1440	5515	3.0
S12S-SSKCR/L3	1240	5515	3.0
S16T-SSKCR/L3	1240	5515	3.0

SC..

Square positive inserts with 7° clearance. A32

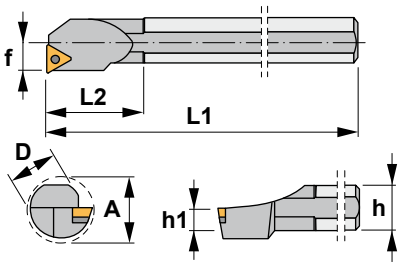
Reference	l	T	d
SC..32.5..	0.375	0.156	0.375

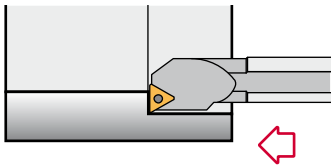


SCGT-AL	SCMT
	
SCMT-39	**SCMW**
	

Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
For boring bars with negative inserts see Ref. MTFN (Page: A149).

Axial 0°
Radial -12°





STFC 90°

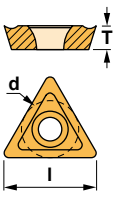
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S06M-STFCR/L2	0.375	0.340	0.170	6.00	0.850	0.250	0.500	TC..21.5..	0.132
S08M-STFCR/L2	0.500	0.460	0.230	6.00	0.800	0.312	0.625	TC..21.5..	0.330
S10R-STFCR/L2	0.625	0.580	0.290	8.00	0.960	0.406	0.812	TC..21.5..	0.660
S12S-STFCR/L2	0.750	0.710	0.355	10.00	1.420	0.500	1.000	TC..21.5..	1.210
S16T-STFCR/L3	1.000	0.900	0.450	12.00	1.930	0.640	1.280	TC..32.5..	1.540
S20U-STFCR/L3	1.250	1.180	0.590	14.00	1.970	0.765	1.530	TC..32.5..	4.510
S24V-STFCR/L3	1.500	1.370	0.685	15.75	2.360	0.890	1.780	TC..32.5..	8.250

Reference					Nm
S06M-STFCR/L2	1425	5507	-	-	0.9
S08M-STFCR/L2	1425	5507	-	-	0.9
S10R-STFCR/L2	1225	5507	-	-	0.9
S12S-STFCR/L2	1225	5507	-	-	0.9
S16T-STFCR/L3	1240	5515	-	-	3.0
S20U-STFCR/L3	1335	5516	3414	1750	3.0
S24V-STFCR/L3	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7° clearance. A36

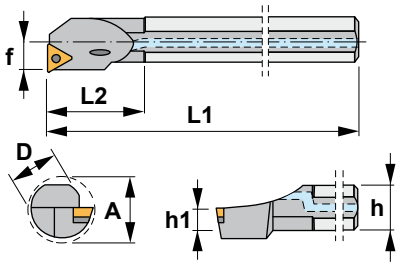
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375

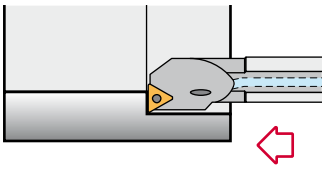


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
For boring bars with negative inserts see Ref. MTFN (Page: A149).

Axial 0°
Radial -12°





A-STFC 90°

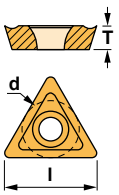
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
A06M-STFCR/L2	0.375	0.340	0.170	6.00	0.850	0.250	0.500	TC..21.5..	0.132
A08M-STFCR/L2	0.500	0.460	0.230	6.00	0.800	0.312	0.625	TC..21.5..	0.330
A10R-STFCR/L2	0.625	0.580	0.290	8.00	0.960	0.406	0.812	TC..21.5..	0.660
A12S-STFCR/L2	0.750	0.710	0.355	10.00	1.420	0.500	1.000	TC..21.5..	1.210

Reference			Nm
A06M-STFCR/L2	1425	5507	0.9
A08M-STFCR/L2	1225	5507	0.9
A10R-STFCR/L2	1225	5507	0.9
A12S-STFCR/L2	1225	5507	0.9

TC..

Triangular positive inserts with 7° clearance. A36

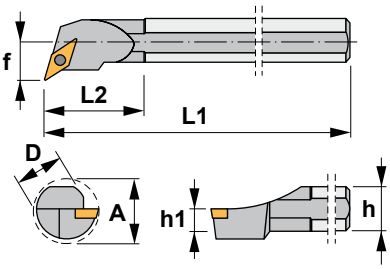
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250

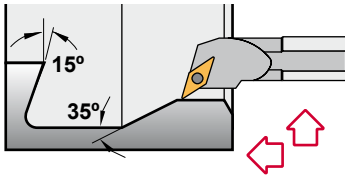


TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
For general applications, roughing, semi-finishing and finishing.

Axial 0º
Radial -6º





SVQC 107°30'

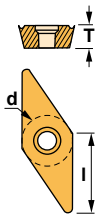
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S16T-SVQCR/L3	1.000	0.900	0.450	12.00	0.910	0.750	1.375	VC..33..	1.540
S20U-SVQCR/L3	1.250	1.180	0.590	14.00	1.060	0.875	1.625	VC..33..	4.510
S24V-SVQCR/L3	1.500	1.370	0.685	15.75	1.370	1.063	2.000	VC..33..	8.250

Reference					Nm
S16T-SVQCR/L3	1240	5515	-	-	3.0
S20U-SVQCR/L3	1335	5516	3718	1750	3.0
S24V-SVQCR/L3	1335	5516	3718	1750	3.0

VC..

35º rhombic positive inserts with 7º clearance. A40

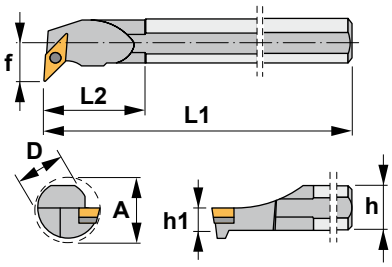
Reference	l	T	d
VC..33..	0.650	0.187	0.375

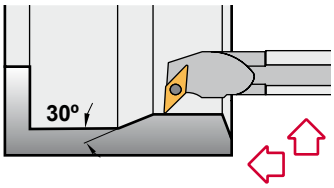


VCGT-AL	VCGT-AP
	
VCMT	
	

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
For boring bars with negative inserts see Ref. MVUN (Page: A152).

Axial 0º
Radial -7º





SVUC 93°

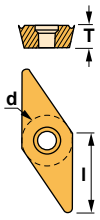
Reference	D	h	h1	L1	L2	f	A	Insert size	lbs
S10R-SVUCR/L2E	0.625	0.580	0.290	8.00	1.060	0.500	0.867	VC..22..	0.660
S12S-SVUCR/L2E	0.750	0.710	0.355	10.00	1.580	0.625	1.060	VC..22..	1.210
S16T-SVUCR/L2D	1.000	0.900	0.450	12.00	1.810	0.750	1.300	VC..22..	1.540
S20U-SVUCR/L3	1.250	1.180	0.590	14.00	3.000	1.000	2.000	VC..33..	4.510
S24V-SVUCR/L3	1.500	1.370	0.685	15.75	3.000	1.125	2.250	VC..33..	8.250
S32W-SVUCR/L3	2.000	1.870	0.935	17.75	4.000	1.375	2.750	VC..33..	15.210

Reference					Nm
S10R-SVUCR/L2E	1225	5507	-	-	0.9
S12S-SVUCR/L2E	1225	5507	-	-	0.9
S16T-SVUCR/L2D	1225	5507	-	-	0.9
S20U-SVUCR/L3	1335	5516	3718	1750	3.0
S24V-SVUCR/L3	1335	5516	3718	1750	3.0
S32W-SVUCR/L3	1335	5516	3718	1750	3.0

VC..

35º rhombic positive inserts with 7º clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375



VCGT-AL	VCGT-AP
	
VCMT	
	

J..
Anti-vibration shank

Strong tightening

With the use of “split” sleeves the clamping force (black colour) will be as high as possible and the bar will work optimally.

Machining recommendations

Notes for anti-vibration shank

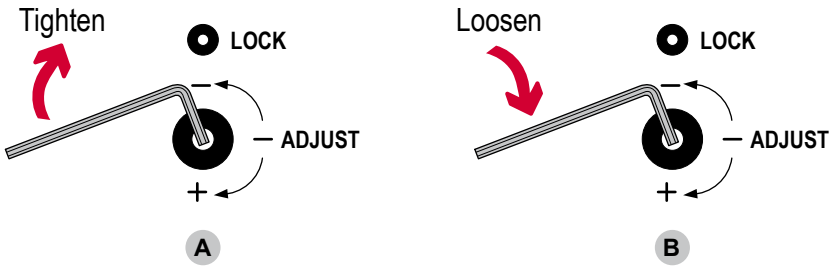
Centering line

The anti-vibration bar is centered by taking as a reference the plane indicated by the arrow.

Calibration procedure

The bars are supplied pre-calibrated, but a new, different calibration may be necessary, depending on the type of application.

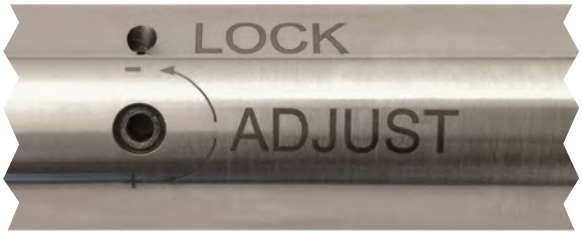
The variables to consider are many:
- Head type
- Insert type
- Material to be machined
- Cutting depth
- Speeds and feeds, etc.



Machining recommendations

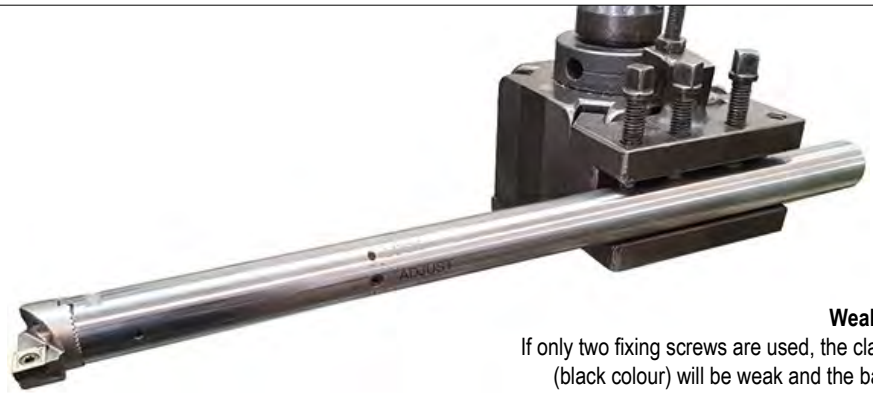
Notes for anti-vibration shank

Calibration procedure

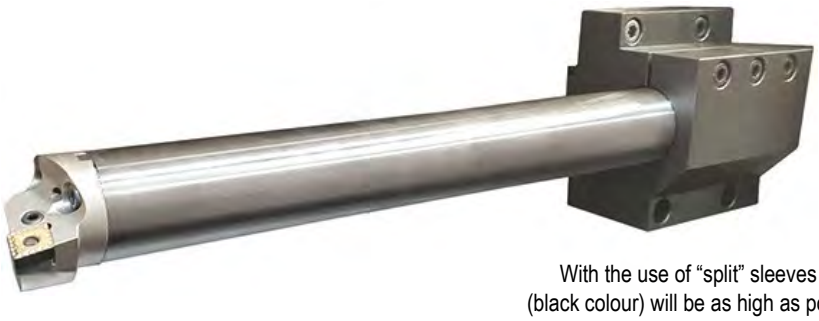


1 - Make sure that the LOCKING screw is loose.
2 - Calibrate by turning the ADJUSTING screw by tightening or loosening.
A - If the frequency of the vibration produces a high sound, tighten the adjustment.
B - If the frequency of the vibration produces a low sound, loosen the adjustment
3 - Make sure that the LOCKING screw is tightened.
4 - Try the tool and, if necessary, repeat the adjustments until you obtain satisfactory results.

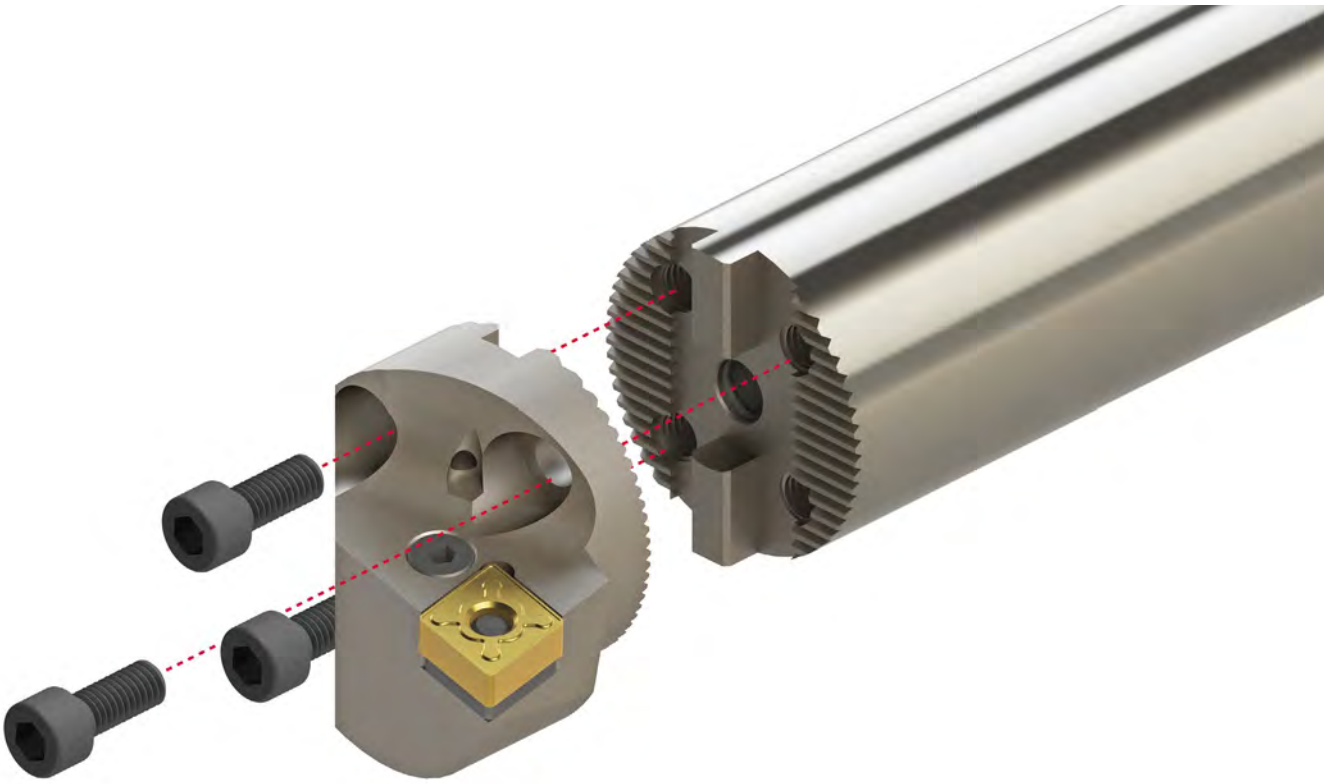
Use **a suitable SLEEVE** in order to have a vibration-free tool.



Weak tightening
If only two fixing screws are used, the clamping force (black colour) will be weak and the bar damaged.

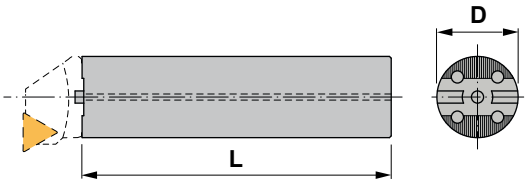


Strong tightening
With the use of “split” sleeves the clamping force (black colour) will be as high as possible and the bar will work optimally.



MTUN 93º-N	PCLN 95º-N	PDUN 93º-N	PWLN 95º-N
			
SCLC 95º-N	**SDUC 93º-N**	**STFC 90º-N**	**STXN 90º-N**
			

Characteristics:
Anti-vibration shank with internal coolant.
Max. cutting depth: 7 x Diameter

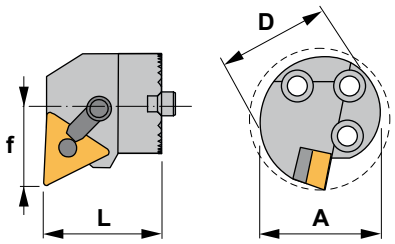


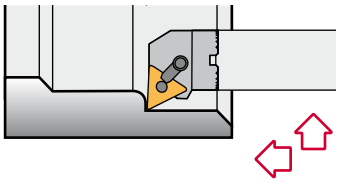
J..

Reference		D	L	Thread	lbs
J16/1200	25	1.000	12.00	1/4-18 NPT	2.645
J20/1400	32	1.250	14.00	1/4-18 NPT	4.850
J24/1600	32	1.500	16.00	1/4-18 NPT	5.900
J28/1800	40	1.750	18.00	1/4-18 NPT	8.820
J32/2000	50	2.000	20.00	1/4-18 NPT	18.740
J40/2500	60	2.500	25.00	1/4-18 NPT	31.750

Reference			Nm
J16/1200	1924	5025	2.0
J20/1400	1925	5003	3.0
J24/1600	1925	5003	3.0
J28/1800	1926	5004	3.5
J32/2000	1928	5005	4.0
J40/2500	1928	5005	4.0

Characteristics:
Internal turning and profiling boring head equipped with triangular negative double-sided insert.
For general applications, roughing, semi-finishing and finishing.





MTUN 93°-N

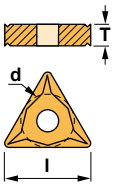
Reference	D	L	f	A	Insert size	lbs
A32X-MTUNR/L16-N	1.260	1.811	0.866	1.575	TNM..33..	0.330
A40X-MTUNR/L16-N	1.575	1.811	1.063	1.968	TNM..33..	0.660
A50X-MTUNR/L16-N	1.968	1.811	1.378	2.480	TNM..33..	1.435
A50X-MTUNR/L22-N	1.968	1.575	1.378	2.480	TNM..43..	1.435
A60X-MTUNR/L22-N	2.362	1.575	1.693	3.150	TNM..43..	1.875

Reference			1					2	Nm¹	Nm²
A32X-MTUNR/L16-N	2613	-	5003	ITSN-322	1086	1665	-	5002	3.0	1.4
A40X-MTUNR/L16-N	2613	-	5003	ITSN-322	1086	1665	-	5002	3.0	1.4
A50X-MTUNR/L16-N	2613	-	5003	ITSN-322	1086	1665	-	5002	3.0	1.4
A50X-MTUNR/L22-N	-	2024	5005	ITSN-433	1394	-	1661	-	4.0	-
A60X-MTUNR/L22-N	-	2024	5005	ITSN-433	1394	-	1661	-	4.0	-

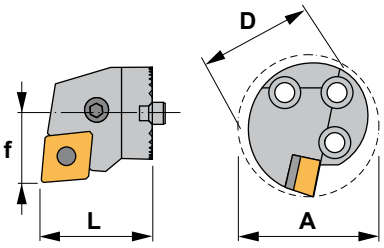
TNM..

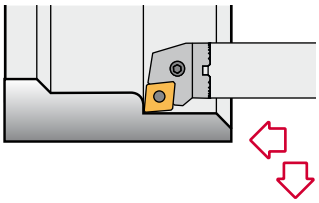
Triangular negative inserts. A37-38

Reference	l	T	d
TNM..33..	0.650	0.187	0.375
TNM..43..	0.866	0.187	0.500



Characteristics:
Boring head for internal turning applications equipped with rhombic negative inserts (angle 80º). For low powered machines and small pieces choose boring bars Ref. A-SCLC (Page: A162).





PCLN 95°-N

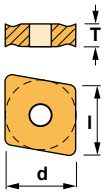
Reference	D	L	f	A	Insert size	lbs
A25X-PCLNR/L12-N	0.984	1.811	0.669	1.260	CN..43..	0.110
A32X-PCLNR/L12-N	1.260	1.811	0.866	1.575	CN..43..	0.330
A40X-PCLNR/L12-N	1.575	1.811	1.063	1.968	CN..43..	0.660
A50X-PCLNR/L12-N	1.968	1.811	1.378	2.480	CN..43..	1.325
A60X-PCLNR/L12-N	2.362	1.575	1.693	3.150	CN..43..	1.765
A50X-PCLNR/L16-N	1.968	1.575	1.378	2.480	CN..54..	1.325
A60X-PCLNR/L16-N	2.362	1.575	1.693	3.150	CN..54..	1.765

Reference							Nm
A25X-PCLNR/L12-N	8212	1626	5025	-	-	-	2.0
A32X-PCLNR/L12-N	8312	1648	5003	3612	4112	0012	3.0
A40X-PCLNR/L12-N	8012	1608	5003	3612	4112	0012	3.0
A50X-PCLNR/L12-N	8012	1608	5003	3612	4112	0012	3.0
A60X-PCLNR/L12-N	8012	1608	5003	3612	4112	0012	3.0
A50X-PCLNR/L16-N	8016	1618	5003	3616	4115	0015	3.0
A60X-PCLNR/L16-N	8016	1618	5003	3616	4115	0015	3.0

CN..

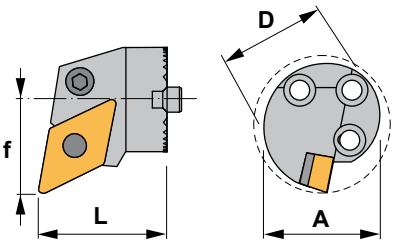
80° rhombic negative inserts. A24-26

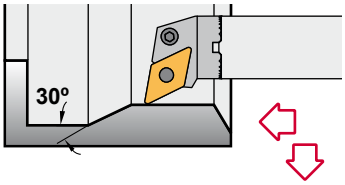
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.630	0.250	0.625



CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
CNMG-MFC	CNMG-MHC	CNMG-RC	CNMG-TC	CNMM

Characteristics:
Boring head for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º). For low powered machines and small pieces choose boring bars Ref. A-SDUC (Page: A164).





PDUN 93°-N

Reference	D	L	f	A	Insert size	lbs
A32X-PDUNR/L15-N	1.260	1.378	0.866	1.575	DN..44..	0.330
A40X-PDUNR/L15-N	1.575	1.811	1.063	1.968	DN..44..	0.660
A50X-PDUNR/L15-N	1.968	1.575	1.378	2.480	DN..44..	1.325
A60X-PDUNR/L15-N	2.362	1.575	1.693	3.150	DN..44..	1.765

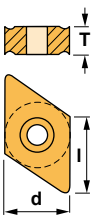
Reference									Nm
A32X-PDUNR/L15-N	8415	1648	5003	3715	4112	0012	3725	4135	3.0
A40X-PDUNR/L15-N	8415	1638	5003	3715	4112	0012	3725	4135	3.0
A50X-PDUNR/L15-N	8415	1638	5003	3715	4112	0012	3725	4135	3.0
A60X-PDUNR/L15-N	8415	1638	5003	3715	4112	0012	3725	4135	3.0

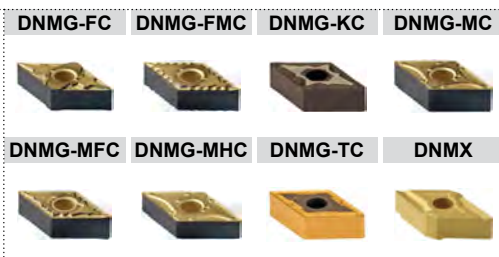
For DNM..43.. inserts

DN..

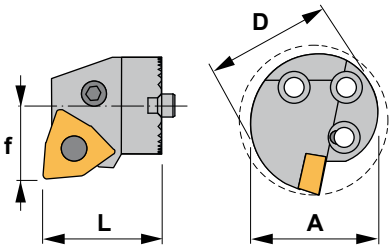
55° rhombic negative inserts. A28-30

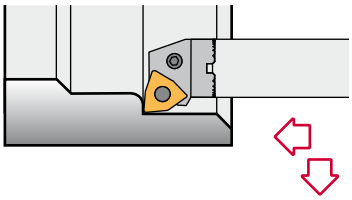
Reference	l	T	d
DN..43..	0.610	0.187	0.500
DN..44..	0.610	0.250	0.500





Characteristics:
Boring head for internal turning applications equipped with trigon negative inserts (angle 80°). For general applications, roughing, semi-finishing and finishing.





PWLN 95°-N

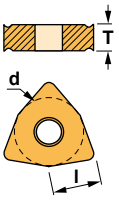
Reference	D	L	f	A	Insert size	lbs
A32X-PWLNR/L08-N	1.260	1.811	0.866	1.575	WNMG43..	0.330
A40X-PWLNR/L08-N	1.575	1.811	1.063	1.968	WNMG43..	0.660
A50X-PWLNR/L08-N	1.968	1.575	1.378	2.480	WNMG43..	1.325
A60X-PWLNR/L08-N	2.362	1.575	1.693	3.150	WNMG43..	1.765

Reference							Nm
A32X-PWLNR/L08-N	8012	1608	5003	3008	4112	0012	3.0
A40X-PWLNR/L08-N	8012	1608	5003	3008	4112	0012	3.0
A50X-PWLNR/L08-N	8012	1608	5003	3008	4112	0012	3.0
A60X-PWLNR/L08-N	8012	1608	5003	3008	4112	0012	3.0

WNMG

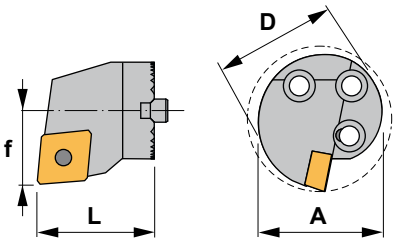
80° trigon negative inserts. A42-43

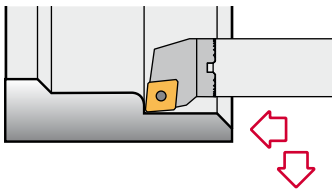
Reference	l	T	d
WNMG43..	0.320	0.187	0.500



WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

Characteristics:
Multipurpose boring head equipped with rhombic positive insert (angle 80°).





SCLC 95°-N

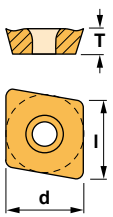
Reference	D	L	f	A	Insert size	lbs
A25X-SCLCR/L09-N	0.984	0.984	0.669	1.260	CC..32.5..	0.155
A32X-SCLCR/L12-N	1.260	1.811	0.866	1.575	CC..43..	0.330
A40X-SCLCR/L12-N	1.575	1.811	1.063	1.968	CC..43..	0.550
A50X-SCLCR/L12-N	1.968	1.575	1.378	2.480	CC..43..	1.435
A60X-SCLCR/L12-N	2.362	1.575	1.693	3.150	CC..43..	1.875

Reference					Nm
A25X-SCLCR/L09-N	1440	5515	-	-	3.0
A32X-SCLCR/L12-N	1540	5517	3614	1760	3.0
A40X-SCLCR/L12-N	1540	5517	3614	1760	3.0
A50X-SCLCR/L12-N	1540	5517	3614	1760	3.0
A60X-SCLCR/L12-N	1540	5517	3614	1760	3.0

CC..

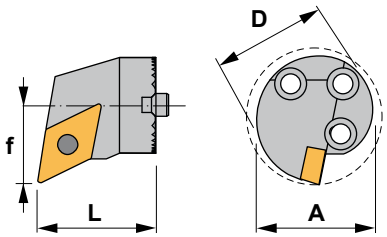
80° rhombic positive inserts with 7° clearance. A23

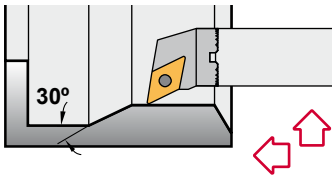
Reference	l	T	d
CC..32.5..	0.380	0.156	0.375
CC..43..	0.508	0.187	0.500



CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose profiling boring head equipped with rhombic positive insert (angle 55º).





SDUC 93°-N

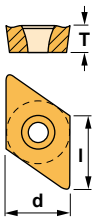
Reference	D	L	f	A	Insert size	lbs
A25X-SDUCR/L11-N	0.984	0.984	0.669	1.260	DC..32.5..	0.155
A32X-SDUCR/L11-N	1.260	1.811	0.866	1.575	DC..32.5..	0.330
A40X-SDUCR/L11-N	1.575	1.811	1.063	1.968	DC..32.5..	0.550
A50X-SDUCR/L11-N	1.968	1.575	1.378	2.480	DC..32.5..	1.435
A60X-SDUCR/L11-N	2.362	1.575	1.693	3.150	DC..32.5..	1.875

Reference					Nm
A25X-SDUCR/L11-N	1240	5515	-	-	3.0
A32X-SDUCR/L11-N	1335	5516	3714	1750	3.0
A40X-SDUCR/L11-N	1335	5516	3714	1750	3.0
A50X-SDUCR/L11-N	1335	5516	3714	1750	3.0
A60X-SDUCR/L11-N	1335	5516	3714	1750	3.0

DC..

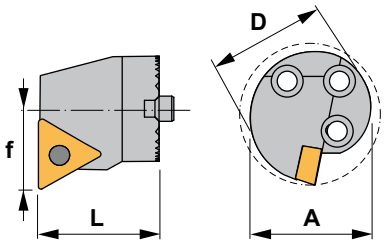
55º rhombic positive inserts with 7º clearance. A27

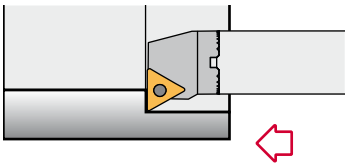
Reference	l	T	d
DC..32.5..	0.457	0.156	0.375



DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Multipurpose boring head equipped with triangular positive insert.
For general applications, roughing, semi-finishing and finishing.





STFC 90°-N

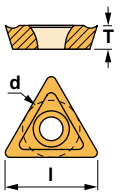
Reference	D	L	f	A	Insert size	lbs
A25X-STFCR/L16-N	0.984	0.984	0.669	1.260	TC..32.5..	0.155
A32X-STFCR/L16-N	1.260	1.811	0.866	1.575	TC..32.5..	0.330
A40X-STFCR/L16-N	1.575	1.811	1.063	1.968	TC..32.5..	0.550
A50X-STFCR/L16-N	1.968	1.575	1.378	2.480	TC..32.5..	1.435
A60X-STFCR/L16-N	2.362	1.575	1.693	3.150	TC..32.5..	1.875

Reference					Nm
A25X-STFCR/L16-N	1240	5515	-	-	3.0
A32X-STFCR/L16-N	1335	5516	3414	1750	3.0
A40X-STFCR/L16-N	1335	5516	3414	1750	3.0
A50X-STFCR/L16-N	1335	5516	3414	1750	3.0
A60X-STFCR/L16-N	1335	5516	3414	1750	3.0

TC..

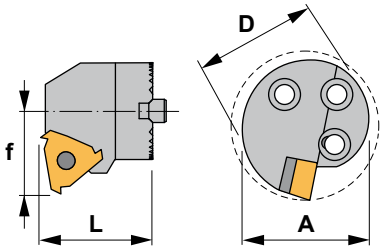
Triangular positive inserts with 7° clearance. A36

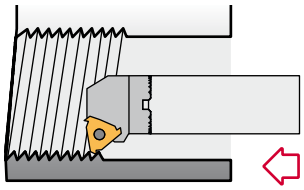
Reference	l	T	d
TC..32.5..	0.650	0.156	0.375



TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Boring head for internal threading equipped with triangular negative insert.





STXN 90°-N

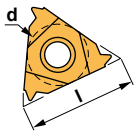
Reference	D	L	f	A	Insert size	lbs
A25X-STXNR/L16-N	0.984	0.984	0.641	1.260	16NR/L..	0.155
A32X-STXNR/L16-N	1.260	1.811	0.771	1.575	16NR/L..	0.330
A32X-STXNR/L22-N	1.260	1.260	0.846	1.575	22NR/L..	0.330
A40X-STXNR/L22-N	1.575	1.260	1.015	1.968	22NR/L..	0.550
A50X-STXNR/L22-N	1.968	1.575	1.236	2.480	22NR/L..	1.435
A60X-STXNR/L22-N	2.362	1.575	1.433	3.150	22NR/L..	1.875

Reference						Nm
A25X-STXNR/L16-N	SA3	5510	YE3	YI3	SY3	2.0
A32X-STXNR/L16-N	SA3	5510	YE3	YI3	SY3	2.0
A32X-STXNR/L22-N	SA4	5520	YE4	YI4	SY4	4.0
A40X-STXNR/L22-N	SA4	5520	YE4	YI4	SY4	4.0
A50X-STXNR/L22-N	SA4	5520	YE4	YI4	SY4	4.0
A60X-STXNR/L22-N	SA4	5520	YE4	YI4	SY4	4.0

NR/L

Triangular negative inserts for internal threading. C04, C06-07, C09-10

Reference	l	d
16NR/L..	0.629	0.375
22NR/L..	0.866	0.500



N R/L

N R/L TD

Nominal cutting speed and feed values for boring bars

Material P	Type of treatment	Alloy	Hardness HB
Non alloyed steel	Annealed Annealed Tempered	≤ .15% C .15% - .45% C ≥ .45% C	125 150-250 300
Low alloyed steel	Annealed Tempered Tempered		180 250-300 350
High alloyed steel	Annealed Tempered		200 350
Corrosion-resistant steel	Annealed Tempered	ferritic martensitic	200 325
Material M	**Type of treatment**	**Alloy**	**Hardness HB**
Stainless steel	Annealed Quenched Quenched Hardened	ferritic / martensitic austenitic duplex martensitic / austenitic	200 180 230-260 330
Material K	**Type of treatment**	**Alloy**	**Hardness HB**
Gray cast iron		pearlitic / ferritic pearlitic / martensitic	180 260
Spheroidal cast iron		ferritic pearlitic	160 -
Malleable cast iron		ferritic pearlitic	130 230
Material N	**Type of treatment**	**Alloy**	**Hardness HB**
Aluminium wrought alloys	Non hardened Hardened		60 100
Aluminium cast alloys	Non hardened Hardened Non hardened	< 12% Si < 12% Si < 12% Si	80 90 130
Copper and copper alloys (bronze, brass)		machining alloy stock (1% Pb) brass, red bronze bronze lead-free copper and electrolytic copper	- 90 100 100
Non-metallic materials		thermosetting plastics fiber-reinforced plastics hard rubber	- - -
Material S	**Type of treatment**	**Alloy**	**Hardness HB**
Heat-resistant alloys	Annealed Hardened Annealed Hardened Cast	Fe-base Fe-base Ni or Co-base Ni or Co-base 30 - 58 HRC Ni or Co-base 1500 - 2200 N/mm^2	200 280 250 - -
Titanium alloys		pure titanium alpha + beta alloys	R_m 440* R_m 1050*
Material H	**Type of treatment**	**Alloy**	**Hardness HB**
Tempered steel	Hardened and tempered Hardened and tempered		55 HRC 60 HRC
Chilled castings	Cast		400
Tempered cast iron	Hardened and tempered		55 HRC

*** R_m = ultimate tensile strength, measured in MPa**

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	754-1476	853-1640	585-748	-	-	-	1312-1706
-	-	656-1115	722-1312	553-618	-	-	-	1148-1312
-	-	525-886	590-984	423-488	-	-	-	984-1148
-	-	656-1181	853-1312	553-618	-	-	-	1312-1440
-	-	492-951	656-1050	293-488	-	-	-	984-1180
-	-	426-853	492-918	228-423	-	-	-	820-984
-	-	492-951	590-1050	390-650	-	-	-	1017-1245
-	-	328-853	394-918	163-325	-	-	-	917-1312
-	-	525-951	656-1050	455-585	-	-	-	1148-1312
-	-	426-820	492-918	358-520	-	-	-	851-1017

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	-	722-984	455-650	140-200	492-656	423-715	820-1050
-	-	-	-	358-618	110-190	394-656	390-585	984-1148
-	-	-	-	260-488	80-150	294-525	163-293	-
-	-	-	-	179-244	55-75	197-263	-	689-820

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
394-525	455-656	492-1312	459-1214	-	-	394-525	-	1114-1573
294-458	328-525	590-1148	459-1082	-	-	294-425	-	853-1180
425-558	522-656	656-1476	623-1410	-	-	394-525	-	1181-1706
294-425	361-492	525-984	459-886	-	-	394-589	-	984-1312
458-656	525-722	656-1804	590-1706	-	-	458-722	-	1081-1640
394-525	458-589	525-1148	492-1082	-	-	361-525	-	589-1050

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
984-11480	984-9840	-	-	-	-	328-1968	-	-
656-6560	656-8200	-	-	-	-	328-1312	-	-
1312-4920	1312-6560	-	-	-	-	328-1968	-	-
1312-4920	1312-5904	-	-	-	-	328-1312	-	-
656-2624	656-3280	-	-	-	-	328-1312	-	-
820-1968	820-2624	-	-	-	-	328-1968	-	-
656-1968	656-2624	-	-	-	-	328-1968	-	-
492-1312	492-1968	-	-	-	-	328-1312	-	-
492-984	492-1312	-	-	-	-	328-1312	-	-
261-589	328-7216	-	-	-	-	-	-	-
197-492	263-656	-	-	-	-	-	-	-
328-820	328-656	-	-	-	-	-	-	-

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	115-164	-	-	-	-	66-164	260-390	-
-	82-130	-	-	-	-	66-164	195-325	-
-	82-130	-	-	-	-	48-130	114-293	-
-	66-97	-	-	-	-	66-115	98-163	-
-	48-82	-	-	-	-	33-82	98-146	-
-	261-458	-	-	-	-	261-455	228-390	-
-	130-328	-	-	-	-	82-145	130-228	-

Uncoated carbide		Coated carbide						Cermet
KM15	ZR10	TK15	TN15	TN30	TN35	TS15	TS20	NC25
V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)	V_c (sfpm)
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

Lever lock

Double lock

Top clamp

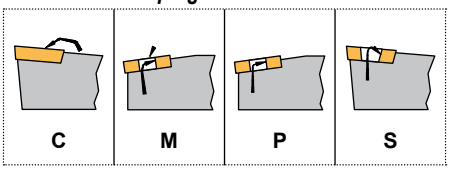
Center screw

CARTRIDGES

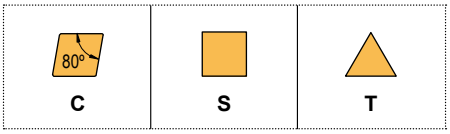
Code system (ISO)

P	C	L	N	R	16	CA	-	12
1	2	3	4	5	6	7		8

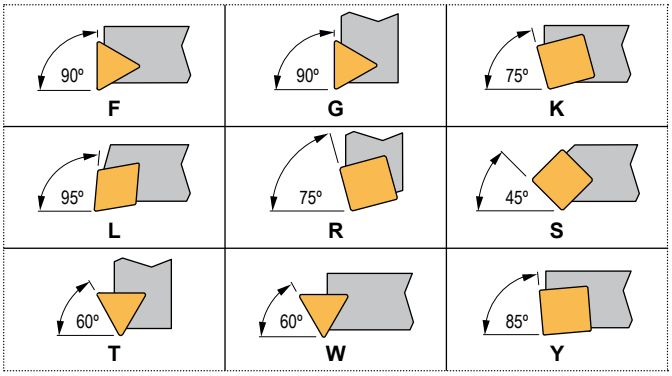
1 Clamping method of insert



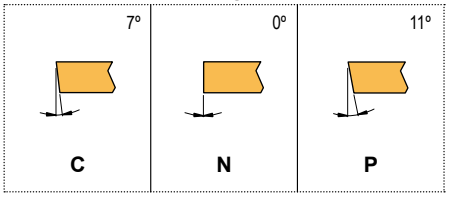
2 Insert shape



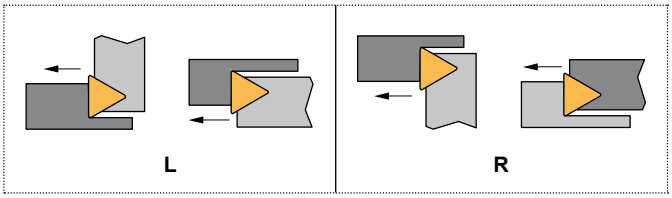
3 Holder style



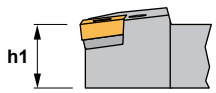
4 Clearance angle of insert



5 Hand

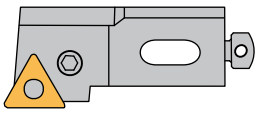


6 Cutting edge height



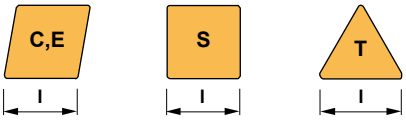
h1		
0.236	0.314	0.393
0.472	0.630	0.787
0.984		

7 Cartridge code



C	A
C (Cartridge)	A (ISO5611)

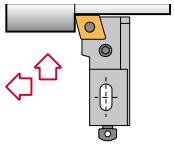
8 Cutting edge length



A

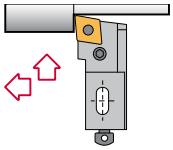
Lever lock cartridges

PCFN 90º



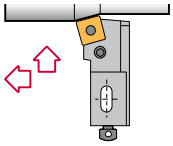
CN..43..
CN..54..
Page A191

PCLN 95º



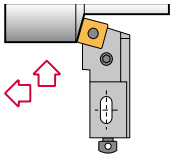
CN..43..
CN..54..
Page A191

PSKN 75º



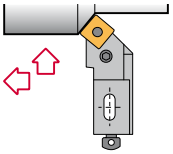
SNM..43..
SNM..54..
Page A192

PSRN 75º



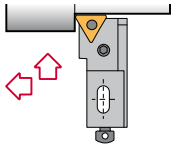
SNM..43..
Page A192

PSSN 45º



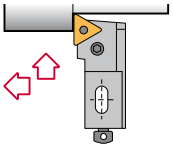
SNM..43..
Page A193

PTFN 90º



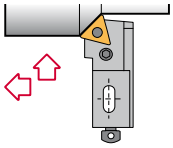
TNM..33..
TNM..43..
Page A193

PTGN 90º



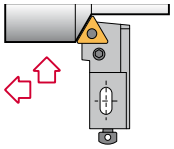
TNM..33..
TNM..43..
Page A194

PTSN 45º



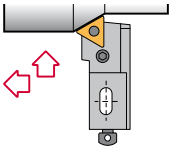
TNM..33..
TNM..43..
Page A194

PTTN 60º



TNM..33..
TNM..43..
Page A195

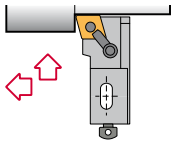
PTWN 30º



TNM..33..
TNM..43..
Page A195

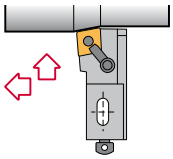
Double lock cartridges

MCFN 90º



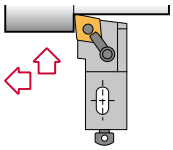
CN..32..
CN..43..
Page A196

MCKN 75º



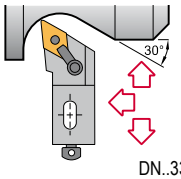
CN..32..
CN..43..
Page A196

MCLN 95º



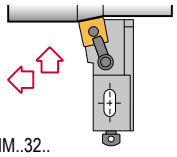
CN..32..
CN..43..
Page A197

MDJN 93º



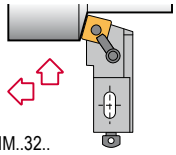
DN..33..
DN..43..
Page A197

MSKN 75º



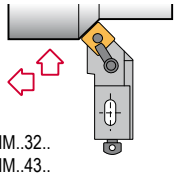
SNM..32..
SNM..43..
SNM..54..
Page A198

MSRN 75º



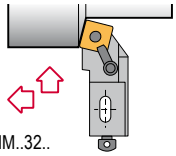
SNM..32..
SNM..43..
SNM..54..
Page A198

MSSN 45º



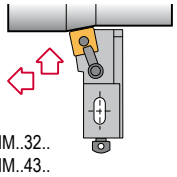
SNM..32..
SNM..43..
SNM..54..
Page A199

MSTN 60º



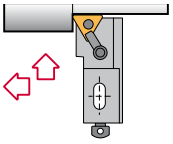
SNM..32..
SNM..43..
SNM..54..
Page A199

MSYN 85º



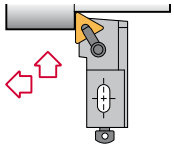
SNM..32..
SNM..43..
SNM..54..
Page A200

MTFN 90º



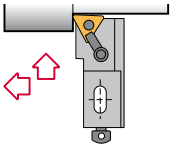
TNM..33..
TNM..43..
Page A200

MTGN 90º



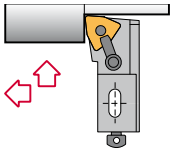
TNM..33..
TNM..43..
Page A201

MTUN 93º



TNM..33..
TNM..43..
Page A201

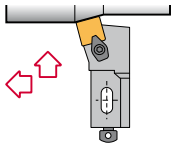
MWLN 95º



WNM..33..
WNM..43..
Page A202

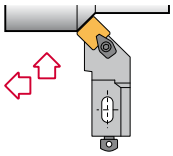
Top clamp cartridges

CSKP 75º



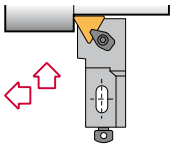
SP..32..
SP..42..
Page A203

CSSP 45º



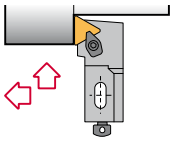
SP..32..
SP..42..
Page A203

CTFP 90º



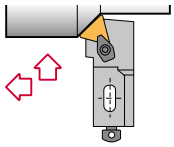
TP..22..
TP..32..
Page A204

CTGP 90º



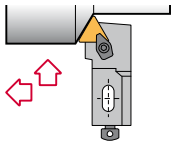
TP..22..
TP..32..
Page A204

CTSP 45º



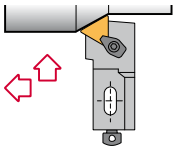
TP..22..
TP..32..
Page A205

CTTP 60º



TP..22..
TP..32..
Page A205

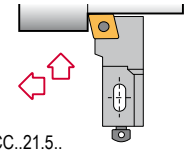
CTWP 30º



TP..22..
TP..32..
Page A206

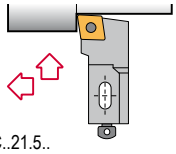
Center screw cartridges

SCFC 90º



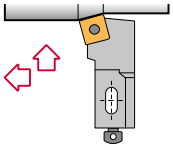
CC..21.5..
CC..32.5..
CC..43..
Page A207

SCLC 95º



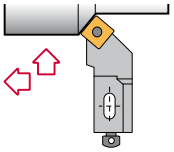
CC..21.5..
CC..32.5..
CC..43..
Page A207

SSKC 75º



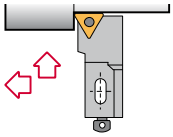
SC..32.5..
SC..43..
Page A208

SSSC 45º



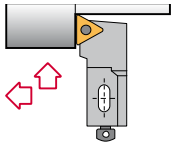
SC..32.5..
SC..43..
Page A208

STFC 90º



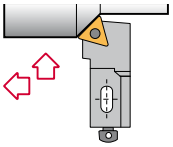
TC..21.5..
TC..32.5..
Page A209

STGC 90º



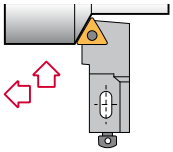
TC..21.5..
TC..32.5..
Page A209

STSC 45º



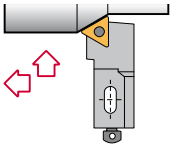
TC..21.5..
TC..32.5..
Page A210

STTC 60º



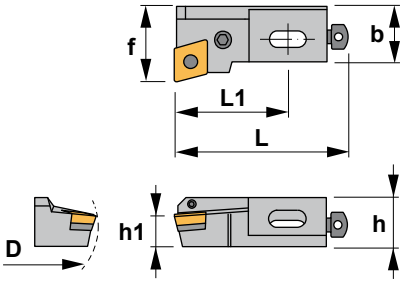
TC..21.5..
TC..32.5..
Page A210

STWC 60º



TC..21.5..
TC..32.5..
Page A211

Characteristics:
Cartridge equipped with rhombic negative inserts (angle 80°) and strong cutting edges.
Axial -6°
Radial -8°

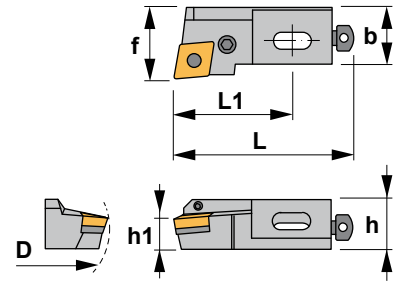


PCFN 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PCFNR/L16CA-12	2.362	0.984	0.630	2.480	1.496	0.984	0.787	CN..43..	0.308
PCFNR/L20CA-12	2.756	1.181	0.787	2.756	1.575	0.984	0.787	CN..43..	0.374
PCFNR/L25CA-16	3.937	1.378	0.985	3.937	1.967	1.260	0.984	CN..54..	0.836

Reference													Nm
PCFNR/L16CA-12	8312	1648	5003	3612	4112	1406	1505	0012	5025	2808	1808	5005	3.0
PCFNR/L20CA-12	8012	1608	5003	3612	4112	1406	1506	0012	5003	2808	1808	5005	3.0
PCFNR/L25CA-16	8016	1618	5003	3616	4115	1408	1508	0015	5004	2810	1810	5006	3.0

Characteristics:
Cartridge equipped with rhombic negative double-sided insert (angle 80°) with strong cutting edge.
Axial -8°
Radial -8°



PCLN 95°

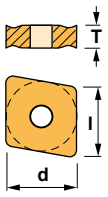
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PCLNR/L16CA-12	2.362	0.984	0.630	2.480	1.496	0.984	0.787	CN..43..	0.297
PCLNR/L20CA-12	2.756	1.181	0.787	2.756	1.575	0.984	0.787	CN..43..	0.352
PCLNR/L25CA-16	3.937	1.378	0.985	3.937	1.967	1.260	0.984	CN..54..	0.825

Reference													Nm
PCLNR/L16CA-12	8312	1648	5003	3612	4112	1406	1505	0012	5025	2808	1808	5005	3.0
PCLNR/L20CA-12	8012	1608	5003	3612	4112	1406	1506	0012	5003	2808	1808	5005	3.0
PCLNR/L25CA-16	8016	1618	5003	3616	4115	1408	1508	0015	5004	2810	1810	5006	3.0

CN..

80° rhombic negative inserts. A24-26

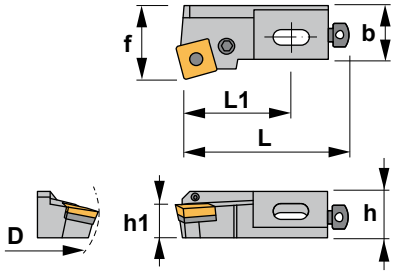
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.634	0.250	0.625



CNMG-CC	CNMG-FC	CNMG-MC	CNMG-MHC	CNMG-RC

More inserts: CNGP, CNMA, CNMG-KC, CNMG-FMC, CNMG-MFC, CNMG-TC, CNMM.

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -3.75°
Radial -9.25°

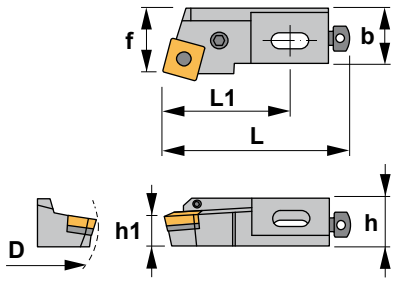


PSKN 75°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PSKNR/L12CA-12	1.969	0.787	0.472	2.165	1.378	0.787	0.630	SNMG43..	0.176
PSKNR/L16CA-12	2.362	0.984	0.630	2.480	1.496	0.984	0.787	SNMG43..	0.297
PSKNR/L20CA-12	2.756	1.181	0.787	2.756	1.575	0.984	0.787	SNMG43..	0.396
PSKNR/L25CA-15	3.937	1.378	0.985	3.937	1.967	1.260	0.984	SNMG54..	0.880

Reference													Nm
PSKNR/L12CA-12	8212	1626	5025	-	-	1405	1505	-	5025	2806	1806	5004	2.0
PSKNR/L16CA-12	8312	1648	5003	3512	4112	1406	1505	0012	5025	2808	1808	5005	3.0
PSKNR/L20CA-12	8012	1608	5003	3512	4112	1406	1506	0012	5003	2808	1808	5005	3.0
PSKNR/L25CA-15	8016	1618	5003	3515	4115	1408	1508	0015	5004	2810	1810	5006	3.0

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -11.25°
Radial -3.25°



PSRN 75°

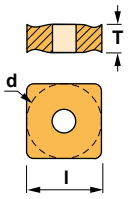
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PSRNR/L16CA-12	2.362	0.984	0.630	2.480	1.496	0.984	0.787	SNMG43..	0.297
PSRNR/L20CA-12	2.756	1.181	0.787	2.756	1.575	0.984	0.787	SNMG43..	0.396

Reference													Nm
PSRNR/L16CA-12	8312	1648	5003	3512	4112	1406	1505	0012	5025	2808	1808	5005	3.0
PSRNR/L20CA-12	8012	1608	5003	3512	4112	1406	1506	0012	5003	2808	1808	5005	3.0

SNMG..

Square negative inserts. A33-34

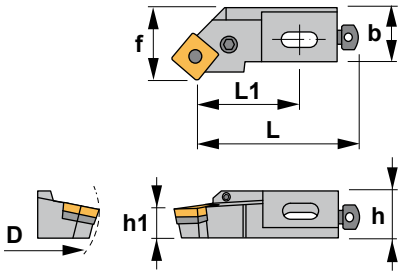
Reference	l	T	d
SNMG43..	0.500	0.187	0.500
SNMG54..	0.625	0.250	0.625



SNMG-KC | SNMG-FMC | SNMG-MHC

SNMG-RC | SNMG-TC

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -5°
Radial -9.25°

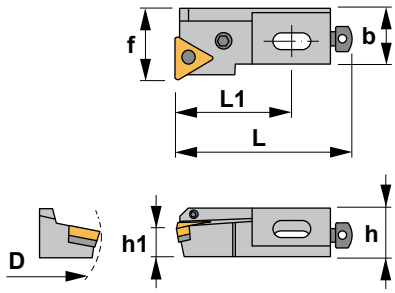


PSSN 45°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PSSNR/L12CA-12	1.969	0.787	0.472	1.850	1.063	0.787	0.630	SNMG43..	0.154
PSSNR/L16CA-12	2.362	0.984	0.630	2.087	1.102	0.984	0.787	SNMG43..	0.242
PSSNR/L20CA-12	2.756	1.181	0.787	2.362	1.181	0.984	0.787	SNMG43..	0.308

Reference												Nm
PSSNR/L12CA-12	8212	1626	5025	-	-	1405	1505	-	5025	2806	1806	5004	2.0
PSSNR/L16CA-12	8312	1648	5003	3512	4112	1406	1505	0012	5025	2808	1808	5005	3.0
PSSNR/L20CA-12	8012	1608	5003	3512	4112	1406	1506	0012	5003	2808	1808	5005	3.0

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -9°



PTFN 90°

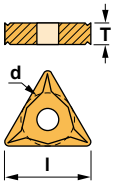
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PTFNR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.176
PTFNR/L16CA-16	2.362	0.984	0.630	2.480	1.496	0.984	0.787	TNMG33..	0.264
PTFNR/L20CA-22	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.352
PTFNR/L25CA-22	3.937	1.378	0.985	3.937	1.967	1.260	0.984	TNMG43..	0.880

Reference												Nm
PTFNR/L12CA-16	8216	1605	5002	-	-	1405	1505	-	5025	2806	1806	5004	1.4
PTFNR/L16CA-16	8009	1606	5025	3416	4109	1406	1505	0009	5025	2808	1808	5005	2.0
PTFNR/L20CA-22	8012	1608	5003	3422	4112	1406	1506	0012	5003	2808	1808	5005	3.0
PTFNR/L25CA-22	8012	1608	5003	3422	4112	1408	1508	0012	5004	2810	1810	5006	3.0

TNMG..

Triangular negative inserts. A37-38

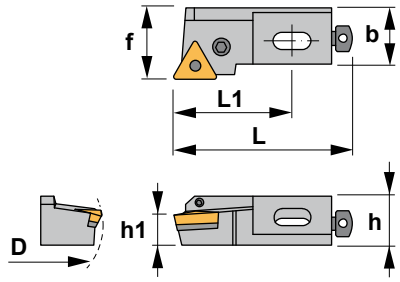
Reference	l	T	d
TNMG33..	0.650	0.187	0.375
TNMG43..	0.866	0.187	0.500



TNMG-FC	TNMG-MC
	

More inserts: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -6°
Radial -10°

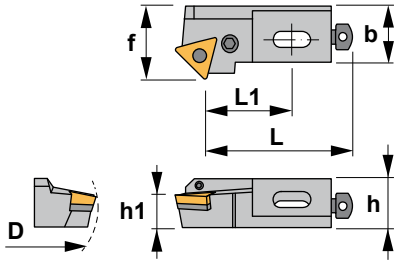


PTGN 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PTGNR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.176
PTGNR/L16CA-16	2.362	0.984	0.630	2.480	1.496	0.984	0.787	TNMG33..	0.264
PTGNR/L20CA-22	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.352

Reference													Nm
PTGNR/L12CA-16	8216	1605	5002	-	-	1405	1505	-	5025	2806	1806	5004	1.4
PTGNR/L16CA-16	8009	1606	5025	3416	4109	1406	1505	0009	5025	2808	1808	5005	2.0
PTGNR/L20CA-22	8012	1608	5003	3422	4112	1406	1506	0012	5003	2808	1808	5005	3.0

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -5°
Radial -9.25°



PTSN 45°

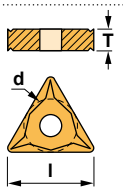
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PTSNR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.154
PTSNR/L16CA-16	2.362	0.984	0.630	2.480	1.496	0.984	0.787	TNMG33..	0.286
PTSNR/L20CA-22	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.353
PTSNR/L25CA-22	3.937	1.378	0.985	3.937	1.967	1.260	0.984	TNMG43..	0.726

Reference													Nm
PTSNR/L12CA-16	8216	1605	5002	-	-	1405	1505	-	5025	2806	1806	5004	1.4
PTSNR/L16CA-16	8009	1606	5025	3416	4109	1406	1505	0009	5025	2808	1808	5005	2.0
PTSNR/L20CA-22	8012	1608	5003	3422	4112	1406	1506	0012	5003	2808	1808	5005	3.0
PTSNR/L25CA-22	8012	1608	5003	3422	4112	1408	1508	0012	5004	2810	1810	5006	3.0

TNMG..

Triangular negative inserts. A37-38

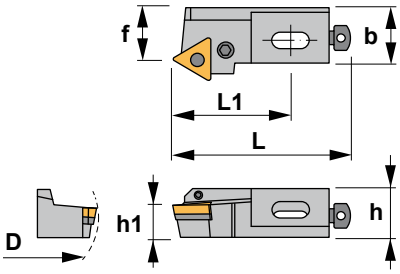
Reference	l	T	d
TNMG33..	0.650	0.187	0.375
TNMG43..	0.866	0.187	0.500



TNMG-FC	TNMG-MC
	

More inserts: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -3.25°
Radial -9.75°

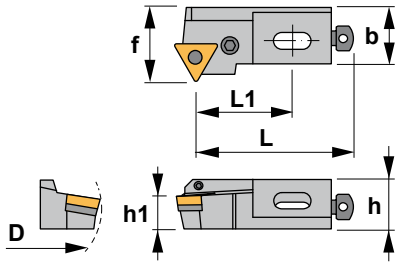


PTTN 60°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PTTNR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.512	0.630	TNMG33..	0.297
PTTNR/L16CA-16	2.362	0.984	0.630	2.480	1.496	0.591	0.787	TNMG33..	0.264
PTTNR/L20CA-22	2.756	1.181	0.787	2.756	1.575	0.591	0.787	TNMG43..	0.352

Reference		Nm
PTTNR/L12CA-16	8216 1605 5002 - - 1405 1505 - 5025 2806 1806 5004	1.4
PTTNR/L16CA-16	8009 1606 5025 3416 4109 1406 1505 0009 5025 2808 1808 5005	2.0
PTTNR/L20CA-22	8012 1608 5003 3422 4112 1406 1506 0012 5003 2808 1808 5005	3.0

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -3°
Radial -8.75°



PTWN 30°

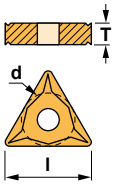
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
PTWNR/L12CA-16	1.969	0.787	0.472	2.165	1.063	0.787	0.630	TNMG33..	0.176
PTWNR/L16CA-16	2.362	0.984	0.630	2.480	1.102	0.984	0.787	TNMG33..	0.286
PTWNR/L20CA-22	2.756	1.181	0.787	2.756	1.181	0.984	0.787	TNMG43..	0.363

Reference		Nm
PTWNR/L12CA-16	8216 1605 5002 - - 1405 1505 - 5025 2806 1806 5004	1.4
PTWNR/L16CA-16	8009 1606 5025 3416 4109 1406 1505 0009 5025 2808 1808 5005	2.0
PTWNR/L20CA-22	8012 1608 5003 3422 4112 1406 1506 0012 5003 2808 1808 5005	3.0

TNMG..

Triangular negative inserts. A37-38

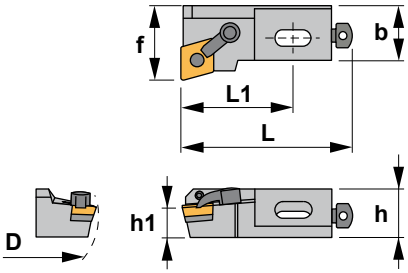
Reference	l	T	d
TNMG33..	0.650	0.187	0.375
TNMG43..	0.866	0.187	0.500



TNMG-FC	TNMG-MC
	

More inserts: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.

Characteristics:
Cartridge equipped with rhombic negative inserts and strong cutting edges.
Axial -5º
Radial -9º

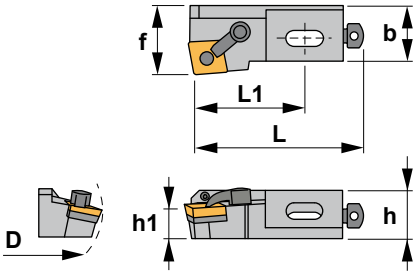


MCFN 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MCFNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	CN..32..	0.175
MCFNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	CN..43..	0.300
MCFNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	CN..43..	0.400
MCFNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	CN..43..	0.900

Reference										Nm
MCFNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MCFNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MCFNR/L16CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46S	5124	1406	1505	5025	3.5
MCFNR/L20CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46	5025	1406	1506	5003	3.5

Characteristics:
Cartridge equipped with rhombic negative inserts and strong cutting edges.
Axial -5º
Radial -9º



MCKN 75°

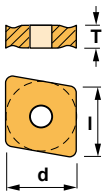
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MCKNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	CN..32..	0.175
MCKNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	CN..43..	0.300
MCKNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	CN..43..	0.400
MCKNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	CN..43..	0.900

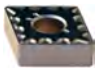
Reference										Nm
MCKNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MCKNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MCKNR/L16CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46S	5124	1406	1505	5025	3.5
MCKNR/L20CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46	5025	1406	1506	5003	3.5

CN..

80º rhombic negative inserts. A24-26

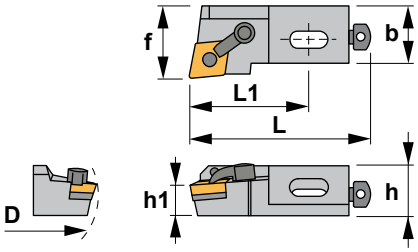
Reference	l	T	d
CN..32..	0.379	0.125	0.375
CN..43..	0.508	0.187	0.500



CNMG-CC	CNMG-FC	CNMG-MC	CNMG-MHC	CNMG-RC
				

More inserts: CNGP, CNMA, CNMG-KC, CNMG-FMC, CNMG-MFC, CNMG-TC, CNMM.

Characteristics:
Cartridge equipped with rhombic negative double-sided inserts and strong cutting edges.
Axial -5°
Radial -9°



MCLN 95°

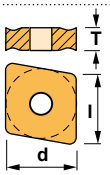
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MCLNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	CN..32..	0.175
MCLNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	CN..43..	0.300
MCLNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	CN..43..	0.400
MCLNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	CN..43..	0.900

Reference										Nm
MCLNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MCLNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MCLNR/L16CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46S	5124	1406	1505	5025	3.5
MCLNR/L20CA-4C	CL-6	XNS-36	5124	ICSN-432	NL-46	5025	1406	1506	5003	3.5

CN..

80° rhombic negative inserts. A24-26

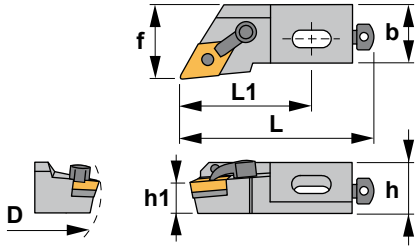
Reference	l	T	d
CN..32..	0.379	0.125	0.375
CN..43..	0.508	0.187	0.500



CNMG-CC | CNMG-FC | CNMG-MC | CNMG-MHC | CNMG-RC

More inserts: CNGP, CNMA, CNMG-KC, CNMG-FMC, CNMG-MFC, CNMG-TC, CNMM.

Characteristics:
Cartridge equipped with rhombic negative double-sided inserts and strong cutting edges.
Axial -9°
Radial -9°



MDJN 93°

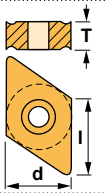
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MDJNR/L12CA-3C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	DN..33..	0.175
MDJNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	DN..43..	0.300
MDJNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	DN..43..	0.400

Reference										Nm
MDJNR/L12CA-3C	CL-6	XNS-36	5124	-	NL-34L	5102	1405	1505	5025	3.5
MDJNR/L16CA-4C	CL-6	XNS-36	5124	IDSN-432	NL-46S	5124	1406	1505	5025	3.5
MDJNR/L20CA-4C	CL-20	XNS-48	5103	IDSN-432	NL-46	5025	1406	1506	5003	3.0

DN..

55° rhombic negative inserts. A28-30

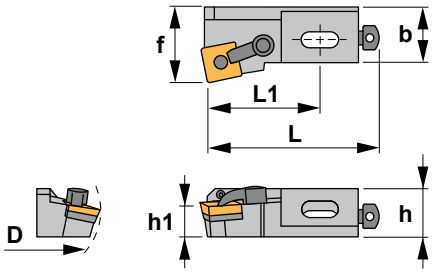
Reference	l	T	d
DN..33..	0.457	0.187	0.375
DN..43..	0.610	0.187	0.500



DNMG-FC | DNMG-FMC | DNMG-KC | DNMG-MC | DNMG-MFC

More inserts: DNMG-MHC, DNMG-TC, DNMX.

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -5º
Radial -9º

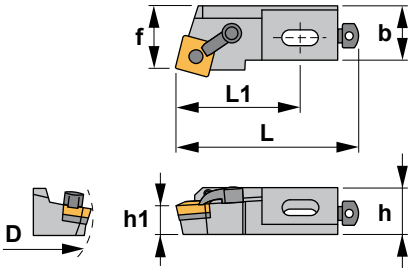


MSKN 75°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MSKNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	SNMG32..	0.175
MSKNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	SNMG43..	0.300
MSKNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	SNMG43..	0.400
MSKNR/L20CA-5C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	SNMG54..	0.900

Reference										Nm
MSKNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MSKNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MSKNR/L16CA-4C	CL-6	XNS-36	5124	ISSN-432	NL-46S	5124	1406	1505	5025	3.5
MSKNR/L20CA-5C	CL-20	XNS-48	5103	ISSN-533	NL-58	5103	1406	1506	5003	3.0

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -11.25º
Radial -3.25º



MSRN 75°

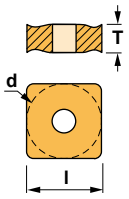
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MSRNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	SNMG32..	0.175
MSRNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	SNMG43..	0.300
MSRNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	SNMG43..	0.400
MSRNR/L20CA-5C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	SNMG54..	0.900

Reference										Nm
MSRNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MSRNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MSRNR/L16CA-4C	CL-6	XNS-36	5124	ISSN-432	NL-46S	5124	1406	1505	5025	3.5
MSRNR/L20CA-5C	CL-20	XNS-48	5103	ISSN-533	NL-58S	5103	1406	1506	5003	3.0

SNMG..

Square negative inserts. A33-34

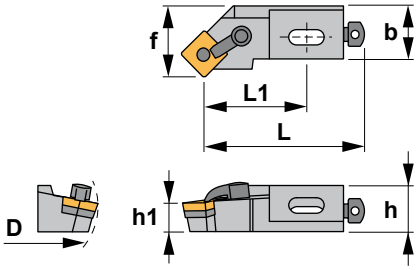
Reference	l	T	d
SNMG32..	0.375	0.125	0.375
SNMG43..	0.500	0.187	0.500
SNMG54..	0.625	0.250	0.625



SNMG-KC | SNMG-FMC | SNMG-MHC

SNMG-RC | SNMG-TC

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -5°
Radial -9°

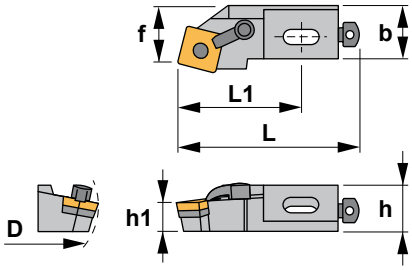


MSSN 45°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MSSNR/L10CA-3C	1.575	0.591	0.393	1.732	0.945	0.551	0.433	SNMG32..	0.175
MSSNR/L12CA-4C	1.969	0.787	0.472	1.850	1.063	0.787	0.630	SNMG43..	0.300
MSSNR/L16CA-4C	2.362	0.984	0.630	2.087	1.102	0.984	0.787	SNMG43..	0.400
MSSNR/L20CA-5C	2.756	1.181	0.787	2.362	1.181	0.984	0.787	SNMG54..	0.900

Reference										Nm
MSSNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MSSNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MSSNR/L16CA-4C	CL-6	XNS-36	5124	ISSN-432	NL-46S	5124	1406	1505	5025	3.5
MSSNR/L20CA-5C	CL-20	XNS-48	5103	ISSN-533	NL-58	5103	1406	1506	5003	3.0

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -5°
Radial -9°



MSTN 60°

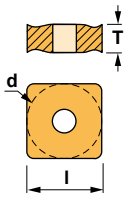
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MSTNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.354	0.433	SNMG32..	0.175
MSTNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.512	0.630	SNMG43..	0.300
MSTNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.590	0.787	SNMG43..	0.400
MSTNR/L20CA-5C	2.756	1.181	0.787	2.756	1.575	0.590	0.787	SNMG54..	0.900

Reference										Nm
MSTNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MSTNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MSTNR/L16CA-4C	CL-6	XNS-36	5124	ISSN-432	NL-46S	5124	1406	1505	5025	3.5
MSTNR/L20CA-5C	CL-20	XNS-48	5103	ISSN-533	NL-58	5103	1406	1506	5003	3.0

SNMG..

Square negative inserts. A33-34

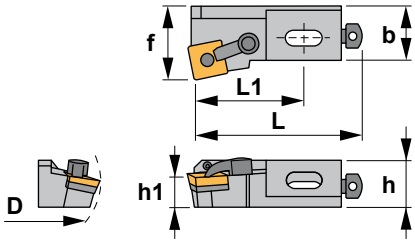
Reference	l	T	d
SNMG32..	0.375	0.125	0.375
SNMG43..	0.500	0.187	0.500
SNMG54..	0.625	0.250	0.625



SNMG-KC | SNMG-FMC | SNMG-MHC

SNMG-RC | SNMG-TC

Characteristics:
Cartridge equipped with square negative inserts and strong cutting edges.
Axial -5º
Radial -9º



MSYN 85°

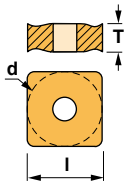
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MSYNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	SNMG32..	0.175
MSYNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	SNMG43..	0.300
MSYNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	SNMG43..	0.400
MSYNR/L20CA-5C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	SNMG54..	0.900

Reference										Nm
MSYNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33	5102	1405	1504	5002	3.5
MSYNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MSYNR/L16CA-4C	CL-6	XNS-36	5124	ISSN-432	NL-46S	5124	1406	1505	5025	3.5
MSYNR/L20CA-5C	CL-20	XNS-48	5103	ISSN-533	NL-58	5103	1406	1506	5003	3.0

SNMG..

Square negative inserts. A33-34

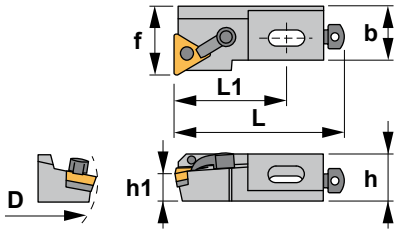
Reference	l	T	d
SNMG32..	0.375	0.156	0.375
SNMG43..	0.500	0.187	0.500
SNMG54..	0.625	0.250	0.625



SNMG-KC SNMG-FMC SNMG-MHC

SNMG-RC SNMG-TC

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -5º
Radial -9º



MTFN 90°

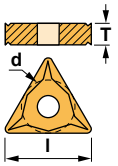
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MTFNR/L12CA-3C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.175
MTFNR/L16CA-3C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	TNMG33..	0.300
MTFNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.400

Reference										Nm
MTFNR/L12CA-3C	CL-6	XNS-36	5124	-	NL-33L	5102	1405	1505	5025	3.5
MTFNR/L16CA-3C	CL-6	XNS-36	5124	ITSN-322	NL-34L	5102	1406	1505	5025	3.5
MTFNR/L20CA-4C	CL-20	XNS-48	5103	ITSN-433	NL-46	5025	1406	1506	5003	3.0

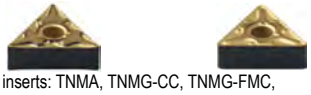
TNMG..

Triangular negative inserts. A37-38

Reference	l	T	d
TNMG33..	0.650	0.187	0.375
TNMG43..	0.866	0.187	0.500

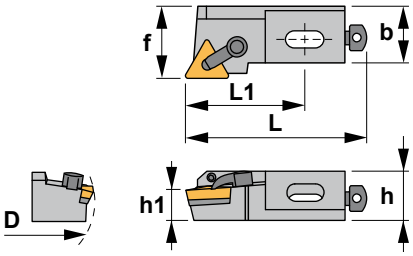


TNMG-FC TNMG-MC



More inserts: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -5°
Radial -9°

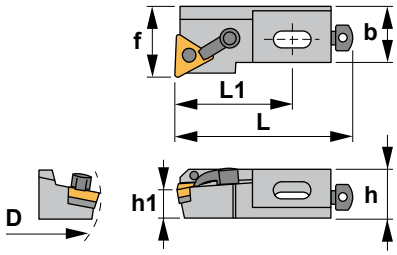


MTGN 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MTGNR/L12CA-3C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.175
MTGNR/L16CA-3C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	TNMG33..	0.300
MTGNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.400

Reference										Nm
MTGNR/L12CA-3C	CL-6	XNS-36	5124	-	NL-33L	5102	1405	1505	5025	3.5
MTGNR/L16CA-3C	CL-6	XNS-36	5124	ITSN-322	NL-34L	5102	1406	1505	5025	3.5
MTGNR/L20CA-4C	CL-20	XNS-48	5103	ITSN-433	NL-46	5025	1406	1506	5003	3.0

Characteristics:
Cartridge equipped with triangular negative inserts and strong cutting edges.
Axial -5°
Radial -9°



MTUN 93°

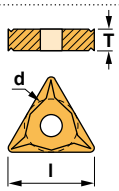
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MTUNR/L12CA-3C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TNMG33..	0.175
MTUNR/L16CA-3C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	TNMG33..	0.300
MTUNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	TNMG43..	0.400

Reference										Nm
MTUNR/L12CA-3C	CL-6	XNS-36	5124	-	NL-33L	5102	1405	1505	5025	3.5
MTUNR/L16CA-3C	CL-6	XNS-36	5124	ITSN-322	NL-34L	5102	1406	1505	5025	3.5
MTUNR/L20CA-4C	CL-20	XNS-48	5103	ITSN-433	NL-46	5025	1406	1506	5003	3.0

TNMG..

Triangular negative inserts. A37-38

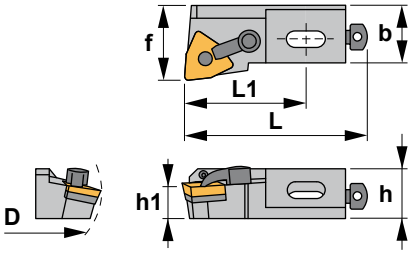
Reference	I	T	d
TNMG33..	0.650	0.187	0.375
TNMG43..	0.866	0.187	0.500



TNMG-FC	TNMG-MC
	

More inserts: TNMA, TNMG-CC, TNMG-FMC, TNMG-KC, TNMG-MFC, TNMG-MHC, TNMG-TC, TNMX.

Characteristics:
Cartridge equipped with trigon negative inserts and strong cutting edges.
Axial -5º
Radial -9º



MWLN 95°

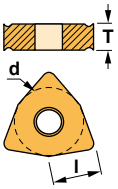
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
MWLNR/L10CA-3C	1.575	0.591	0.393	1.969	1.181	0.551	0.433	WNMG33..	0.175
MWLNR/L12CA-4C	1.969	0.787	0.472	2.165	1.378	0.787	0.630	WNMG43..	0.300
MWLNR/L16CA-4C	2.362	0.984	0.630	2.480	1.497	0.984	0.787	WNMG43..	0.400
MWLNR/L20CA-4C	2.756	1.181	0.787	2.756	1.575	0.984	0.787	WNMG43..	0.900

Reference										Nm
MWLNR/L10CA-3C	CL-6	XNS-34	5124	-	NL-33L	5102	1405	1504	5002	3.5
MWLNR/L12CA-4C	CL-6	XNS-36	5124	-	NL-44	5124	1405	1505	5025	3.5
MWLNR/L16CA-4C	CL-6	XNS-36	5124	IWSN-433	NL-46S	5124	1406	1505	5025	3.5
MWLNR/L20CA-4C	CL-6	XNS-36	5124	IWSN-433	NL-46	5025	1406	1506	5003	3.5

WNMG..

80º trigon negative inserts. A42-43

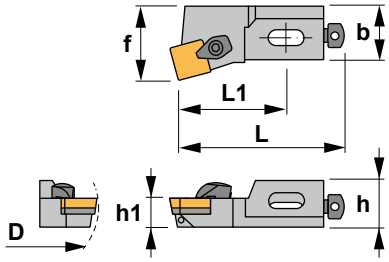
Reference	l	T	d
WNMG33..	0.254	0.187	0.375
WNMG43..	0.320	0.187	0.500



WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC	WNMG-MC
				

More inserts: WNMG-MHC, WNMG-TC.

Characteristics:
Cartridge equipped with square positive inserts and strong cutting edges.
Axial 5.75°
Radial 1.50°

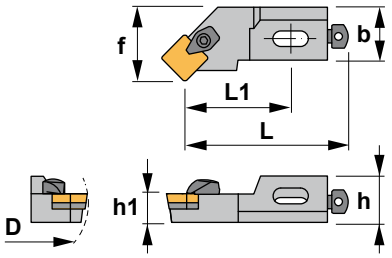


CSKP 75°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CSKPR/L10CA-09	1.575	0.591	0.393	1.969	1.181	0.551	0.433	SP..32..	0.077
CSKPR/L12CA-12	1.969	0.787	0.472	2.165	1.378	0.787	0.630	SP..42..	0.165
CSKPR/L16CA-12	2.165	0.984	0.630	2.480	1.497	0.984	0.787	SP..42..	0.275

Reference											Nm
CSKPR/L10CA-09	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CSKPR/L12CA-12	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CSKPR/L16CA-12	2305	5003	3112	4002	1406	1505	5025	2808	1808	5005	3.0

Characteristics:
Cartridge equipped with square positive inserts and strong cutting edges.
Axial 3.5°
Radial 3.5°



CSSP 45°

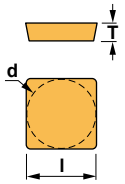
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CSSPR/L10CA-09	1.575	0.591	0.393	1.732	0.945	0.551	0.433	SP..32..	0.077
CSSPR/L12CA-12	1.969	0.787	0.472	1.850	1.063	0.787	0.630	SP..42..	0.143
CSSPR/L16CA-12	2.165	0.984	0.630	2.087	1.102	0.984	0.787	SP..42..	0.198

Reference											Nm
CSSPR/L10CA-09	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CSSPR/L12CA-12	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CSSPR/L16CA-12	2305	5003	3112	4002	1406	1505	5025	2808	1808	5005	3.0

SP..

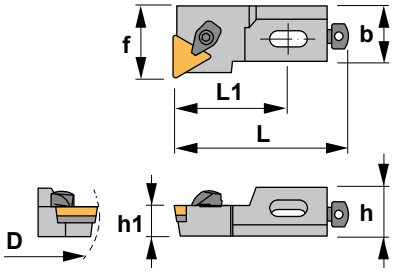
Square positive inserts with 11° clearance. A35

Reference	l	T	d
SP..32..	0.375	0.125	0.375
SP..42..	0.500	0.125	0.500



SPMR	SPUN
	

Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 6º
Radial 0º

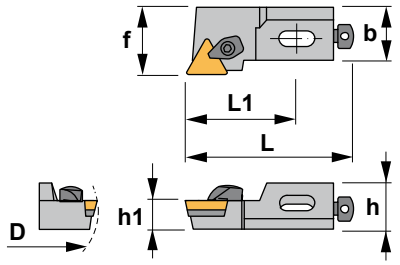


CTFP 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CTFPR/L10CA-11	1.575	0.591	0.393	1.969	1.181	0.551	0.433	TP..22..	0.077
CTFPR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TP..32..	0.176
CTFPR/L16CA-16	2.165	0.984	0.630	2.480	1.497	0.984	0.787	TP..32..	0.264

Reference											Nm
CTFPR/L10CA-11	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CTFPR/L12CA-16	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CTFPR/L16CA-16	2305	5003	3116	4002	1406	1505	5025	2808	1808	5005	3.0

Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 0º
Radial 4º



CTGP 90°

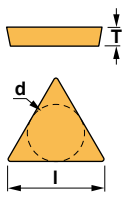
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CTGPR/L10CA-11	1.575	0.591	0.393	1.969	1.181	0.551	0.433	TP..22..	0.077
CTGPR/L12CA-16	1.969	0.787	0.472	2.165	1.378	0.787	0.630	TP..32..	0.154
CTGPR/L16CA-16	2.362	0.984	0.630	2.480	1.497	0.984	0.787	TP..32..	0.253

Reference											Nm
CTGPR/L10CA-11	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CTGPR/L12CA-16	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CTGPR/L16CA-16	2305	5003	3116	4002	1406	1505	5025	2808	1808	5005	3.0

TP..

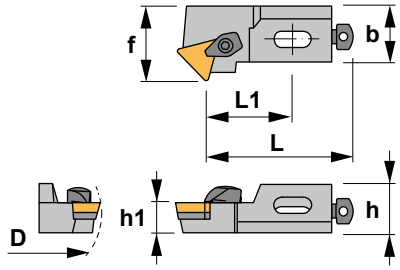
Triangular positive inserts with 11º clearance. A39

Reference	I	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375



TPMN	TPMR	TPUN	TPUX R/L

Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 2.75º
Radial 2.75º

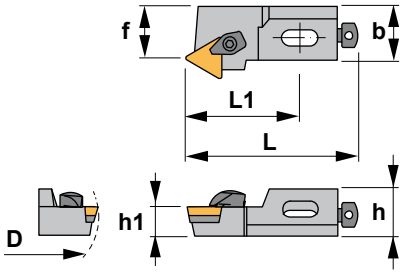


CTSP 45°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CTSPR/L10CA-11	1.575	0.591	0.393	1.732	0.945	0.551	0.433	TP..22..	0.077
CTSPR/L12CA-16	1.969	0.787	0.472	1.063	1.063	0.787	0.630	TP..32..	0.165
CTSPR/L16CA-16	2.165	0.984	0.630	2.087	1.102	0.984	0.787	TP..32..	0.308

Reference											Nm
CTSPR/L10CA-11	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CTSPR/L12CA-16	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CTSPR/L16CA-16	2305	5003	3116	4002	1406	1505	5025	2808	1808	5005	3.0

Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 2.5º
Radial 4.3º



CTTP 60°

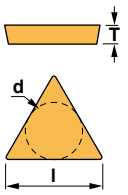
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CTTPR/L10CA-11	1.575	0.591	0.393	1.969	1.181	0.354	0.433	TP..22..	0.088
CTTPR/L12CA-16	1.969	0.787	0.472	2.165	1.380	0.512	0.630	TP..32..	0.165
CTTPR/L16CA-16	2.165	0.984	0.630	2.480	1.496	0.591	0.787	TP..32..	0.253

Reference											Nm
CTTPR/L10CA-11	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CTTPR/L12CA-16	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CTTPR/L16CA-16	2305	5003	3116	4002	1406	1505	5025	2808	1808	5005	3.0

TP..

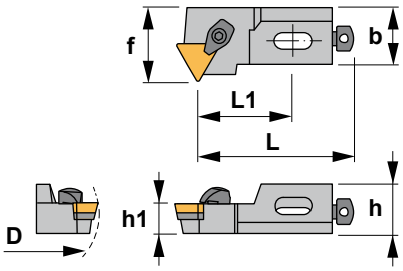
Triangular positive inserts with 11º clearance. A39

Reference	I	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375



TPMN	TPMR	TPUN	TPUX R/L

Characteristics:
Cartridge equipped with triangular positive inserts and strong cutting edges.
Axial 5.25°
Radial 3°



CTWP 30°

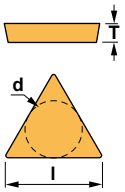
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
CTWPR/L10CA-11	1.575	0.591	0.393	1.732	0.945	0.551	0.433	TP..22..	0.077
CTWPR/L12CA-16	1.969	0.787	0.472	1.850	1.063	0.787	0.630	TP..32..	0.143
CTWPR/L16CA-16	2.165	0.984	0.630	2.087	1.102	0.984	0.787	TP..32..	0.231

Reference											Nm
CTWPR/L10CA-11	2304	5025	-	-	1405	1504	5002	2806	1816	5004	2.0
CTWPR/L12CA-16	2305	5003	-	-	1405	1505	5025	2806	1806	5004	3.0
CTWPR/L16CA-16	2305	5003	3116	4002	1406	1505	5025	2808	1808	5005	3.0

TP..

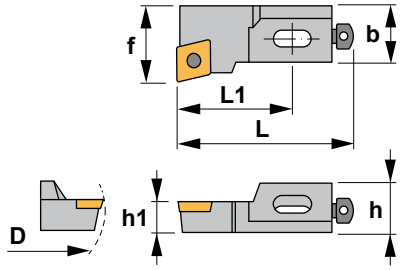
Triangular positive inserts with 11° clearance. A39

Reference	l	T	d
TP..22..	0.433	0.125	0.250
TP..32..	0.650	0.125	0.375



TPMN	TPMR	TPUN	TPUX R/L
			

Characteristics:
Cartridge equipped with rhombic positive insert (angle 80°).
Axial 0°
Radial 0°

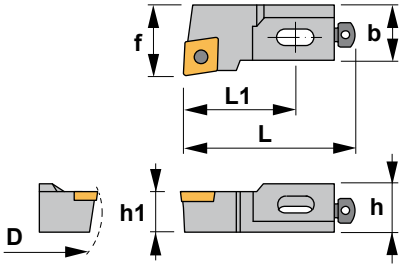


SCFC 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
SCFCR/L06CA-06	0.315	0.236	0.236	0.984	0.531	0.394	0.196	CC..21.5..	0.011
SCFCR/L08CA-06	0.433	0.315	0.315	1.063	0.590	0.394	0.295	CC..21.5..	0.022
SCFCR/L10CA-09	1.181	0.551	0.394	1.653	0.945	0.551	0.394	CC..32.5..	0.066
SCFCR/L12CA-12	1.575	0.630	0.472	1.850	0.984	0.787	0.551	CC..43..	0.132

Reference									Nm
SCFCR/L06CA-06	1425	5507	1403	1503	5015	2803	1803	5002	0.9
SCFCR/L08CA-06	1425	5507	1404	1503	5015	2804	1804	5025	0.9
SCFCR/L10CA-09	1440	5515	1405	1504	5002	2806	1806	5004	3.0
SCFCR/L12CA-12	1250	5520	1405	1505	5025	2806	1806	5004	4.0

Characteristics:
Cartridge equipped with rhombic positive insert (angle 80°).
Axial 0°
Radial 0°



SCLC 95°

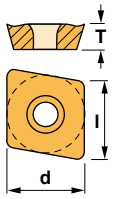
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
SCLCR/L06CA-06	0.315	0.236	0.236	0.984	0.531	0.394	0.196	CC..21.5..	0.011
SCLCR/L08CA-06	0.433	0.315	0.315	1.063	0.590	0.394	0.295	CC..21.5..	0.022
SCLCR/L10CA-09	1.181	0.551	0.394	1.653	0.945	0.551	0.394	CC..32.5..	0.066
SCLCR/L12CA-12	1.575	0.630	0.472	1.850	0.984	0.787	0.551	CC..43..	0.132

Reference									Nm
SCLCR/L06CA-06	1425	5507	1403	1503	5015	2803	1803	5002	0.9
SCLCR/L08CA-06	1425	5507	1404	1503	5015	2804	1804	5025	0.9
SCLCR/L10CA-09	1440	5515	1405	1504	5002	2806	1806	5004	3.0
SCLCR/L12CA-12	1250	5520	1405	1505	5025	2806	1806	5004	4.0

CC..

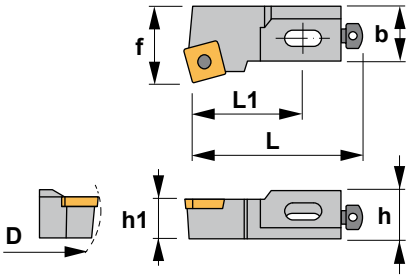
80° rhombic positive inserts with 7° clearance. A23

Reference	l	T	d
CC..21.5..	0.254	0.094	0.250
CC..32.5..	0.380	0.156	0.375
CC..43..	0.508	0.187	0.500



CCGT-AL CCGT-AP CCMT CCMW

Characteristics:
Cartridge equipped with square positive inserts.
Axial -1°
Radial -3.75°

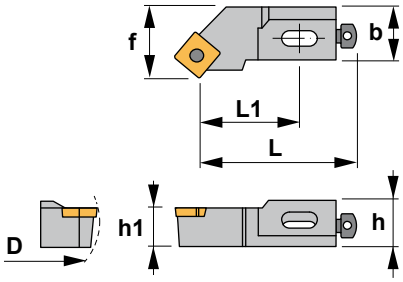


SSKC 75°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
SSKCR/L10CA-09	1.181	0.551	0.394	1.969	1.181	0.551	0.394	SC..32.5..	0.066
SSKCR/L12CA-12	1.575	0.630	0.472	2.165	2.165	0.787	0.551	SC..43..	0.143
SSKCR/L16CA-12	1.969	0.787	0.630	2.480	2.480	0.984	0.689	SC..43..	0.253

Reference									Nm
SSKCR/L10CA-09	1440	5515	1405	1504	5002	2806	1816	5004	3.0
SSKCR/L12CA-12	1250	5520	1405	1505	5025	2806	1806	5004	4.0
SSKCR/L16CA-12	1250	5520	1406	1505	5025	2808	1808	5005	4.0

Characteristics:
Cartridge equipped with square positive inserts.
Axial -3.5°
Radial -3.5°



SSSC 45°

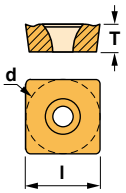
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
SSSCR/L10CA-09	1.181	0.551	0.394	1.732	0.945	0.551	0.394	SC..32.5..	0.066
SSSCR/L12CA-12	1.575	0.630	0.472	1.850	1.063	0.787	0.551	SC..43..	0.121
SSSCR/L16CA-12	1.969	0.787	0.630	2.087	1.102	0.984	0.689	SC..43..	0.198

Reference									Nm
SSSCR/L10CA-09	1440	5515	1405	1504	5002	2806	1816	5004	3.0
SSSCR/L12CA-12	1250	5520	1405	1505	5025	2806	1806	5004	4.0
SSSCR/L16CA-12	1250	5520	1406	1505	5025	2808	1808	5005	4.0

SC..

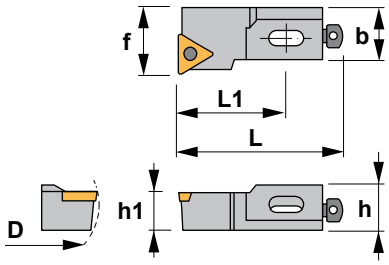
Square positive inserts with 7° clearance. A32

Reference	l	T	d
SC..32.5..	0.375	0.156	0.375
SC..43..	0.500	0.187	0.500



SCGT-AL	SCMT	SCMT-39	SCMW
			

Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial 0°

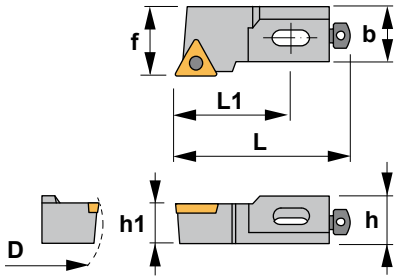


STFC 90°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
STFCR/L08CA-11	0.984	0.433	0.315	1.417	0.591	0.433	0.295	TC..21.5..	0.022
STFCR/L10CA-11	1.181	0.551	0.394	1.969	1.181	0.551	0.394	TC..21.5..	0.077
STFCR/L12CA-16	1.575	0.630	0.472	2.165	1.378	0.787	0.551	TC..32.5..	0.143
STFCR/L16CA-16	1.969	0.787	0.630	2.480	1.496	0.984	0.689	TC..32.5..	0.275

Reference									Nm
STFCR/L08CA-11	1225	5507	1404	1503	5015	2804	1804	5025	0.9
STFCR/L10CA-11	1225	5507	1405	1504	5002	2806	1816	5004	0.9
STFCR/L12CA-16	1240	5515	1405	1505	5025	2806	1806	5004	3.0
STFCR/L16CA-16	1240	5515	1406	1505	5025	2808	1808	5005	3.0

Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial -3°



STGC 90°

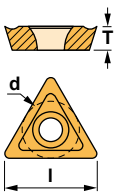
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
STGCR/L10CA-11	1.181	0.551	0.394	1.969	1.181	0.551	0.394	TC..21.5..	0.077
STGCR/L12CA-16	1.575	0.630	0.472	2.165	1.378	0.787	0.551	TC..32.5..	0.143
STGCR/L16CA-16	1.969	0.787	0.630	2.480	1.496	0.984	0.689	TC..32.5..	0.245

Reference									Nm
STGCR/L10CA-11	1225	5507	1405	1504	5002	2806	1816	5004	0.9
STGCR/L12CA-16	1240	5515	1405	1505	5025	2806	1806	5004	3.0
STGCR/L16CA-16	1240	5515	1406	1505	5025	2808	1808	5005	3.0

TC..

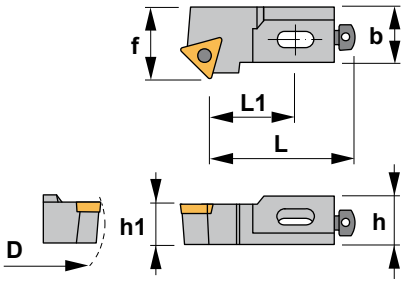
Triangular positive inserts with 7° clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



TCGT-AL	TCMT	TCMW
		

Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial 0°

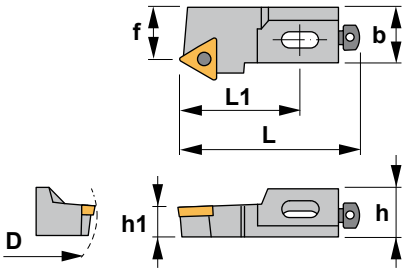


STSC 45°

Reference	D	h	h1	L	L1	f	b	Insert size	lbs
STSCR/L08CA-11	0.984	0.433	0.315	1.063	0.394	0.433	0.295	TC..21.5..	0.011
STSCR/L10CA-11	1.181	0.551	0.394	1.732	0.945	0.551	0.394	TC..21.5..	0.077
STSCR/L12CA-16	1.575	0.630	0.472	1.850	1.063	0.787	0.551	TC..32.5..	0.143
STSCR/L16CA-16	1.969	0.787	0.630	2.087	1.102	0.984	0.689	TC..32.5..	0.242

Reference									Nm
STSCR/L08CA-11	1225	5507	1404	1503	5015	2804	1804	5025	0.9
STSCR/L10CA-11	1225	5507	1405	1504	5002	2806	1816	5004	0.9
STSCR/L12CA-16	1240	5515	1405	1505	5025	2806	1806	5004	3.0
STSCR/L16CA-16	1240	5515	1406	1505	5025	2808	1808	5005	3.0

Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial 0°



STTC 60°

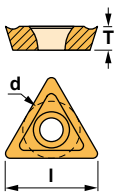
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
STTCR/L08CA-11	0.984	0.433	0.315	1.417	0.394	0.433	0.295	TC..21.5..	0.022
STTCR/L10CA-11	1.181	0.551	0.394	1.969	1.181	0.551	0.394	TC..21.5..	0.077
STTCR/L12CA-16	1.575	0.630	0.472	2.165	1.378	0.512	0.551	TC..32.5..	0.143
STTCR/L16CA-16	1.969	0.787	0.630	2.480	1.496	0.591	0.689	TC..32.5..	0.231

Reference									Nm
STTCR/L08CA-11	1225	5507	1404	1503	5015	2804	1804	5025	0.9
STTCR/L10CA-11	1225	5507	1405	1504	5002	2806	1816	5004	0.9
STTCR/L12CA-16	1240	5515	1405	1505	5025	2806	1806	5004	3.0
STTCR/L16CA-16	1240	5515	1406	1505	5025	2808	1808	5005	3.0

TC..

Triangular positive inserts with 7° clearance. A36

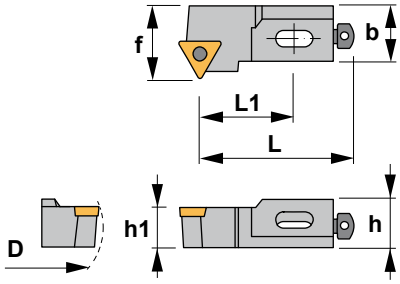
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



TCGT-AL	TCMT	TCMW



Characteristics:
Cartridge for face turning applications equipped with triangular positive inserts.
Axial 0°
Radial 0°



STWC 60°

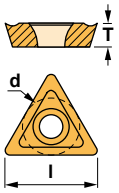
Reference	D	h	h1	L	L1	f	b	Insert size	lbs
STWCR/L08CA-11	0.984	0.433	0.315	1.063	0.394	0.394	0.295	TC..21.5..	0.011
STWCR/L10CA-11	1.181	0.551	0.394	1.732	0.945	0.551	0.394	TC..21.5..	0.077
STWCR/L12CA-16	1.575	0.630	0.472	1.850	1.063	0.787	0.551	TC..32.5..	0.143
STWCR/L16CA-16	1.969	0.787	0.630	2.087	1.102	0.984	0.689	TC..32.5..	0.243

Reference									Nm
STWCR/L08CA-11	1225	5507	1404	1503	5015	2804	1804	5025	0.9
STWCR/L10CA-11	1225	5507	1405	1504	5002	2806	1816	5004	0.9
STWCR/L12CA-16	1240	5515	1405	1505	5025	2806	1806	5004	3.0
STWCR/L16CA-16	1240	5515	1406	1505	5025	2808	1808	5005	3.0

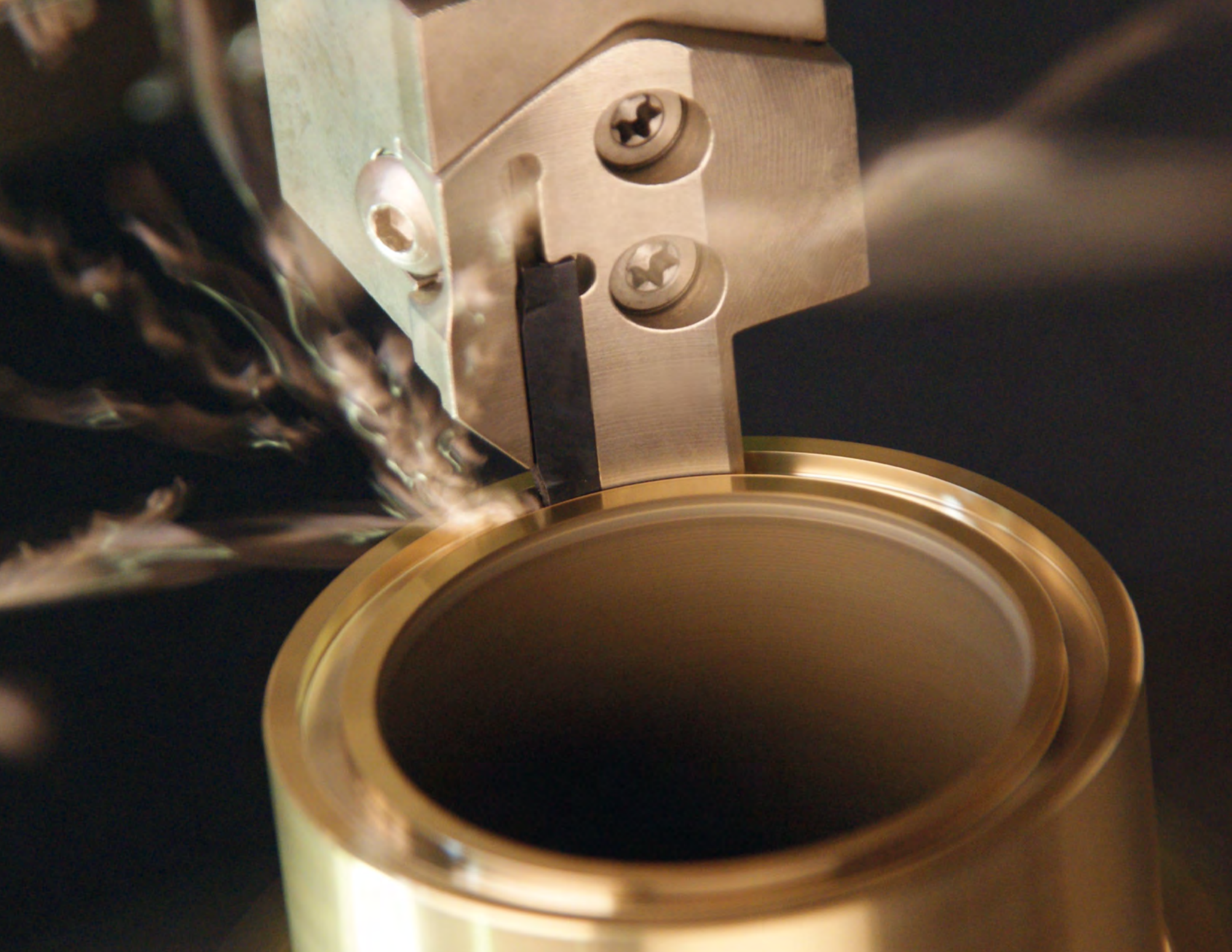
TC..

Triangular positive inserts with 7° clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



TCGT-AL	TCMT	TCMW
		



PARTING AND GROOVING

B

CVD / PVD

CVD coated carbide

The CVD coatings are generated by a chemical reaction at high temperatures (700-1050ºC). All CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.

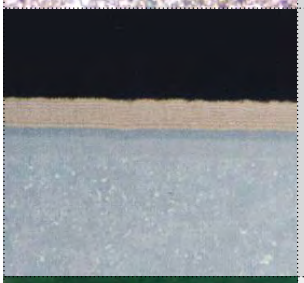
CVD coatings are the first choice in a large turning range where wear resistance is important.

PVD coated carbide

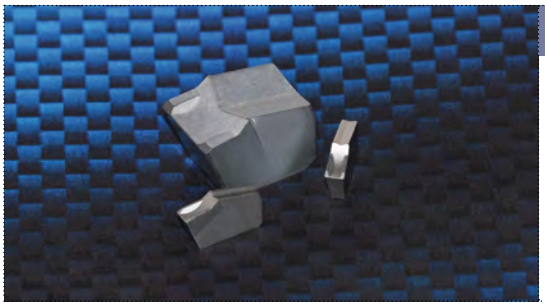
PVD coatings offer wear resistance due to their hardness. The coating process involves the evaporation of metal, which reacts with nitrogen to form a hard nitride coating. The full process is made at relatively low temperatures (400-600ºC).

PVD coatings are recommended when sharp cutting edges are needed.

Features of CVD and PVD coated carbide

	Grade	Colour	Coating composition	Definition
	***TN15***		TiN-TiC-TiN	CVD coating with TiN-TiC-TiN. The coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant.
	***TN30***		$TiCN+Al_2O_3+TiN$	General purpose wear resistant CVD turning grade. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel at lower speeds thanTN15. This turning grade is for demanding metal removal operations, including cutting through scale at low speeds through heavy interruption, and problem machining of stainless steel at low speed and poor rigidity.
	***TL20***		TiAlN	Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel.
	***TL30***		TiAlN	The PVD universal high-performance grade for steel, austenitic steel, cast iron and heat-resistant alloys.
	***TL40***		TiAlN	Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel.

UNCOATED CARBIDE

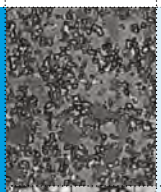
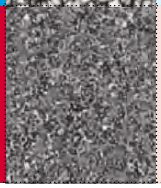


UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

B

Features of uncoated carbide

Material		Grade	Colour	Composition	Definition
P Steel		***PM25***		WC+TiC+TaC+Co	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. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications.
		***PM40***		WC+TiC+TaC+Co	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.
K Cast iron		***KM15***		WC+Co	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.

Application

ISO	Composition	Features	Workpiece
P	WC+TiC+TaC+Co	Heat resistance, excellent plastic deformation resistance.	Carbon steel, alloyed steel, stainless steel.
M	WC+TiC+TaC+Co	General tools stable heat resistance with strength.	Carbon steel, alloyed steel, stainless steel, cast steel.
K	WC+Co	High strength and superior wear resistance.	Carbon iron, non-ferrous metal, plastic, etc.

Properties

Grade	Hardness (HRA)	TRS (Kg/mm²)	Young's modulus (103Kg/mm²)	Thermal expansion coefficient (10^{-6}/°C)	Thermal conductivity (cal/cm·sec·°C)
KM15	90.9	250	63	-	105
PM25	91.9	200	56	5.2	45
PM40	91.3	230	53	5.2	-

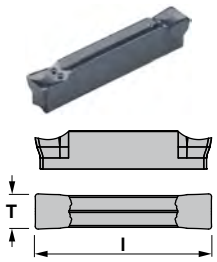
B

Inserts for parting and grooving

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

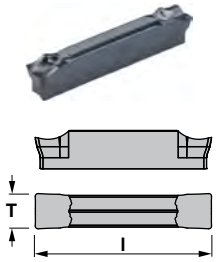
AVAILABILITY
- Standard item
- Check availability

Grade	Continuous	Slight interruption	Interruption
TN15			
TN30			
TL20			
TL30			
TL40			
PM25			
PM40			
KM15			



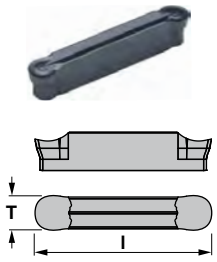
WDMG

Reference	l	T	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL30	ZR10
WDMG02	0.866	0.078								●	
WDMG03	0.866	0.118								●	
WDMG04	0.984	0.157								●	
WDMG05	0.984	0.197								●	
WDMG06	0.984	0.236								●	



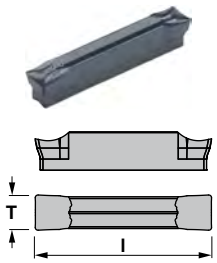
WDMP

Reference	l	T	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL30	ZR10
WDMP02	0.866	0.078								●	
WDMP03	0.866	0.118								●	
WDMP04	0.984	0.157								●	
WDMP05	0.984	0.197								●	
WDMP06	0.984	0.236								●	



WDMR

Reference	l	T	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL30	ZR10
WDMR02	0.866	0.078								●	
WDMR03	0.866	0.118								●	
WDMR04	0.984	0.157								●	
WDMR05	0.984	0.197								●	
WDMR06	0.984	0.236								●	



WDMT

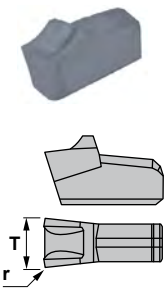
Reference	l	T	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL30	ZR10
WDMT02	0.866	0.078								●	
WDMT03	0.866	0.118								●	
WDMT04	0.984	0.157								●	
WDMT05	0.984	0.197								●	
WDMT06	0.984	0.236								●	

Inserts for parting and grooving

USE CLASSIFICATION
- ● Continuous
- ◕ Slight interruption
- ✣ Interruption

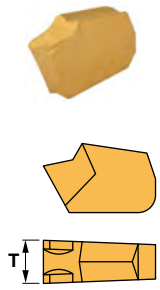
AVAILABILITY
- ● Standard item
- ○ Check availability

Grade	● Continuous	◕ Slight interruption	✣ Interruption
TN15			
TN30			
TL20			
TL30			
TL40			
PM25			
PM40			
KM15			



MRCN

Reference	T	r	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL40	ZR10
MRCN16	0.063	0.006								●	
MRCN22	0.087	0.008								●	
MRCN30	0.118	0.008								●	
MRCN40	0.157	0.008								●	
MRCN50	0.197	0.012								●	
MRCN60	0.236	0.016								●	



PTNT

Reference	T	KM15	PM25	PM40	TN15	TN20	TN30	TIN21	TL40	ZR10
PTNT02	0.083		●	●			●			
PTNT03	0.122	○	●	●			●	●		
PTNT04	0.161		●	●			●	●		
PTNT05	0.201	○	○				○			
PTNT06	0.240						○			
PTNT08	0.319						●			
PTNT09	0.358		○				●			

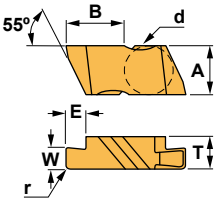
B

Inserts for parting and grooving

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

Grade	Continuous	Slight interruption	Interruption
TN15			
TN30			
TL20			
TL30			
TL40			
PM25			
PM40			
KM15			



NG

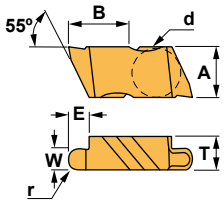
Reference	d	A	B	E	r	T	W	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL40	ZR10
NG2031R/L	0.187	0.219	0.270	0.050	0.002	0.150	0.031				○					
NG210R/L	0.187	0.219	0.270	0.050	0.002	0.150	0.039				○					
NG2041R/L	0.187	0.219	0.270	0.050	0.002	0.150	0.041				○					
NG2047R/L	0.187	0.219	0.270	0.050	0.002	0.150	0.047				○					
NG2058R/L	0.187	0.219	0.270	0.050	0.002	0.150	0.058				○					
NG2062R/L	0.187	0.219	0.270	0.110	0.002	0.150	0.062				○					
NG220R/L	0.187	0.219	0.270	0.110	0.002	0.150	0.080				○					
NG2094R/L	0.187	0.219	0.270	0.110	0.002	0.150	0.094				○					
NG230R/L	0.187	0.219	0.270	0.110	0.002	0.150	0.119				○					
NG2125R/L	0.187	0.219	0.270	0.110	0.002	0.150	0.125				○					
NG3031R/L	0.375	0.344	0.405	0.050	0.002	0.195	0.031				○					
NG310R/L	0.375	0.344	0.405	0.050	0.002	0.195	0.039				○					
NG3047R/L	0.375	0.344	0.405	0.075	0.002	0.195	0.047				○					
NG3062R/L	0.375	0.344	0.405	0.120	0.005	0.195	0.062				○					
NG3072R/L	0.375	0.344	0.405	0.120	0.005	0.195	0.072				○					
NG3078R/L	0.375	0.344	0.405	0.120	0.005	0.195	0.078				○					
NG320R/L	0.375	0.344	0.405	0.120	0.005	0.195	0.079				○					
NG3088R/L	0.375	0.344	0.405	0.120	0.005	0.195	0.088				○					
NG3094R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.094				○					
NG3105R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.105				○					
NG3110R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.110				○					
NG330R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.118				○					
NG3122R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.122				○					
NG3125R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.125				○					
NG3142R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.142				○					
NG3156R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.156				○					
NG340R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.158				○					
NG3178R/L	0.375	0.344	0.405	0.180	0.005	0.195	0.178				○					
NG3185R/L	0.375	0.344	0.405	0.180	0.020	0.195	0.185				○					
NG3189R/L	0.375	0.344	0.405	0.180	0.020	0.195	0.189				○					
NG4125R/L	0.375	0.453	0.636	0.250	0.005	0.255	0.125				○					
NG4189R/L	0.375	0.453	0.636	0.250	0.020	0.255	0.189				○					
NG450R/L	0.375	0.453	0.636	0.250	0.010	0.255	0.197				○					
NG4213R/L	0.375	0.453	0.636	0.250	0.005	0.255	0.213				○					
NG4219R/L	0.375	0.453	0.636	0.250	0.020	0.255	0.219				○					
NG4250R/L	0.375	0.453	0.636	0.250	0.020	0.255	0.250				○					
NG6281R/L	0.375	0.453	0.636	0.250	0.030	0.383	0.281				○					
NG6312R/L	0.375	0.453	0.636	0.250	0.030	0.383	0.319				○					
NG6375R/L	0.375	0.453	0.636	0.250	0.030	0.383	0.375				○					

Inserts for parting and grooving

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

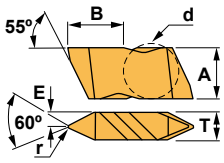
AVAILABILITY
- Standard item
- Check availability

Grade	Continuous	Slight interruption	Interruption
TN15			
TN30			
TL20			
TL30			
TL40			
PM25			
PM40			
KM15			



NR

Reference	d	A	B	E	r	T	W	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL40	ZR10
NR2031R/L	0.187	0.219	0.268	0.110	0.031	0.150	0.062				○					
NR2047R/L	0.187	0.219	0.267	0.110	0.047	0.150	0.094				○					
NR2062R/L	0.187	0.219	0.266	0.110	0.062	0.150	0.125				○					
NR3031R/L	0.375	0.344	0.403	0.150	0.031	0.195	0.062				○					
NR3047R/L	0.375	0.344	0.402	0.150	0.047	0.195	0.094				○					
NR3062R/L	0.375	0.344	0.401	0.150	0.062	0.195	0.125				○					
NR3078R/L	0.375	0.344	0.400	0.150	0.078	0.195	0.156				○					
NR3094R/L	0.375	0.344	0.400	0.150	0.094	0.195	0.188				○					
NR4062R/L	0.375	0.453	0.632	0.250	0.062	0.255	0.125				○					
NR4094R/L	0.375	0.453	0.394	0.250	0.094	0.255	0.188				○					
NR4125R/L	0.375	0.453	0.630	0.250	0.125	0.255	0.250				○					



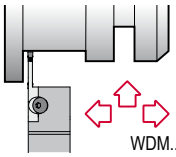
NT

Reference	d	A	B	E	r	T	KM15	PM25	PM40	TN15	TN20	TN30	TK15	TL40	ZR10
NT2R/L	0.187	0.219	0.266	0.075	0.003	0.150				○					
NT3R/L	0.375	0.344	0.400	0.098	0.005	0.195				○					
NT4R/L	0.375	0.453	0.629	0.128	0.005	0.255				○					

B

Toolholders

CZGD



WDM..02
..
WDM..06

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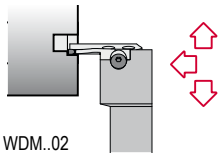
CZFD



WDM..02
..
WDM..06

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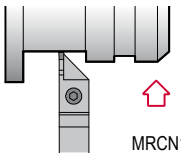
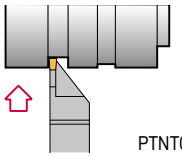
CZCB



MRCN16
..
MRCN60

Page B30

XLCF



PTNT02
PTNT03
PTNT04

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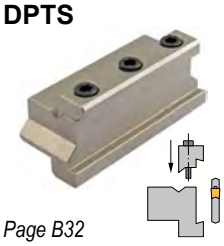
Tool blocks

CPTS

Page B32

DPTS



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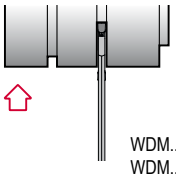
Blades

CZDPN



WDM..02
WDM..03
WDM..04

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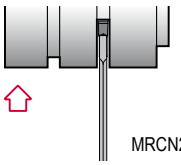
CRCFN



MRCN22
..
MRCN60

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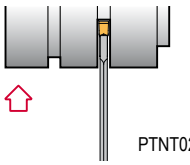
XLCFN



PTNT02
..
PTNT09

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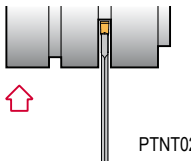
XLCTN



PTNT02
..
PTNT06

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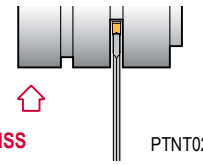
XLCTN-HSS



HSS
PTNT02
..
PTNT05

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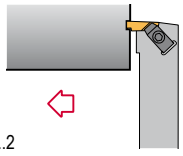
Top Notch tools

NE 93º



N..2
N..3
N..4

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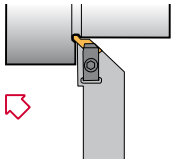
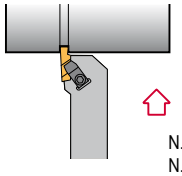
NR 45º



Page B38
N..3

NS 93º



N..2
N..3
N..4

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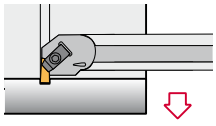
NNTO 93º



N..2
N..3
N..4

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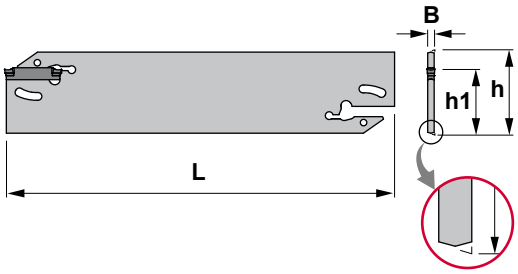
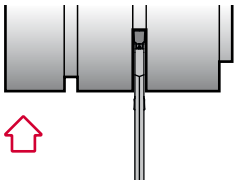
Characteristics:
Parting, grooving and face grooving blade that works well on steels, alloyed steels, stainless steels and refractories. Modular system for inserts with thickness from 0.078 to 0.157 inches.





CZDPN

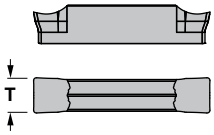
Reference	h	L	h1	B	Insert size	lbs
CZDPN2601J02	1.023	4.330	0.842	0.086	WDM..02	0.130
CZDPN2602J03	1.023	4.330	0.842	0.118	WDM..03	0.155
CZDPN3201M02	1.260	5.906	0.984	0.086	WDM..02	0.200
CZDPN3202M03	1.260	5.906	0.984	0.118	WDM..03	0.220
CZDPN3203M04	1.260	5.906	0.984	0.157	WDM..04	0.275

Reference	
CZDPN2601J02	5735
CZDPN2602J03	5735
CZDPN3201M02	5735
CZDPN3202M03	5735
CZDPN3203M04	5735

WDM..

B04

Reference	T
WDM..02	0.078
WDM..03	0.118
WDM..04	0.157

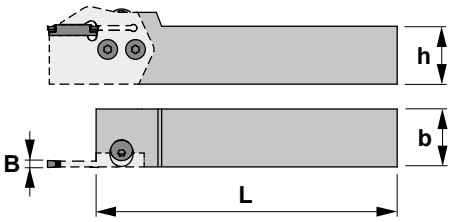


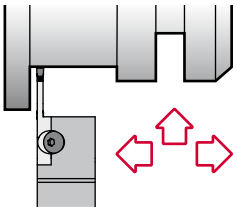
WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.

WDMG	WDMP
	
WDMR	**WDMT**
	

B

Characteristics:
Parting, grooving and side turning toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Double-ended inserts with thickness from 0.078 to 0.236 inches.





CZGD

Reference	h	b	L	B	lbs
CZGDL12-26	0.750	0.750	4.5	0.078-0.236	0.683
CZGDR12-26	0.750	0.750	4.5	0.078-0.236	0.683
CZGDL16-26	1.000	1.000	6.0	0.078-0.236	1.345
CZGDR16-26	1.000	1.000	6.0	0.078-0.236	1.345
CZGDL20-26	1.250	1.250	6.0	0.078-0.236	2.866
CZGDR20-26	1.250	1.250	6.0	0.078-0.236	2.866

Reference					Nm
CZGDL12-26	1025	1450	5003	5520	3.0
CZGDR12-26	1025	1450	5003	5520	3.0
CZGDL16-26	1025	1450	5003	5520	3.0
CZGDR16-26	1025	1450	5003	5520	3.0
CZGDL20-26	1025	1450	5003	5520	3.0
CZGDR20-26	1025	1450	5003	5520	3.0

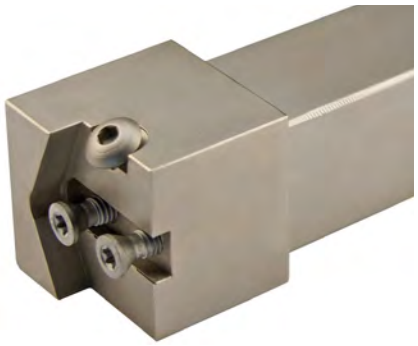
Modular blades

WDM..02
WDM..03
WDM..04
WDM..05
WDM..06

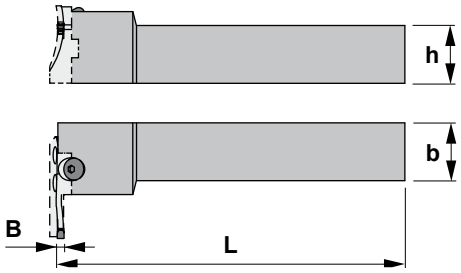
CZGD

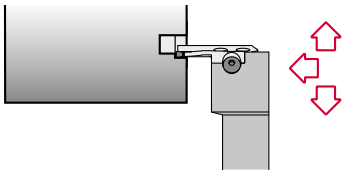
Right-handed holders use right-handed modular blades.

WDM..03
WDM..04
WDM..05
WDM..06



Characteristics:
Parting, grooving and face grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories. Modular system for inserts with thickness from 0.078 to 0.236 inches.





B

CZFD

Reference	h	b	L	B	lbs
CZFDL12-26	0.750	0.750	4.5	0.078-0.236	0.990
CZFDR12-26	0.750	0.750	4.5	0.078-0.236	0.990
CZFDL16-26	1.000	1.000	6.0	0.078-0.236	1.720
CZFDR16-26	1.000	1.000	6.0	0.078-0.236	1.720
CZFDL20-26	1.250	1.250	6.0	0.078-0.236	3.090
CZFDR20-26	1.250	1.250	6.0	0.078-0.236	3.090

Reference					Nm
CZFDL12-26	1025	1450	5003	5520	3.0
CZFDR12-26	1025	1450	5003	5520	3.0
CZFDL16-26	1025	1450	5003	5520	3.0
CZFDR16-26	1025	1450	5003	5520	3.0
CZFDL20-26	1025	1450	5003	5520	3.0
CZFDR20-26	1025	1450	5003	5520	3.0

Modular blades

WDM..02
WDM..03
WDM..04
WDM..05
WDM..06

CZFD

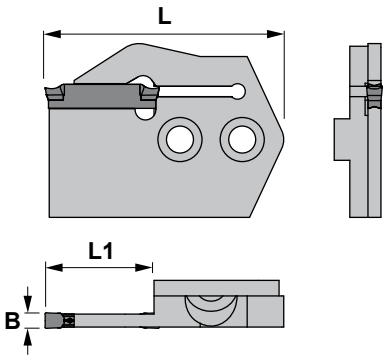
Right-handed holders use left-handed modular blades.

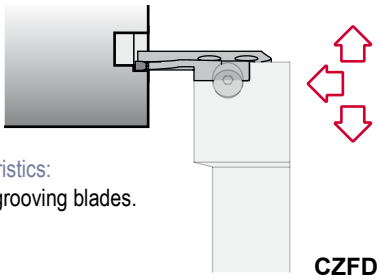
WDM..03
WDM..04
WDM..05
WDM..06

B

Right Hand

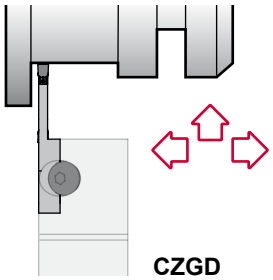
Left Hand





Characteristics:
Modular grooving blades.

CZFD



CZGD

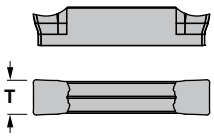
CZFD

Reference	L1	L	B	Insert size
CZFDL0012-02	0.472	1.496	0.078	WDM..02
CZFDR0012-02	0.472	1.496	0.078	WDM..02
CZFDL0020-02	0.787	1.811	0.078	WDM..02
CZFDR0020-02	0.787	1.811	0.078	WDM..02
CZFDL0012-03	0.472	1.496	0.118	WDM..03
CZFDR0012-03	0.472	1.496	0.118	WDM..03
CZFDL0020-03	0.787	1.811	0.118	WDM..03
CZFDR0020-03	0.787	1.811	0.118	WDM..03
CZFDL0012-04	0.472	1.496	0.157	WDM..04
CZFDR0012-04	0.472	1.496	0.157	WDM..04
CZFDL0020-04	0.787	1.811	0.157	WDM..04
CZFDR0020-04	0.787	1.811	0.157	WDM..04
CZFDL0012-05	0.472	1.496	0.197	WDM..05
CZFDR0012-05	0.472	1.496	0.197	WDM..05
CZFDL0022-05	0.866	1.890	0.197	WDM..05
CZFDR0022-05	0.866	1.890	0.197	WDM..05
CZFDL0012-06	0.472	1.496	0.236	WDM..06
CZFDR0012-06	0.472	1.496	0.236	WDM..06
CZFDL0022-06	0.866	1.890	0.236	WDM..06
CZFDR0022-06	0.866	1.890	0.236	WDM..06

WDM..

B04

Reference	T
WDM..02	0.078
WDM..03	0.118
WDM..04	0.157
WDM..05	0.197
WDM..06	0.236

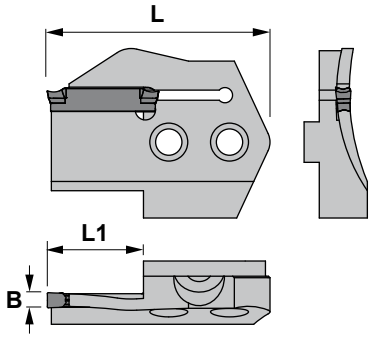


WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.

WDMG	WDMP
	
WDMR	**WDMT**
	

Right Hand

Left Hand



CZFD

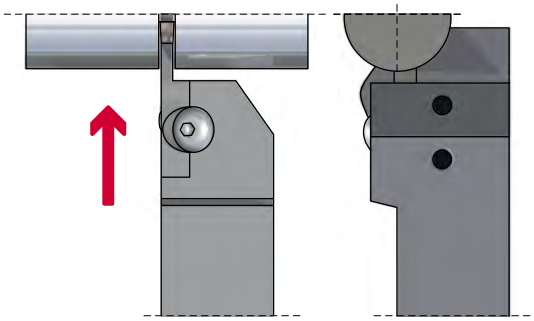
Reference	L1	L	B	Ø Range	Insert size
CZFDL4055-03	0.472	1.496	0.118	1.574-2.165	WDM..03
CZFDR4055-03	0.472	1.496	0.118	1.574-2.165	WDM..03
CZFDL5570-03	0.590	1.614	0.118	2.165-2.755	WDM..03
CZFDR5570-03	0.590	1.614	0.118	2.165-2.755	WDM..03
CZFDL7098-03	0.710	1.732	0.118	2.755-3.858	WDM..03
CZFDR7098-03	0.710	1.732	0.118	2.755-3.858	WDM..03
CZFDL90140-03	0.710	1.732	0.118	3.543-5.511	WDM..03
CZFDR90140-03	0.710	1.732	0.118	3.543-5.511	WDM..03
CZFDL130300-03	0.710	1.732	0.118	5.118-11.811	WDM..03
CZFDR130300-03	0.710	1.732	0.118	5.118-11.811	WDM..03
CZFDL300999-03	0.710	1.732	0.118	11.811-39.330	WDM..03
CZFDR300999-03	0.710	1.732	0.118	11.811-39.330	WDM..03
CZFDL4055-04	0.710	1.732	0.157	1.574-2.165	WDM..04
CZFDR4055-04	0.710	1.732	0.157	1.574-2.165	WDM..04
CZFDL5570-04	0.710	1.732	0.157	2.165-2.755	WDM..04
CZFDR5570-04	0.710	1.732	0.157	2.165-2.755	WDM..04
CZFDL7098-04	0.710	1.732	0.157	2.755-3.858	WDM..04
CZFDR7098-04	0.710	1.732	0.157	2.755-3.858	WDM..04
CZFDL90140-04	0.710	1.732	0.157	3.543-5.511	WDM..04
CZFDR90140-04	0.710	1.732	0.157	3.543-5.511	WDM..04
CZFDL130300-04	0.710	1.732	0.157	5.118-11.811	WDM..04
CZFDR130300-04	0.710	1.732	0.157	5.118-11.811	WDM..04
CZFDL300999-04	0.710	1.732	0.157	11.811-39.330	WDM..04
CZFDR300999-04	0.710	1.732	0.157	11.811-39.330	WDM..04
CZFDL5070-05	0.787	1.811	0.197	1.968-2.755	WDM..05
CZFDR5070-05	0.787	1.811	0.197	1.968-2.755	WDM..05
CZFDL7098-05	0.787	1.811	0.197	2.755-3.858	WDM..05
CZFDR7098-05	0.787	1.811	0.197	2.755-3.858	WDM..05
CZFDL90140-05	0.787	1.811	0.197	3.543-5.511	WDM..05
CZFDR90140-05	0.787	1.811	0.197	3.543-5.511	WDM..05
CZFDL130300-05	0.787	1.811	0.197	5.118-11.811	WDM..05
CZFDR130300-05	0.787	1.811	0.197	5.118-11.811	WDM..05
CZFDL300999-05	0.787	1.811	0.197	11.811-39.330	WDM..05
CZFDR300999-05	0.787	1.811	0.197	11.811-39.330	WDM..05
CZFDL5070-06	0.787	1.811	0.236	1.968-2.755	WDM..06
CZFDR5070-06	0.787	1.811	0.236	1.968-2.755	WDM..06
CZFDL7098-06	0.787	1.811	0.236	2.755-3.858	WDM..06
CZFDR7098-06	0.787	1.811	0.236	2.755-3.858	WDM..06
CZFDL90140-06	0.787	1.811	0.236	3.543-5.511	WDM..06
CZFDR90140-06	0.787	1.811	0.236	3.543-5.511	WDM..06
CZFDL130300-06	0.787	1.811	0.236	5.118-11.811	WDM..06
CZFDR130300-06	0.787	1.811	0.236	5.118-11.811	WDM..06
CZFDL300999-06	0.787	1.811	0.236	11.811-39.330	WDM..06
CZFDR300999-06	0.787	1.811	0.236	11.811-39.330	WDM..06

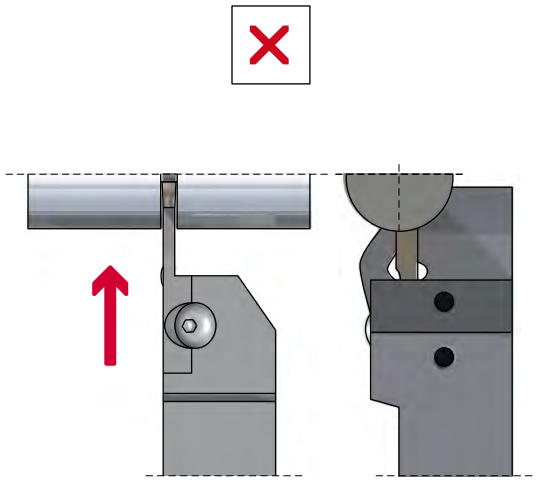
B

Tool selection

Notes to select the tool body

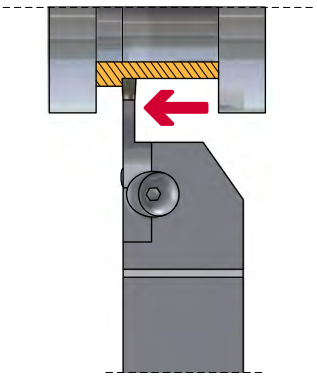
Modular blade

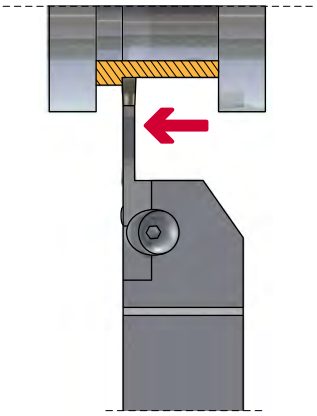




Select the shortest possible blade suitable for the application.

Modular blade



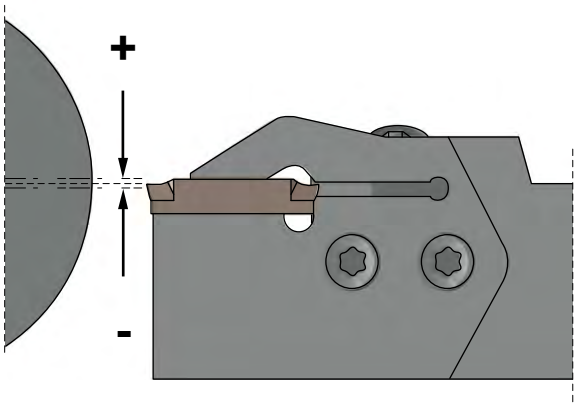


Select the shortest possible blade suitable for the application.

Tool selection

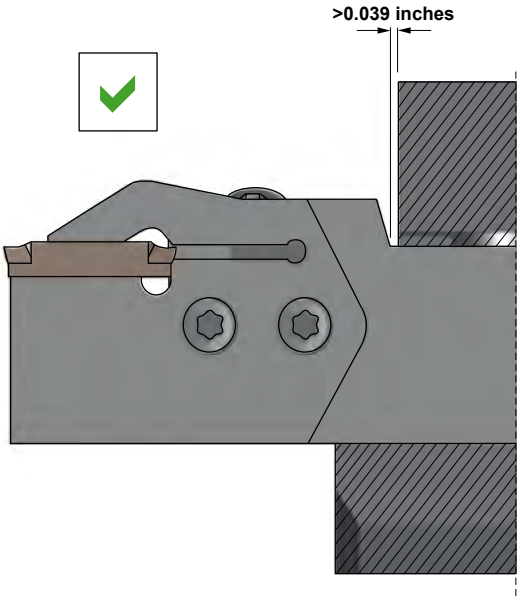
Notes for the tool setting

Setting of the cutting edge height

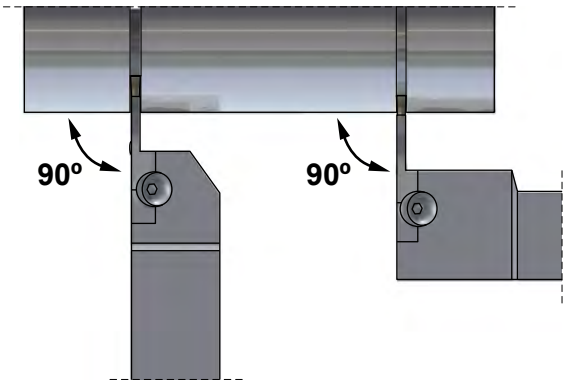


<Grooving/Cross-feed machining> Set the cutting edge height to ± 0.039 inches parallel to the central axis.
<Parting> Set the cutting edge height to 0-±0.007 inches parallel to the central axis.

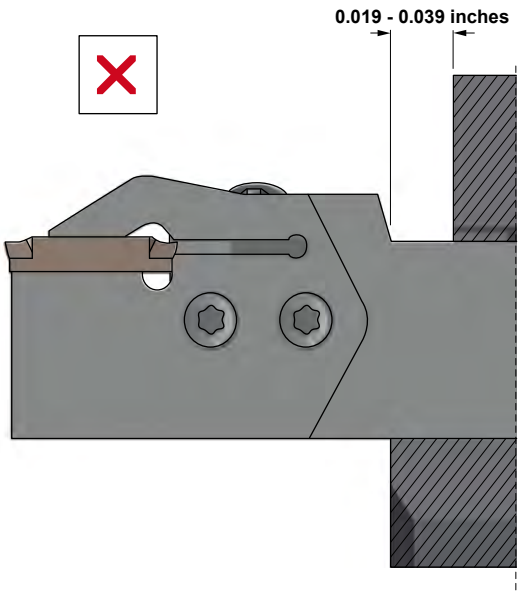
Overhang



Tool setting angle



Set the insert perpendicular to the central axis.



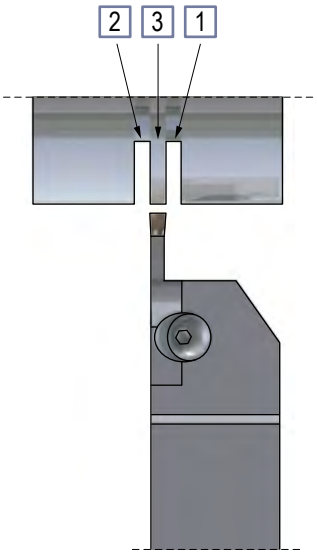
When you set the tool, ensure that the overhang is as short as possible.

B

Machining recommendations

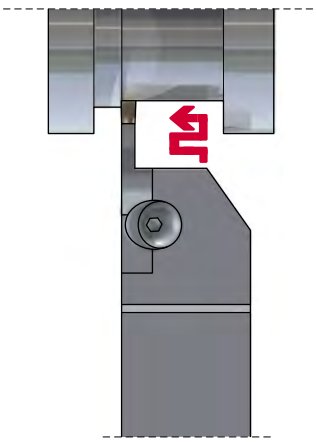
Notes for multi-functional machining

Machining of narrow grooves



We recommend to do the plunging in several passes. Following the above mentioned steps makes it difficult for the chips to elongate.
This also improves the accuracy of the workpiece wall surface.

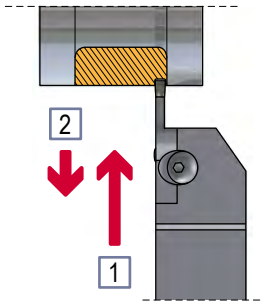
Machining wide grooves

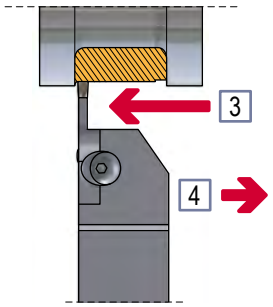


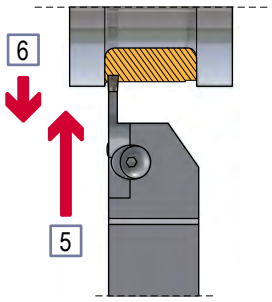
It is recommended to use cross-feed machining.

Machining of wide grooves

ROUGHING







1 - Carry out grooving.
2 - Retract the tool approx. 0.003 inch.
3 - Carry out cross-feed machining.
4 - Retract the tool approx. 0.003 inch.
5 - Carry out grooving.
6 - Retract the tool approx. 0.003 inch.
* Repeat the steps 1 - 6.

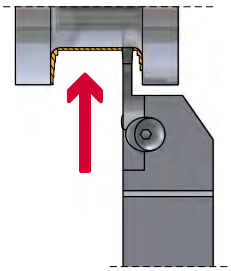
Machining recommendations

Notes for multi-functional machining

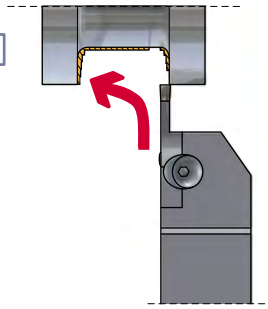
Machining wide grooves

FINISHING

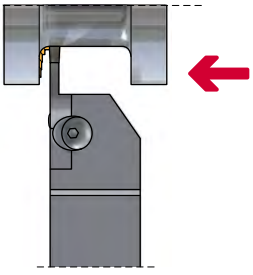
7



8



9

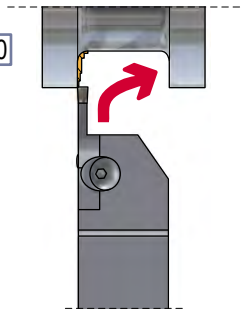


7 - Carry out grooving to the end point of the corner radius.
8 - The machining of the wall surface, corner radius and bottom face must be carried out in one process.
9 - Stop at the bottom of the corner radius.

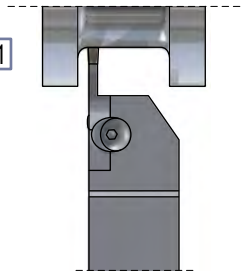
Machining wide grooves

FINISHING

10



11



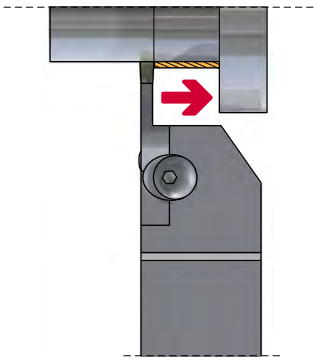
10 - Machine the counter wall to the corner radius in one process.
11 - Finish the machining.

B

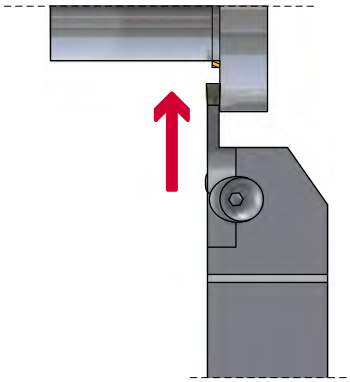
Machining recommendations

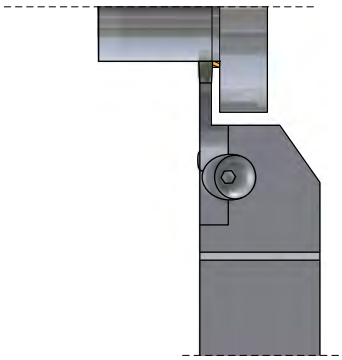
Notes for multi-functional machining

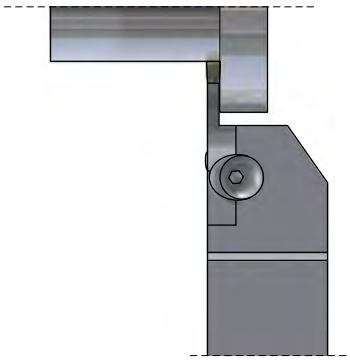
Wall machining



Wall machining





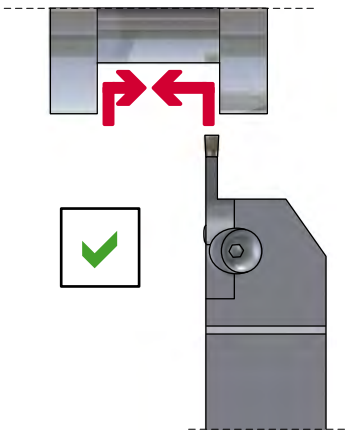


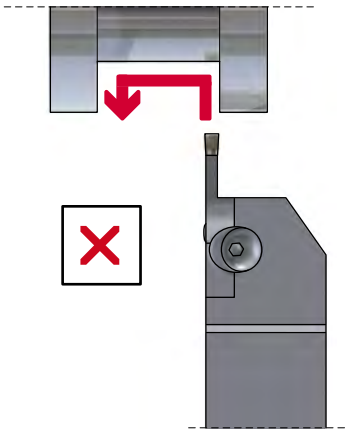
When machining a wall, chip jamming can occur. In that case, stop the cross-feed machining just before the wall (a point less than the insert width) and then remove the remaining material by plunging.

Machining recommendations

Notes for multi-functional machining

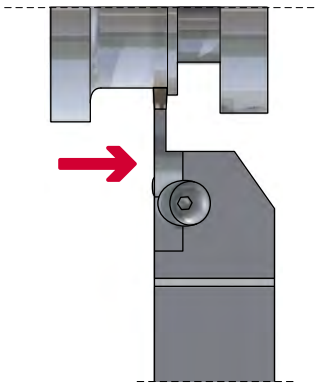
Precautions when finishing walls

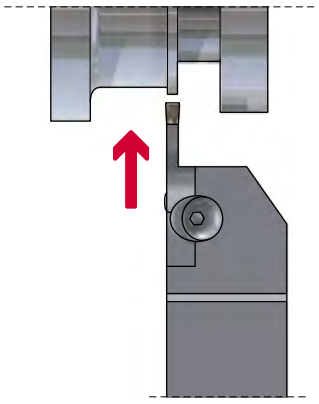


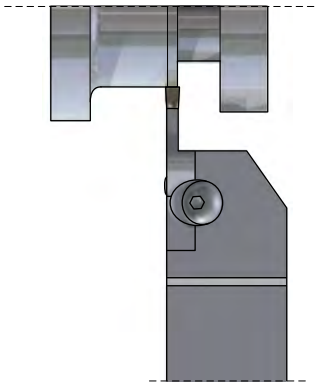


To produce high accuracy walls using face grooving inserts, do not carry out back turning. We recommend plunging.

Machining of a ring







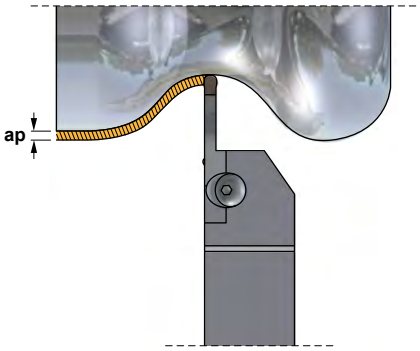
When a ring remains in a cross-feed end process, finish the cross-feed machining 0.039-0.059 inches short of the end point, and then remove the ring by plunging.

B

Machining recommendations

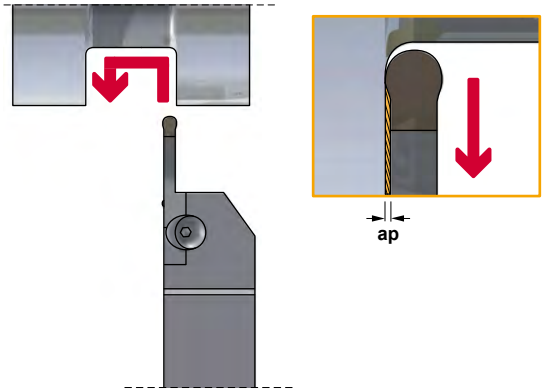
Notes for multi-functional machining

Notes for the first pass



With the face grooving ball nose insert it is possible to do tridimensional copying. Set the depth of cut (ap) to 40% less than the insert width.

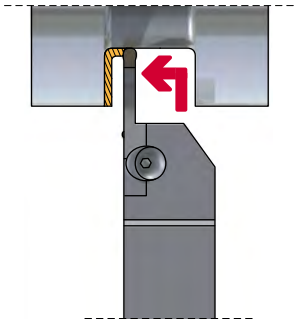
FINISHING

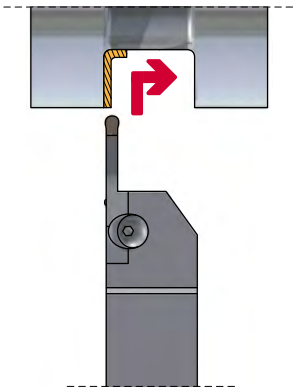


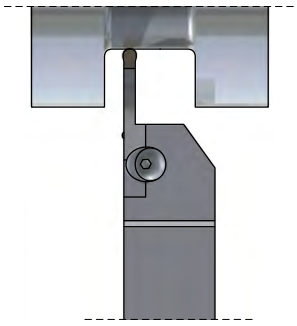
WDMR	ap (inch)
WDMR03	0.003
WDMR04	0.005
WDMR05	0.007
WDMR06	0.009

Carry out finishing in one process. For the depth of cut (ap) when back turning, refer to the table above.

ROUGHING







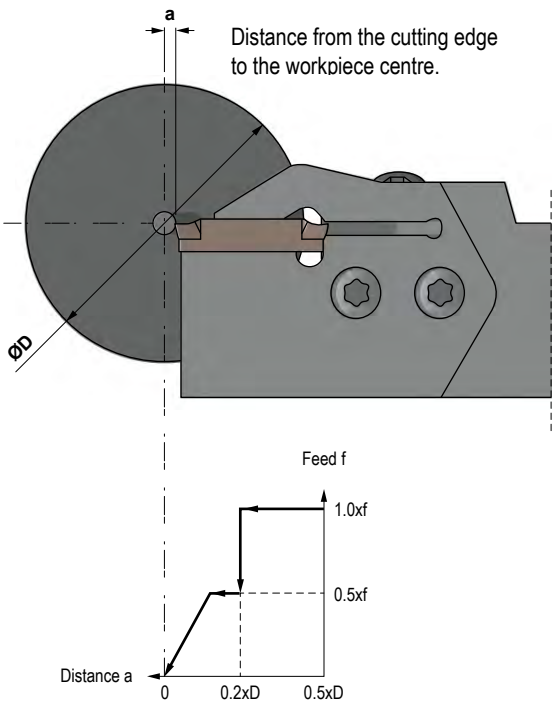
Use plunging and cross-feed machining. When machining the corner, vibration is likely to occur. To avoid this, reduce the feed by 50%.

Machining recommendations

Notes for parting

FEED

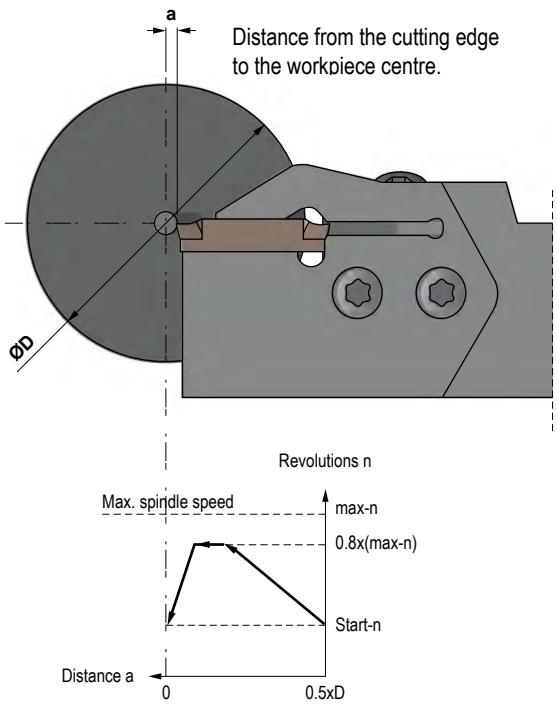
<Feed>



- When the cutting edge approaches the centre, reduce the feed by 50%.
- If necessary, stop the feed prior to reaching the centre of the workpiece to prevent it falling under its own weight.

REVOLUTIONS

<Spindle speed>



If you use a constant cutting speed during a parting cycle, it is recommended to limit the spindle speed to 80% of maximum to ensure stability.

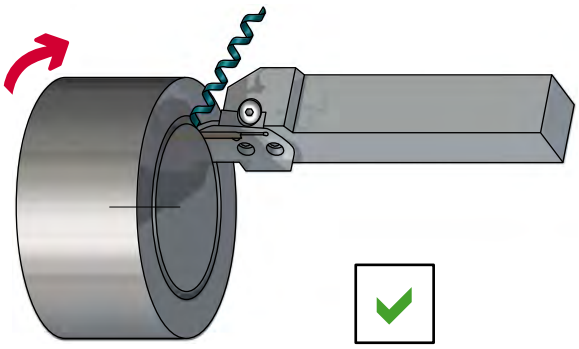
- To prevent the workpiece from being expelled, reduce the spindle speed before finishing the grooving operation.

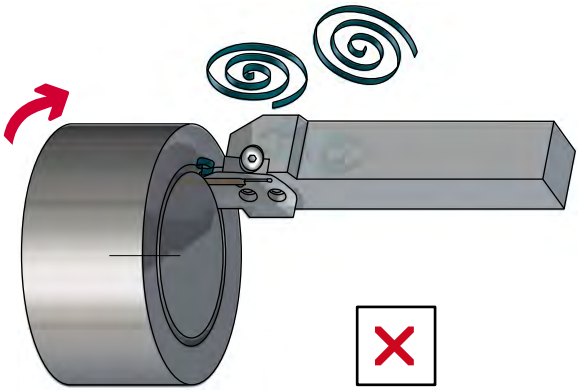
B

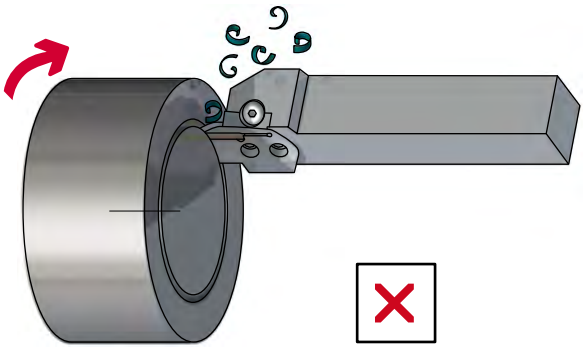
Machining recommendations

Notes for face grooving

Notes for the first pass

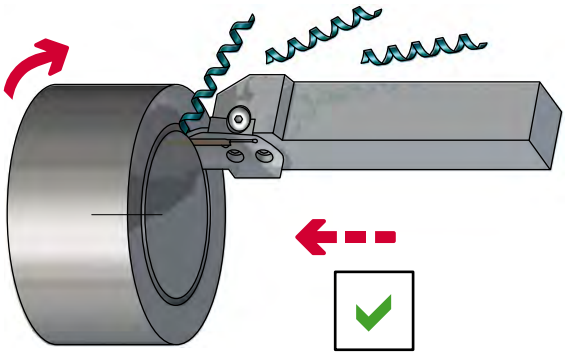


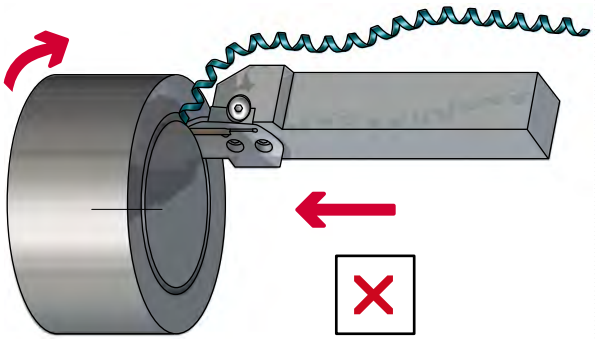




During the first face grooving pass it is difficult to disperse the broken chips, and that can lead to problems, such as insert wearing.
Maintain longer chips that disperse easily by reducing the feed per rotation.

Notes for the first pass



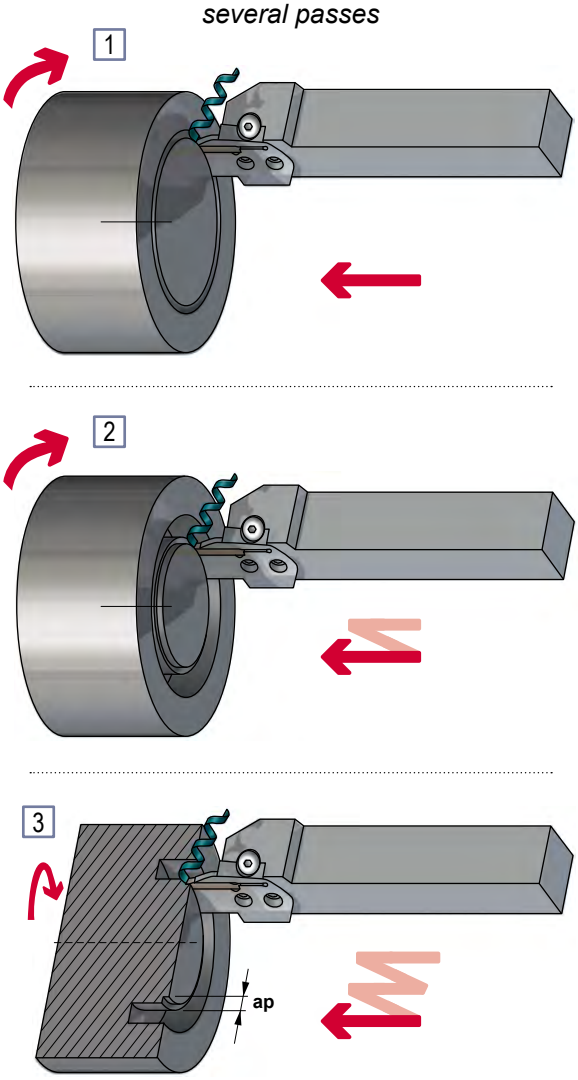


If the chips become too long, use peck feed to break them into a suitable length.

Machining recommendations

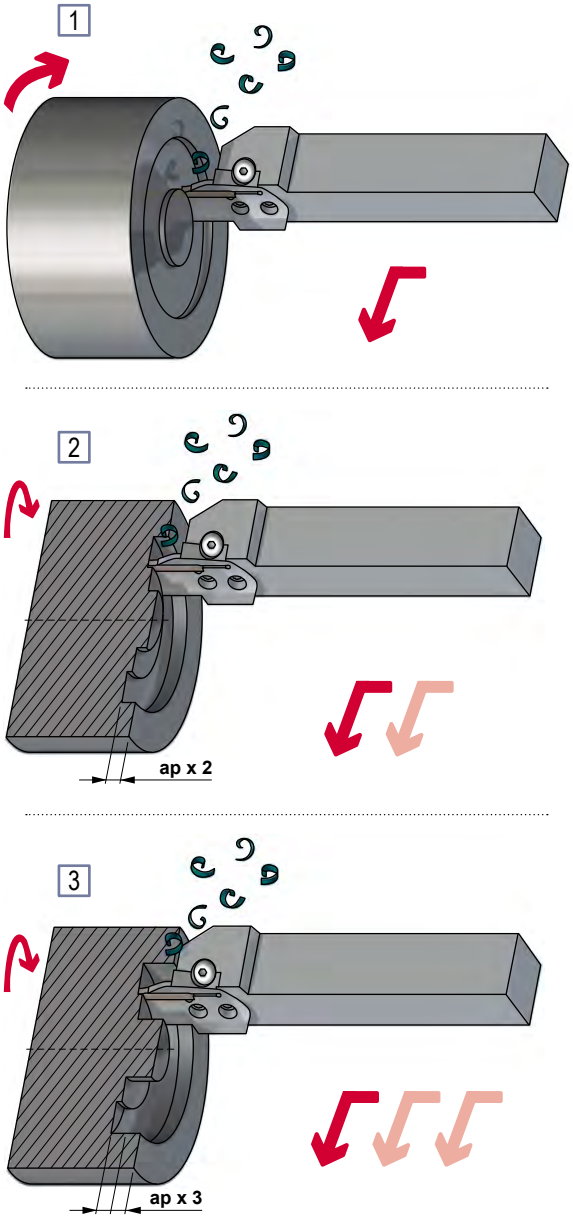
Notes for face grooving

Notes for face grooving by plunging in several passes



When machining a face groove in several passes, machine from the outer diametre towards the centre, leaving space for discharging chips, and so preventing insert damage caused by chip jamming.
It is recommended to set the plunging width of cut at 60-80% of the insert width. This enhances the effect of the chipbreaker by enlarging the width of the groove to improve chip dispersal.

Notes for face grooving by combination of plunging and traverse machining



When face grooving by using plunge feed and traverse machining, always machine from the outer diametre towards the centre to disperse the chips outwards in order to avoid chip jamming problems.
Set the depth of cut within 40% of the insert width.

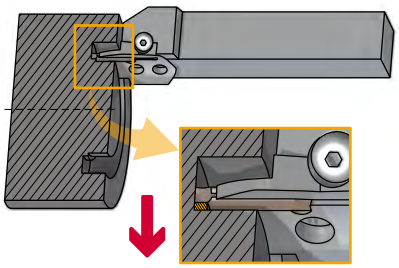
B

Machining recommendations

Notes for face grooving

Notes for face grooving by combination of plunging and traverse machining

1



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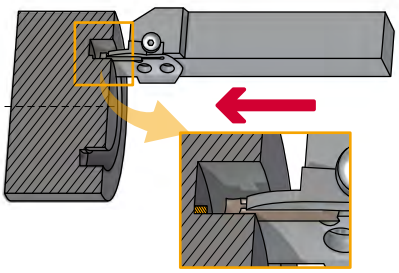

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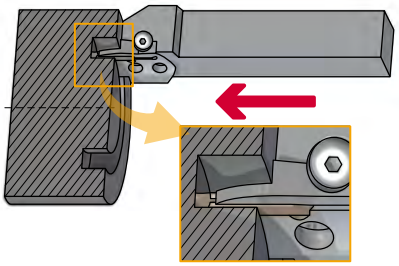
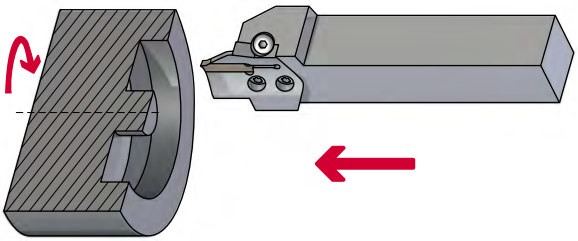


When infeed machining at the bottom of a deep groove, chips may interfere on the cutting edge near the centre wall.
In such cases, stop infeed machining just before the centre wall (at a point less than the insert width) and then remove the remaining material by plunging.

Finishing

1



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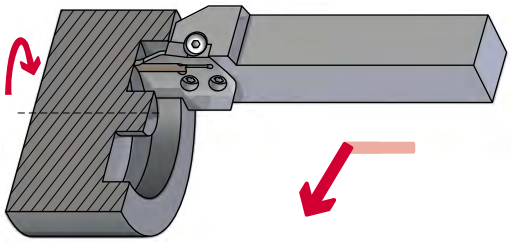

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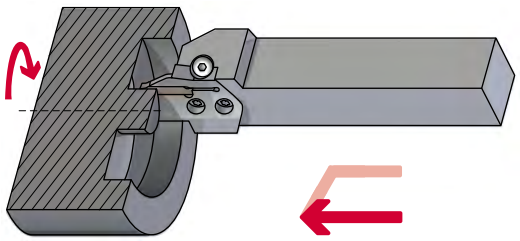
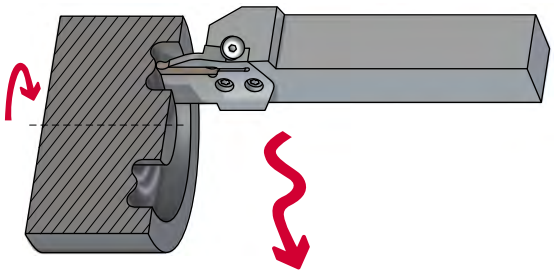


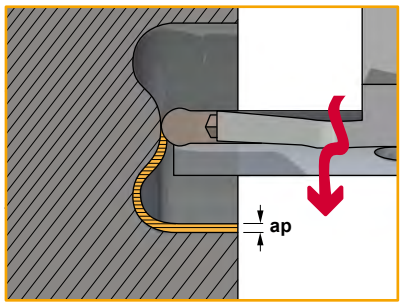
When you finish cutting, machine continously from the outer wall to the bottom of the groove, then finally plunge cut the centre wall.

Machining recommendations

Notes for face grooving

Notes for the copying with a ball nose insert

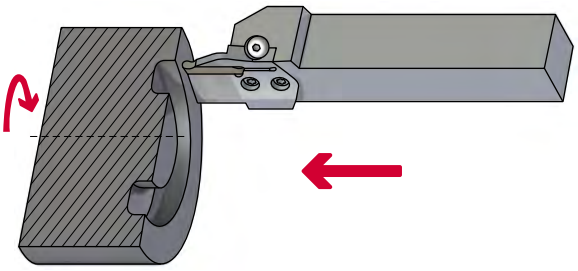




With the ball nose insert it is possible to do tridimensional copying. Set the depth of cut (ap) to 30% less than the insert width.

Finishing with a ball nose insert

1



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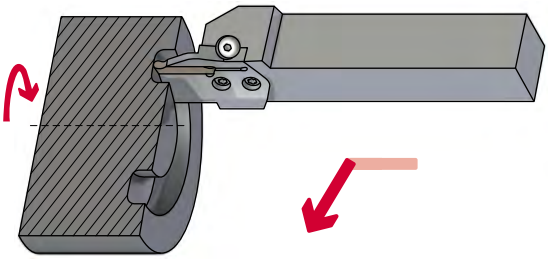

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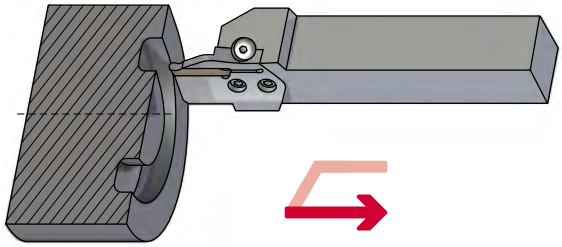
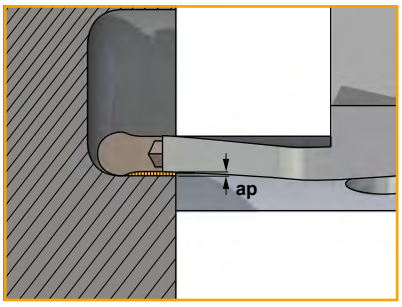


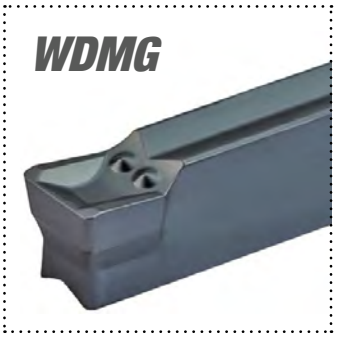
WDMR	ap (inch)
WDMR03	0.003
WDMR04	0.005
WDMR05	0.007
WDMR06	0.009



Carry out finishing in one process.
For the depth of cut (ap) when back turning, refer to the table above.

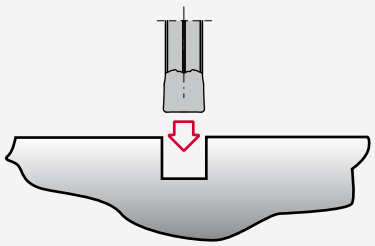
B

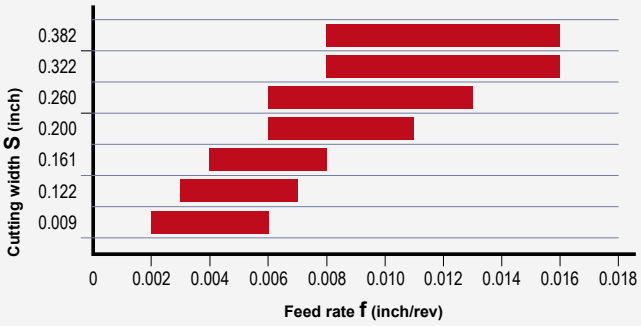
Nominal cutting speed and feed values for parting and grooving



WDMG *Medium cutting geometry*

- ***Insert with narrow negative chamfer.***
- ***Suitable for all steel materials with high strength.***
- ***Suitable for all applications.***
- ***For steel and grey cast iron.***

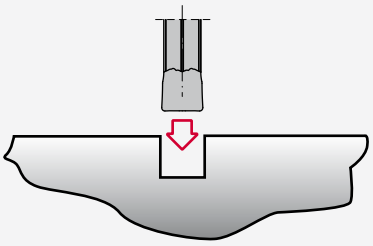


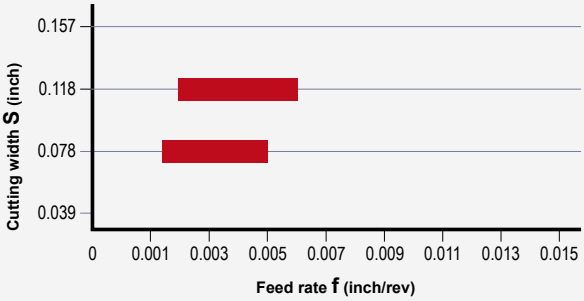


Nominal cutting speed and feed values for parting and grooving

WDMP *Soft cutting geometry*

- ***Especially for stainless steel.***
- ***Problem solver for steel machining.***





Material	M	HB	Condition	Cutting speed TL30 Vc (ft/min)
Stainless steel		200	Annealed ferritic	164 656
		180	Quenched austenitic	164 590
		230-260	Quenched duplex	164 328
		330	Hardened martensitic	164 262

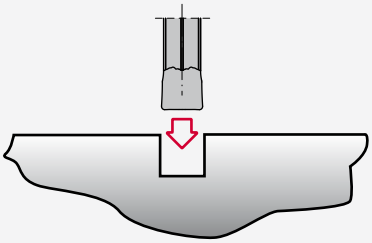
B

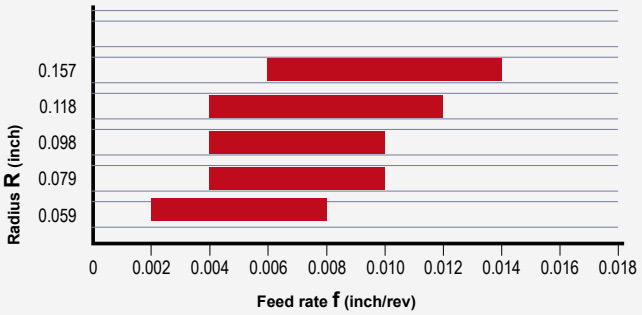
Nominal cutting speed and feed values for parting and grooving

WDMR *Radius grooves*

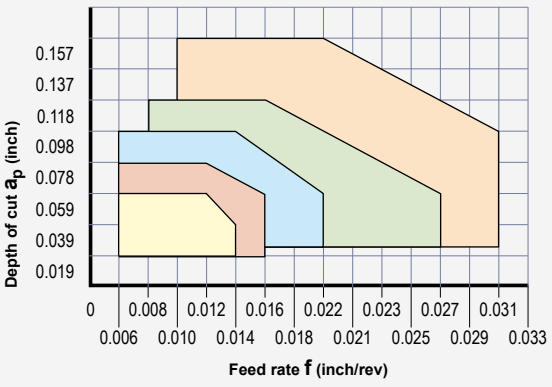
- ***Insert for radius grooves.***
- ***For copy turning.***
- ***Suitable for all steel and cast iron materials.***

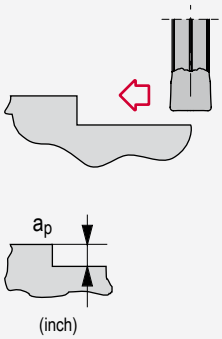
Feed rate for parting and grooving

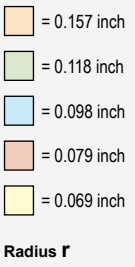




Feed rate for longitudinal turning





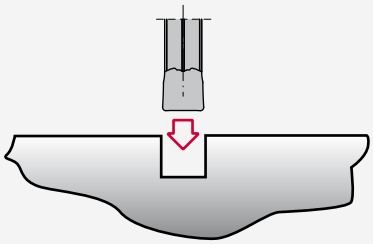


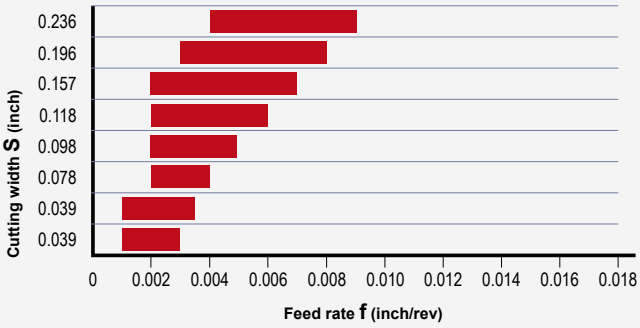
Nominal cutting speed and feed values for parting and grooving

WDMT *Grooving and Turning*

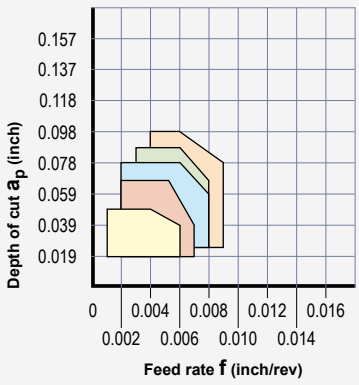
- ***For grooving and turning.***
- ***Suitable for all steel and stainless steel materials.***
- ***Very good chip control.***

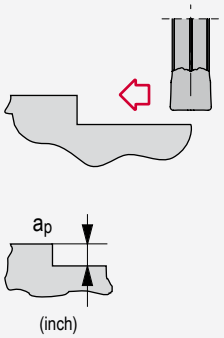
Feed rate for parting and grooving

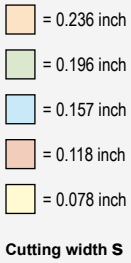




Feed rate for longitudinal turning

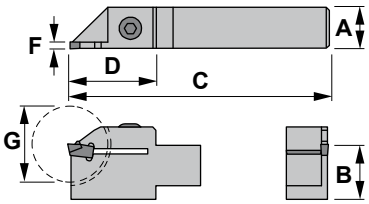


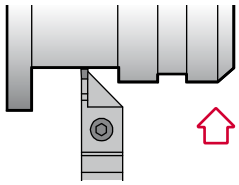




B

Characteristics:
Parting, grooving and side turning toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 0.08 to 0.35 inches.





CZCB

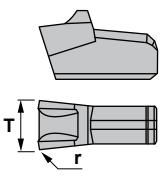
Reference	A	B	C	D	F	G	Insert size	lbs
CZCBR/L06-16	0.375	0.375	3.543	0.984	0.063	0.866	MRCN16	0.176
CZCBR/L06-22	0.375	0.375	3.543	0.984	0.087	0.866	MRCN22	0.176
CZCBR/L08-16	0.500	0.500	3.543	0.984	0.063	0.866	MRCN16	0.220
CZCBR/L08-22	0.500	0.500	3.543	0.984	0.087	0.866	MRCN22	0.220
CZCBR/L10-22	0.500	0.625	3.740	1.142	0.087	1.260	MRCN22	0.330
CZCBR/L10-30	0.500	0.625	3.740	1.142	0.118	1.260	MRCN30	0.330
CZCBR/L12-30	0.625	0.750	5.905	1.378	0.118	1.654	MRCN30	0.770
CZCBR/L12-40	0.625	0.750	5.905	1.378	0.157	1.654	MRCN40	0.770
CZCBR/L12-50	0.625	0.750	5.905	1.378	0.197	1.654	MRCN50	0.770
CZCBR/L12-60	0.625	0.750	5.905	1.378	0.236	1.654	MRCN60	0.770
CZCBR/L16-30	0.750	1.000	6.497	1.968	0.118	3.150	MRCN30	1.210
CZCBR/L16-40	0.750	1.000	6.497	1.968	0.157	3.150	MRCN40	1.210
CZCBR/L16-50	0.750	1.000	6.497	1.968	0.197	3.150	MRCN50	1.210
CZCBR/L16-60	0.750	1.000	6.497	1.968	0.236	3.150	MRCN60	1.210

Reference		
CZCBR/L06-16	1905	5004
CZCBR/L06-22	1905	5004
CZCBR/L08-16	1905	5004
CZCBR/L08-22	1905	5004
CZCBR/L10-22	1916	5005
CZCBR/L10-30	1916	5005
CZCBR/L12-30	1906	5005
CZCBR/L12-40	1906	5005
CZCBR/L12-50	1906	5005
CZCBR/L12-60	1906	5005
CZCBR/L16-30	1906	5005
CZCBR/L16-40	1906	5005
CZCBR/L16-50	1906	5005
CZCBR/L16-60	1906	5005

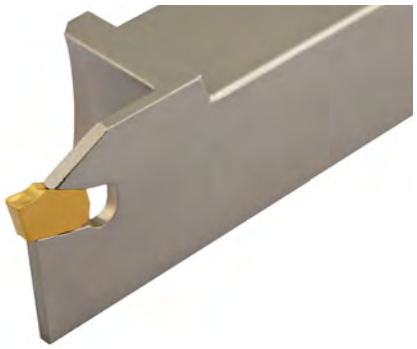
MRCN

Single-ended insert for parting and grooving. B05

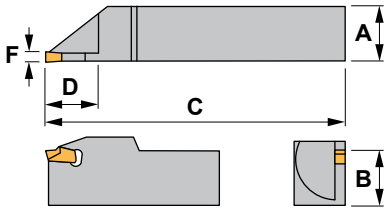
Reference	T	r
MRCN16	0.063	0.006
MRCN22	0.087	0.008
MRCN30	0.118	0.008
MRCN40	0.157	0.008
MRCN50	0.197	0.012
MRCN60	0.236	0.016

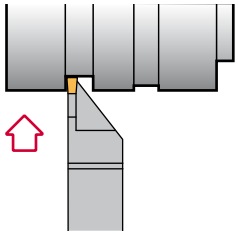


MRCN



Characteristics:
Parting and grooving toolholder that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 0.08 to 0.35 inches.





B

XLCF

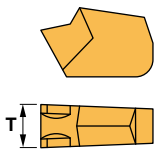
Reference	A	B	C	D	F	Insert size	lbs
XLCFR/L06-2B	0.375	0.375	4.331	0.709	0.078	PTNT02	0.176
XLCFR/L08-2B	0.500	0.500	4.331	0.709	0.078	PTNT02	0.220
XLCFR/L52-3B	0.500	0.625	4.331	0.787	0.118	PTNT03	0.330
XLCFR/L52-4B	0.500	0.625	4.331	0.787	0.157	PTNT04	0.330
XLCFR/L62-3C	0.500	0.750	4.921	0.787	0.118	PTNT03	0.440
XLCFR/L62-4C	0.500	0.750	4.921	0.787	0.157	PTNT04	0.440
XLCFR/L12-3C	0.750	0.750	4.921	0.787	0.118	PTNT03	0.770
XLCFR/L12-4C	0.750	0.750	4.921	0.787	0.157	PTNT04	0.770
XLCFR/L16-3D	1.000	1.000	5.906	0.787	0.118	PTNT03	1.430
XLCFR/L16-4D	1.000	1.000	5.906	0.787	0.157	PTNT04	1.430

Reference	
XLCFR/L06-2B	5732
XLCFR/L08-2B	5732
XLCFR/L52-3B	5732
XLCFR/L52-4B	5732
XLCFR/L62-3C	5732
XLCFR/L62-4C	5732
XLCFR/L12-3C	5732
XLCFR/L12-4C	5732
XLCFR/L16-3D	5732
XLCFR/L16-4D	5732

PTNT

Single-ended insert for parting and grooving. B05

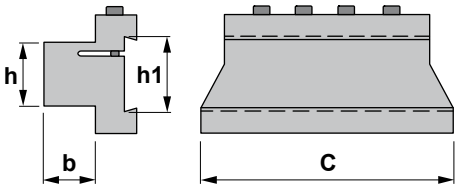
Reference	T
PTNT02	0.083
PTNT03	0.122
PTNT04	0.161



PTNT

B

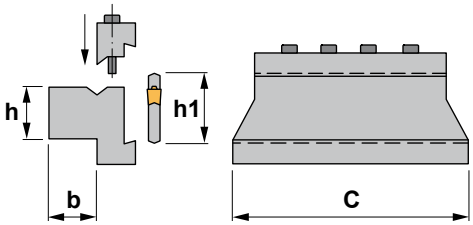
Characteristics:
Tool blocks manufactured with two slot-guides that allow to mantain the blade always guided.
For manual and C.N.C. lathes.



CPTS

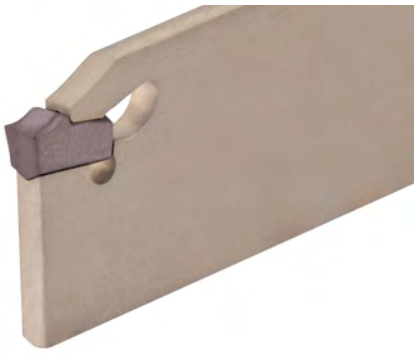
Reference	h1	C	h	b			lbs
CPTS-1019	0.750	2.990	0.625	0.625	1075	5004	0.660
CPTS-1026	1.020	3.430	0.625	0.625	1076	5005	0.990
CPTS-1226	1.020	3.430	0.750	0.750	1076	5005	1.100
CPTS-1232	1.250	3.940	0.750	0.750	1076	5005	1.540
CPTS-1632	1.250	4.330	1.000	1.000	1076	5005	2.090
CPTS-2032	1.250	4.750	1.250	1.250	1076	5005	3.080
CPTS-2432	1.250	4.750	1.500	1.640	1076	5005	3.080

Characteristics:
Tool blocks manufactured with two slot-guides that allow to mantain the blade always guided. Fixing system in two parts for machines with difficult access.
For manual and C.N.C. lathes.



DPTS

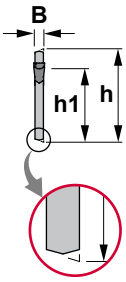
Reference	h1	C	h	b				lbs
DPTS-1019	0.750	2.990	0.625	0.625	1075	2916	5004	0.550
DPTS-1026	1.020	3.430	0.625	0.625	1076	2920	5005	1.210
DPTS-1226	1.020	3.430	0.750	0.750	1076	2920	5005	1.540
DPTS-1232	1.250	3.940	0.750	0.750	1076	2930	5005	1.650
DPTS-1632	1.250	4.330	1.000	1.000	1076	2935	5005	2.200
DPTS-2032	1.250	4.750	1.250	1.250	1076	2942	5005	3.190
DPTS-2432	1.250	4.750	1.500	1.640	1076	2950	5005	3.190

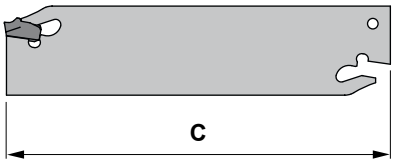


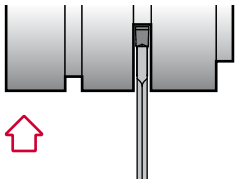
Characteristics:

Parting and grooving blade that works well on steels, alloyed steels, stainless steels and refractories.

Single-ended inserts with thickness from 0.08 to 0.23 inches.







CRCFN

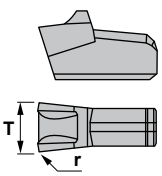
Reference	h	C	h1	B	Insert size	lbs
CRCFN2601J02	1.020	4.330	0.840	0.086	MRCN22	0.132
CRCFN2602J03	1.020	4.330	0.840	0.118	MRCN30	0.154
CRCFN2603J04	1.020	4.330	0.840	0.157	MRCN40	0.198
CRCFN2604J05	1.020	4.330	0.840	0.196	MRCN50	0.220
CRCFN2605J06	1.020	4.330	0.840	0.236	MRCN60	0.220
CRCFN3202M03	1.250	5.900	0.980	0.118	MRCN30	0.220
CRCFN3203M04	1.250	5.900	0.980	0.157	MRCN40	0.275
CRCFN3204M05	1.250	5.900	0.980	0.196	MRCN50	0.374
CRCFN3205M06	1.250	5.900	0.980	0.236	MRCN60	0.410

Reference	
CRCFN2601J02	5735
CRCFN2602J03	5735
CRCFN2603J04	5735
CRCFN2604J05	5735
CRCFN2605J06	5735
CRCFN3202M03	5735
CRCFN3203M04	5735
CRCFN3204M05	5735
CRCFN3205M06	5735

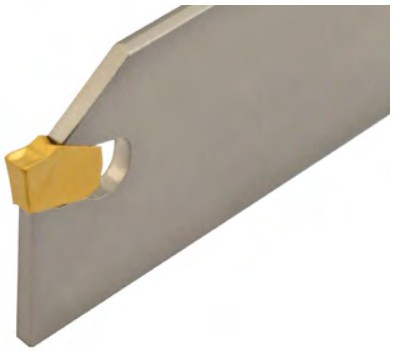
MRCN

Single-ended insert for parting and grooving. B05

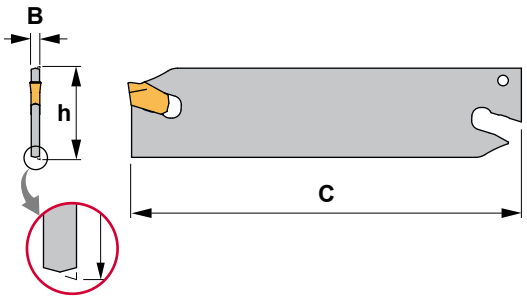
Reference	T	r
MRCN22	0.087	0.008
MRCN30	0.118	0.008
MRCN40	0.157	0.008
MRCN50	0.197	0.012
MRCN60	0.236	0.016

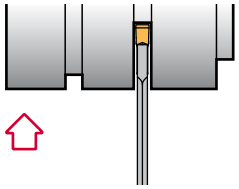


MRCN



Characteristics:
Parting and grooving blade that works well on steels, alloyed steels, stainless steels and refractories.
Single-ended inserts with thickness from 0.08 to 0.35 inches.





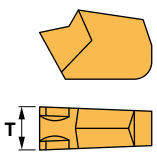
XLCFN

Reference	h	C	B		Insert size	lbs
XLCFN1901X02	0.750	3.386	0.083	5732	PTNT02	0.088
XLCFN2601J02	1.020	4.331	0.083	5732	PTNT02	0.110
XLCFN2602J03	1.020	4.331	0.122	5732	PTNT03	0.110
XLCFN2603J04	1.020	4.331	0.161	5732	PTNT04	0.187
XLCFN2604J05	1.020	4.331	0.201	5732	PTNT05	0.209
XLCFN2605J06	1.020	4.331	0.240	5732	PTNT06	0.264
XLCFN3201M02	1.250	5.906	0.083	5732	PTNT02	0.165
XLCFN3202M03	1.250	5.906	0.122	5732	PTNT03	0.220
XLCFN3203M04	1.250	5.906	0.161	5732	PTNT04	0.286
XLCFN3204M05	1.250	5.906	0.201	5732	PTNT05	0.352
XLCFN3205M06	1.250	5.906	0.240	5732	PTNT06	0.418
XLCFN3207M08	1.250	5.906	0.319	5732	PTNT08	0.506
XLCFN3208M09	1.250	5.906	0.358	5732	PTNT09	0.594
XLCFN5207X08	2.087	7.480	0.319	5732	PTNT08	1.100
XLCFN5208X09	2.087	7.480	0.358	5732	PTNT09	1.320
XLCFN5307X08	2.087	10.236	0.319	5732	PTNT08	1.540
XLCFN5308X09	2.087	10.236	0.358	5732	PTNT09	1.760

PTNT

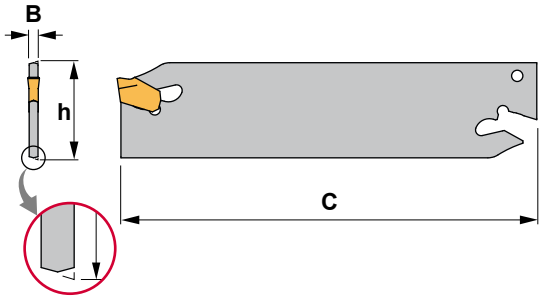
Single-ended insert for parting and grooving. B05

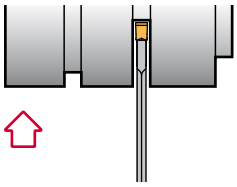
Reference	T
PTNT02	0.083
PTNT03	0.122
PTNT04	0.161
PTNT05	0.201
PTNT06	0.240
PTNT08	0.319
PTNT09	0.358



PTNT

Characteristics:
Parting and grooving positive stop blade that works well on steels, alloyed steels, stainless steels and refractories.
For inserts with thickness from 0.078 to 0.236 inches.





XLCTN

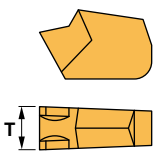
Reference	h	C	B	Insert size	lbs
XLCTN1901X02	0.750	3.386	0.083	PTNT02	0.088
XLCTN2601J02	1.020	4.331	0.083	PTNT02	0.110
XLCTN2602J03	1.020	4.331	0.122	PTNT03	0.110
XLCTN2603J04	1.020	4.331	0.161	PTNT04	0.187
XLCTN2604J05	1.020	4.331	0.201	PTNT05	0.209
XLCTN2605J06	1.020	4.331	0.240	PTNT06	0.264
XLCTN3201M02	1.250	5.906	0.083	PTNT02	0.165
XLCTN3202M03	1.250	5.906	0.122	PTNT03	0.220
XLCTN3203M04	1.250	5.906	0.161	PTNT04	0.286
XLCTN3204M05	1.250	5.906	0.201	PTNT05	0.352
XLCTN3205M06	1.250	5.906	0.240	PTNT06	0.418

Reference	
XLCTN1901X02	5732
XLCTN2601J02	5732
XLCTN2602J03	5732
XLCTN2603J04	5732
XLCTN2604J05	5732
XLCTN2605J06	5732
XLCTN3201M02	5732
XLCTN3202M03	5732
XLCTN3203M04	5732
XLCTN3204M05	5732
XLCTN3205M06	5732

PTNT

Single-ended insert for parting and grooving. B05

Reference	T
PTNT02	0.083
PTNT03	0.122
PTNT04	0.161
PTNT05	0.201
PTNT06	0.240

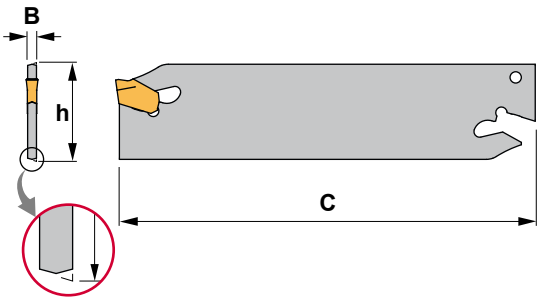


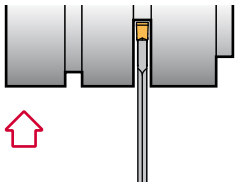
PTNT

B

Characteristics:
Parting and grooving positive stop blade that works well on steels, alloyed steels, stainless steels and refractories.
For inserts with thickness from 0.078 to 0.197 inches.

HSS





XLCTN-HSS

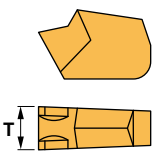
Reference	h	C	B	Insert size	lbs
XLCTN2601J02-HSS	1.020	4.331	0.083	PTNT02	0.110
XLCTN2602J03-HSS	1.020	4.331	0.122	PTNT03	0.110
XLCTN2603J04-HSS	1.020	4.331	0.161	PTNT04	0.187
XLCTN3201M02-HSS	1.250	5.906	0.083	PTNT02	0.165
XLCTN3202M03-HSS	1.250	5.906	0.122	PTNT03	0.220
XLCTN3203M04-HSS	1.250	5.906	0.161	PTNT04	0.286
XLCTN3204M05-HSS	1.250	5.906	0.201	PTNT05	0.352

Reference	
XLCTN2601J02-HSS	5732
XLCTN2602J03-HSS	5732
XLCTN2603J04-HSS	5732
XLCTN3201M02-HSS	5732
XLCTN3202M03-HSS	5732
XLCTN3203M04-HSS	5732
XLCTN3204M05-HSS	5732

PTNT

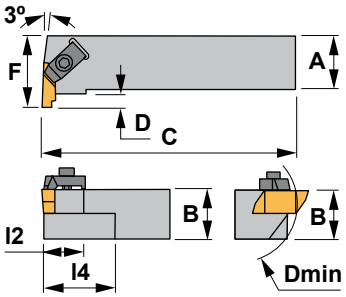
Single-ended insert for parting and grooving. B05

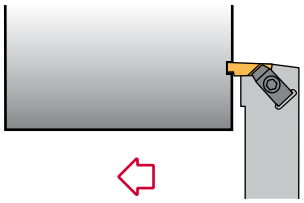
Reference	T
PTNT02	0.083
PTNT03	0.122
PTNT04	0.161
PTNT05	0.201



PTNT

Characteristics:
Multipurpose grooving and threading top clamp external toolholder.





NE 93°

Reference	Dmin	A	B	l2	C	l4	D	F	Insert size	lbs
NER/L062	1.968	0.375	0.375	0.500	2.5	1.000	0.138	0.750	N..2	0.154
NER/L082J	1.968	0.500	0.500	0.500	3.5	1.000	0.138	0.750	N..2	0.220
NER/L102B	1.968	0.625	0.625	-	4.5	1.000	0.138	0.750	N..2	0.440
NER/L122B	2.362	0.750	0.750	0.500	4.5	1.000	0.138	1.000	N..2	0.880
NER/L123B	2.362	0.750	0.750	0.750	4.5	2.000	0.210	1.125	N..3	0.880
NER/L163D	2.755	1.000	1.000	0.750	6.0	2.000	0.210	1.250	N..3	1.540
NER/L203D	3.346	1.250	1.250	0.750	6.0	2.000	0.210	1.500	N..3	2.750
NER/L164D	3.149	1.000	1.000	0.750	6.0	2.000	0.294	1.375	N..4	1.540
NER/L204D	3.346	1.250	1.250	0.750	6.0	2.000	0.294	1.625	N..4	2.750

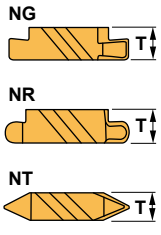
Reference				
NER/L062	5124	TF-75	TF-74	1291
NER/L082J	5124	TF-75	TF-74	1291
NER/L102B	5124	TF-75	TF-74	1291
NER/L122B	5124	TF-75	TF-74	1291
NER/L123B	5004	TF-73	TF-72	1297
NER/L163D	5004	TF-73	TF-72	1297
NER/L203D	5004	TF-73	TF-72	1297
NER/L164D	5004	TF-73	TF-72	1297
NER/L204D	5004	TF-73	TF-72	1297

N..

B06-07

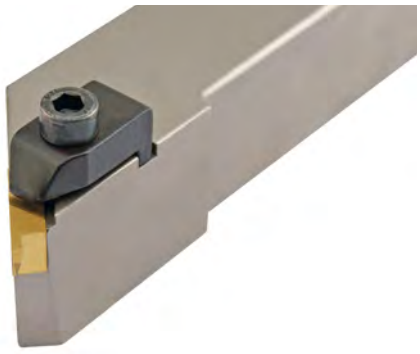
Reference	T
N..2	0.150
N..3	0.195
N..4	0.255

NG: Insert for grooving
NR: Insert for grooving with radius
NT: Insert for threading

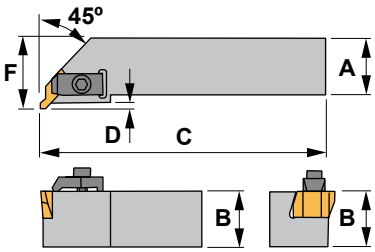


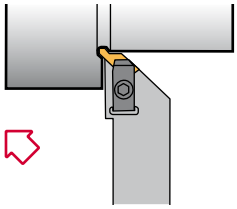
NG	NR
	
NT	
	

B



Characteristics:
Specific application external grooving toolholder.
Right tools require left inserts and vice versa. Maximum grooving depth depending on insert.





NR 45°

Reference	A	B	C	D	F	Insert size	lbs
NRR/L123B	0.750	0.750	4.5	1.250	1.000	N..3	0.880
NRR/L163D	1.000	1.000	6.0	1.250	1.250	N..3	1.540
NRR/L203D	1.250	1.250	6.0	1.375	1.375	N..3	2.200
NRR/L243D	1.500	1.500	6.0	1.375	1.375	N..3	5.830

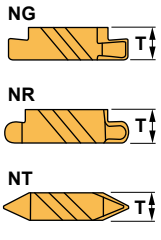
Reference				
NRR/L123B	5004	TF-73	TF-72	1297
NRR/L163D	5004	TF-73	TF-72	1297
NRR/L203D	5004	TF-73	TF-72	1297
NRR/L243D	5004	TF-73	TF-72	1297

N..

B06-07

Reference	T
N..3	0.195

NG: Insert for grooving
NR: Insert for grooving with radius
NT: Insert for threading

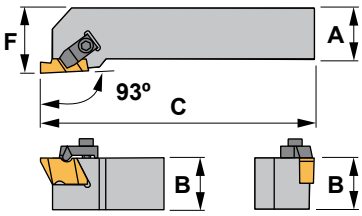


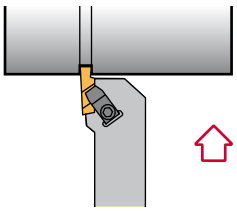
NG

NR

NT

Characteristics:
Multipurpose grooving and threading top clamp external toolholder.
Maximum grooving depth depending on insert.





NS 93°

Reference	A	B	C	D	F	Insert size	lbs
NSR/L062	0.375	0.375	2.5	0.138	0.562	N..2	0.154
NSR/L082J	0.500	0.500	3.5	0.138	0.750	N..2	0.220
NSR/L102B	0.625	0.625	4.5	0.138	0.875	N..2	0.440
NSR/L122B	0.750	0.750	4.5	0.138	1.000	N..2	0.880
NSR/L162D	1.000	1.000	6.0	0.138	1.250	N..2	1.540
NSR/L123B	0.750	0.750	4.5	0.210	1.000	N..3	0.880
NSR/L163C	1.000	1.000	5.0	0.210	1.250	N..3	1.540
NSR/L163D	1.000	1.000	6.0	0.210	1.250	N..3	1.540
NSR/L203D	1.250	1.250	6.0	0.210	1.500	N..3	2.750
NSR/L164C	1.000	1.000	5.0	0.294	1.250	N..4	1.540
NSR/L164D	1.000	1.000	6.0	0.294	1.250	N..4	1.540
NSR/L204D	1.250	1.250	6.0	0.294	1.500	N..4	2.750
NSR/L244D	1.500	1.500	6.0	0.294	1.750	N..4	3.800

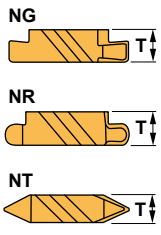
Reference						
NSR/L062	5124	TF-75	TF-74	-	-	1291
NSR/L082J	5124	TF-75	TF-74	-	-	1291
NSR/L102B	5124	TF-75	TF-74	-	-	1291
NSR/L122B	5124	TF-75	TF-74	-	-	1291
NSR/L162D	5124	TF-75	TF-74	-	-	1291
NSR/L123B	5004	TF-73	TF-72	-	-	1297
NSR/L163C	5004	TF-73	TF-72	-	-	1297
NSR/L163D	5004	TF-73	TF-72	-	-	1297
NSR/L203D	5004	TF-73	TF-72	-	-	1297
NSR/L164C	5004	TF-73	TF-72	3521	1625	1297
NSR/L164D	5004	TF-73	TF-72	3521	1625	1297
NSR/L204D	5004	TF-73	TF-72	3521	1625	1297
NSR/L244D	5004	TF-73	TF-72	3521	1625	1297

N..

B06-07

Reference	T
N..2	0.150
N..3	0.195
N..4	0.255

NG: Insert for grooving / NR: Insert for grooving with radius / NT: Insert for threading



NG

NR

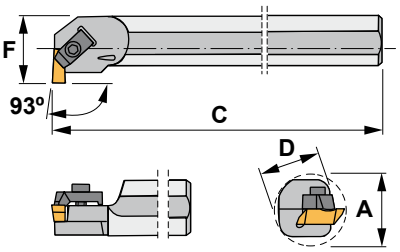
NT

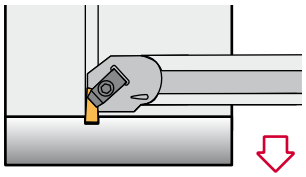
B

Characteristics:

Multipurpose grooving and threading top clamp boring bar. Right tools require left inserts and vice versa.

Maximum grooving depth depending on insert.





NNTO 93°

Reference	A	C	D	F	Insert size	lbs
A10S-NNTOR/L2	1.000	10.0	0.625	0.500	N..2	0.440
A12S-NNTOR/L2	1.125	10.0	0.750	0.562	N..2	0.880
A16T-NNTOR/L2	1.375	12.0	1.000	0.688	N..2	1.540
A16T-NNTOR/L3	1.375	12.0	1.000	0.688	N..3	1.540
A20U-NNTOR/L3	1.750	14.0	1.250	0.875	N..3	3.080
A24U-NNTOR/L3	2.000	14.0	1.500	1.000	N..3	5.830
A28U-NNTOR/L3	2.250	14.0	1.750	1.125	N..3	5.830
A28U-NNTOR/L4	2.500	14.0	1.750	1.250	N..4	5.830
A32V-NNTOR/L4	2.750	16.0	2.000	1.375	N..4	11.880

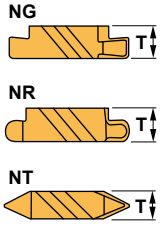
Reference				
A10S-NNTOR/L2	5124	TF-147	TF-146	1291
A12S-NNTOR/L2	5124	TF-75	TF-74	1291
A16T-NNTOR/L2	5124	TF-75	TF-74	1291
A16T-NNTOR/L3	5004	TF-75	TF-74	1297
A20U-NNTOR/L3	5004	TF-73	TF-72	1297
A24U-NNTOR/L3	5004	TF-73	TF-72	1297
A28U-NNTOR/L3	5004	TF-73	TF-72	1297
A28U-NNTOR/L4	5004	TF-73	TF-72	1297
A32V-NNTOR/L4	5004	TF-73	TF-72	1297

N..

B06-07

Reference	T
N..2	0.150
N..3	0.195
N..4	0.255

NG: Insert for grooving
NR: Insert for grooving with radius
NT: Insert for threading



NG	NR
	
NT	
	

Nominal cutting speed for parting

Material	HB	Condition	Basic grades TN30	PM25	KM15	TL30	Specific cutting force lbs/in²
			Cutting speed m/min.				
P							
Unalloyed steel	125 150 200	C=0.15% C=0.35% C=0.60%	656-492 623-459 558-394	525-394 492-361 426-295		394-821 263-591 197-492	390.0 304.5 330.5
Low alloyed steel	180 275 300 350	Annealed Hardened Hardened Hardened	590-426 525-361 492-328 459-295	459-328 394-262 361-230 295-197		263-591 197-492 197-394	304.5 377.0 400.0 413.5
High alloyed steel	200 325	Annealed Hardened	361-295 230-164	230-197 148-98		263-525 164-394	377.0 565.5
Stainless steel	200	Martensitic / ferritic	558-394	426-295		164-657	377.0
Steel	180 200 225	Unalloyed Low alloyed High alloyed	426-295 377-246 328-197	328-197 295-164 262-131			290.0 304.5 391.5
M							
Stainless steel annealed	180		558-394	426-295	328-197		355.0
Heat-resistant alloys	200 280 250 350 320	Annealed | Iron base Aged | Iron base Annealed | Ni or Co base Aged | Ni or Co base Cast | Ni or Co base			164-98 131-66 98-66 66-33 66-33	164-657 164-591 164-328 164-263	435.0 422.0 481.5 522.0 536.5
Titanium alloys	400 950 1050	Ti Cast α, almost α and α+β Aged cast α+β					222.0 243.0 245.0
K							
Hardened steel	220 250	Hardened steel Manganese steel 12%					652.5
Malleable cast iron	130 230	Ferritic Pearlitic	459-361 328-230		100-80 70-50	361-755 263-525	138.0 159.5
Cast iron	180 260	Low tensile strength High tensile strength	361-279 328-230		80-60 70-50	328-657 295-525	159.5 203.5
Nodular SG iron	160 250	Ferritic Pearlitic	328-230 279-197		70-50 60-40	328-591 263-525	152 254
Aluminium alloys	60 100	Non heat treatable Heat treatable	4920 1640	4920 1640	3280 2132		72.5 116.0
Aluminium alloys (cast)	75 90	Non heat treatable Heat treatable	4920 2460	4920 2460	3280 2132		109.0 130.5
Bronze-brass alloys	110 90 100	Lead alloys, Pb>1% Brass, red brass Bronze and lead-free copper	984 656 492	984 656 492	984 656 492		101.5 101.5 254.0

B

Nominal cutting speed for grooving

Material P	HB	Condition	External				Internal				Specific cutting force lbs/in²
			TL30	TN30	PM25	KM15	TL30	TN30	PM25	KM15	
			Cutting speed m/min.								
Unalloyed steel	125 150 200	C=0.15% C=0.35% C=0.60%	394-821 263-591 197-492	656-492 623-460 558-394	525-394 150-361 426-295		394-821 263-591 197-492	459-344 443-328 394-279	361-279 344-262 295-197		390.0 304.5 330.5
Low alloyed steel	180 275 300 350	Annealed Hardened Hardened Hardened	263-591 197-492 197-394	590-426 525-361 492-328 459-295	459-328 394-262 361-230 295-197		263-591 197-492 197-394	410-295 361-262 344-230 328-197	328-230 279-180 262-164 197-147		304.5 377.0 400.0 413.5
High alloyed steel	200 325	Annealed Hardened	263-525 164-394	361-295 230-164	230-197 148-98		263-525 164-394	262-197 262-115	164-147 105-66		377.0 565.5
Stainless steel	200	Martensitic / ferritic	164-657	558-394	426-295		164-657	394-279	295-197		377.0
Steel	180 200 225	Unalloyed Low alloyed High alloyed		426-295 377-246 328-197	328-197 295-164 262-131			295-197 262-164 230-148	230-148 197-115 180-98		290.0 304.5 391.5

Material M	HB	Condition	External				Internal				Specific cutting force lbs/in²
			TL30	TN30	PM25	KM15	TL30	TN30	PM25	KM15	
			Cutting speed m/min.								
Stainless steel annealed	180			558-394	426-295	328-197		394-279	295-197	230-148	355.0
Heat-resistant alloys	200 280 250 350 320	Annealed | Iron base Aged | Iron base Annealed | Ni or Co base Aged | Ni or Co base Cast | Ni or Co base	164-657 164-591 164-328 164-263			164-98 131-66 98-66 66-33 66-33	164-657 164-591 164-328 164-263			164-98 131-66 98-66 66-33 66-33	435.0 422.0 481.5 522.0 536.5
Titanium alloys	400 950 1050	Ti Cast α, almost α and α+β Aged cast α+β				574 236 213					222.0 243.0 245.0

Material K	HB	Condition	External				Internal				Specific cutting force lbs/in²
			TL30	TN30	PM25	KM15	TL30	TN30	PM25	KM15	
			Cutting speed m/min.								
Hardened steel	220 250	Hardened steel Manganese steel 12%									652.5
Malleable cast iron	130 230	Ferritic Pearlitic	361-755 263-525	459-361 328-230		328-262 230-164	361-755 263-525	328-262 230-164		328-262 230-164	138.0 159.5
Cast iron	180 260	Low tensile strength High tensile strength	328-657 295-525	361-279 328-230		262-197 230-164	328-657 295-525	262-197 230-164		262-197 230-164	159.5 203.5
Nodular SG iron	160 250	Ferritic Pearlitic	328-591 263-525	328-230 279-197		230-164 197-131	328-591 263-525	230-164 197-148		230-164 197-131	152 254
Aluminium alloys	60 100	Non heat treatable Heat treatable		4920 1640	4920 1640	3280 1378		3444 1148	3444 1148	2296 984	72.5 116.0
Aluminium alloys (cast)	75 90	Non heat treatable Heat treatable		4920 2460	4920 2460	3280 2132		3444 1722	3444 1722	2296 1509	109.0 130.5
Bronze-brass alloys	110 90 100	Lead alloys, Pb>1% Brass, red brass Bronze and lead-free copper		984 656 492	984 656 492	984 656 492		689 459 344	689 459 344	689 459 344	101.5 101.5 254.0

Nominal cutting speed for profiling

Material	HB	Condition	Basic grades TN30	PM25	KM15	TL30	Specific cutting force lbs/in²
			Cutting speed m/min.				
P							
Unalloyed steel	125 150 200	C=0.15% C=0.35% C=0.60%	656 623 558	525 492 426		394-821 263-591 197-492	390.0 304.5 330.5
Low alloyed steel	180 275 300 350	Annealed Hardened Hardened Hardened	590 525 492 459	459 394 361 295		263-591 197-492 197-394	304.5 377.0 400.0 413.5
High alloyed steel	200 325	Annealed Hardened	426 328	328 197		263-525 164-394	377.0 565.5
Stainless steel	200	Martensitic / ferritic	558	426		164-657	377.0
Steel	180 200 225	Unalloyed Low alloyed High alloyed	426 377 328	328 295 230			290.0 304.5 391.5
M							
Stainless steel annealed	180		558	394	328		355.0
Heat-resistant alloys	200 280 250 350 320	Annealed | Iron base Aged | Iron base Annealed | Ni or Co base Aged | Ni or Co base Cast | Ni or Co base			197 164 98 66 66	164-657 164-591 164-328 164-263	435.0 422.0 481.5 522.0 536.5
Titanium alloys	400 950 1050	Ti Cast α, almost α and $\alpha+\beta$ Aged cast $\alpha+\beta$			574 236 213		222.0 243.0 245.0
K							
Hardened steel	220 250	Hardened steel Manganese steel 12%					652.5
Malleable cast iron	130 230	Ferritic Pearlitic		459 361	328 230	361-755 263-525	138.0 159.5
Cast iron	180 260	Low tensile strength High tensile strength		361 328	328 230	328-657 295-525	159.5 203.5
Nodular SG iron	160 250	Ferritic Pearlitic		328 279	328 230	328-591 263-525	152.0 254.0
Aluminium alloys	60 100	Non heat treatable Heat treatable			3280 1378		72.5 116.0
Aluminium alloys (cast)	75 90	Non heat treatable Heat treatable			1476 984		109.0 130.5
Bronze-brass alloys	110 90 100	Lead alloys, Pb>1% Brass, red brass Bronze and lead-free copper	984 656 492	984 656 492	984 656 492		101.5 101.5 254.0

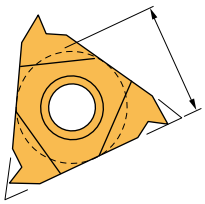
THREADING

C

Code system

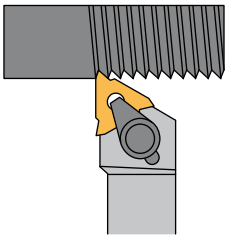
16	E	L	-	AG	55
1	2	3		4	5

1 Insert size

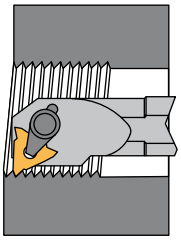


	IC=inch	D=mm.
06	5/32	3,96
08	3/16	4,76
11	1/4	6,35
16	3/8	9,52
22	1/2	12,70
27	5/8	15,87

2 Insert type

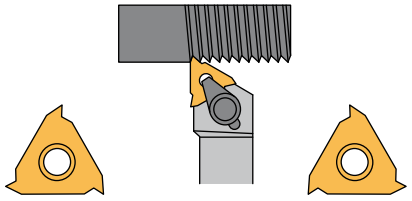


E
External thread

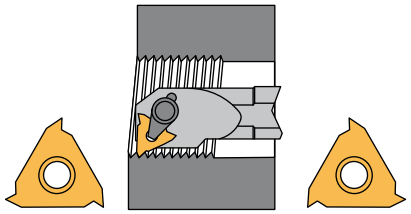


N
Internal thread

3 Hand of insert

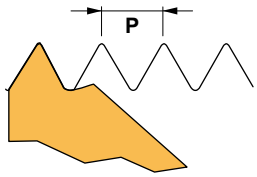


R | **L**



R | **L**

4 Pitch



p-mm. x 100
p-inch x 10

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

5 Standard

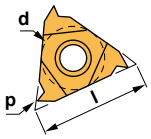
55	Partial profile 55°
60	Partial profile 60°
ISO	ISO metric
W	Whitworth, BSW
LG	Groove type LG

Grade characteristics

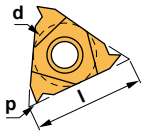
Grades	General use
TL20	General purpose grade with tough submicron substrate. Provides good fracture toughness in non-rigid cutting conditions. TiAlN coated.
TIN25	General purpose grade, excellent in steel and stainless steel, recommended for rigid cutting conditions. Ground or sintered chipbreaker styles. TiN coated.

ER

ER TD



ER



EL

ER-60º

Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
11ER-A60	0.433	0.250	60°	○	
16ER-A60	0.629	0.374	60°	○	
16ER-AG60	0.629	0.374	60°	●	○
16ER-G60	0.629	0.374	60°	●	○
22ER-N60	0.866	0.500	60°	●	○
27ER-S60	1.062	0.624	60°	○	

EL-60°

Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
11EL-A60	0.433	0.250	60°	○	
16EL-A60	0.629	0.374	60°	○	
16EL-AG60	0.629	0.374	60°	○	
16EL-G60	0.629	0.374	60°	○	
22EL-N60	0.866	0.500	60°	○	
27EL-S60	1.062	0.624	60°	○	

ER-55°

Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
11ER-A55	0.433	0.250	55°	○	
16ER-A55	0.629	0.374	55°	○	
16ER-AG55	0.629	0.374	55°	●	○
16ER-G55	0.629	0.374	55°	○	
22ER-N55	0.866	0.500	55°	○	
27ER-S55	1.062	0.624	55°	○	

EL-55°

Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
11EL-A55	0.433	0.250	55°	○	
16EL-A55	0.629	0.374	55°	○	
16EL-AG55	0.629	0.374	55°	○	
16EL-G55	0.629	0.374	55°	○	
22EL-N55	0.866	0.500	55°	○	
27EL-S55	1.062	0.624	55°	○	

ER-60° TD

Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
16ER-AG60-TD	0.629	0.374	60°	●	

ER-55° TD

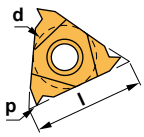
Partial profile thread forms - External inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
16ER-AG55-TD	0.629	0.374	55°	●	

C

C

NR



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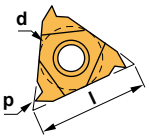
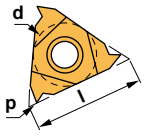


NL

NR-TD



NR-60°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
06NR-A60	0.236	0.155	60°	○	
08NR-A60	0.314	0.187	60°	○	
11NR-A60	0.433	0.250	60°	●	○
16NR-A60	0.629	0.374	60°	○	
16NR-AG60	0.629	0.374	60°	●	○
16NR-G60	0.629	0.374	60°	○	
22NR-N60	0.866	0.500	60°	●	○
27NR-S60	1.062	0.624	60°	○	

NL-60°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
06NL-A60	0.236	0.155	60°	○	
08NL-A60	0.314	0.187	60°	○	
11NL-A60	0.433	0.250	60°	○	
16NL-A60	0.629	0.374	60°	○	
16NL-AG60	0.629	0.374	60°	○	
16NL-G60	0.629	0.374	60°	○	
22NL-N60	0.866	0.500	60°	○	
27NL-S60	1.062	0.624	60°	○	

NR-55°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
06NR-A55	0.236	0.155	55°	○	
08NR-A55	0.314	0.187	55°	○	
11NR-A55	0.433	0.250	55°	○	
16NR-A55	0.629	0.374	55°	○	
16NR-AG55	0.629	0.374	55°	●	○
16NR-G55	0.629	0.374	55°	●	
22NR-N55	0.866	0.500	55°	○	
27NR-S55	1.062	0.624	55°	○	

NL-55°

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
06NL-A55	0.236	0.155	55°		
08NL-A55	0.314	0.187	55°		
11NL-A55	0.433	0.250	55°	○	
16NL-A55	0.629	0.374	55°	○	
16NL-AG55	0.629	0.374	55°	○	
16NL-G55	0.629	0.374	55°	○	
22NL-N55	0.866	0.500	55°	○	
27NL-S55	1.062	0.624	55°		

NR-60° TD

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

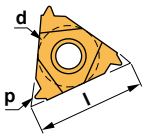
Reference	l	d	p	TIN25	TL20
16NR-AG60-TD	0.629	0.374	60°	●	

NR-55° TD

Partial profile thread forms - Internal inserts **60º-55º (non topping)**

Reference	l	d	p	TIN25	TL20
16NR-AG55-TD	0.629	0.374	55°	●	

ER



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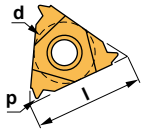


EL

ER-ISO

Mechanical thread forms - External inserts **ISO (full form) BS36**

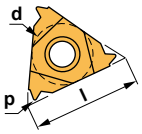
Reference	l	d	p	TIN25	TL20
11ER-030ISO	0.433	0.250	0.011	○	
11ER-040ISO	0.433	0.250	0.015	○	
11ER-045ISO	0.433	0.250	0.017	○	
11ER-050ISO	0.433	0.250	0.019	○	
11ER-060ISO	0.433	0.250	0.023	○	
11ER-070ISO	0.433	0.250	0.027	○	
11ER-075ISO	0.433	0.250	0.029	○	
11ER-080ISO	0.433	0.250	0.031	○	
11ER-100ISO	0.433	0.250	0.039	○	
11ER-125ISO	0.433	0.250	0.049	○	
11ER-150ISO	0.433	0.250	0.059	○	
11ER-175ISO	0.433	0.250	0.068	○	
16ER-075ISO	0.629	0.374	0.029	○	
16ER-100ISO	0.629	0.374	0.039	○	
16ER-125ISO	0.629	0.374	0.049	○	
16ER-150ISO	0.629	0.374	0.059	○	
16ER-175ISO	0.629	0.374	0.068	○	
16ER-200ISO	0.629	0.374	0.078	○	
16ER-250ISO	0.629	0.374	0.098	○	
16ER-300ISO	0.629	0.374	0.118	○	
22ER-350ISO	0.866	0.500	0.137	○	
22ER-400ISO	0.866	0.500	0.157	○	
22ER-450ISO	0.866	0.500	0.177	○	
22ER-500ISO	0.866	0.500	0.196	○	
27ER-500ISO	1.062	0.624	0.196	○	
27ER-550ISO	1.062	0.624	0.216	○	
27ER-600ISO	1.062	0.624	0.236	○	
27ER-800ISO	1.062	0.624	0.314	○	

EL-ISO

Mechanical thread forms - External inserts **ISO (full form) BS36**

Reference	l	d	p	TIN25	TL20
16EL-100ISO	0.629	0.374	0.039	○	
16EL-125ISO	0.629	0.374	0.049	○	
16EL-150ISO	0.629	0.374	0.059	○	
16EL-175ISO	0.629	0.374	0.068	○	
16EL-200ISO	0.629	0.374	0.078	○	
16EL-250ISO	0.629	0.374	0.098	○	
16EL-300ISO	0.629	0.374	0.118	○	
22EL-400ISO	0.866	0.500	0.157	○	

C

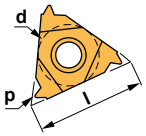


NR-ISO

Mechanical thread forms - Internal inserts **ISO (full form) BS36**

Reference	l	d	p	TIN25	TL20
06NR-050ISO	0.236	0.155	0.019	○	
06NR-075ISO	0.236	0.155	0.029	○	
06NR-100ISO	0.236	0.155	0.039	○	
06NR-125ISO	0.236	0.155	0.049	○	
08NR-050ISO	0.314	0.187	0.019	○	
08NR-075ISO	0.314	0.187	0.029	○	
08NR-100ISO	0.314	0.187	0.039	○	
08NR-125ISO	0.314	0.187	0.049	○	
08NR-150ISO	0.314	0.187	0.059	○	
08NR-175ISO	0.314	0.187	0.068	○	
11NR-035ISO	0.433	0.250	0.013	○	
11NR-040ISO	0.433	0.250	0.015	○	
11NR-045ISO	0.433	0.250	0.017	○	
11NR-050ISO	0.433	0.250	0.019	○	
11NR-060ISO	0.433	0.250	0.023	○	
11NR-070ISO	0.433	0.250	0.027	○	
11NR-075ISO	0.433	0.250	0.029	○	
11NR-080ISO	0.433	0.250	0.031	○	
11NR-100ISO	0.433	0.250	0.039	○	
11NR-125ISO	0.433	0.250	0.049	○	
11NR-150ISO	0.433	0.250	0.059	○	
11NR-175ISO	0.433	0.250	0.068	○	
11NR-200ISO	0.433	0.250	0.078	○	
11NR-250ISO	0.433	0.250	0.098	○	
16NR-075ISO	0.629	0.374	0.029	○	
16NR-100ISO	0.629	0.374	0.039	○	
16NR-125ISO	0.629	0.374	0.049	○	
16NR-150ISO	0.629	0.374	0.059	○	
16NR-175ISO	0.629	0.374	0.068	○	
16NR-200ISO	0.629	0.374	0.078	○	
16NR-250ISO	0.629	0.374	0.098	○	
16NR-300ISO	0.629	0.374	0.118	○	
22NR-350ISO	0.866	0.500	0.137	○	
22NR-400ISO	0.866	0.500	0.157	○	
22NR-450ISO	0.866	0.500	0.177	○	
22NR-500ISO	0.866	0.500	0.196	○	
27NR-500ISO	1.062	0.624	0.196	○	
27NR-550ISO	1.062	0.624	0.216	○	
27NR-600ISO	1.062	0.624	0.236	○	
27NR-800ISO	1.062	0.624	0.314	○	

NL ISO



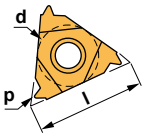
NL

NL-ISO

Mechanical thread forms - Internal inserts **ISO (full form) BS36**

Reference	l	d	p	TIN25	TL20
06NL-050ISO	0.236	0.155	0.019	○	
06NL-075ISO	0.236	0.155	0.029	○	
06NL-100ISO	0.236	0.155	0.039	○	
06NL-125ISO	0.236	0.155	0.049	○	
08NL-050ISO	0.314	0.187	0.019	○	
08NL-075ISO	0.314	0.187	0.029	○	
08NL-100ISO	0.314	0.187	0.039	○	
08NL-125ISO	0.314	0.187	0.049	○	
08NL-150ISO	0.314	0.187	0.059	○	
08NL-175ISO	0.314	0.187	0.068	○	
11NL-100ISO	0.433	0.250	0.039	○	
11NL-150ISO	0.433	0.250	0.059	○	
16NL-100ISO	0.629	0.374	0.039	○	
16NL-125ISO	0.629	0.374	0.049	○	
16NL-150ISO	0.629	0.374	0.059	○	
16NL-175ISO	0.629	0.374	0.068	○	
16NL-200ISO	0.629	0.374	0.078	○	
16NL-250ISO	0.629	0.374	0.098	○	
16NL-300ISO	0.629	0.374	0.118	○	
22NL-400ISO	0.866	0.500	0.157	○	

C



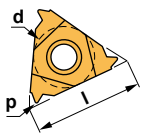
ER

ER-W

Mechanical thread forms - External and internal inserts **WHITWORTH (full form) BS84**

Reference	l	d	p	TIN25	TL20
11ER-14W	0.433	0.250	0.551	○	
11ER-16W	0.433	0.250	0.629	○	
11ER-18W	0.433	0.250	0.708	○	
11ER-19W	0.433	0.250	0.748	○	
11ER-22W	0.433	0.250	0.866	○	
11ER-24W	0.433	0.250	0.944	○	
11ER-26W	0.433	0.250	1.023	○	
11ER-28W	0.433	0.250	1.102	○	
11ER-40W	0.433	0.250	1.574	○	
11ER-50W	0.433	0.250	1.968	○	
11ER-56W	0.433	0.250	2.204	○	
16ER-8W	0.629	0.374	0.314	○	
16ER-9W	0.629	0.374	0.354	○	
16ER-10W	0.629	0.374	0.393	○	
16ER-11W	0.629	0.374	0.433	○	
16ER-12W	0.629	0.374	0.472	○	
16ER-14W	0.629	0.374	0.551	○	
16ER-16W	0.629	0.374	0.629	○	
16ER-18W	0.629	0.374	0.708	○	
16ER-19W	0.629	0.374	0.748	○	
16ER-20W	0.629	0.374	0.787	○	
16ER-22W	0.629	0.374	0.866	○	
16ER-24W	0.629	0.374	0.944	○	
16ER-26W	0.629	0.374	1.023	○	
16ER-28W	0.629	0.374	1.102	○	
22ER-4W	0.866	0.500	0.157	○	
22ER-4.5W	0.866	0.500	0.177	○	
22ER-5W	0.866	0.500	0.196	○	
22ER-6W	0.866	0.500	0.236	○	
22ER-7W	0.866	0.500	0.275	○	
22ER-8W	0.866	0.500	0.314	○	
27ER-4W	1.062	0.624	0.157	○	
27ER-4.5W	1.062	0.624	0.177	○	

EL-W

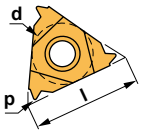


EL

EL-W

Mechanical thread forms - External and internal inserts **WHITWORTH (full form) BS84**

Reference	l	d	p	TIN25	TL20
16EL-11W	0.629	0.374	0.433	○	
16EL-14W	0.629	0.374	0.551	○	
16EL-20W	0.629	0.374	0.787	○	



NR

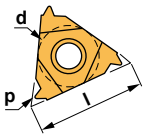
NR-W

Mechanical thread forms - Internal inserts **WHITWORTH (full form) BS84**

Reference	l	d	p	TIN25	TL20
06NR-18W	0.236	0.155	0.708	○	
06NR-19W	0.236	0.155	0.748	○	
06NR-20W	0.236	0.155	0.787	○	
06NR-22W	0.236	0.155	0.866	○	
06NR-26W	0.236	0.155	1.023	○	
08NR-16W	0.314	0.187	0.629	○	
08NR-18W	0.314	0.187	0.708	○	
08NR-19W	0.314	0.187	0.748	○	
08NR-20W	0.314	0.187	0.787	○	
08NR-24W	0.314	0.187	0.944	○	
08NR-28W	0.314	0.187	1.102	○	
11NR-11W	0.433	0.250	0.433	○	
11NR-12W	0.433	0.250	0.472	○	
11NR-14W	0.433	0.250	0.551	○	
11NR-16W	0.433	0.250	0.629	○	
11NR-18W	0.433	0.250	0.708	○	
11NR-19W	0.433	0.250	0.748	○	
11NR-20W	0.433	0.250	0.787	○	
11NR-22W	0.433	0.250	0.866	○	
11NR-24W	0.433	0.250	0.944	○	
11NR-26W	0.433	0.250	1.023	○	
11NR-28W	0.433	0.250	1.102	○	
11NR-32W	0.433	0.250	1.259	○	
11NR-36W	0.433	0.250	1.417	○	
11NR-40W	0.433	0.250	1.574	○	
11NR-48W	0.433	0.250	1.889	○	
16NR-8W	0.629	0.374	0.314	○	
16NR-9W	0.629	0.374	0.354	○	
16NR-10W	0.629	0.374	0.393	○	
16NR-11W	0.629	0.374	0.433	○	
16NR-12W	0.629	0.374	0.472	○	
16NR-14W	0.629	0.374	0.551	○	
16NR-16W	0.629	0.374	0.629	○	
16NR-18W	0.629	0.374	0.708	○	
16NR-19W	0.629	0.374	0.748	○	
16NR-20W	0.629	0.374	0.787	○	
16NR-22W	0.629	0.374	0.866	○	
16NR-24W	0.629	0.374	0.944	○	
16NR-26W	0.629	0.374	1.023	○	
16NR-28W	0.629	0.374	1.102	○	
22NR-4W	0.866	0.500	0.157	○	
22NR-4.5W	0.866	0.500	0.177	○	
22NR-5W	0.866	0.500	0.196	○	
22NR-6W	0.866	0.500	0.236	○	
22NR-7W	0.866	0.500	0.275	○	

C

NL-W



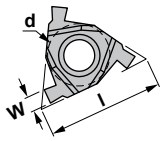
NL

NL-W

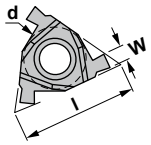
Mechanical thread forms - Internal inserts **WHITWORTH (full form) BS84**

Reference	l	d	p	TIN25	TL20
06NL-18W	0.629	0.155	0.708	○	
06NL-20W	0.629	0.155	0.787	○	
06NL-22W	0.629	0.155	0.866	○	
06NL-26W	0.629	0.155	1.023	○	
08NL-16W	0.314	0.187	0.629	○	
08NL-18W	0.314	0.187	0.708	○	
08NL-19W	0.314	0.187	0.748	○	
08NL-20W	0.314	0.187	0.787	○	
08NL-24W	0.314	0.187	0.944	○	
08NL-28W	0.314	0.187	1.102	○	
16NL-11W	0.629	0.374	0.433	○	
16NL-14W	0.629	0.374	0.551	○	
16NL-16W	0.629	0.374	0.629	○	

ER-LG



ER



EL

ER-LG

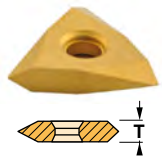
External lock ring grooving inserts - **Type LG**

Reference	l	d	W	TIN25	TL20
16ER-100LG	0.629	0.374	0.045		●
16ER-120LG	0.629	0.374	0.053		●
16ER-150LG	0.629	0.374	0.064		●
16ER-175LG	0.629	0.374	0.074		●
16ER-200LG	0.629	0.374	0.084		●
16ER-250LG	0.629	0.374	0.104		●

EL-LG

External lock ring grooving inserts - **Type LG**

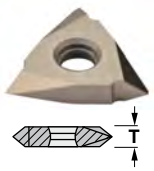
Reference	l	d	W	TIN25	TL20
16EL-100LG	0.629	0.374	0.045		●
16EL-120LG	0.629	0.374	0.053		●
16EL-150LG	0.629	0.374	0.064		●
16EL-175LG	0.629	0.374	0.074		●
16EL-200LG	0.629	0.374	0.084		●



TNMC

Triangular negative insert for threading.

Reference	l	T	d	PM25	TN15
TNMC-32XX	0.649	0.125	0.374		○
TNMC-43XX	0.866	0.187	0.500	●	○



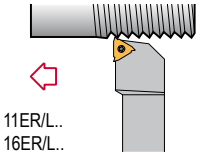
TPMC

Triangular positive insert for threading.

Reference	l	T	d	PM25	TN15
TPMC-32XX	0.649	0.125	0.374	○	
TPMC-43XX	0.866	0.187	0.500	○	

External threading

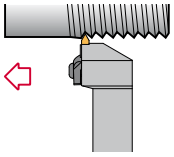
SE



11ER/L..
16ER/L..
22ER/L..
27ER/L..

Page C12

STCN 90º



T..MC43..
T..MC54..

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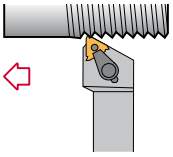
MXGNR



22ER/L..
27ER/L..

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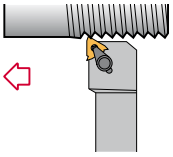
MTGNR



22ER/L..
27ER/L..

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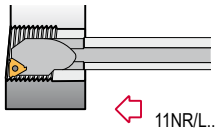
Internal threading

SI



11NR/L..
16NR/L..
22NR/L..
27NR/L..

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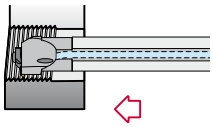
STCNR



TNMC-32..
TNMC-43..
TNMC-54..

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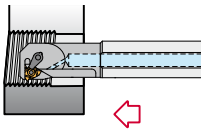
MXFNR



22NR/L..
27NR/L..

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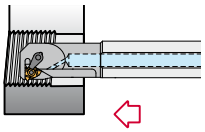
MXFNR-C



27NR/L..

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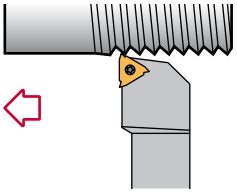
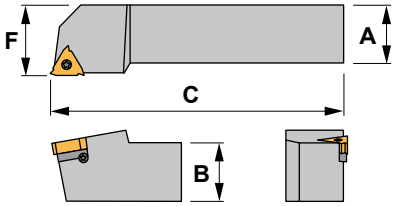
C

Characteristics:
Multipurpose threading toolholder for negative lay down inserts.





C

SE

Reference	A=B	C	F	Insert size	lbs
SER/L0310H11	0.312	4.00	0.430	11ER/L..	0.154
SER/L0375H11	0.375	4.00	0.430	11ER/L..	0.220
SER/L0375D16	0.375	2.50	0.630	16ER/L..	0.220
SER/L0500F16	0.500	3.25	0.630	16ER/L..	0.308
SER/L0625H16	0.625	4.00	0.630	16ER/L..	0.440
SER/L0750K16	0.750	5.00	0.750	16ER/L..	0.880
SER/L1000M16	1.000	6.00	1.000	16ER/L..	1.540
SER/L1250P16	1.250	7.00	1.250	16ER/L..	2.860
SER/L1000M22	1.000	6.00	1.000	22ER/L..	1.540
SER/L1250P22	1.250	7.00	1.250	22ER/L..	2.860
SER/L1500R22	1.500	8.00	1.500	22ER/L..	3.740
SER/L1000M27	1.000	6.00	1.250	27ER/L..	1.540
SER/L1250P27	1.250	7.00	1.250	27ER/L..	2.860
SER/L1500R27	1.500	8.00	1.500	27ER/L..	3.740

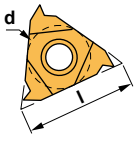
WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.

Reference			 R	 L		Nm
SER/L0310H11	1225	5507	-	-	-	0.9
SER/L0375H11	1225	5507	-	-	-	0.9
SER/L0375D16	SN3	5510	YE3	YI3	SY3	2.0
SER/L0500F16	SA3	5510	YE3	YI3	SY3	2.0
SER/L0625H16	SA3	5510	YE3	YI3	SY3	2.0
SER/L0750K16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1000M16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1250P16	SA3	5510	YE3	YI3	SY3	2.0
SER/L1000M22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1250P22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1500R22	SA4	5520	YE4	YI4	SY4	4.0
SER/L1000M27	SA5	5525	YE5	YI5	SY5	5.0
SER/L1250P27	SA5	5525	YE5	YI5	SY5	5.0
SER/L1500R27	SA5	5525	YE5	YI5	SY5	5.0

ER/L

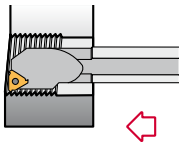
Triangular negative inserts for external threading. C03,05,08,10

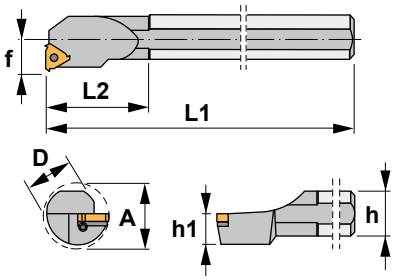
Reference	l	d
11ER/L..	0.433	0.250
16ER/L..	0.629	0.374
22ER/L..	0.866	0.500
27ER/L..	1.062	0.624



E R/L	E R/L TD
	
ER/L-LG	
	

Characteristics:
Multipurpose threading boring bar for negative lay down inserts.





SI

Reference	D	h	L1	L2	f	A	Insert size	lbs
SIR/L0375H11	0.375	0.380	4.00	1.000	0.290	0.470	11NR/L..	0.112
SIR/L0375K11	0.375	0.380	5.00	1.250	0.260	0.470	11NR/L..	0.139
SIR/L0500L11	0.625	0.500	5.50	1.250	0.320	0.630	11NR/L..	0.485
SIR/L0500M16	0.620	0.500	6.00	1.250	0.390	0.640	16NR/L..	0.525
SIR/L0625P16	0.625	0.620	7.00	1.500	0.460	0.750	16NR/L..	0.613
SIR/L0750P16	0.750	0.750	7.00	1.500	0.510	1.000	16NR/L..	0.863
SIR/L1000R16	1.000	1.000	8.00	1.500	0.650	1.200	16NR/L..	1.715
SIR/L1250S16	1.250	1.250	10.00	1.500	0.700	1.420	16NR/L..	3.516
SIR/L1500T16	1.500	1.500	12.00	1.500	0.900	1.650	16NR/L..	5.935
SIR/L0750P22	0.750	0.750	7.00	1.500	0.510	0.950	22NR/L..	0.863
SIR/L1000R22	1.000	1.000	8.00	1.500	0.710	1.200	22NR/L..	1.715
SIR/L1250S22	1.250	1.250	10.00	1.500	0.850	1.500	22NR/L..	3.516
SIR/L1500T22	1.500	1.500	12.00	1.500	0.980	1.750	22NR/L..	5.935
SIR/L1250S27	1.250	1.250	10.00	1.500	0.880	1.560	27NR/L..	1.715
SIR/L1500T27	1.500	1.500	12.00	1.500	1.000	1.800	27NR/L..	5.935
SIR/L2000U27	2.000	2.000	14.00	1.500	1.250	2.300	27NR/L..	10.010
SIR/L2500V27	2.500	2.500	16.00	1.500	1.500	2.700	27NR/L..	21.240

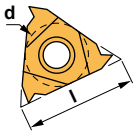
WARNING!! Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.

Reference			R	L		Nm
SIR/L0375H11	1225	5507	-	-	-	0.9
SIR/L0375K11	1225	5507	-	-	-	0.9
SIR/L0500L11	1225	5507	-	-	-	0.9
SIR/L0500M16	SN3	5510	-	-	-	2.0
SIR/L0625P16	SN3	5510	-	-	-	2.0
SIR/L0750P16	SA3T	5510	YI3	YE3	SY3	2.0
SIR/L1000R16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L1250S16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L1500T16	SA3	5510	YI3	YE3	SY3	2.0
SIR/L0750P22	SA4	5520	-	-	-	4.0
SIR/L1000R22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1250S22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1500T22	SA4	5520	YI4	YE4	SY4	4.0
SIR/L1250S27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L1500T27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L2000U27	SA5	5525	YI5	YE5	SY5	5.0
SIR/L2500V27	SA5	5525	YI5	YE5	SY5	5.0

NR/L

Triangular negative inserts for internal threading. C04,06,07,09,10

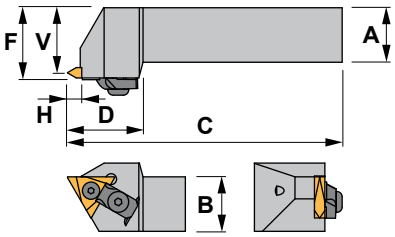
Reference	l	d
11NR/L..	0.433	0.250
16NR/L..	0.629	0.374
22NR/L..	0.866	0.500
27NR/L..	1.062	0.624

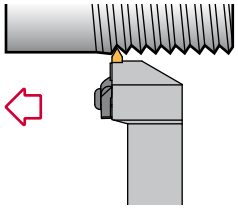


N R/L

N R/L TD

Characteristics:
Vertical on edge threading toolholder.





STCN 90°

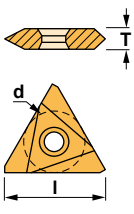
Reference	A	B	C	D	F	H	V	Insert size	lbs
STCNR/L1243	0.75	0.75	6.00	1.25	1.00	0.23	0.906	TNMC/TPMC-43..	0.880
STCNR/L1643	1.00	1.00	6.00	1.25	1.25	0.23	1.156	TNMC/TPMC-43..	1.540
STCNR/L2043	1.25	1.25	6.00	1.25	1.50	0.23	1.406	TNMC/TPMC-43..	2.310
STCNR/L1654	1.00	1.00	6.00	1.34	1.25	0.30	1.125	TNMC/TPMC-54..	1.540
STCNR/L2054	1.25	1.25	7.00	1.34	1.50	0.30	1.375	TNMC/TPMC-54..	2.310

Reference				1	2	Nm¹	Nm²
STCNR/L1243	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L1643	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L2043	1936	2101	1801	5124	5103	3.5	3.0
STCNR/L1654	1937	2101	1801	5124	5103	3.5	3.0
STCNR/L2054	1937	2101	1801	5124	5103	3.5	3.0

TNMC/TPMC

Triangular negative and positive inserts for external threading. C10

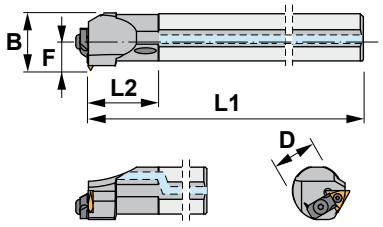
Reference	l	T	d
T..MC-43..	0.866	0.187	0.500
T..MC-54..	1.062	0.187	0.625

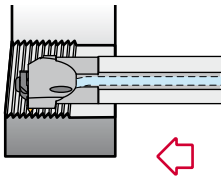


TNMC

TPMC

Characteristics:
Vertical on edge threading boring bar.





STCNR

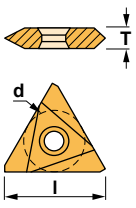
Reference	D	B	F	L1	L2	Insert size	lbs
A20U-STCNR4	1.25	1.500	0.875	14.00	1.12	TNMC-43..	4.620
A24U-STCNR4	1.50	1.734	0.984	14.00	1.12	TNMC-43..	8.030
A28V-STCNR4	1.75	2.063	1.188	16.00	1.12	TNMC-32..	9.000
A32V-STCNR4	2.00	2.260	1.260	16.00	1.12	TNMC-43..	14.740
A40V-STCNR4	2.50	2.750	1.500	16.00	1.12	TNMC-43..	21.500
A28V-STCNR5	1.75	2.375	1.500	16.00	1.88	TNMC-43..	9.000
A32V-STCNR5	2.00	2.375	1.375	16.00	1.88	TNMC-54..	14.740
A40V-STCNR5	2.50	2.875	1.625	16.00	1.88	TNMC-54..	21.500

Reference				1	2	Nm[1]	Nm[2]
A20U-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A24U-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A28V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A32V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A40V-STCNR4	1936	2101	1801	5124	5103	3.5	3.0
A28V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0
A32V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0
A40V-STCNR5	1937	2101	1801	5124	5103	3.5	3.0

TNMC

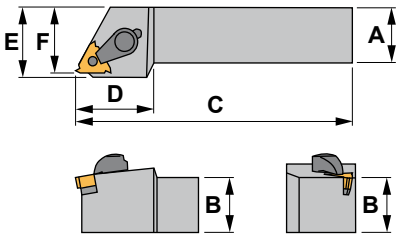
Triangular negative insert for internal threading. C10

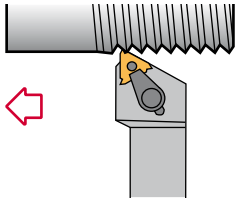
Reference	l	T	d
TNMC-32..	0.649	0.125	0.374
TNMC-43..	0.866	0.187	0.500
TNMC-54..	1.062	0.187	0.625



TNMC

Characteristics:
Multipurpose threading toolholder for negative lay down inserts.





MXGNR

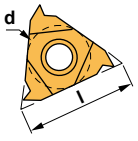
Reference	A	B	C	D	E	F	Insert size	lbs
MXGNR164API	1.00	1.00	6.00	1.25	1.38	1.25	22ER/L..	1.540
MXGNR204API	1.25	1.25	7.00	1.25	1.62	1.50	22ER/L..	2.310
MXGNR244API	1.50	1.50	8.00	1.25	2.12	2.00	22ER/L..	3.750
MXGNR165API	1.00	1.00	6.00	1.25	1.38	1.25	27ER/L..	1.540
MXGNR205API	1.25	1.25	7.00	1.25	1.62	1.50	27ER/L..	2.310
MXGNR245API	1.50	1.50	8.00	1.25	2.12	2.00	27ER/L..	3.750

Reference			1	L		2	Nm¹	Nm²
MXGNR164API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR204API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR244API	2722	1466	5124	3420	1678	5126	3.5	
MXGNR165API	2727	1488	5103	3421	1679	5004	3.0	3.5
MXGNR205API	2727	1488	5103	3421	1679	5004	3.0	3.5
MXGNR245API	2727	1488	5103	3421	1679	5004	3.0	3.5

ER/L

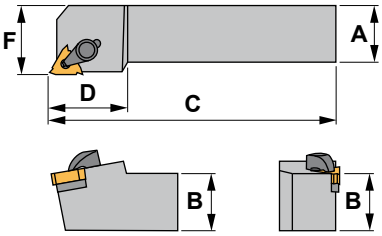
Triangular negative inserts for external threading. C03,05,08,10

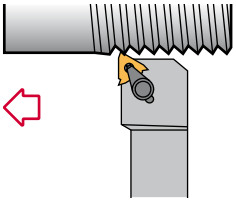
Reference	l	d
22ER/L..	0.866	0.500
27ER/L..	1.062	0.624



E R/L	E R/L TD
	
ER/L-LG	
	

Characteristics:
Multipurpose threading toolholder for negative lay down inserts.





C

MTGNR

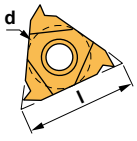
Reference	A	B	C	D	F	Insert size	lbs
MTGNR164API	1.00	1.00	6.00	1.25	1.25	22ER/L..	1.540
MTGNR204API	1.25	1.25	7.00	1.25	1.50	22ER/L..	2.310
MTGNR165API	1.00	1.00	6.00	1.25	1.25	27ER/L..	1.540
MTGNR205API	1.25	1.25	7.00	1.25	1.50	27ER/L..	2.860

Reference			1	L		2	Nm¹	Nm²
MTGNR164API	2722	1466	5124	3420	1678	5126	3.5	
MTGNR204API	2722	1466	5124	3420	1678	5126	3.5	
MTGNR165API	2727	1488	5103	3421	1679	5004	3.0	3.5
MTGNR205API	2727	1488	5103	3421	1679	5004	3.0	3.5

ER/L

Triangular negative inserts for external threading. C03,05,08,10

Reference	l	d
22ER/L..	0.866	0.500
27ER/L..	1.062	0.624

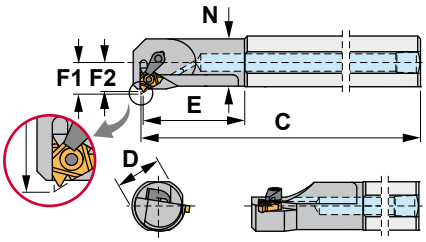


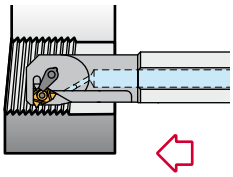
E R/L

E R/L TD

ER/L-LG

Characteristics:
Multipurpose threading boring bar for negative lay down inserts.





MXFNR

Reference	D	F1	F2	C	E	N	Insert size	lbs
A24U-MXFNR4	1.50	0.891	0.812	14.00	3.00	1.34	22NR..	8.250
A28V-MXFNR4	1.75	1.079	1.000	16.00	4.00	1.50	22NR..	9.300
A32V-MXFNR4	2.00	1.329	1.250	16.00	4.00	1.75	22NR..	13.750
A40V-MXFNR4	2.50	1.579	1.500	16.00	4.00	2.12	22NR..	21.800
A24U-MXFNR5	1.50	1.208	1.125	14.00	3.00	1.52	27NR..	8.250
A28V-MXFNR5	1.75	1.208	1.125	16.00	4.00	1.50	27NR..	9.300
A32V-MXFNR5	2.00	1.333	1.250	16.00	4.00	1.75	27NR..	13.750
A40V-MXFNR5	2.50	1.583	1.500	16.00	4.00	2.12	27NR..	21.800

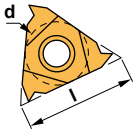
(F1) dimension shown is over a 0.0312 radius industry standard 22 NR.. insert and over a 0.0468 radius industry standard 27NR.. insert.

Reference				1	2	Nm[1]	Nm[2]
A24U-MXFNR4	2722	1676	1466	5124	5126	3.5	
A28V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A32V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A40V-MXFNR4	2722	1676	1466	5124	5126	3.5	
A24U-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A28V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A32V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5
A40V-MXFNR5	2727	1677	1488	5103	5004	3.0	3.5

NR/L

Triangular negative inserts for internal threading. C04,06,07,09,10

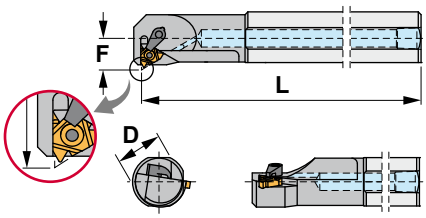
Reference	l	d
22NR/L..	0.866	0.500
27NR/L..	1.062	0.624

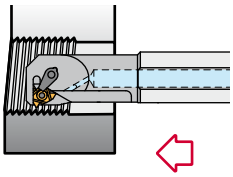


N R/L

N R/L TD

Characteristics:
Multipurpose threading boring bar for negative lay down inserts.





C

MXFNR-C

Reference	D	F	L	Insert size	lbs
A28V-MXFNR5C	1.75	0.950	0.629	27NR..	9.300
A32V-MXFNR5C	2.00	0.950	0.629	27NR..	13.750

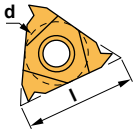
(F) dimension shown is over a 0.0468 radius industry standard 27NR.. insert.

Reference				1	2	Nm[1]	Nm[2]
A28V-MXFNR5C	2727	1677	1488	5103	5004	3.0	3.5
A32V-MXFNR5C	2727	1677	1488	5103	5004	3.0	3.5

NR/L

Triangular negative inserts for internal threading. C04,06,07,09,10

Reference	l	d
27NR/L..	1.062	0.624



N R/L

N R/L TD

C

Cutting data

Material	Cutting speed m/min. (Ft/min) Insert grade		
	PM25	KM15	TIN25
Low and medium carbon steel	120-80 (390-260)		250-210 (820-690)
High carbon steel	110-70 (360-230)		210-150 (690-490)
Alloyed tool steel and heat-treated steels	100-70 (360-230)		180-140 (590-460)
Stainless steels	100-70 (360-230)	90-70 (295-230)	140-110 (460-360)
Cast-iron HB 180-250		90-70 (295-230)	
Non-ferrous metals		180-120 (590-390)	

Nº of passes		
P inch	TPI	Nº of passes
0.022	48.0	4 - 6
0.029	32.0	4 - 7
0.039	24.0	4 - 8
0.049	20.0	5 - 9
0.059	16.0	6 - 10
0.068	14.0	7 - 12
0.078	12.0	7 - 12
0.098	10.0	8 - 14
0.118	8.0	10 - 18
0.137	7.0	11 - 18
0.157	6.0	11 - 18
0.177	5.5	11 - 19
0.196	5.0	12 - 20
0.216	4.5	12 - 20
0.236	4.0	12 - 20
0.314	3.0	15 - 24

General recommendations:

- Threading speeds should normally be a minimum of 80% to 90% of turning speeds being used to machine the same component (assuming grades are compatible).
- Check helix angle and number of passes shown in charts before starting.
- Ensure centre height is correct.
- When there is a problem consult the following recommendations and change only one variable at a time. This will help to be sure of the original problem.
- Do not use flank infeed on work hardening materials.

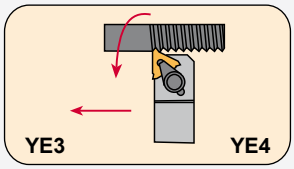
Component problems

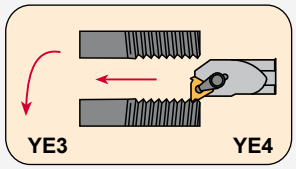
	Problem	Remedy
Pitch error (on CNC machines)	▼ Starting too close to workpiece. ▼ Saddle speed towards chuck is excessive.	▲ Start cycle further back from workpiece. ▲ Reduce speed by 10% until correct.
Thread torn on one side only	▼ Incorrect helix angle in toolholder.	▲ Check helix chart. ▲ Reassemble with correct anvil. ▲ Check centre height.
Thread torn on both sides	▼ Running too slow. ▼ Built up edge.	▲ Increase cutting speed. ▲ Check center height. ▲ Use coated grade. ▲ Compare thread speed with turning speed.
Long dangerous swarf	▼ Incorrect chipbreaker geometry. ▼ Incorrect method of infeed.	▲ Use Canela (TD) chipbreaker. ▲ Use different infeed method.
Vibration chatter marks on both flanks	▼ Poor stability. ▼ Excessive overhang.	▲ Renew anvil to support insert. ▲ Check tool clamping. ▲ Reduce tool overhang. ▲ Check rigidity of setup.
Shallow threads Problem with gauging	▼ Insert not cresting. ▼ Incorrect effective diameter.	▲ Check machined diameters. ▲ Excessive tool wear or chipped on nose see remedies above.

Helix chart

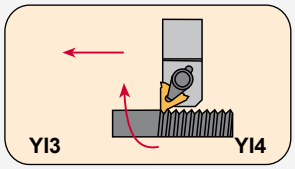
Feed direction towards the chuck

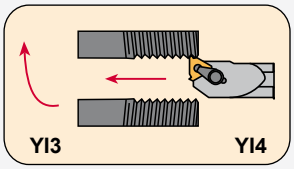
RH Thread - RH Tool





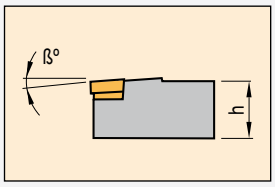
LH Thread - LH Tool

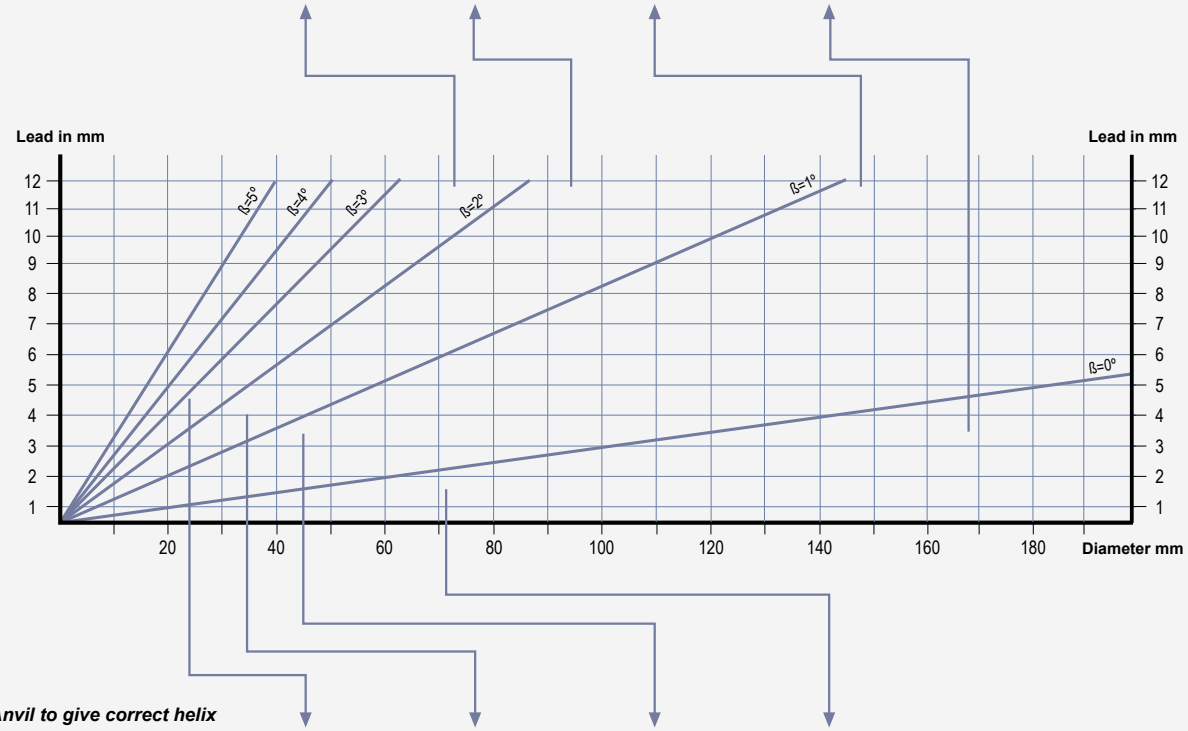




Anvil to give correct helix

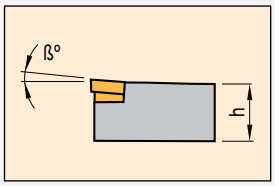
Insert size	+3º	+2º	+1º	0º
16R	3424+3	3424+2	3424+1	YE3
16L	3425+3	3425+2	3425+1	YI3
22R	3430+3	3430+2	3430+1	YE4
22L	3431+3	3431+2	3431+1	YI4





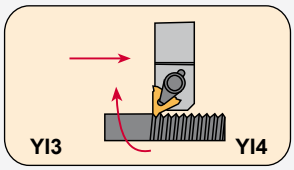
Anvil to give correct helix

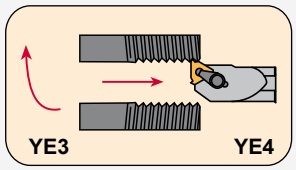
Insert size	-3º	-2º	-1º	0º
16R	3424-3	3424-2	3424-1	YE3
16L	3425-3	3425-2	3425-1	YI3
22R	3430-3	3430-2	3430-1	YE4
22L	3431-3	3431-2	3431-1	YI4



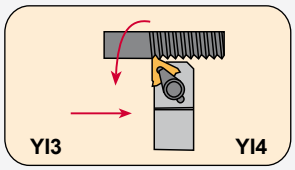
Feed direction away from the chuck

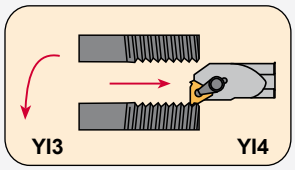
RH Thread - RH chuck





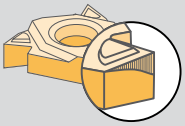
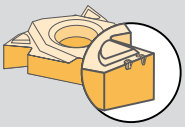
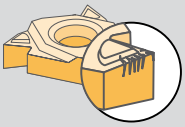
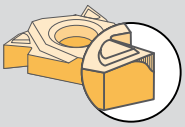
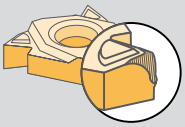
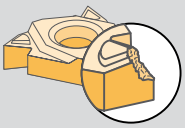
LH Thread - LH Tool





C

Threading insert wear and tool life

	Problem	Remedy
Rapid flank wear 	▼ Cutting speed too high. ▼ Lack of coolant. ▼ Infeed per pass too small - too many passes. ▼ Incorrect grade.	▲ Reduce the cutting speed. ▲ Increase the coolant supply. ▲ Increase the depth of infeed for the smallest infeed depths - reduce the number of passes. ▲ Select a more wear resistant grade.
Edge frittering 	▼ Instability of workholding and/or tool set-up.	▲ Check rigidity of operation. ▲ Select a tougher grade.
Edge spalling 	▼ Intermittent coolant supply.	▲ Position coolant flow and/or increase coolant supply.
Uneven flank wear 	▼ Incorrect method of infeed. ▼ Incorrect angle of inclination.	▲ In case of flank infeed use modified flank infeed. Decrease infeed angle 3-5°. ▲ Correct the angle on inclination according to the diagram.
Excessive plastic deformation 	▼ Infeed per pass too big - too few passes. ▼ Lack of coolant. ▼ Cutting speed too high. ▼ Incorrect grade. ▼ Excessive stock removal from crest.	▲ Decrease the depth of infeed for the biggest depths. - Increase the number of passes. ▲ Increase coolant supply. ▲ Reduce the cutting speed. ▲ Select a harder grade. ▲ Check the volume of the material above the crest.
Insert breakage 	▼ Instability. ▼ Lack of chip control. ▼ Excessive plastic deformation. ▼ Intermittent or inadequate coolant supply. ▼ Incorrect preparation of the operation.	▲ Check rigidity of operation. ▲ Select a tougher grade. Select modified flank infeed. ▲ Machine with same infeed per pass. ▲ Direct coolant flow and/or increase coolant supply. ▲ Check dimension of blank.
Shallow thread profile	▼ Wrong centre height. ▼ Insert not cresting. ▼ Excessive tool wear.	▲ Adjust cutting edge height. ▲ Check dimension of blank. ▲ Change insert earlier.
Incorrect thread profile	▼ Incorrect tool setting.	▲ Correct tool setting.
Lack of chip control	▼ Incorrect depth of infeed per pass. ▼ Radial infeed.	▲ For modified flank infeed use 3-5°. ▲ Use geometry with modified flank infeed 1°.
Bad surface finish	▼ Cutting speed too low. ▼ Incorrect angle of inclination. ▼ Flank infeed.	▲ Increase the cutting speed. ▲ Correct the angle of inclination according to diagram. ▲ Use modified flank infeed or radial infeed.

CERAMIC

D

Ceramic inserts

CNGA  *Page D03* 0°	**CNGN**  *Page D03* 0°	**CNGX**  *Page D03* 0°	**DNGA**  *Page D03* 0°	**DNGN**  *Page D04* 0°	**DNGX**  *Page D04* 0°
RCGX  *Page D04* 7°	**RNGN**  *Page D05* 0°	**RPGN**  *Page D05* 0°	**SNGA**  *Page D05* 0°	**SNGN**  *Page D05* 0°	**SNGN**  *Page D06* 0°
SNGX  *Page D06* 0°	**TNGA**  *Page D06* 0°	**TNGN**  *Page D06* 0°	**VNGA**  *Page D07* 0°	**WNGA**  *Page D07* 0°	

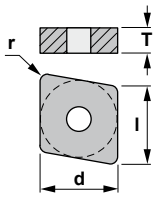
D

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

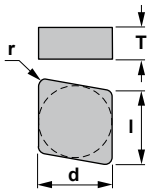
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2	●		
		CX6	●	●	●
		CW1	●	●	
S	Heat-resistant alloys	CX9	●	●	●
		CW1	●	●	
H	Hard materials	CC7	●		



CNGA

80° rhombic negative insert.

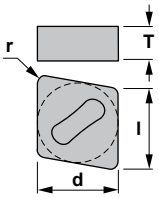
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGA431	0.508	0.187	0.500	0.016				●	
CNGA432	0.508	0.187	0.500	0.031	●			●	
CNGA433	0.508	0.187	0.500	0.047	●			●	



CNGN

80° rhombic negative insert.

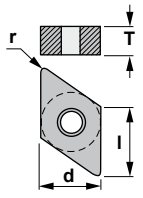
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGN432	0.508	0.187	0.500	0.031			●		●
CNGN433	0.508	0.187	0.500	0.047			●		●
CNGN452	0.508	0.312	0.500	0.031			●		●
CNGN453	0.508	0.312	0.500	0.047			●		●
CNGN454	0.508	0.312	0.500	0.063					●



CNGX

80° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
CNGX452	0.508	0.312	0.500	0.031	●	●			
CNGX453	0.508	0.312	0.500	0.047	●	●			
CNGX454	0.508	0.312	0.500	0.063	●	●			
CNGX553	0.634	0.312	0.625	0.047	●				
CNGX554	0.634	0.312	0.625	0.063	●	●			



DNGA

55° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGA431	0.508	0.187	0.500	0.016				●	
DNGA432	0.508	0.187	0.500	0.031	●			●	
DNGA433	0.508	0.187	0.500	0.047	●			●	

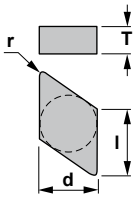
D

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

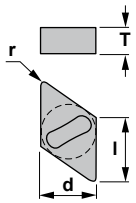
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2	●		
		CX6	●	●	●
		CW1	●	●	
S	Heat-resistant alloys	CX9	●	●	●
		CW1	●	●	
H	Hard materials	CC7	●		



DNGN

55° rhombic negative insert.

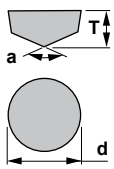
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGN452	0.610	0.312	0.500	0.031			●		●
DNGN453	0.610	0.312	0.500	0.047			●		●
DNGN454	0.610	0.312	0.500	0.063			●		



DNGX

55° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
DNGX452	0.610	0.312	0.500	0.031	●				
DNGX453	0.610	0.312	0.500	0.047	●	●			
DNGX454	0.610	0.312	0.500	0.063	●	●			



RCGX

Round positive insert.

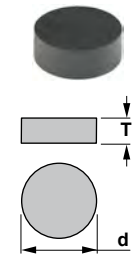
Reference	T	d	a	CX6	CX9	CC2	CC7	CW1
RCGX060700	0.312	0.250	120°			●		●
RCGX090700	0.312	0.375	120°		●	●		●
RCGX120700	0.312	0.500	120°		●	●		●
RCGX151000	0.394	0.625	120°			●		●
RCGX191000	0.394	0.750	120°		●	●		●
RCGX251200	0.472	1.000	140°			●		

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

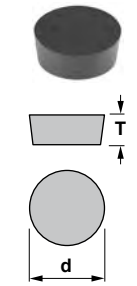
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



RNGN

Round negative inserts.

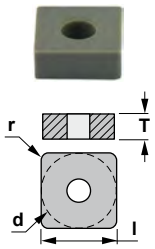
Reference	T	d	CX6	CX9	CC2	CC7	CW1
RNGN43	0.187	0.500		●		●	●
RNGN45	0.312	0.500		●		●	●



RPGN

Round negative inserts.

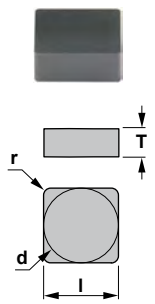
Reference	T	d	CX6	CX9	CC2	CC7	CW1
RPGN060200	0.094	0.250		●			
RPGN090300	0.125	0.375		●			
RPGN120400	0.187	0.500		●			



SNGA

Square negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGA432	0.500	0.187	0.500	0.031				●	
SNGA433	0.500	0.187	0.500	0.047	●			●	
SNGA434	0.500	0.187	0.500	0.063	●			●	



SNGN

Square negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGN431	0.500	0.187	0.500	0.016			●		
SNGN432	0.500	0.187	0.500	0.031			●		
SNGN433	0.500	0.187	0.500	0.047			●		
SNGN434	0.500	0.187	0.500	0.063			●		
SNGN435	0.500	0.187	0.500	0.078			○		
SNGN436	0.500	0.187	0.500	0.094			○		
SNGN452	0.500	0.312	0.500	0.031		●	●		●
SNGN453	0.500	0.312	0.500	0.047		●	●		●
SNGN454	0.500	0.312	0.500	0.063		●	●		●
SNGN455	0.500	0.312	0.500	0.078			○		

D

Ceramic inserts

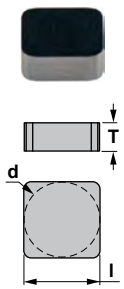
USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			

SNGN

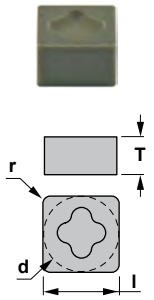
Square negative insert.



Reference	l	T	d	CX6	CX9	CC2	CC7	CW1
SNGN1204ENT	0.500	0.187	0.500		●			

SNGX

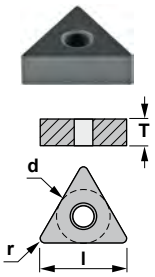
Square negative insert.



Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
SNGX452	0.500	0.312	0.500	0.031	●				
SNGX453	0.500	0.312	0.500	0.047	●				
SNGX454	0.500	0.312	0.500	0.063	●				
SNGX552	0.625	0.312	0.625	0.031	○				
SNGX553	0.625	0.312	0.625	0.047	●	●			
SNGX554	0.625	0.312	0.625	0.063	●	●			

TNGA

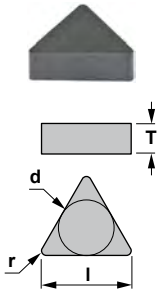
Triangular negative insert.



Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
TNGA331	0.650	0.187	0.375	0.016				●	
TNGA332	0.650	0.187	0.375	0.031				●	
TNGA333	0.650	0.187	0.375	0.047				●	
TNGA334	0.650	0.187	0.375	0.063				○	

TNGN

Triangular negative insert.



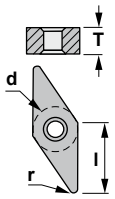
Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
TNGN332	0.650	0.187	0.375	0.031			●		
TNGN333	0.650	0.187	0.375	0.047			●		
TNGN334	0.650	0.187	0.375	0.063			●		
TNGN352	0.650	0.312	0.375	0.031			●		
TNGN353	0.650	0.312	0.375	0.047			○		

Ceramic inserts

USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

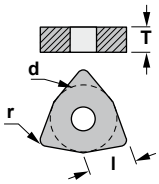
Material		Grade	Continuous	Slight interruption	Interruption
K	Cast iron	CC2			
		CX6			
		CW1			
S	Heat-resistant alloys	CX9			
		CW1			
H	Hard materials	CC7			



VNGA

35° rhombic negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
VNGA331	0.650	0.187	0.375	0.016				●	
VNGA332	0.650	0.187	0.375	0.031				●	
VNGA333	0.650	0.187	0.375	0.047				●	



WNGA

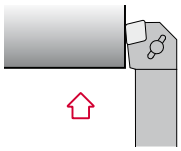
80° trigon negative insert.

Reference	l	T	d	r	CX6	CX9	CC2	CC7	CW1
WNGA432	0.320	0.187	0.500	0.031	●			●	
WNGA433	0.320	0.187	0.500	0.047	●			●	

D

Toolholders

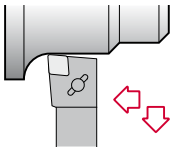
CCKN 75º



CNG..43..
CNG..45..

Page D09

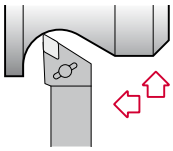
CCLN 95º



CNG..43..
CNG..45..

Page D10

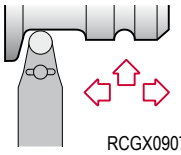
CDJN 93º



DNG..43..
DNG..45..

Page D11

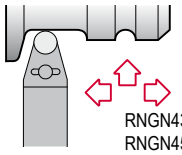
CRDC



RCGX0907..
..
RCGX1910..

Page D12

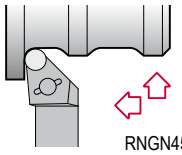
CRDN



RNGN43..
RNGN45..
RNGN55..
RNGN65..

Page D13

CRGN



RNGN45..
RNGN55..
RNGN65..

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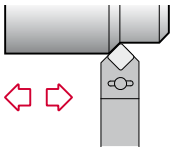
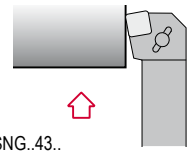
CSDN 45º



SNG..43..
SNG..45..

Page D15

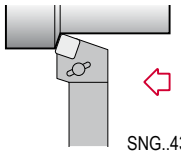
CSKN 75º



SNG..43..
SNG..45..
SNG..55..

Page D16

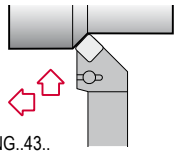
CSRN 75º



SNG..43..
SNG..45..
SNG..55..

Page D17

CSSN 45º

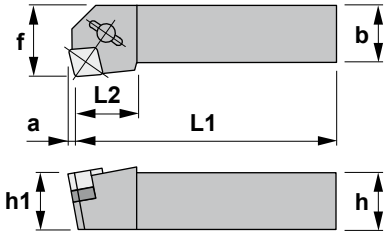


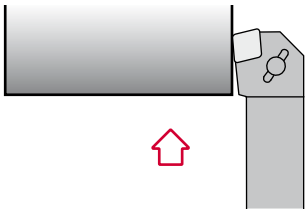
SNG..43..
SNG..45..
SNG..55..

Page D18

D

Characteristics:
Toolholder for face turning applications equipped with rhombic negative inserts (angle 80º).
For general applications, roughing, semi-finishing and finishing.





CCKN 75°

Reference	h=h1	b	L1	L2	f	a	Insert size	lbs
CCKNR/L164CD	1.000	1.000	6.00	1.338	1.250	0.122	CNGN45..	1.600
CCKNR/L204CD	1.250	1.250	6.00	1.338	1.500	0.122	CNGN45..	1.600
CCKNR/L164CX	1.000	1.000	6.00	1.338	1.250	0.122	CNGX45..	1.600
CCKNR/L204CX	1.250	1.250	6.00	1.338	1.500	0.122	CNGX45..	1.600

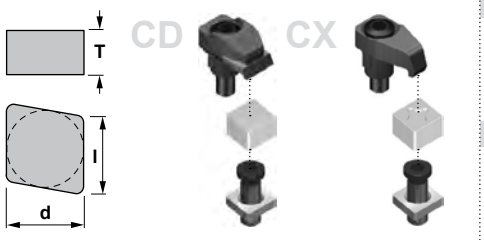
Reference								Nm
CCKNR/L164CD	ICSN-434	1160	9414	2417	-	5004	ICSN-454	3.5
CCKNR/L204CD	ICSN-434	1160	9414	2417	-	5004	ICSN-454	3.5
CCKNR/L164CX	ICSN-434	1160	-	-	2471	5004	ICSN-454	3.5
CCKNR/L204CX	ICSN-434	1160	-	-	2471	5004	ICSN-454	3.5

For inserts CNG..43..

CNG..

80º rhombic negative inserts. D03

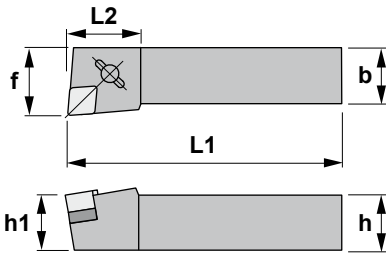
Reference	l	T	d
CNG..43..	0.508	0.187	0.500
CNG..45..	0.508	0.312	0.500

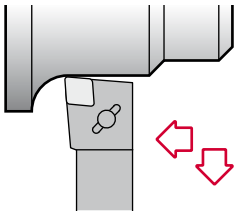


CNGN

CNGX

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
For general applications, roughing, semi-finishing and finishing.





D

CCLN 95°

Reference	h=h1	b	L1	L2	f	Insert size	lbs
CCLNR/L164CD	1.000	1.000	6.00	1.338	1.250	CNGN45..	1.600
CCLNR/L204CD	1.250	1.250	6.00	1.338	1.500	CNGN45..	1.600
CCLNR/L164CX	1.000	1.000	6.00	1.338	1.250	CNGX45..	1.600
CCLNR/L204CX	1.250	1.250	6.00	1.338	1.500	CNGX45..	1.600

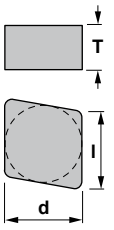
Reference								Nm
CCLNR/L164CD	ICSN-434	1160	9414	2417	-	5004	ICSN-454	3.5
CCLNR/L204CD	ICSN-434	1160	9414	2417	-	5004	ICSN-454	3.5
CCLNR/L164CX	ICSN-434	1160	-	-	2415	5004	ICSN-454	3.5
CCLNR/L204CX	ICSN-434	1160	-	-	2415	5004	ICSN-454	3.5

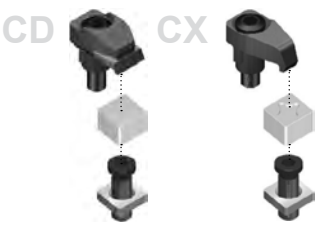
For inserts CNG..43..

CNG..

80º rhombic negative inserts. D03

Reference	l	T	d
CNG..43..	0.508	0.187	0.500
CNG..45..	0.508	0.312	0.500

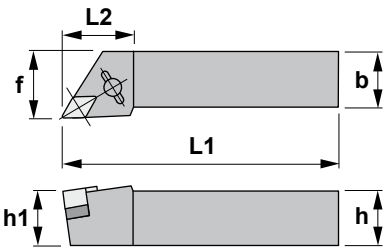


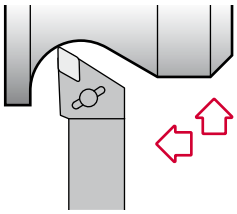


CNGN

CNGX

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
For general applications, roughing, semi-finishing and finishing.





CDJN 93°

Reference	h=h1	b	L1	L2	f	Insert size	lbs
CDJNR/L164CD	1.000	1.000	6.00	1.496	1.250	DNGN45..	2.200
CDJNR/L204CD	1.250	1.250	6.00	1.496	1.500	DNGN45..	2.200
CDJNR/L164CX	1.000	1.000	6.00	1.496	1.250	DNGX45..	2.200
CDJNR/L204CX	1.250	1.250	6.00	1.496	1.500	DNGX45..	2.200

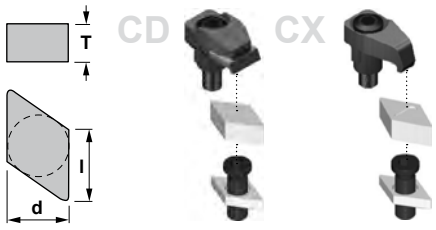
Reference								Nm
CDJNR/L164CD	IDSN-434	1160	9416	2417	-	5004	IDSN-452	3.5
CDJNR/L204CD	IDSN-434	1160	9416	2417	-	5004	IDSN-452	3.5
CDJNR/L164CX	IDSN-434	1160	-	-	2432	5004	IDSN-452	3.5
CDJNR/L204CX	IDSN-434	1160	-	-	2432	5004	IDSN-452	3.5

For inserts DNG..43..

DNG..

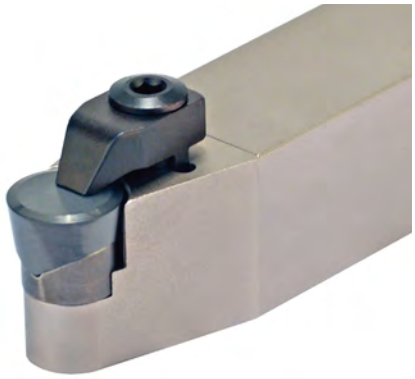
55º rhombic negative inserts. D04

Reference	l	T	d
DNG..43..	0.610	0.187	0.500
DNG..45..	0.610	0.312	0.500

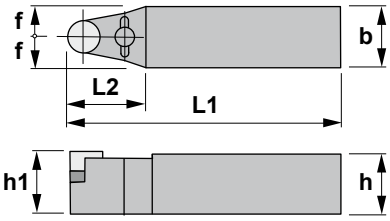


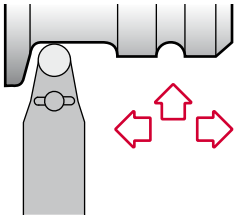
DNGN

DNGX



Characteristics:
Profiling toolholder equipped with round positive insert.
For general applications, roughing, semi-finishing and finishing.





D

CRDC

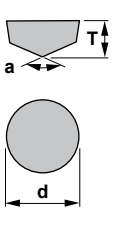
Reference	h=h1	b	L1	L2	f	Insert size	lbs
CRDCN163CD	1.000	1.000	6.00	1.420	0.500	RCGX0907..	1.600
CRDCN203CD	1.250	1.250	6.00	1.420	0.625	RCGX0907..	1.600
CRDCN164CD	1.000	1.000	6.00	1.300	0.500	RCGX1207..	1.600
CRDCN204CD	1.250	1.250	6.00	1.300	0.625	RCGX1207..	2.200
CRDCN205CD	1.250	1.250	6.00	1.300	0.625	RCGX1510..	1.600
CRDCN206CD	1.250	1.250	6.00	1.500	0.625	RCGX1910..	1.600

Reference								Nm
CRDCN163CD	3849	-	1335	2121	1250	-	5515	3.0
CRDCN203CD	3849	-	1335	2121	1250	-	5515	3.0
CRDCN164CD	3852	-	1350	2122	1260	-	5520	4.0
CRDCN204CD	3852	-	1350	2122	1260	-	5520	4.0
CRDCN205CD	-	3817	1230 (2)	2414	-	5004	-	3.5
CRDCN206CD	-	3819	1230 (2)	2414	-	5004	-	3.5

RCGX

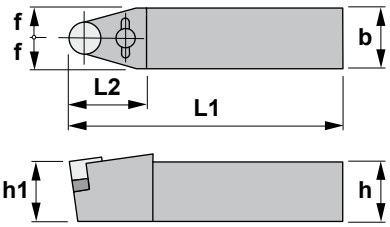
Round positive insert with 7° clearance. D04

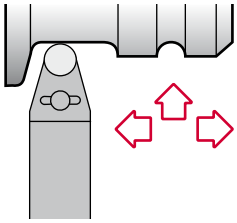
Reference	a	T	d
RCGX0907..	120°	0.312	0.374
RCGX1207..	120°	0.312	0.500
RCGX1510..	120°	0.393	0.624
RCGX1910..	120°	0.393	0.750



RCGX

Characteristics:
Profiling multipurpose turning toolholder equipped with round negative inserts.
For general applications, roughing, semi-finishing and finishing.





D

CRDN

Reference	h=h1	b	L1	L2	f	Insert size	lbs
CRDNN164CD	1.000	1.000	6.00	1.417	0.500	RNGN45..	1.600
CRDNN204CD	1.250	1.250	6.00	1.417	0.625	RNGN45..	1.600
CRDNN205CD	1.250	1.250	6.00	1.417	0.625	RNGN55..	2.200
CRDNN245CD	1.500	1.500	8.00	1.417	0.750	RNGN55..	2.200
CRDNN206CD	1.250	1.250	6.00	1.496	0.625	RNGN65..	2.200
CRDNN246CD	1.500	1.500	8.00	1.496	0.750	RNGN65..	2.760

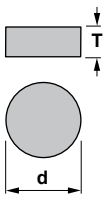
Reference							Nm
CRDNN164CD	IRSN-43	1160	2413	9414	5004	IRSN-45	3.5
CRDNN204CD	IRSN-43	1160	2413	9414	5004	IRSN-45	3.5
CRDNN205CD	IRSN-53	1180	2417	9414	5004	-	3.5
CRDNN245CD	IRSN-53	1180	2417	9414	5004	-	3.5
CRDNN206CD	3919	1182	2417	9414	5004	-	3.5
CRDNN246CD	3925	1192	2417	9414	5004	-	3.5

For inserts RNGN43..

RNGN

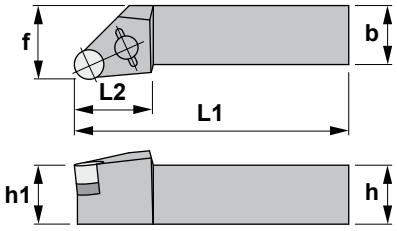
Round negative insert. D05

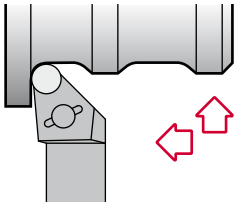
Reference	T	d
RNGN43..	0.187	0.500
RNGN45..	0.312	0.500
RNGN55..	0.312	0.625
RNGN65..	0.312	0.750



RNGN

Characteristics:
Profiling multipurpose turning toolholder equipped with round negative inserts.
For general applications, roughing, semi-finishing and finishing.





D

CRGN

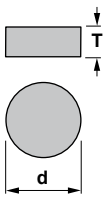
Reference	h=h1	b	L1	L2	f	Insert size	lbs
CRGNR/L164CD	1.000	1.000	6.00	1.338	1.250	RNGN45..	1.600
CRGNR/L204CD	1.250	1.250	6.00	1.338	1.500	RNGN45..	1.600
CRGNR/L165CD	1.000	1.000	6.00	1.338	1.250	RNGN55..	1.600
CRGNR/L205CD	1.250	1.250	6.00	1.338	1.500	RNGN55..	1.600
CRGNR/L206CD	1.250	1.250	6.00	1.653	1.500	RNGN65..	2.200

Reference						Nm
CRGNR/L164CD	IRSN-43	1160	2413	9414	5004	3.5
CRGNR/L204CD	IRSN-43	1160	2413	9414	5004	3.5
CRGNR/L165CD	IRSN-53	1180	2413	9414	5004	3.5
CRGNR/L205CD	IRSN-53	1180	2413	9414	5004	3.5
CRGNR/L206CD	3919	1182	2417	9414	5004	3.5

RNGN

Round negative insert. D05

Reference	T	d
RNGN45..	0.312	0.500
RNGN55..	0.312	0.625
RNGN65..	0.312	0.750



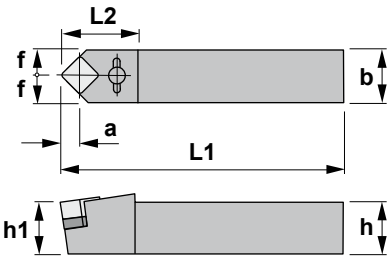
CD

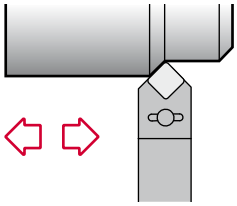
RNGN

Characteristics:

Toolholder for external turning and chamfering applications equipped with square negative inserts.

For general applications, roughing, semi-finishing and finishing.





CSDN 45°

Reference	h=h1	b	L1	L2	f	a	Insert size	lbs
CSDNN164CD	1.000	1.000	6.00	1.653	0.500	0.327	SNGN45..	1.600
CSDNN204CD	1.250	1.250	6.00	1.653	0.625	0.327	SNGN45..	1.600
CSDNN164CX	1.000	1.000	6.00	1.653	0.500	0.327	SNGX45..	1.600
CSDNN204CX	1.250	1.250	6.00	1.653	0.625	0.327	SNGX45..	1.600

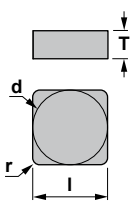
Reference								Nm
CSDNN164CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSDNN204CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSDNN164CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSDNN204CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5

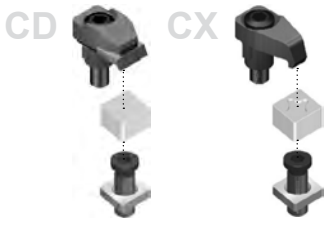
For inserts SNG..43..

SNG..

Square negative inserts. D05-06

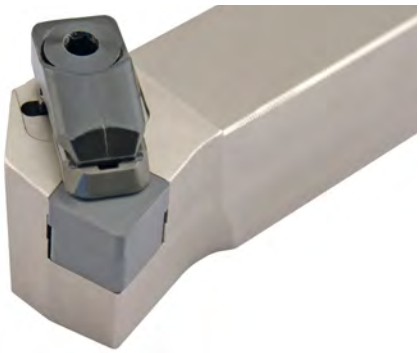
Reference	l	T	d
SNG..43..	0.500	0.187	0.500
SNG..45..	0.500	0.312	0.500



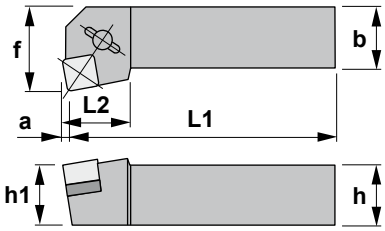


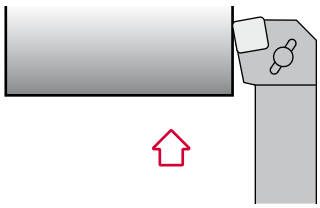
SNGN

SNGX



Characteristics:
Toolholder for face turning applications equipped with square negative inserts and strong cutting edges.
For general applications, roughing, semi-finishing and finishing.





CSKN 75°

Reference	h=h1	b	L1	L2	f	a	Insert size	lbs
CSKNR/L164CD	1.000	1.000	6.00	1.338	1.250	0.120	SNGN45..	1.600
CSKNR/L204CD	1.250	1.250	6.00	1.338	1.500	0.120	SNGN45..	1.600
CSKNR/L165CD	1.000	1.000	6.00	1.338	1.250	0.148	SNGN55..	2.200
CSKNR/L205CD	1.250	1.250	6.00	1.338	1.500	0.148	SNGN55..	2.200
CSKNR/L164CX	1.000	1.000	6.00	1.338	1.250	0.120	SNGX45..	1.600
CSKNR/L204CX	1.250	1.250	6.00	1.338	1.500	0.120	SNGX45..	1.600
CSKNR/L165CX	1.000	1.000	6.00	1.338	1.250	0.148	SNGX55..	2.200
CSKNR/L205CX	1.250	1.250	6.00	1.338	1.500	0.148	SNGX55..	2.200

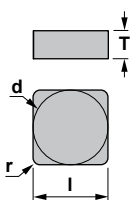
Reference								Nm
CSKNR/L164CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSKNR/L204CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSKNR/L165CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSKNR/L205CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSKNR/L164CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSKNR/L204CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSKNR/L165CX	ISSN-534	1180	-	-	2415	5004	-	3.5
CSKNR/L205CX	ISSN-534	1180	-	-	2415	5004	-	3.5

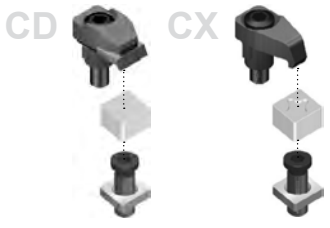
For inserts SNG..43..

SNG..

Square negative inserts. D05-06

Reference	l	T	d
SNG..43..	0.500	0.187	0.500
SNG..45..	0.500	0.312	0.500
SNG..55..	0.624	0.312	0.624





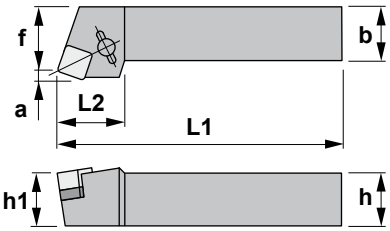
SNGN

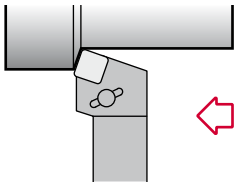
SNGX

Characteristics:

Toolholder for external turning applications equipped with square negative inserts.

For general applications, roughing, semi-finishing and finishing.





CSRN 75°

Reference	h=h1	b	L1	L2	f	a	Insert size	lbs
CSRNR/L164CD	1.000	1.000	6.00	1.338	1.130	0.120	SNGN45..	1.550
CSRNR/L204CD	1.250	1.250	6.00	1.338	1.379	0.120	SNGN45..	1.600
CSRNR/L165CD	1.000	1.000	6.00	1.496	1.103	0.148	SNGN55..	2.200
CSRNR/L205CD	1.250	1.250	6.00	1.496	1.353	0.148	SNGN55..	1.600
CSRNR/L164CX	1.000	1.000	6.00	1.338	1.130	0.120	SNGX45..	1.550
CSRNR/L204CX	1.250	1.250	6.00	1.338	1.379	0.120	SNGX45..	1.600
CSRNR/L165CX	1.000	1.000	6.00	1.496	1.103	0.148	SNGX55..	2.200
CSRNR/L205CX	1.250	1.250	6.00	1.496	1.353	0.148	SNGX55..	1.600

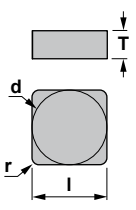
Reference								Nm
CSRNR/L164CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSRNR/L204CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSRNR/L165CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSRNR/L205CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSRNR/L164CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSRNR/L204CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSRNR/L165CX	ISSN-534	1180	-	-	2415	5004	-	3.5
CSRNR/L205CX	ISSN-534	1180	-	-	2415	5004	-	3.5

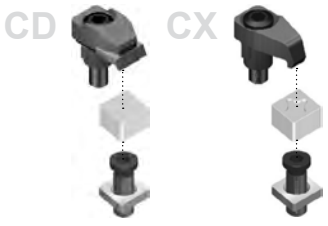
For inserts SNG..43..

SNG..

Square negative inserts. D05-06

Reference	l	T	d
SNG..43..	0.500	0.187	0.500
SNG..45..	0.500	0.312	0.500
SNG..55..	0.624	0.312	0.624





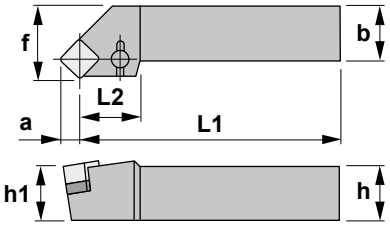
SNGN

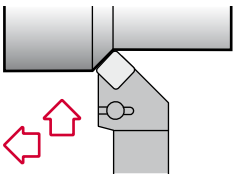
SNGX

Characteristics:

Toolholder for external turning and chamfering applications equipped with square negative inserts.

For general applications, roughing, semi-finishing and finishing.





CSSN 45°

Reference	h=h1	b	L1	L2	f	a	Insert size	lbs
CSSNR/L164CD	1.000	1.000	6.00	1.653	1.250	0.327	SNGN45..	1.600
CSSNR/L204CD	1.250	1.250	6.00	1.653	1.500	0.327	SNGN45..	1.600
CSSNR/L165CD	1.000	1.000	6.00	1.653	1.250	0.402	SNGN55..	2.200
CSSNR/L205CD	1.250	1.250	6.00	1.653	1.500	0.402	SNGN55..	2.200
CSSNR/L164CX	1.000	1.000	6.00	1.653	1.250	0.327	SNGX45..	1.600
CSSNR/L204CX	1.250	1.250	6.00	1.653	1.500	0.327	SNGX45..	1.600
CSSNR/L165CX	1.000	1.000	6.00	1.653	1.250	0.402	SNGX55..	2.200
CSSNR/L205CX	1.250	1.250	6.00	1.653	1.500	0.402	SNGX55..	2.200

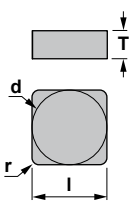
Reference								Nm
CSSNR/L164CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSSNR/L204CD	ISSN-434	1160	9414	2417	-	5004	ISSN-454	3.5
CSSNR/L165CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSSNR/L205CD	ISSN-534	1180	9414	2417	-	5004	-	3.5
CSSNR/L164CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSSNR/L204CX	ISSN-434	1160	-	-	2415	5004	ISSN-454	3.5
CSSNR/L165CX	ISSN-534	1180	-	-	2415	5004	-	3.5
CSSNR/L205CX	ISSN-534	1180	-	-	2415	5004	-	3.5

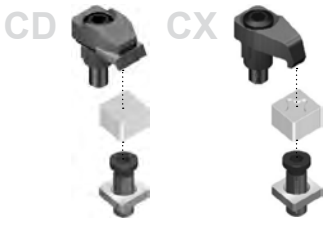
For inserts SNG..43..

SNG..

Square negative inserts. D05-06

Reference	l	T	d
SNG..43..	0.500	0.187	0.500
SNG..45..	0.500	0.312	0.500
SNG..55..	0.624	0.312	0.624





SNGN

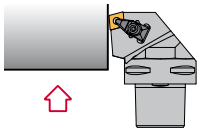
SNGX

PSC

NEGATIVE TOOLHOLDERS

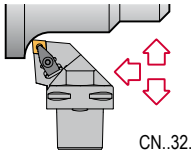
Dimple lock toolholders

DCKN 75º



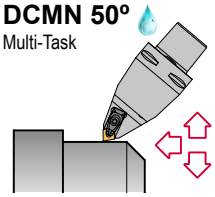
CN..43..
CN..54..
CN..64..
Page E07

DCLN 95º



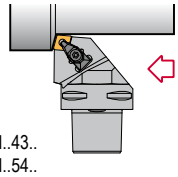
CN..32..
..
Page E08 CN..64..

DCMN 50º
Multi-Task



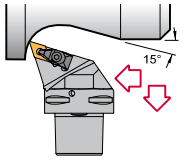
CN..43..
Page E09 CN..54..

DCRN 75º



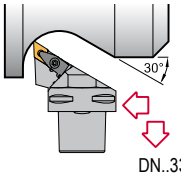
CN..43..
CN..54..
CN..64.. *Page E10*

DDHN 107º30'



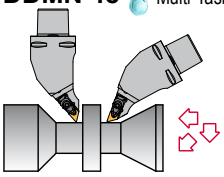
Page E11 DN..44..

DDJN 93º



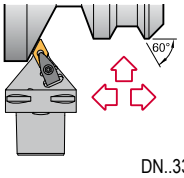
DN..33..
Page E12 DN..44..

DDMN 48º Multi-Task



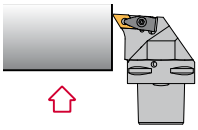
Page E13 DN..44..

DDNN 63º



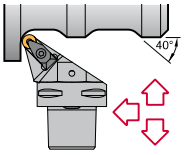
DN..33..
Page E14 DN..44..

DDUN 93º



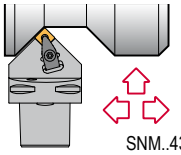
Page E15 DN..44..

DRSN



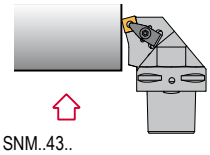
Page E16 RNMG43..

DSDN 45º



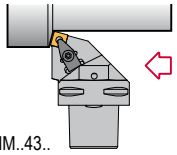
SNM..43..
SNM..54..
SNM..64..
Page E17

DSKN 75º



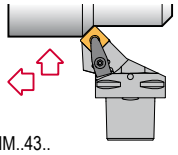
SNM..43..
SNM..54..
SNM..64.. *Page E18*

DSRN 75º



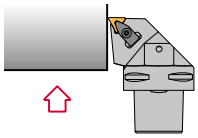
SNM..43..
SNM..54..
SNM..64.. *Page E19*

DSSN 45º



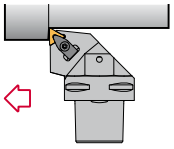
SNM..43..
SNM..54..
SNM..64.. *Page E20*

DTFN 90º



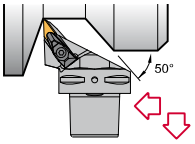
TNM..33..
Page E21 TNM..43..

DTGN 90º



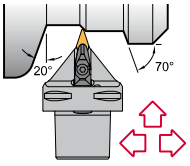
TNM..33..
Page E22 TNM..43..

DVJN 93º



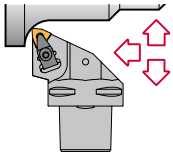
Page E23 VN..33..

DVVN 72º30'



Page E24 VN..33..

DWLN 95º



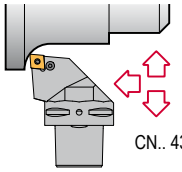
WNMG33..
Page E25 WNMG43..

E

NEGATIVE TOOLHOLDERS

Lever lock toolholders

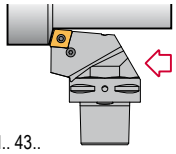
PCLN 95º



CN.. 43..
..
CN.. 2509..

Page E26

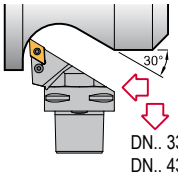
PCRN 75º



CN.. 43..
CN.. 54..
CN.. 64..

Page E27

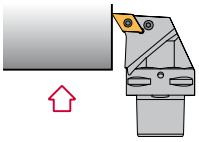
PDJN 93º



DN.. 33..
DN.. 43..
DN.. 44..

Page E28

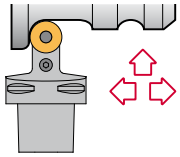
PDUN 93º



DN.. 43..
DN.. 44..

Page E29

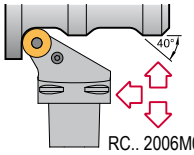
PRDC



RC.. 2507M0
RC.. 3209M0

Page E30

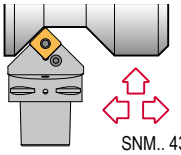
PRSC



RC.. 2006M0
RC.. 2507M0
RC.. 3209M0

Page E31

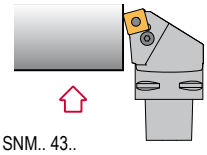
PSDN 45º



SNM.. 43..
..
SNM.. 85..

Page E32

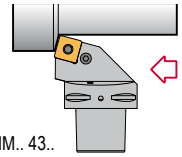
PSKN 75º



SNM.. 43..
..
SNM.. 85..

Page E33

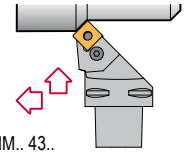
PSRN 75º



SNM.. 43..
..
SNM.. 85..

Page E34

PSSN 45º



SNM.. 43..
..
SNM.. 85..

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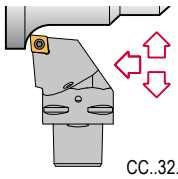
POSITIVE TOOLHOLDERS

Center screw toolholders

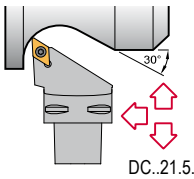
SCLC 95º



CC..32.5..
CC..43..

Page E36

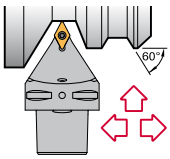
SDJC 93º



DC..21.5..
DC..32.5..

Page E37

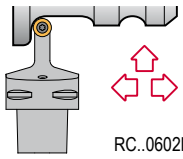
SDNC 62º30'



DC..32.5..

Page E38

SRDC



RC..0602M0
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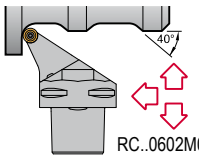
RC..2006M0

Page E39

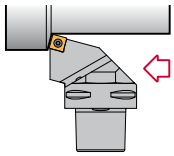
SRSC 45º



RC..0602M0
..
RC..2006M0

Page E40

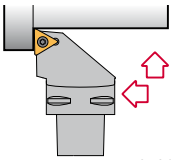
SSRC 75º



SC..43..

Page E41

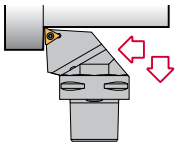
STGC 90º



TC..21.5..
TC..32.5..

Page E42

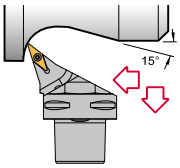
STJC 93º



TC..21.5..
TC..32.5..

Page E43

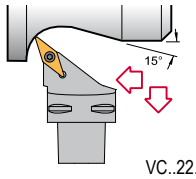
SVHB 107º30'



VBMT33..

Page E44

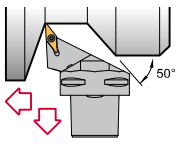
SVHC 107º30'



VC..22..
VC..33..

Page E45

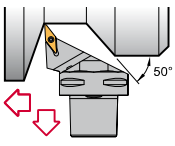
SVJB 93º



VBMT33..

Page E46

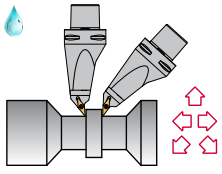
SVJC 93º



VC..22..
VC..33..

Page E47

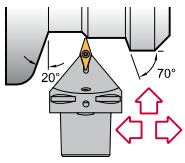
SVMB 50º Multi-Task



VBMT33..

Page E48

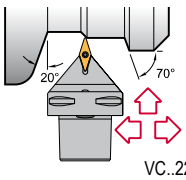
SVVB 72º30'



VBMT33..

Page E49

SVVC 72º30'



VC..22..
VC..33..

Page E50

E

NEGATIVE BORING BARS

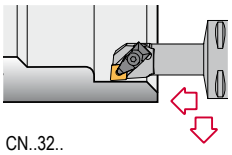
Adaptor

J..

Page E51

Dimple lock boring bars

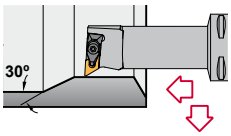
DCLN 95º



CN..32..
CN..43..
CN..54..

Page E52

DDUN 93º



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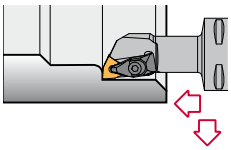
DN..33..
DN..44..

DWLN 95º

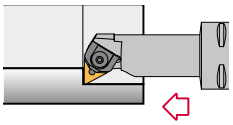


Page E54

WNMG33..
WNMG43..

Wedge clamp / Double lock boring bars

MTFN 90º



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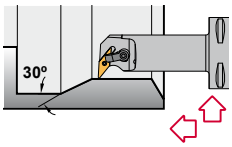
TNM..33..

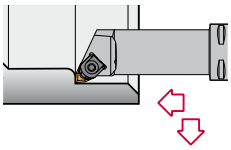
MVUN 93º



Page E56

VN..33..

MWLN 95º



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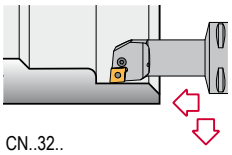
WNMG33..
WNMG43..

Lever lock boring bars

PCLN 95º



CN..32..
CN..43..
CN..54..

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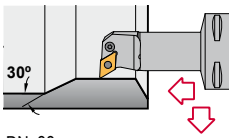
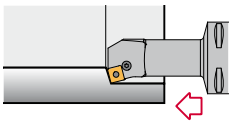
PDUN 93º



DN..33..
DN..43..
DN..44..

Page E59

PSKN 75º



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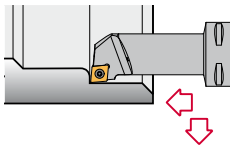
SNM..43..

POSITIVE BORING BARS

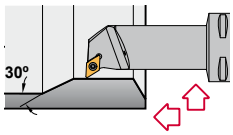
Center screw boring bars

SCLC 95º



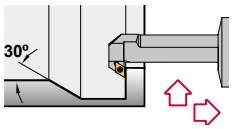
CC..32.5..
Page E61 CC..43..

SDUC 93º



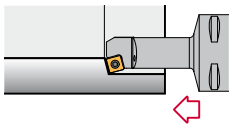
DC..21.5..
Page E62 DC..32.5..

SDUC-X 93º



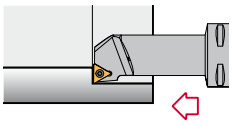
Page E63 DC..21.5..

SSKC 75º



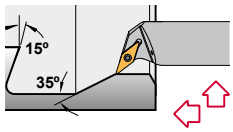
Page E64 SC..32.5..

STFC 90º



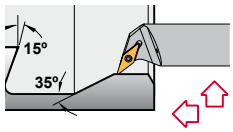
TC..21.5..
Page E65 TC..32.5..

SVQB 107º30'



Page E66 VBMT33..

SVQC 107º30'

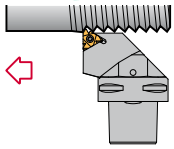


VC..22..
Page E67 VC..33..

THREADING

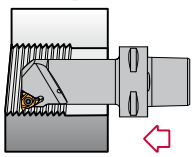
External and internal threading

SE 90º



16ER/L..
Page E68 22ER/L..

SI 90º



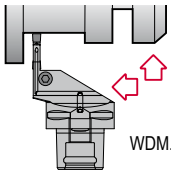
16NR/L..
Page E69 22NR/L..

E

PARTING AND GROOVING

Toolholders and boring bars

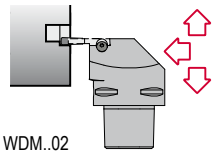
CZCD



WDM..02
..
WDM..06

Page E70

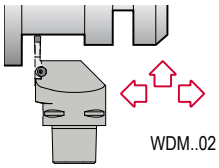
CZFD



WDM..02
..
WDM..06

Page E71

CZGD



WDM..02
..
WDM..06

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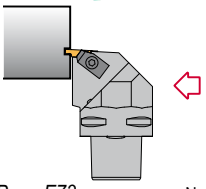
NE 93º



N..3

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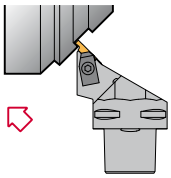
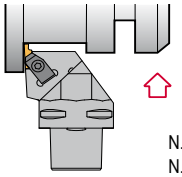
NR 45º



N..3

Page E74

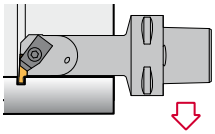
NS 93º



N..2
N..3
N..4

Page E75

NNTO 93º



N..2
N..3
N..4

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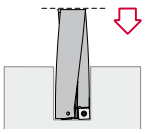
DRILLS

45..

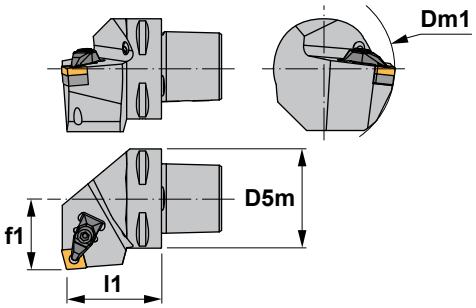


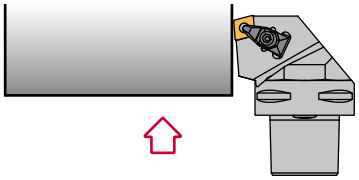
SPMT0603..
..
SPMT1204..

Page E77-79

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





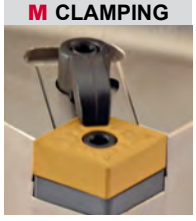
DCKN 75º

Reference	D5m	Dm1 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DCKNR/L27050-12	1.575	4.331	1.063	1.969	-6º	-6º	CN..43..	0.930
PSC50-DCKNR/L35060-12	1.969	4.331	1.378	2.362	-6º	-6º	CN..43..	1.765
PSC63-DCKNR/L45065-12	2.480	4.331	1.772	2.559	-6º	-6º	CN..43..	2.425
PSC40-DCKNR/L27050-16	1.575	4.921	1.063	1.969	-6º	-6º	CN..54..	0.930
PSC50-DCKNR/L35060-16	1.969	4.921	1.378	2.362	-6º	-6º	CN..54..	1.765
PSC63-DCKNR/L45065-16	2.480	4.921	1.772	2.559	-6º	-6º	CN..54..	2.425
PSC63-DCKNR/L45065-19	2.480	4.921	1.772	2.559	-6º	-6º	CN..64..	2.425
PSC80-DCKNR/L55080-19	3.150	4.921	2.165	3.150	-6º	-6º	CN..64..	6.040

Reference							Nm
PSC...-12	1766	ICSN-442	2712	1696	4295	5004	3.5
PSC...-16	1768	ICSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ICSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING



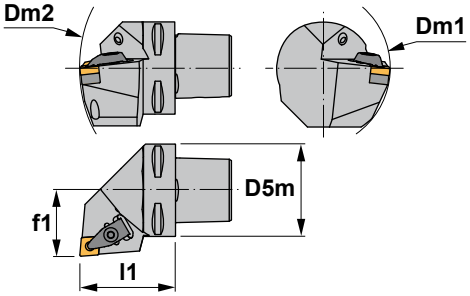
Reference							Nm
PSC...-12	2613	1086	5003	ICSN-442	1657	5025	3.0
PSC...-16	2614	1086	5003	ICSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ICSN-633	1674	5004	3.0

C CLAMPING

Reference							Nm
PSC...-12-4	1766	ICSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ICSN-422	9414	2713	1086	5003	3.0
PSC...-16	1768	ICSN-523	9414	2713	1086	5003	3.0
PSC...-19	1770	ICSN-623	9414	2713	1086	5003	3.0

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



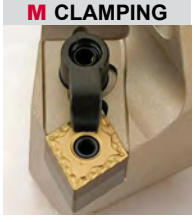
DCLN 95º

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DCLNR/L22040-09	1.260	2.362	4.567	0.866	1.575	-6º	-6º	CN..32..	0.465
PSC40-DCLNR/L27050-09	1.575	2.362	5.512	1.063	1.969	-6º	-6º	CN..32..	0.930
PSC32-DCLNR/L22045-12	1.260	2.362	4.764	0.866	1.772	-6º	-6º	CN..43..	0.530
PSC40-DCLNR/L27050-12	1.575	4.331	5.512	1.063	1.969	-6º	-6º	CN..43..	0.930
PSC50-DCLNR/L35060-12	1.969	4.331	6.496	1.378	2.362	-6º	-6º	CN..43..	1.765
PSC63-DCLNR/L45065-12	2.480	4.331	7.480	1.772	2.559	-6º	-6º	CN..43..	2.425
PSC80-DCLNR/L55080-12	3.150	4.331	9.843	2.165	3.150	-6º	-6º	CN..43..	6.040
PSC40-DCLNR/L27055-16	1.575	4.921	5.709	1.063	2.165	-6º	-6º	CN..54..	0.950
PSC50-DCLNR/L35060-16	1.969	4.921	6.496	1.378	2.362	-6º	-6º	CN..54..	1.765
PSC63-DCLNR/L45065-16	2.480	4.921	7.480	1.772	2.559	-6º	-6º	CN..54..	2.425
PSC80-DCLNR/L55080-16	3.150	4.921	9.843	2.165	3.150	-6º	-6º	CN..54..	6.040
PSC50-DCLNR/L35060-19	1.969	4.921	6.496	1.378	2.362	-6º	-6º	CN..64..	1.765
PSC63-DCLNR/L45065-19	2.480	4.921	7.480	1.772	2.559	-6º	-6º	CN..64..	2.425
PSC80-DCLNR/L55080-19	3.150	4.921	9.843	2.165	3.150	-6º	-6º	CN..64..	6.040

Reference							Nm
PSC...-09	1764	ICSN-332	2708	1695	4294	5004	3.5
PSC...-12	1766	ICSN-442	2712	1696	4295	5004	3.5
PSC...-16	1768	ICSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ICSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING



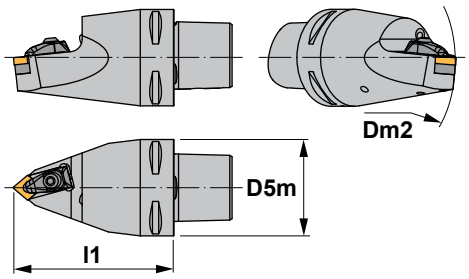
Reference							Nm
PSC...-09	2604	1085	5025	ICSN-332	1665	5002	2.0
PSC...-12	2613	1086	5003	ICSN-442	1657	5025	3.0
PSC...-16	2614	1086	5003	ICSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ICSN-633	1674	5004	3.0

C CLAMPING

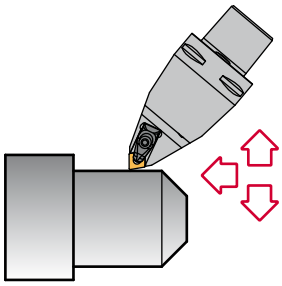
Reference							Nm
PSC...-12-4	1766	ICSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ICSN-422	9414	2713	1086	5003	3.0
PSC...-16	1768	ICSN-523	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 80º).
PSC with internal coolant.

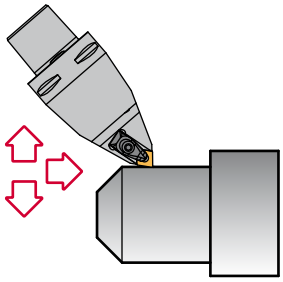
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



Main application



Alternative use



DCMN 50º

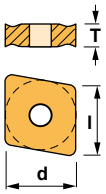
Reference	D5m	Dm2 min.	l1	γ1)	λs2)	Insert size	lbs
PSC63-DCMNN00115-12	2.480	4.331	4.528	-6º	-6º	CN..43..	3.750
PSC80-DCMNN00150-16	3.150	4.528	5.906	-6º	-6º	CN..54..	7.275

Reference							Nm
PSC63-DCMNN00115-12	1766	ICSN-442	2712	1696	4295	5004	3.5
PSC80-DCMNN00150-16	1768	ICSN-533	2716	1696	4295	5004	3.5

CN..

80° rhombic negative inserts. A24-26

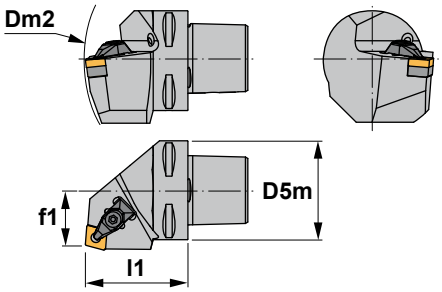
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625

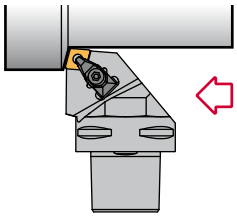


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DCRN 75º

Reference	D5m	Dm2 min.	f1	l1	$\gamma^{1)}$	$\lambda s^{2)}$	Insert size	lbs
PSC40-DCRNR/L22050-12	1.575	5.512	0.866	1.969	-6º	-6º	CN..43..	0.930
PSC50-DCRNR/L27060-12	1.969	6.496	1.063	2.362	-6º	-6º	CN..43..	1.765
PSC63-DCRNR/L35065-12	2.480	7.480	1.378	2.559	-6º	-6º	CN..43..	3.085
PSC50-DCRNR/L27060-16	1.969	6.496	1.063	2.362	-6º	-6º	CN..54..	1.765
PSC63-DCRNR/L35065-16	2.480	7.480	1.378	2.559	-6º	-6º	CN..54..	3.085
PSC80-DCRNR/L55080-16	3.150	9.843	2.165	3.150	-6º	-6º	CN..54..	6.040
PSC50-DCRNR/L27060-19	1.969	6.496	1.063	2.362	-6º	-6º	CN..64..	1.765
PSC63-DCRNR/L35065-19	2.480	7.480	1.378	2.559	-6º	-6º	CN..64..	3.085
PSC80-DCRNR/L55080-19	3.150	9.843	2.165	3.150	-6º	-6º	CN..64..	6.040

Reference							Nm
PSC...-12	1766	ICSN-442	2712	1696	4295	5004	3.5
PSC...-16	1768	ICSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ICSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

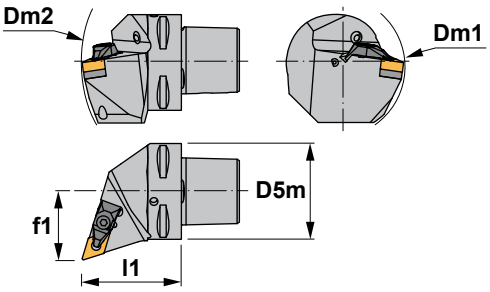
Reference							Nm
PSC...-12	2613	1086	5003	ICSN-442	1657	5025	3.0
PSC...-16	2614	1086	5003	ICSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ICSN-633	1674	5004	3.0

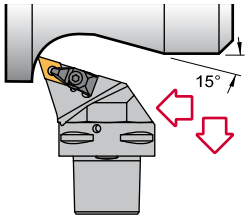
C CLAMPING

Reference							Nm
PSC...-12-4	1766	ICSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ICSN-422	9414	2713	1086	5003	3.0
PSC...-16	1768	ICSN-523	9414	2713	1086	5003	3.0
PSC...-19	1770	ICSN-623	9414	2713	1086	5003	3.0

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DDHN 107° 30'

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DDHNR/L27055-15	1.575	4.331	5.709	1.063	2.165	-6°	-7°	DN..44..	0.950
PSC50-DDHNR/L35060-15	1.969	4.331	6.496	1.378	2.362	-6°	-7°	DN..44..	1.765
PSC63-DDHNR/L45065-15	2.480	4.331	7.480	1.772	2.559	-6°	-7°	DN..44..	2.425
PSC80-DDHNR/L55080-15	3.150	4.331	9.843	2.165	3.150	-6°	-7°	DN..44..	6.040

Reference							Nm
PSC40-DDHNR/L27055-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC50-DDHNR/L35060-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC63-DDHNR/L45065-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC80-DDHNR/L55080-15	1766	IDSN-432	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

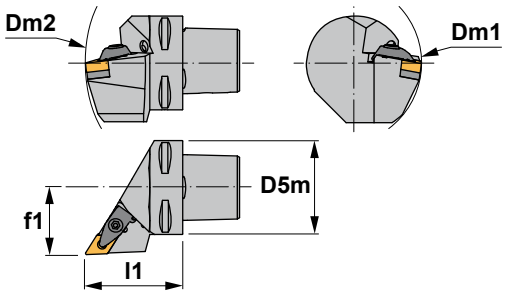
Reference							Nm
PSC...-15	2613	1086	5003	IDSN-432	1657	5025	3.5

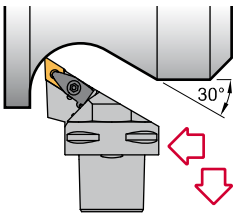
C CLAMPING

Reference							Nm
PSC...-15	1766	IDSN-422	9416	2717	1086	5003	3.0

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DDJN 93º

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DDJNR/L22045-11	1.260	2.362	4.764	0.866	1.772	-6º	-7º	DN..33..	0.530
PSC40-DDJNR/L27050-11	1.575	2.362	5.512	1.063	1.969	-6º	-7º	DN..33..	0.930
PSC50-DDJNR/L35060-11	1.969	2.559	6.496	1.378	2.362	-6º	-7º	DN..33..	1.765
PSC63-DDJNR/L45065-11	2.480	3.189	7.480	1.772	2.559	-6º	-7º	DN..33..	2.425
PSC40-DDJNR/L27055-15	1.575	4.331	5.709	1.063	2.165	-6º	-7º	DN..44..	0.930
PSC50-DDJNR/L35060-15	1.969	4.331	6.496	1.378	2.362	-6º	-7º	DN..44..	1.765
PSC63-DDJNR/L45065-15	2.480	4.331	7.480	1.772	2.559	-6º	-7º	DN..44..	2.425
PSC80-DDJNR/L55080-15	3.150	4.331	9.843	2.165	3.150	-6º	-7º	DN..44..	6.040

Reference							Nm
PSC...-11	1764	IDSN-322	2708	1695	4294	5004	3.5
PSC...-15	1766	IDSN-432	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

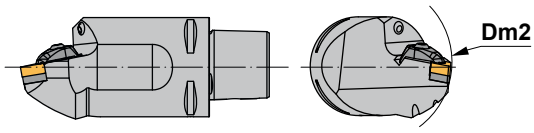
Reference							Nm
PSC...-11	2604	1085	5025	IDSN-322	1665	5002	2.0
PSC...-15	2613	1086	5003	IDSN-432	1657	5025	3.0

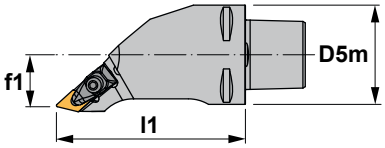
C CLAMPING

Reference							Nm
PSC...-15	1766	IDSN-422	9416	2717	1086	5003	3.0

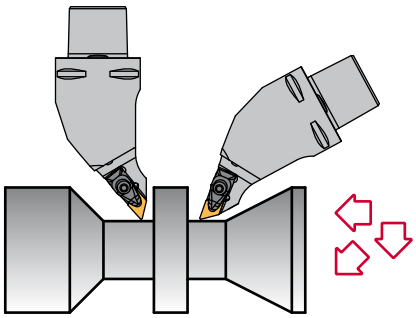
Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

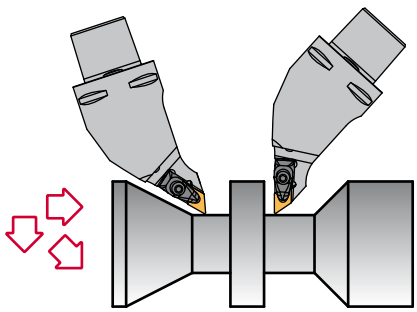




Main application



Alternative use



E

DDMN 48°

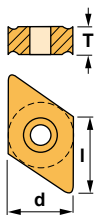
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC63-DDMNR/L33120-15	2.480	5.118	1.299	4.724	-5°	-9°	DN..44..	5.070

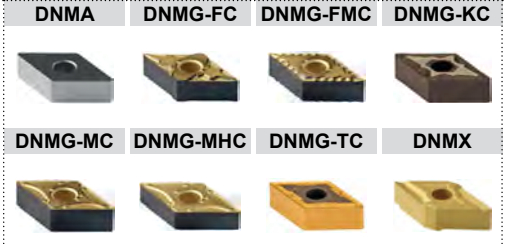
Reference							Nm
PSC63-DDMNR/L33120-15	1766	IDSN-432	2712	1696	4295	5004	3.5

DN..

55° rhombic negative inserts. A28-30

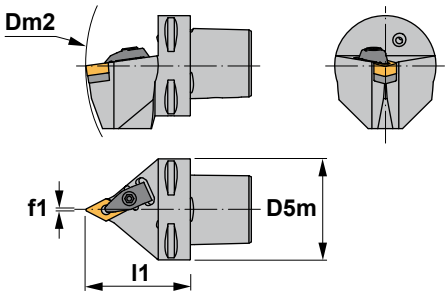
Reference	l	T	d
DN..44..	0.610	0.250	0.500

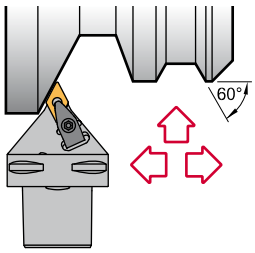




Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DDNN 63º

Reference	D5m	Dm2 min.	f1	l1	$\gamma^{1)}$	$\lambda s^{2)}$	Insert size	lbs
PSC40-DDNNN00050-11	1.575	5.512	0.020	1.969	-5º	-9º	DN..33..	0.770
PSC50-DDNNN00060-11	1.969	6.496	0.020	2.362	-5º	-9º	DN..33..	1.655
PSC40-DDNNN00055-15	1.575	5.709	0.020	2.165	-5º	-9º	DN..44..	0.770
PSC50-DDNNN00060-15	1.969	6.496	0.020	2.362	-5º	-9º	DN..44..	1.655
PSC63-DDNNN00065-15	2.480	7.480	0.020	2.559	-5º	-9º	DN..44..	2.360
PSC80-DDNNN00080-15	3.150	9.843	0.020	3.150	-5º	-9º	DN..44..	5.115

Reference							Nm
PSC...-11	1764	IDSN-322	2708	1695	4294	5004	3.5
PSC...-15	1766	IDSN-432	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

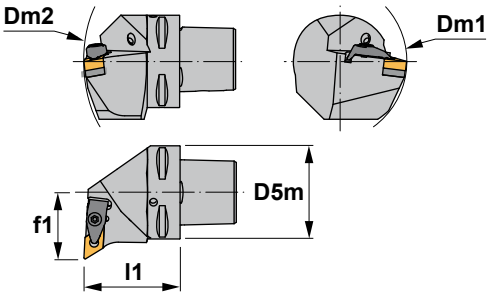
Reference							Nm
PSC...-11	2604	1085	5025	IDSN-322	1665	5002	2.0
PSC...-15	2613	1086	5003	IDSN-432	1657	5025	3.0

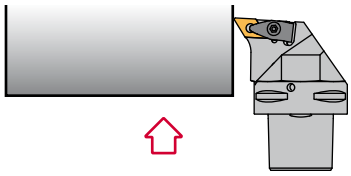
C CLAMPING

Reference							Nm
PSC...-15	1766	IDSN-422	9416	2717	1086	5003	3.0

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





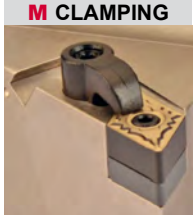
DDUN 93º

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DDUNR/L27050-15	1.575	4.331	5.512	1.063	1.969	-6º	-7º	DN..44..	0.930
PSC50-DDUNR/L35060-15	1.969	4.331	6.496	1.378	2.362	-6º	-7º	DN..44..	1.765
PSC63-DDUNR/L45065-15	2.480	4.331	7.480	1.772	2.559	-6º	-7º	DN..44..	2.425
PSC80-DDUNR/L55080-15	3.150	4.331	9.843	2.165	3.150	-6º	-7º	DN..44..	6.040

Reference							Nm
PSC40-DDUNR/L27050-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC50-DDUNR/L35060-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC63-DDUNR/L45065-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC80-DDUNR/L55080-15	1766	IDSN-432	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING



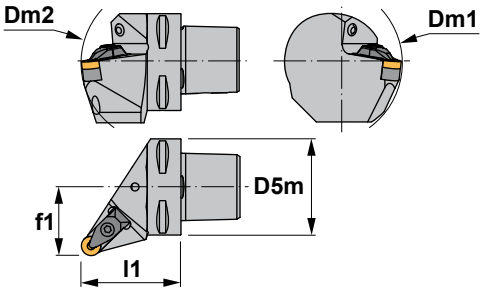
Reference							Nm
PSC...-15	2613	1086	5003	IDSN-432	1657	5025	3.0

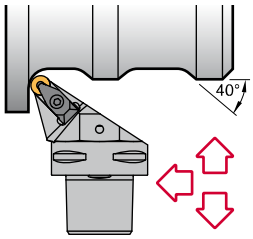
C CLAMPING

Reference							Nm
PSC...-15	1766	IDSN-422	9416	2717	1086	5003	3.0

Characteristics:
Profiling multipurpose turning toolholder equipped with round negative insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DRSN

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DRSNR/L27050-12	1.575	4.331	5.512	1.063	1.969	-6°	-6°	RNMG43..	0.930
PSC50-DRSNR/L35060-12	1.969	4.331	6.496	1.378	2.362	-6°	-6°	RNMG43..	1.765
PSC63-DRSNR/L45065-12	2.480	4.331	7.480	1.772	2.559	-6°	-6°	RNMG43..	2.425

Reference							Nm
PSC40-DRSNR/L27050-12	1766	IRSN-44	2712	1696	4295	5004	3.5
PSC50-DRSNR/L35060-12	1766	IRSN-44	2712	1696	4295	5004	3.5
PSC63-DRSNR/L45065-12	1766	IRSN-44	2712	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

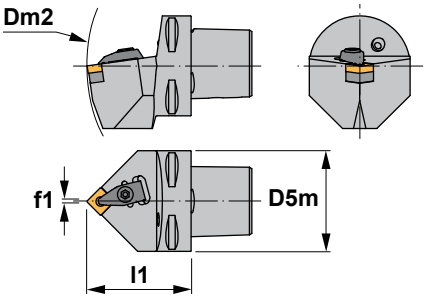
Reference							Nm
PSC...-12	2613	1086	5003	IRSN-44	1657	5025	3.5

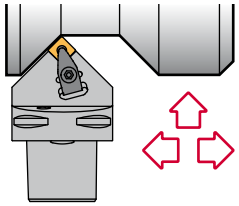
C CLAMPING

Reference							Nm
PSC...-12-4	1766	IRSN-44	9414	2713	1086	5003	3.0
PSC...-12-7	1766	IRSN-42	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





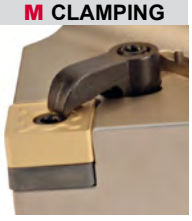
DSDN 45º

Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DSDNN00048-12	1.260	4.882	0.012	1.890	-6º	-6º	SNM..43..	0.530
PSC40-DSDNN00050-12	1.575	5.512	0.012	1.969	-6º	-6º	SNM..43..	0.770
PSC50-DSDNN00060-12	1.969	6.496	0.012	2.362	-6º	-6º	SNM..43..	1.655
PSC63-DSDNN00065-12	2.480	7.480	0.012	2.559	-6º	-6º	SNM..43..	2.360
PSC50-DSDNN00060-15	1.969	6.496	0.020	2.362	-6º	-6º	SNM..54..	1.655
PSC63-DSDNN00065-15	2.480	7.480	0.020	2.559	-6º	-6º	SNM..54..	2.360
PSC50-DSDNN00065-19	1.969	6.693	0.020	2.559	-6º	-6º	SNM..64..	1.765
PSC63-DSDNN00070-19	2.480	7.677	0.020	2.756	-6º	-6º	SNM..64..	2.780

Reference							Nm
PSC...-12	1766	ISSN-442	2712	1696	4295	5004	3.5
PSC...-15	1768	ISSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ISSN-633	2719	1696	4295	5004	3.5

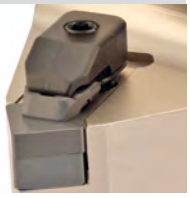
Optional clamping systems

M CLAMPING



Reference							Nm
PSC...-12	2613	1086	5003	ISSN-442	1657	5025	3.0
PSC...-15	2614	1086	5003	ISSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ISSN-633	1674	5004	3.0

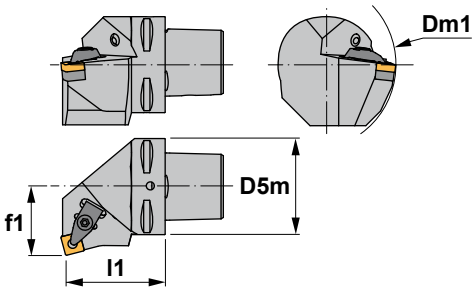
C CLAMPING

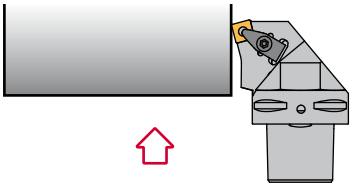


Reference							Nm
PSC...-12-4	1766	ISSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DSKN 75º

Reference	D5m	Dm1 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DSKNR/L22040-12	1.260	2.362	0.866	1.575	-6º	-6º	SNM..43..	0.465
PSC40-DSKNR/L27050-12	1.575	4.331	1.063	1.969	-6º	-6º	SNM..43..	0.930
PSC50-DSKNR/L35060-12	1.969	4.331	1.378	2.362	-6º	-6º	SNM..43..	1.765
PSC63-DSKNR/L45065-12	2.480	4.331	1.772	2.559	-6º	-6º	SNM..43..	2.425
PSC50-DSKNR/L35060-15	1.969	4.921	1.378	2.362	-6º	-6º	SNM..54..	1.765
PSC63-DSKNR/L45065-15	2.480	4.921	1.772	2.559	-6º	-6º	SNM..54..	2.425
PSC50-DSKNR/L35060-19	1.969	4.921	1.378	2.362	-6º	-6º	SNM..64..	1.765
PSC63-DSKNR/L45065-19	2.480	4.921	1.772	2.559	-6º	-6º	SNM..64..	2.425
PSC80-DSKNR/L55080-19	3.150	4.921	2.165	3.150	-6º	-6º	SNM..64..	6.040

Reference							Nm
PSC...-12	1766	ISSN-442	2712	1696	4295	5004	3.5
PSC...-15	1768	ISSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ISSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

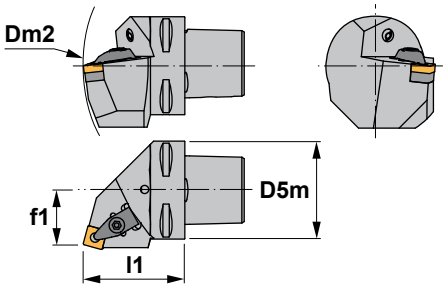
Reference							Nm
PSC...-12	2613	1086	5003	ISSN-442	1657	5025	3.0
PSC...-15	2614	1086	5003	ISSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ISSN-633	1674	5004	3.0

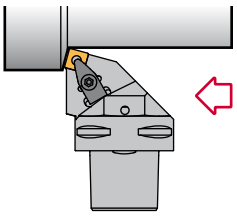
C CLAMPING

Reference							Nm
PSC...-12-4	1766	ISSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DSRN 75º

Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DSRNR/L19048-12	1.260	4.882	0.748	1.890	-6º	-6º	SNM..43..	0.575
PSC40-DSRNR/L22050-12	1.575	5.512	0.866	1.969	-6º	-6º	SNM..43..	0.930
PSC50-DSRNR/L27060-12	1.969	6.496	1.063	2.362	-6º	-6º	SNM..43..	1.765
PSC63-DSRNR/L35065-12	2.480	7.480	1.378	2.559	-6º	-6º	SNM..43..	3.085
PSC50-DSRNR/L27060-15	1.969	6.496	1.063	2.362	-6º	-6º	SNM..54..	1.765
PSC63-DSRNR/L35065-15	2.480	7.480	1.378	2.559	-6º	-6º	SNM..54..	3.085
PSC50-DSRNR/L27060-19	1.969	6.496	1.063	2.362	-6º	-6º	SNM..64..	1.765
PSC63-DSRNR/L35065-19	2.480	7.480	1.378	2.559	-6º	-6º	SNM..64..	3.085
PSC80-DSRNR/L45080-19	3.150	9.843	1.772	3.150	-6º	-6º	SNM..64..	6.170

Reference							Nm
PSC...-12	1766	ISSN-442	2712	1696	4295	5004	3.5
PSC...-15	1768	ISSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ISSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

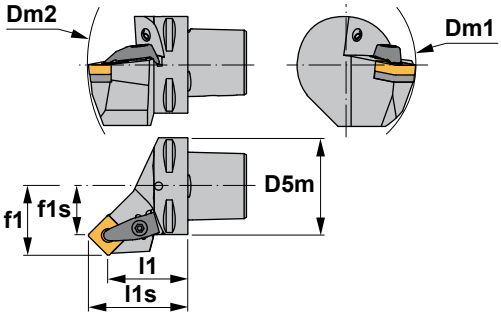
Reference							Nm
PSC...-12	2613	1086	5003	ISSN-442	1657	5025	3.0
PSC...-15	2614	1086	5003	ISSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ISSN-633	1674	5004	3.0

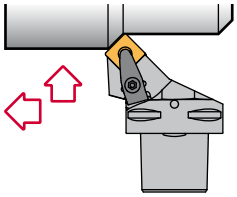
C CLAMPING

Reference							Nm
PSC...-12-4	1766	ISSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DSSN 45º

Reference	D5m	Dm1 min.	Dm2 min.	f1	f1s	l1	l1s	γ1) λs2)	Insert size	lbs
PSC32-DSSNR/L22040-12	1.260	2.362	4.882	0.866	0.539	1.575	1.901	-8º 0º	SNM..43..	0.465
PSC40-DSSNR/L27042-12	1.575	4.331	5.512	1.063	0.735	1.654	1.981	-8º 0º	SNM..43..	0.770
PSC50-DSSNR/L35052-12	1.969	4.331	6.496	1.378	1.050	2.047	2.375	-8º 0º	SNM..43..	1.545
PSC63-DSSNR/L45056-12	2.480	4.331	7.480	1.772	1.444	2.205	2.532	-8º 0º	SNM..43..	2.470
PSC40-DSSNR/L27045-15	1.575	4.921	5.709	1.063	0.661	1.772	2.173	-8º 0º	SNM..54..	0.880
PSC50-DSSNR/L35050-15	1.969	4.921	6.496	1.378	0.975	1.969	2.372	-8º 0º	SNM..54..	1.500
PSC63-DSSNR/L45054-15	2.480	4.921	7.480	1.772	1.369	2.126	2.529	-8º 0º	SNM..54..	2.515
PSC50-DSSNR/L35048-19	1.969	4.921	6.496	1.378	0.885	1.890	2.381	-8º 0º	SNM..64..	1.545
PSC63-DSSNR/L45052-19	2.480	4.921	7.480	1.772	1.280	2.047	2.539	-8º 0º	SNM..64..	2.490

Reference							Nm
PSC...-12	1766	ISSN-442	2712	1696	4295	5004	3.5
PSC...-15	1768	ISSN-533	2716	1696	4295	5004	3.5
PSC...-19	1770	ISSN-633	2719	1696	4295	5004	3.5

Optional clamping systems

M CLAMPING

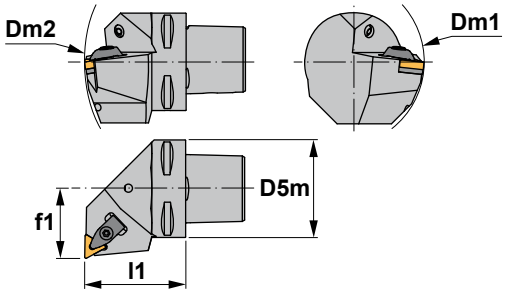
Reference							Nm
PSC...-12	2613	1086	5003	ISSN-442	1657	5025	3.0
PSC...-15	2614	1086	5003	ISSN-533	1673	5003	3.0
PSC...-19	2614	1086	5003	ISSN-633	1674	5004	3.0

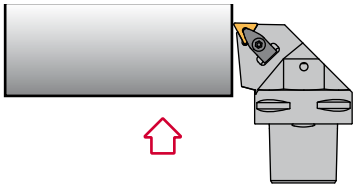
C CLAMPING

Reference							Nm
PSC...-12-4	1766	ISSN-442	9414	2713	1086	5003	3.0
PSC...-12-7	1766	ISSN-422	9414	2713	1086	5003	3.0

Characteristics:
Toolholder for face turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





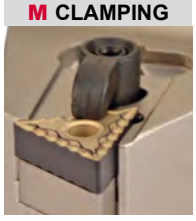
DTFN 90°

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DTFNR/L27050-16	1.575	4.331	5.512	1.063	1.969	-6°	-6°	TNM..33..	0.930
PSC50-DTFNR/L35060-16	1.969	4.331	6.496	1.378	2.362	-6°	-6°	TNM..33..	1.765
PSC63-DTFNR/L45065-16	2.480	4.331	7.480	1.772	2.559	-6°	-6°	TNM..33..	2.425
PSC40-DTFNR/L27050-22	1.575	4.331	5.512	1.063	1.969	-6°	-6°	TNM..43..	0.930
PSC50-DTFNR/L35060-22	1.969	4.331	6.496	1.378	2.362	-6°	-6°	TNM..43..	1.765
PSC63-DTFNR/L45065-22	2.480	4.331	7.480	1.772	2.559	-6°	-6°	TNM..43..	2.425

Reference							Nm
PSC40-DTFNR/L27050-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC50-DTFNR/L35060-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC63-DTFNR/L45065-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC40-DTFNR/L27050-22	1766	ITSN-443	2712	1696	4295	5004	3.5
PSC50-DTFNR/L35060-22	1766	ITSN-443	2712	1696	4295	5004	3.5
PSC63-DTFNR/L45065-22	1766	ITSN-443	2712	1696	4295	5004	3.5

Optional clamping systems

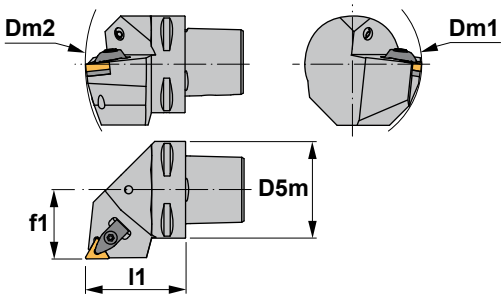
M CLAMPING

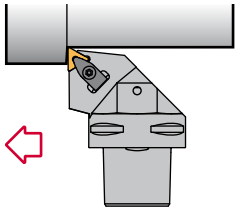


Reference							Nm
PSC...-16	2604	1085	5025	ITSN-342	1675	5002	2.0

Characteristics:
Toolholder for external turning applications equipped with triangular negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DTGN 90°

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DTGNR/L27050-16	1.575	4.331	5.512	1.063	1.969	-6°	-6°	TNM..33..	0.930
PSC50-DTGNR/L35060-16	1.969	4.331	6.496	1.378	2.362	-6°	-6°	TNM..33..	1.765
PSC63-DTGNR/L45065-16	2.480	4.331	7.480	1.772	2.559	-6°	-6°	TNM..33..	2.425
PSC40-DTGNR/L27050-22	1.575	4.331	5.512	1.063	1.969	-6°	-6°	TNM..43..	0.930
PSC50-DTGNR/L35060-22	1.969	4.331	6.496	1.378	2.362	-6°	-6°	TNM..43..	1.765
PSC63-DTGNR/L45065-22	2.480	4.331	7.480	1.772	2.559	-6°	-6°	TNM..43..	2.425

Reference							Nm
PSC40-DTGNR/L27050-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC50-DTGNR/L35060-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC63-DTGNR/L45065-16	1764	ITSN-342	2708	1695	4294	5004	3.5
PSC40-DTGNR/L27050-22	1766	ITSN-433	2712	1696	4295	5004	3.5
PSC50-DTGNR/L35060-22	1766	ITSN-433	2712	1696	4295	5004	3.5
PSC63-DTGNR/L45065-22	1766	ITSN-433	2712	1696	4295	5004	3.5

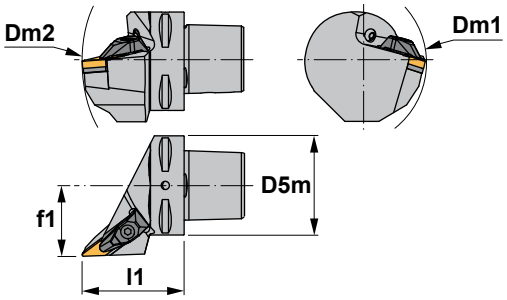
Optional clamping systems

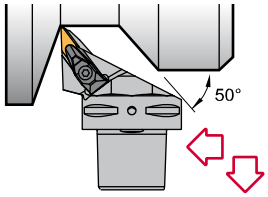
M CLAMPING

Reference							Nm
PSC...-16	2604	1085	5025	ITSN-342	1675	5002	2.0

Characteristics:
Toolholder for very specific operations equipped with rhombic negative inserts (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DVJN 93º

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DVJNR/L27062-16	1.575	2.362	5.984	1.063	2.441	-4º	-13º	VN..33..	0.990
PSC50-DVJNR/L35065-16	1.969	2.559	6.693	1.378	2.559	-4º	-13º	VN..33..	1.740
PSC63-DVJNR/L45065-16	2.480	3.189	7.480	1.772	2.559	-4º	-13º	VN..33..	2.425
PSC80-DVJNR/L55080-16	3.150	3.937	9.843	2.165	3.150	-4º	-13º	VN..33..	6.040

Reference							Nm
PSC40-DVJNR/L27062-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC50-DVJNR/L35065-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC63-DVJNR/L45065-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC80-DVJNR/L55080-16	1764	IVSN-322	2708	1695	4294	5004	3.5

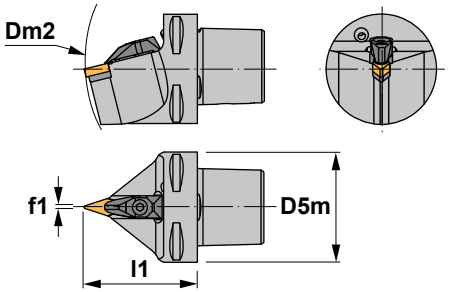
Optional clamping systems

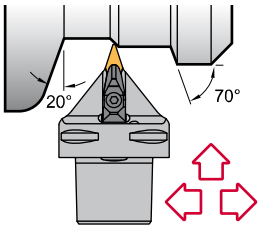
M CLAMPING

Reference							Nm
PSC...-16	2604	1085	5025	IVSN-322	1665	5002	2.0

Characteristics:
Profiling toolholder equipped with rhombic negative double-sided insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DVVN 72º 30'

Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-DVVNN00062-16	1.575	5.984	0.024	2.441	-4º	-13º	VN..33..	0.950
PSC50-DVVNN00065-16	1.969	6.693	0.024	2.559	-4º	-13º	VN..33..	1.765
PSC63-DVVNN00065-16	2.480	7.480	0.024	2.559	-4º	-13º	VN..33..	2.360
PSC80-DVVNN00080-16	3.150	9.843	0.024	3.150	-4º	-13º	VN..33..	5.115

Reference							Nm
PSC40-DVVNN00062-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC50-DVVNN00065-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC63-DVVNN00065-16	1764	IVSN-322	2708	1695	4294	5004	3.5
PSC80-DVVNN00080-16	1764	IVSN-322	2708	1695	4294	5004	3.5

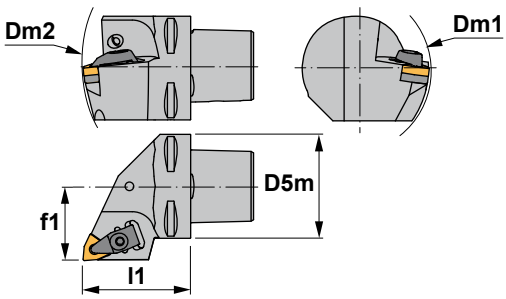
Optional clamping systems

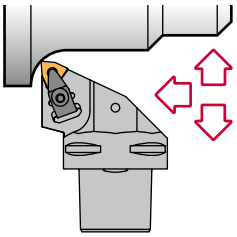
M CLAMPING

Reference							Nm
PSC...-16	2604	1085	5025	IVSN-322	1665	5002	2.0

Characteristics:
Multipurpose toolholder equipped with trigon negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





DWLN 95º

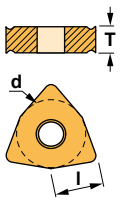
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-DWLNR/L22040-06	1.260	2.362	4.567	0.866	1.575	-6º	-6º	WNMG33..	0.465
PSC40-DWLNR/L27050-06	1.575	2.362	5.512	1.063	1.969	-6º	-6º	WNMG33..	0.930
PSC50-DWLNR/L35060-06	1.969	2.559	6.496	1.378	2.362	-6º	-6º	WNMG33..	1.765
PSC63-DWLNR/L45065-06	2.480	3.189	7.480	1.772	2.559	-6º	-6º	WNMG33..	2.425
PSC40-DWLNR/L27050-08	1.575	4.331	5.512	1.063	1.969	-6º	-6º	WNMG43..	0.930
PSC50-DWLNR/L35060-08	1.969	4.331	6.496	1.378	2.362	-6º	-6º	WNMG43..	1.765
PSC63-DWLNR/L45065-08	2.480	4.331	7.480	1.772	2.559	-6º	-6º	WNMG43..	2.425
PSC80-DWLNR/L55080-08	3.150	4.331	9.843	2.165	3.150	-6º	-6º	WNMG43..	6.040

Reference							Nm
PSC32-DWLNR/L22040-06	1764	IWSN-322	2708	1695	4294	5004	3.5
PSC40-DWLNR/L27050-06	1764	IWSN-322	2708	1695	4294	5004	3.5
PSC50-DWLNR/L35060-06	1764	IWSN-322	2708	1695	4294	5004	3.5
PSC63-DWLNR/L45065-06	1764	IWSN-322	2708	1695	4294	5004	3.5
PSC40-DWLNR/L27050-08	1766	IWSN-433	2712	1696	4295	5004	3.5
PSC50-DWLNR/L35060-08	1766	IWSN-433	2712	1696	4295	5004	3.5
PSC63-DWLNR/L45065-08	1766	IWSN-433	2712	1696	4295	5004	3.5
PSC80-DWLNR/L55080-08	1766	IWSN-433	2712	1696	4295	5004	3.5

WNMG

80º trigon negative inserts. A42-43

Reference	l	T	d
WNMG33..	0.241	0.187	0.375
WNMG43..	0.320	0.187	0.500



WNMG-FC

WNMG-FMC

WNMG-KC

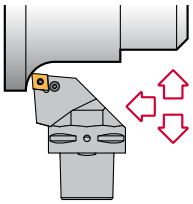
WNMG-MFC

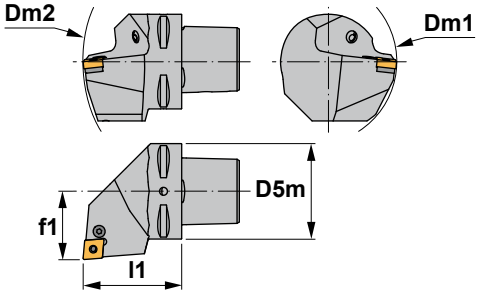
WNMG-MC

WNMG-MHC

WNMG-TC

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80º). PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PCLN 95º

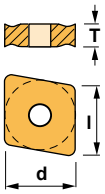
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-PCLNR/L22040-12	1.260	2.362	4.882	0.866	1.575	-6º	-6º	CN..43..	0.465
PSC40-PCLNR/L27050-12	1.575	4.331	5.512	1.063	1.969	-6º	-6º	CN..43..	0.930
PSC50-PCLNR/L35060-12	1.969	4.331	6.496	1.378	2.362	-6º	-6º	CN..43..	1.765
PSC63-PCLNR/L45065-12	2.480	4.331	7.480	1.772	2.559	-6º	-6º	CN..43..	2.425
PSC80-PCLNR/L55080-12	3.150	4.331	9.843	2.165	3.150	-6º	-6º	CN..43..	6.040
PSC40-PCLNR/L27050-16	1.575	4.921	5.512	1.063	1.969	-6º	-6º	CN..54..	0.930
PSC50-PCLNR/L35060-16	1.969	4.921	6.496	1.378	2.362	-6º	-6º	CN..54..	1.765
PSC63-PCLNR/L45065-16	2.480	4.921	7.480	1.772	2.559	-6º	-6º	CN..54..	2.425
PSC80-PCLNR/L55080-16	3.150	4.921	9.843	2.165	3.150	-6º	-6º	CN..54..	6.040
PSC50-PCLNR/L35060-19	1.969	4.921	6.496	1.378	2.362	-6º	-6º	CN..64..	1.765
PSC63-PCLNR/L45065-19	2.480	4.921	7.480	1.772	2.559	-6º	-6º	CN..64..	2.425
PSC80-PCLNR/L55080-19	3.150	4.921	9.843	2.165	3.150	-6º	-6º	CN..64..	6.040
PSC80-PCLNR/L55080-25	3.150	5.906	9.843	2.165	3.150	-6º	-6º	CN..2509..	6.040

Reference							Nm
PSC32-PCLNR/L22040-12	8012	1608	5003	3612	4112	0012	3.0
PSC40-PCLNR/L27050-12	8012	1608	5003	3612	4112	0012	3.0
PSC50-PCLNR/L35060-12	8012	1608	5003	3612	4112	0012	3.0
PSC63-PCLNR/L45065-12	8012	1608	5003	3612	4112	0012	3.0
PSC80-PCLNR/L55080-12	8012	1608	5003	3612	4112	0012	3.0
PSC40-PCLNR/L27050-16	8016	1618	5003	3616	4115	0015	3.0
PSC50-PCLNR/L35060-16	8016	1618	5003	3616	4115	0015	3.0
PSC63-PCLNR/L45065-16	8016	1618	5003	3616	4115	0015	3.0
PSC80-PCLNR/L55080-16	8016	1618	5003	3616	4115	0015	3.0
PSC50-PCLNR/L35060-19	8019	1610	5004	3619	4119	0019	3.5
PSC63-PCLNR/L45065-19	8019	1610	5004	3619	4119	0019	3.5
PSC80-PCLNR/L55080-19	8019	1610	5004	3619	4119	0019	3.5
PSC80-PCLNR/L55080-25	8025	1612	5005	3625	4125	0025	4.0

CN..

80° rhombic negative inserts. A24-26

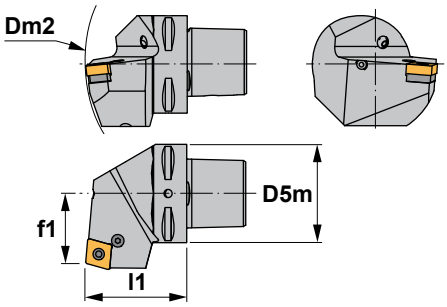
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750
CN..2509..	1.015	0.375	1.000

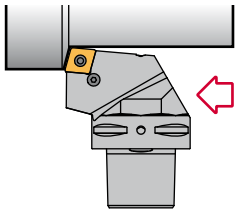


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Multipurpose toolholder equipped with rhombic negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PCRN 75°

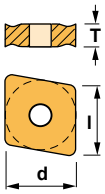
Reference	D5m	Dm2 min.	f1	l1	$\gamma^{1)}$	$\lambda s^{2)}$	Insert size	lbs
PSC50-PCRNR/L27060-12	1.969	6.496	1.063	2.362	-6°	-6°	CN..43..	1.765
PSC63-PCRNR/L35065-12	2.480	7.480	1.378	2.559	-6°	-6°	CN..43..	3.085
PSC50-PCRNR/L27060-16	1.969	6.496	1.063	2.362	-6°	-6°	CN..54..	1.765
PSC63-PCRNR/L35065-16	2.480	7.480	1.378	2.559	-6°	-6°	CN..54..	3.085
PSC50-PCRNR/L27060-19	1.969	6.496	1.063	2.362	-6°	-6°	CN..64..	1.765
PSC63-PCRNR/L35065-19	2.480	7.480	1.378	2.559	-6°	-6°	CN..64..	3.085

Reference							Nm
PSC50-PCRNR/L27060-12	8012	1608	5003	3612	4112	0012	3.0
PSC63-PCRNR/L35065-12	8012	1608	5003	3612	4112	0012	3.0
PSC50-PCRNR/L27060-16	8016	1618	5003	3616	4115	0015	3.0
PSC63-PCRNR/L35065-16	8016	1618	5003	3616	4115	0015	3.0
PSC50-PCRNR/L27060-19	8019	1610	5004	3619	4119	0019	3.5
PSC63-PCRNR/L35065-19	8019	1610	5004	3619	4119	0019	3.5

CN..

80° rhombic negative inserts. A24-26

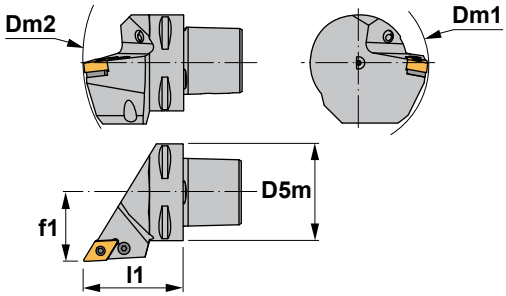
Reference	l	T	d
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625
CN..64..	0.763	0.250	0.750

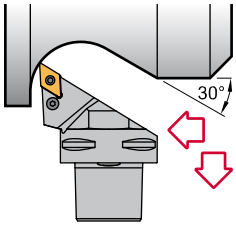


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





E

PDJN 93°

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC50-PDJNR/L35060-11	1.969	4.331	6.496	1.378	2.362	-6°	-7°	DN..33..	1.765
PSC40-PDJNR/L27055-15	1.575	4.331	5.709	1.063	2.165	-6°	-7°	DN..44..	0.950
PSC50-PDJNR/L35060-15	1.969	4.331	6.496	1.378	2.362	-6°	-7°	DN..44..	1.765
PSC63-PDJNR/L45065-15	2.480	4.331	7.480	1.772	2.559	-6°	-7°	DN..44..	2.425
PSC80-PDJNR/L55080-15	3.150	4.331	9.843	2.165	3.150	-6°	-7°	DN..44..	6.040

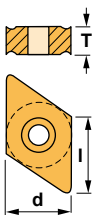
Reference									Nm
PSC50-PDJNR/L35060-11	8009	1606	5025	3711	4109	0009	-	-	2.0
PSC40-PDJNR/L27055-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC50-PDJNR/L35060-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC63-PDJNR/L45065-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC80-PDJNR/L55080-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0

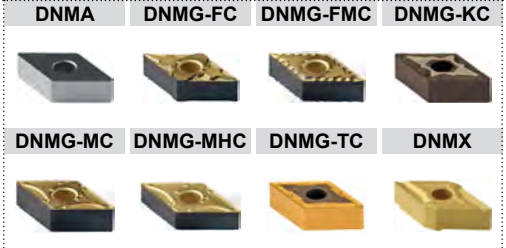
For inserts DN..43..

DN..

55° rhombic negative inserts. A28-30

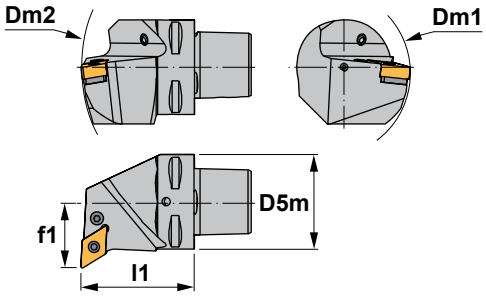
Reference	l	T	d
DN..33..	0.457	0.187	0.375
DN..43..	0.610	0.187	0.500
DN..44..	0.610	0.250	0.500

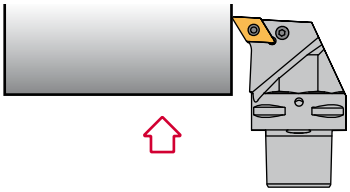




Characteristics:
Turning and profiling toolholder equipped with rhombic negative double-sided insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PDUN 93º

Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-PDUNR/L27050-15	1.575	4.331	5.512	1.063	1.969	-6º	-7º	DN..44..	0.930
PSC50-PDUNR/L35060-15	1.969	4.331	6.496	1.378	2.362	-6º	-7º	DN..44..	1.765
PSC63-PDUNR/L45065-15	2.480	4.331	7.480	1.772	2.559	-6º	-7º	DN..44..	2.425
PSC80-PDUNR/L55080-15	3.150	4.331	9.843	2.165	3.150	-6º	-7º	DN..44..	6.040

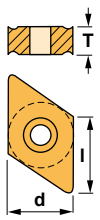
Reference									Nm
PSC40-PDUNR/L27050-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC50-PDUNR/L35060-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC63-PDUNR/L45065-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC80-PDUNR/L55080-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0

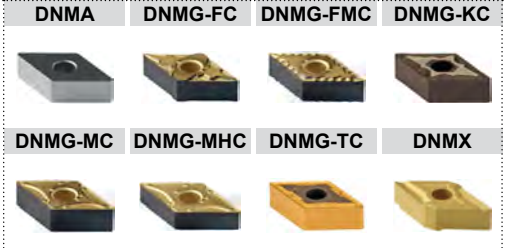
For inserts DN..43..

DN..

55º rhombic negative inserts. A28-30

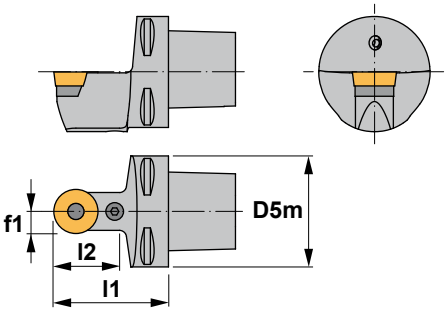
Reference	l	T	d
DN..43..	0.610	0.187	0.500
DN..44..	0.610	0.250	0.500

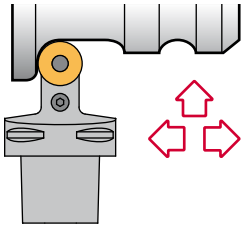




Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PRDC

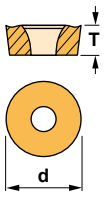
Reference	D5m	f1	l1	l2	γ1)	λs2)	Insert size	lbs
PSC63-PRDCN00065-25	2.480	0.492	2.559	1.575	0°	0°	RC..2507M0	2.360
PSC80-PRDCN00080-25	3.150	0.492	3.150	1.575	0°	0°	RC..2507M0	5.115
PSC80-PRDCN00080-32	3.150	0.630	3.150	1.772	0°	0°	RC..3209M0	5.115

Reference							Nm
PSC63-PRDCN00065-25	8125	1710	5004	3825	4119	0019	3.5
PSC80-PRDCN00080-25	8125	1710	5004	3825	4119	0019	3.5
PSC80-PRDCN00080-32	8132	1612	5005	3832	4125	0025	4.0

RC..

Round positive inserts with 7° clearance. A31

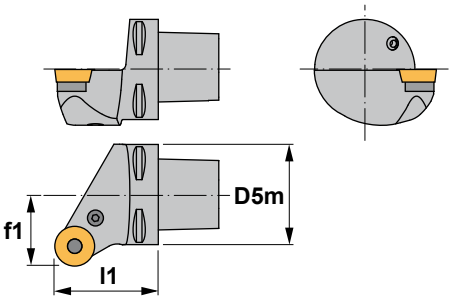
Reference	T	d
RC..2507M0	0.312	0.984
RC..3209M0	0.375	1.260

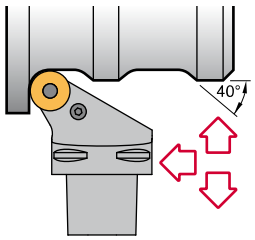


RCGT-AL	RCGT-AP
	
RCMT	
	

Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PRSC

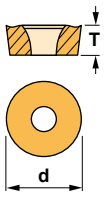
Reference	D5m	f1	l1	γ1)	λs2)	Insert size	lbs
PSC80-PRSCR/L55080-20	3.150	2.165	3.150	0º	0º	RC..2006M0	6.040
PSC63-PRSCR/L45065-25	2.480	1.772	2.559	0º	0º	RC..2507M0	2.425
PSC80-PRSCR/L55080-25	3.150	2.165	3.150	0º	0º	RC..2507M0	6.040
PSC80-PRSCR/L55080-32	3.150	2.165	3.150	0º	0º	RC..3209M0	6.040

Reference							Nm
PSC80-PRSCR/L55080-20	8120	1708	5003	3820	4115	0015	3.0
PSC63-PRSCR/L45065-25	8125	1710	5004	3825	4119	0019	3.5
PSC80-PRSCR/L55080-25	8125	1710	5004	3825	4119	0019	3.5
PSC80-PRSCR/L55080-32	8132	1612	5005	3832	4125	0025	4.0

RC..

Round positive inserts with 7° clearance. A31

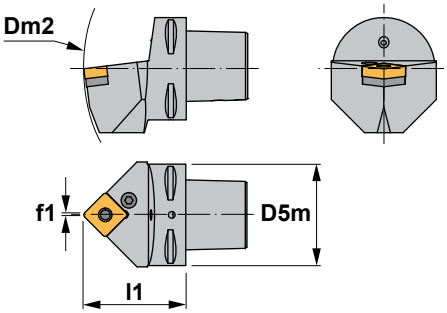
Reference	T	d
RC..2006M0	0.250	0.787
RC..2507M0	0.312	1.000
RC..3209M0	0.375	1.260

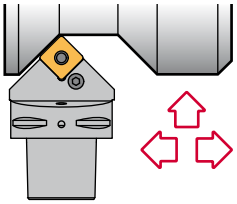


RCGT-AL	RCGT-AP
	
RCMT	
	

Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PSDN 45º

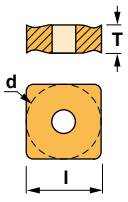
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-PSDNN00050-12	1.575	5.512	0.012	1.969	-6º	-6º	SNM..43..	0.770
PSC50-PSDNN00060-12	1.969	6.496	0.012	2.362	-6º	-6º	SNM..43..	1.655
PSC63-PSDNN00065-12	2.480	7.480	0.012	2.559	-6º	-6º	SNM..43..	2.360
PSC40-PSDNN00050-15	1.575	5.512	0.020	1.969	-6º	-6º	SNM..54..	0.770
PSC50-PSDNN00060-15	1.969	6.496	0.020	2.362	-6º	-6º	SNM..54..	1.655
PSC63-PSDNN00065-15	2.480	7.480	0.020	2.559	-6º	-6º	SNM..54..	2.360
PSC50-PSDNN00060-19	1.969	6.693	0.020	2.362	-6º	-6º	SNM..64..	1.655
PSC63-PSDNN00065-19	2.480	7.677	0.020	2.559	-6º	-6º	SNM..64..	2.360
PSC63-PSDNN00065-25	2.480	7.677	0.039	2.559	-6º	-6º	SNM..85..	2.360
PSC80-PSDNN00080-25	3.150	9.843	0.039	3.150	-6º	-6º	SNM..85..	5.115

Reference							Nm
PSC40-PSDNN00050-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSDNN00060-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSDNN00065-12	8012	1608	5003	3512	4112	0012	3.0
PSC40-PSDNN00050-15	8016	1618	5003	3515	4115	0015	3.0
PSC50-PSDNN00060-15	8016	1618	5003	3515	4115	0015	3.0
PSC63-PSDNN00065-15	8016	1618	5003	3515	4115	0015	3.0
PSC50-PSDNN00060-19	8019	1610	5004	3519	4119	0019	3.5
PSC63-PSDNN00065-19	8019	1610	5004	3519	4119	0019	3.5
PSC63-PSDNN00065-25	8025	1612	5005	3525	4125	0025	4.0
PSC80-PSDNN00080-25	8025	1612	5005	3525	4125	0025	4.0

SNM..

Square negative inserts. A33-34

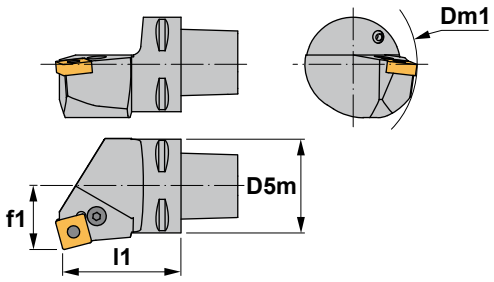
Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750
SNM..85..	1.000	0.312	1.000

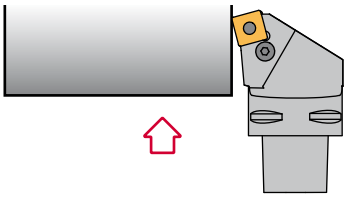


SNMG-FMC	SNMG-KC	SNMG-MHC
SNMG-RC	SNMG-TC	SNMM

Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PSKN 75º

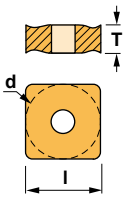
Reference	D5m	Dm1 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-PSKNR/L27050-12	1.575	4.331	1.063	1.969	-6º	-6º	SNM..43..	0.930
PSC50-PSKNR/L35060-12	1.969	4.331	1.378	2.362	-6º	-6º	SNM..43..	1.765
PSC63-PSKNR/L45065-12	2.480	4.331	1.772	2.559	-6º	-6º	SNM..43..	2.425
PSC50-PSKNR/L35060-15	1.969	4.921	1.378	2.362	-6º	-6º	SNM..54..	1.765
PSC63-PSKNR/L45065-15	2.480	4.921	1.772	2.559	-6º	-6º	SNM..54..	2.425
PSC50-PSKNR/L35060-19	1.969	4.921	1.378	2.362	-6º	-6º	SNM..64..	1.765
PSC63-PSKNR/L45065-19	2.480	4.921	1.772	2.559	-6º	-6º	SNM..64..	2.425
PSC80-PSKNR/L55080-19	3.150	4.921	2.165	3.150	-6º	-6º	SNM..64..	6.040
PSC80-PSKNR/L55080-25	3.150	5.906	2.165	3.150	-6º	-6º	SNM..85..	6.040

Reference							Nm
PSC40-PSKNR/L27050-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSKNR/L35060-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSKNR/L45065-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSKNR/L35060-15	8016	1618	5003	3515	4115	0015	3.0
PSC63-PSKNR/L45065-15	8016	1618	5003	3515	4115	0015	3.0
PSC50-PSKNR/L35060-19	8019	1610	5004	3519	4119	0019	3.5
PSC63-PSKNR/L45065-19	8019	1610	5004	3519	4119	0019	3.5
PSC80-PSKNR/L55080-19	8019	1610	5004	3519	4119	0019	3.5
PSC80-PSKNR/L55080-25	8025	1612	5005	3525	4125	0025	4.0

SNM..

Square negative inserts. A33-34

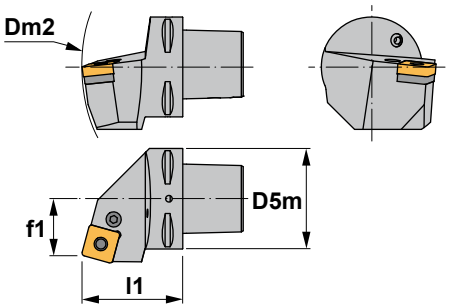
Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750
SNM..85..	1.000	0.312	1.000

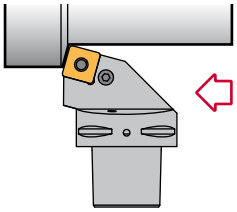


SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		

Characteristics:
Toolholder for face turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PSRN 75º

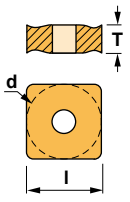
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-PSRNR/L17040-12	1.260	4.882	0.669	1.575	-6º	-6º	SNM..43..	0.440
PSC40-PSRNR/L22050-12	1.575	5.512	0.866	1.969	-6º	-6º	SNM..43..	0.930
PSC50-PSRNR/L27060-12	1.969	6.496	1.063	2.362	-6º	-6º	SNM..43..	1.765
PSC63-PSRNR/L35065-12	2.480	7.480	1.378	2.559	-6º	-6º	SNM..43..	3.085
PSC50-PSRNR/L27060-15	1.969	6.496	1.063	2.362	-6º	-6º	SNM..54..	1.765
PSC63-PSRNR/L35065-15	2.480	7.480	1.378	2.559	-6º	-6º	SNM..54..	3.085
PSC50-PSRNR/L27060-19	1.969	6.496	1.063	2.362	-6º	-6º	SNM..64..	1.765
PSC63-PSRNR/L35065-19	2.480	7.480	1.378	2.559	-6º	-6º	SNM..64..	3.085
PSC80-PSRNR/L45080-19	3.150	9.843	1.772	3.150	-6º	-6º	SNM..64..	6.170
PSC80-PSRNR/L45080-25	3.150	9.843	1.772	3.150	-6º	-6º	SNM..85..	6.170

Reference							Nm
PSC32-PSRNR/L17040-12	8012	1608	5003	3512	4112	0012	3.0
PSC40-PSRNR/L22050-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSRNR/L27060-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSRNR/L35065-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSRNR/L27060-15	8016	1618	5003	3515	4115	0015	3.0
PSC63-PSRNR/L35065-15	8016	1618	5003	3515	4115	0015	3.0
PSC50-PSRNR/L27060-19	8019	1610	5004	3519	4119	0019	3.5
PSC63-PSRNR/L35065-19	8019	1610	5004	3519	4119	0019	3.5
PSC80-PSRNR/L45080-19	8019	1610	5004	3519	4119	0019	3.5
PSC80-PSRNR/L45080-25	8025	1612	5005	3525	4125	0025	4.0

SNM..

Square negative inserts. A33-34

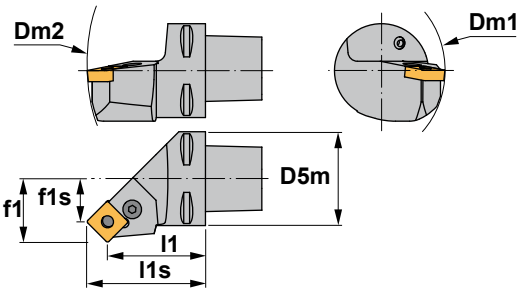
Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750
SNM..85..	1.000	0.312	1.000

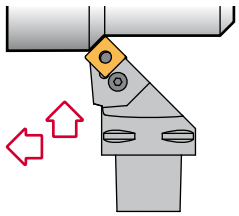


SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		

Characteristics:
Toolholder for external turning and chamfering applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





PSSN 45º

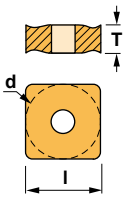
Reference	D5m	Dm1 min.	Dm2 min.	f1	f1s	l1	l1s	γ1)	λs2)	Insert size	lbs
PSC32-PSSNR/L22032-12	1.260	2.362	4.882	0.866	0.539	1.260	1.586	-8º	0º	SNM..43..	0.400
PSC40-PSSNR/L27042-12	1.575	4.331	5.512	1.063	0.735	1.654	1.981	-8º	0º	SNM..43..	0.770
PSC50-PSSNR/L35052-12	1.969	4.331	6.496	1.378	1.050	2.047	2.375	-8º	0º	SNM..43..	1.545
PSC63-PSSNR/L45056-12	2.480	4.331	7.480	1.772	1.444	2.205	2.532	-8º	0º	SNM..43..	2.470
PSC63-PSSNR/L45054-15	2.480	4.921	7.480	1.772	1.369	2.126	2.529	-8º	0º	SNM..54..	2.515
PSC63-PSSNR/L45052-19	2.480	4.921	7.480	1.772	1.280	2.047	2.539	-8º	0º	SNM..64..	2.490
PSC80-PSSNR/L55070-25	3.150	5.906	10.078	2.165	1.535	2.756	3.385	-8º	0º	SNM..85..	5.780

Reference							Nm
PSC32-PSSNR/L22032-12	8012	1608	5003	3512	4112	0012	3.0
PSC40-PSSNR/L27042-12	8012	1608	5003	3512	4112	0012	3.0
PSC50-PSSNR/L35052-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSSNR/L45056-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSSNR/L45054-15	8016	1618	5003	3515	4115	0015	3.0
PSC63-PSSNR/L45052-19	8019	1610	5004	3519	4119	0019	3.5
PSC80-PSSNR/L55070-25	8025	1612	5005	3525	4125	0025	4.0

SNM..

Square negative inserts. A33-34

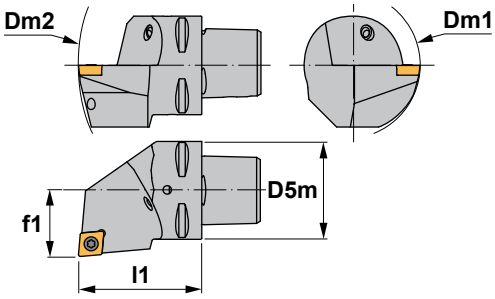
Reference	l	T	d
SNM..43..	0.500	0.187	0.500
SNM..54..	0.625	0.250	0.625
SNM..64..	0.750	0.250	0.750
SNM..85..	1.000	0.312	1.000

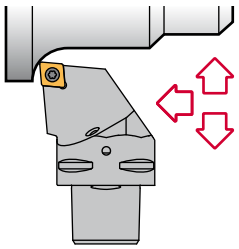


SNMG-FMC	SNMG-KC	SNMG-MHC
		
SNMG-RC	**SNMG-TC**	**SNMM**
		

Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SCLC 95°

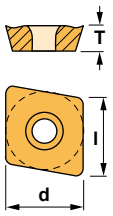
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SCLCR/L22040-09	1.260	3.150	4.882	0.866	1.575	0°	0°	CC..32.5..	0.465
PSC40-SCLCR/L27050-09	1.575	3.150	5.512	1.063	1.969	0°	0°	CC..32.5..	0.930
PSC50-SCLCR/L35060-09	1.969	3.150	6.496	1.378	2.362	0°	0°	CC..32.5..	1.765
PSC63-SCLCR/L45065-09	2.480	3.150	7.480	1.772	2.559	0°	0°	CC..32.5..	2.425
PSC32-SCLCR/L22040-12	1.260	4.331	4.882	0.866	1.575	0°	0°	CC..43..	0.465
PSC40-SCLCR/L27050-12	1.575	4.331	5.512	1.063	1.969	0°	0°	CC..43..	0.930
PSC50-SCLCR/L35060-12	1.969	4.331	6.496	1.378	2.362	0°	0°	CC..43..	1.765
PSC63-SCLCR/L45065-12	2.480	4.331	7.480	1.772	2.559	0°	0°	CC..43..	2.425

Reference					Nm
PSC32-SCLCR/L22040-09	1240	5515	-	-	3.0
PSC40-SCLCR/L27050-09	1240	5515	-	-	3.0
PSC50-SCLCR/L35060-09	1240	5515	-	-	3.0
PSC63-SCLCR/L45065-09	1240	5515	-	-	3.0
PSC32-SCLCR/L22040-12	1540	5517	3614	1760	3.0
PSC40-SCLCR/L27050-12	1540	5517	3614	1760	3.0
PSC50-SCLCR/L35060-12	1540	5517	3614	1760	3.0
PSC63-SCLCR/L45065-12	1540	5517	3614	1760	3.0

CC..

80° rhombic positive inserts with 7° clearance. A23

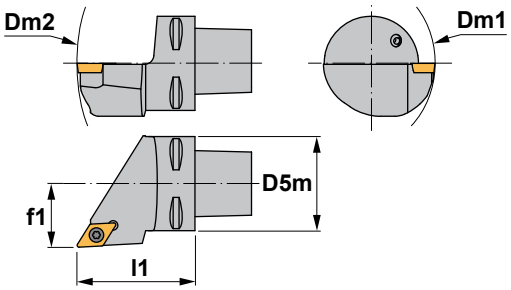
Reference	l	T	d
CC..32.5..	0.380	0.156	0.375
CC..43..	0.508	0.187	0.500

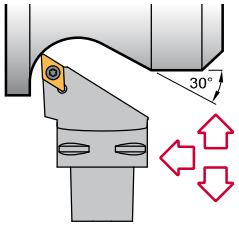


CCGT-AL	CCGT-AP
	
CCMT	**CCMW**
	

Characteristics:
Multipurpose toolholder equipped with rhombic positive insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SDJC 93º

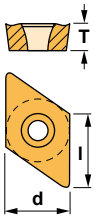
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SDJCR/L22040-07	1.260	3.150	4.882	0.866	1.575	0º	0º	DC..21.5..	0.465
PSC40-SDJCR/L27050-07	1.575	3.150	5.512	1.063	1.969	0º	0º	DC..21.5..	0.930
PSC32-SDJCR/L22040-11	1.260	4.331	4.882	0.866	1.575	0º	0º	DC..32.5..	0.465
PSC40-SDJCR/L27050-11	1.575	4.331	5.512	1.063	1.969	0º	0º	DC..32.5..	0.930
PSC50-SDJCR/L35060-11	1.969	4.331	6.496	1.378	2.362	0º	0º	DC..32.5..	1.765
PSC63-SDJCR/L45065-11	2.480	4.331	7.480	1.772	2.559	0º	0º	DC..32.5..	2.425

Reference					Nm
PSC32-SDJCR/L22040-07	1225	5507	-	-	0.9
PSC40-SDJCR/L27050-07	1225	5507	-	-	0.9
PSC32-SDJCR/L22040-11	1335	5516	3714	1750	3.0
PSC40-SDJCR/L27050-11	1335	5516	3714	1750	3.0
PSC50-SDJCR/L35060-11	1335	5516	3714	1750	3.0
PSC63-SDJCR/L45065-11	1335	5516	3714	1750	3.0

DC..

55º rhombic positive inserts with 7º clearance. A27

Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375



DCGT-AL

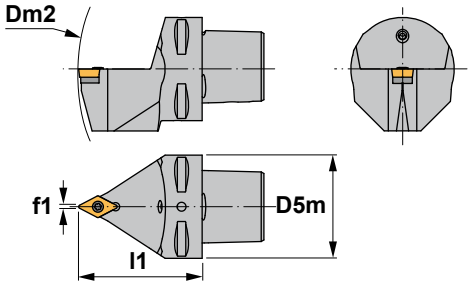
DCGT-AP

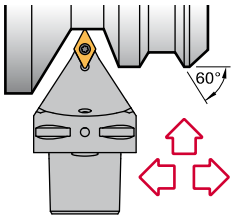
DCMT

DCMW

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SDNC 62º 30'

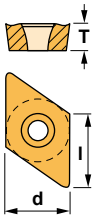
Reference	D5m	Dm2 min.	f1	l1	$\gamma^{1)}$	$\lambda s^{2)}$	Insert size	lbs
PSC32-SDNCN00040-11	1.260	4.882	0.020	1.575	0º	0º	DC..32.5..	0.350
PSC40-SDNCN00050-11	1.575	5.512	0.020	1.969	0º	0º	DC..32.5..	0.770
PSC50-SDNCN00060-11	1.969	6.496	0.020	2.362	0º	0º	DC..32.5..	1.655

Reference					Nm
PSC32-SDNCN00040-11	1335	5516	3714	1750	3.0
PSC40-SDNCN00050-11	1335	5516	3714	1750	3.0
PSC50-SDNCN00060-11	1335	5516	3714	1750	3.0

DC..

55º rhombic positive inserts with 7º clearance. A27

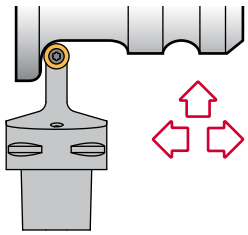
Reference	l	T	d
DC..32.5..	0.456	0.156	0.375

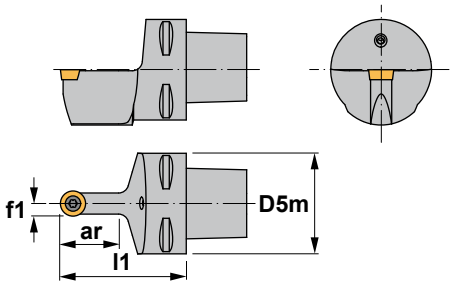


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SRDC

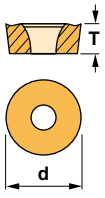
Reference	ar	D5m	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SRDCN00040-06	0.472	1.260	0.118	1.575	0º	0º	RC..0602M0	0.350
PSC40-SRDCN00050-06	0.472	1.575	0.118	1.969	0º	0º	RC..0602M0	0.770
PSC50-SRDCN00060-06	0.472	1.969	0.118	2.362	0º	0º	RC..0602M0	1.655
PSC32-SRDCN00040-08	0.630	1.260	0.157	1.575	0º	0º	RC..0803M0	0.350
PSC40-SRDCN00050-08	0.630	1.575	0.157	1.969	0º	0º	RC..0803M0	0.770
PSC50-SRDCN00060-08	0.630	1.969	0.157	2.362	0º	0º	RC..0803M0	1.655
PSC32-SRDCN00040-10	0.787	1.260	0.197	1.575	0º	0º	RC..10T3M0	0.350
PSC40-SRDCN00050-10	0.984	1.575	0.197	1.969	0º	0º	RC..10T3M0	0.770
PSC50-SRDCN00060-10	0.984	1.969	0.197	2.362	0º	0º	RC..10T3M0	1.655
PSC63-SRDCN00065-10	0.984	2.480	0.197	2.559	0º	0º	RC..10T3M0	2.360
PSC40-SRDCN00050-12	1.102	1.575	0.236	1.969	0º	0º	RC..1204M0	0.770
PSC50-SRDCN00060-12	1.102	1.969	0.236	2.362	0º	0º	RC..1204M0	1.655
PSC63-SRDCN00065-12	1.102	2.480	0.236	2.559	0º	0º	RC..1204M0	2.360
PSC50-SRDCN00060-16	1.378	1.969	0.315	2.362	0º	0º	RC..1606M0	1.655
PSC63-SRDCN00065-16	1.378	2.480	0.315	2.559	0º	0º	RC..1606M0	2.360
PSC50-SRDCN00060-20	1.575	1.969	0.394	2.362	0º	0º	RC..2006M0	1.655
PSC63-SRDCN00065-20	1.575	2.480	0.394	2.559	0º	0º	RC..2006M0	2.360

Reference					Nm
... -06	1225	5507	-	-	0.9
... -08	1230	5508	-	-	1.2
... -10	1335	5516	3811	1750	3.0
... -12	1335	5516	3814	1750	3.0
... -16	1540	5517	3816	1765	3.0
... -20	1260	5520	3919	1059	4.0

RC..

Round positive inserts with 7º clearance. A31

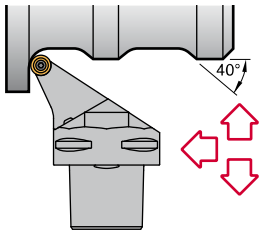
Reference	T	d
RC..0602M0	0.094	0.236
RC..0803M0	0.125	0.315
RC..10T3M0	0.156	0.394
RC..1204M0	0.187	0.472
RC..1606M0	0.250	0.630
RC..2006M0	0.250	0.787

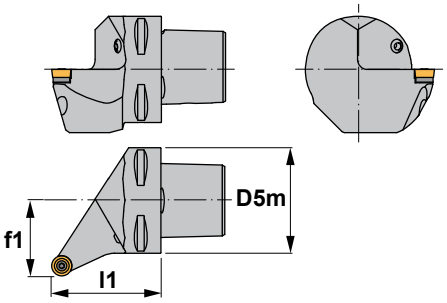


RCGT-AL	RCGT-AP
	
RCMT	
	

Characteristics:
Profiling toolholder equipped with round positive insert. PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SRSC 45º

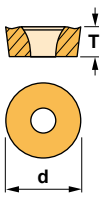
Reference	D5m	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SRSCR/L22040-06	1.260	0.866	1.575	0º	0º	RC..0602M0	0.465
PSC40-SRSCR/L27050-06	1.575	1.063	1.969	0º	0º	RC..0602M0	0.930
PSC50-SRSCR/L35060-06	1.969	1.378	2.362	0º	0º	RC..0602M0	1.765
PSC32-SRSCR/L22040-08	1.260	0.866	1.575	0º	0º	RC..0803M0	0.465
PSC40-SRSCR/L27050-08	1.575	1.063	1.969	0º	0º	RC..0803M0	0.930
PSC50-SRSCR/L35060-08	1.969	1.378	2.362	0º	0º	RC..0803M0	1.765
PSC32-SRSCR/L22040-10	1.260	0.866	1.575	0º	0º	RC..10T3M0	0.465
PSC40-SRSCR/L27050-10	1.575	1.063	1.969	0º	0º	RC..10T3M0	0.930
PSC50-SRSCR/L35060-10	1.969	1.378	2.362	0º	0º	RC..10T3M0	1.765
PSC63-SRSCR/L45065-10	2.480	1.772	2.559	0º	0º	RC..10T3M0	2.425
PSC40-SRSCR/L27050-12	1.575	1.063	1.969	0º	0º	RC..1204M0	0.930
PSC50-SRSCR/L35060-12	1.969	1.378	2.362	0º	0º	RC..1204M0	1.765
PSC63-SRSCR/L45065-12	2.480	1.772	2.559	0º	0º	RC..1204M0	2.425
PSC50-SRSCR/L35060-16	1.969	1.378	2.362	0º	0º	RC..1606M0	1.765
PSC63-SRSCR/L45065-16	2.480	1.772	2.559	0º	0º	RC..1606M0	2.425
PSC50-SRSCR/L35060-20	1.969	1.378	2.362	0º	0º	RC..2006M0	1.765
PSC63-SRSCR/L45065-20	2.480	1.772	2.559	0º	0º	RC..2006M0	2.425

Reference					Nm
...-06	1225	5507	-	-	0.9
...-08	1230	5508	-	-	1.2
...-10	1335	5516	3811	1750	3.0
...-12	1335	5516	3814	1750	3.0
...-16	1540	5517	3816	1765	3.0
...-20	1260	5520	3919	1059	4.0

RC..

Round positive inserts with 7º clearance. A31

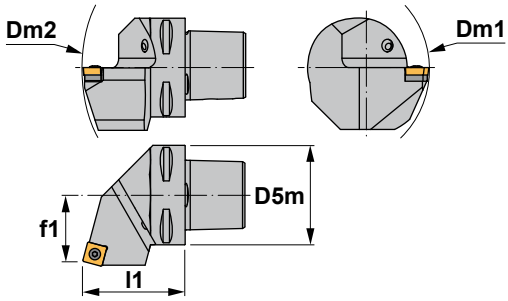
Reference	T	d
RC..0602M0	0.094	0.236
RC..0803M0	0.125	0.315
RC..10T3M0	0.156	0.394
RC..1204M0	0.187	0.472
RC..1606M0	0.250	0.630
RC..2006M0	0.250	0.787

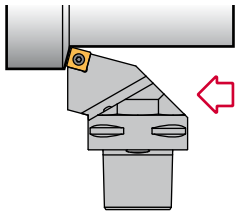


RCGT-AL	RCGT-AP
	
RCMT	
	

Characteristics:
Toolholder for external turning and chamfering applications equipped with square positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SSRC 75º

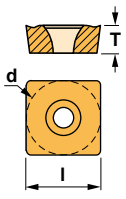
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-SSRCR/L22050-12	1.575	4.331	5.512	0.866	1.969	0º	0º	SC..43..	0.930
PSC50-SSRCR/L27060-12	1.969	4.331	6.496	1.063	2.362	0º	0º	SC..43..	1.765

Reference					Nm
PSC40-SSRCR/L22050-12	1540	5517	3514	1760	3.0
PSC50-SSRCR/L27060-12	1540	5517	3514	1760	3.0

SC..

Square positive inserts with 7º clearance. A32

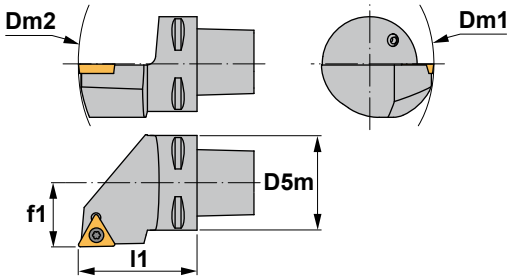
Reference	l	T	d
SC..43..	0.500	0.187	0.500

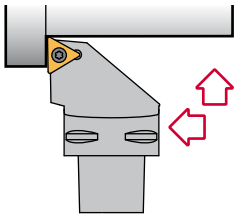


SCGT-AL	SCMT
	
SCMT-39	**SCMW**
	

Characteristics:
Toolholder for external turning applications equipped with triangular positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





STGC 90º

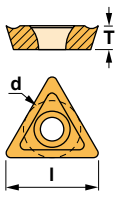
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-STGCR/L22040-11	1.260	3.150	4.882	0.866	1.575	0º	0º	TC..21.5..	0.465
PSC40-STGCR/L27050-11	1.575	3.150	5.512	1.063	1.969	0º	0º	TC..21.5..	0.930
PSC32-STGCR/L22040-16	1.260	4.331	4.882	0.866	1.575	0º	0º	TC..32.5..	0.465
PSC40-STGCR/L27050-16	1.575	4.331	5.512	1.063	1.969	0º	0º	TC..32.5..	0.930
PSC50-STGCR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	TC..32.5..	1.765
PSC63-STGCR/L45065-16	2.480	4.331	7.480	1.772	2.559	0º	0º	TC..32.5..	2.425

Reference					Nm
PSC32-STGCR/L22040-11	1225	5507	-	-	0.9
PSC40-STGCR/L27050-11	1225	5507	-	-	0.9
PSC32-STGCR/L22040-16	1335	5516	3414	1750	3.0
PSC40-STGCR/L27050-16	1335	5516	3414	1750	3.0
PSC50-STGCR/L35060-16	1335	5516	3414	1750	3.0
PSC63-STGCR/L45065-16	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7º clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



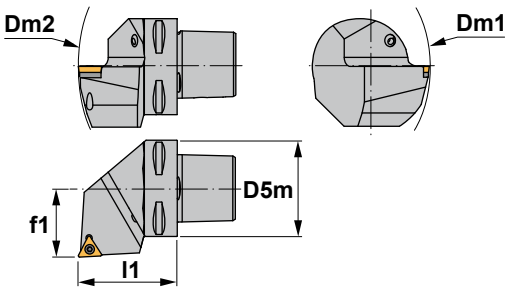
TCGT-AL

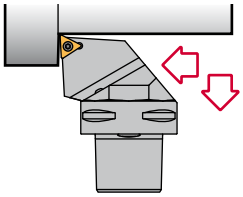
TCMT

TCMW

Characteristics:
Toolholder for external and face turning applications equipped with triangular positive inserts.
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





STJC 93º

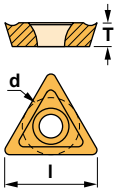
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-STJCR/L22040-11	1.260	3.150	4.882	0.866	1.575	0º	0º	TC..21.5..	0.465
PSC40-STJCR/L27050-11	1.575	3.150	5.512	1.063	1.969	0º	0º	TC..21.5..	0.930
PSC32-STJCR/L22040-16	1.260	4.331	4.882	0.866	1.575	0º	0º	TC..32.5..	0.465
PSC40-STJCR/L27050-16	1.575	4.331	5.512	1.063	1.969	0º	0º	TC..32.5..	0.930
PSC50-STJCR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	TC..32.5..	1.765

Reference					Nm
PSC32-STJCR/L22040-11	1225	5507	-	-	0.9
PSC40-STJCR/L27050-11	1225	5507	-	-	0.9
PSC32-STJCR/L22040-16	1335	5516	3414	1750	3.0
PSC40-STJCR/L27050-16	1335	5516	3414	1750	3.0
PSC50-STJCR/L35060-16	1335	5516	3414	1750	3.0

TC..

Triangular positive inserts with 7º clearance. A36

Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



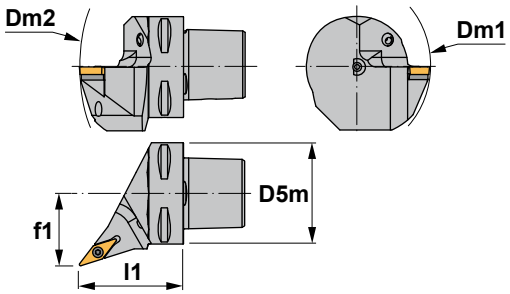
TCGT-AL

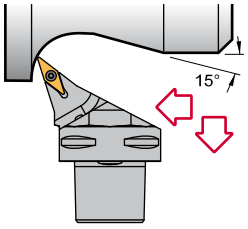
TCMT

TCMW

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVHB 107º 30'

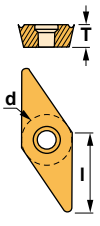
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-SVHBR/L27050-16	1.575	4.331	5.512	1.063	1.969	0º	0º	VBMT33..	0.930
PSC50-SVHBR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	VBMT33..	1.765
PSC63-SVHBR/L45065-16	2.480	4.331	7.480	1.772	2.559	0º	0º	VBMT33..	2.425

Reference					Nm
PSC40-SVHBR/L27050-16	1335	5516	3718	1750	3.0
PSC50-SVHBR/L35060-16	1335	5516	3718	1750	3.0
PSC63-SVHBR/L45065-16	1335	5516	3718	1750	3.0

VBMT

35º rhombic positive insert with 5º clearance. A40

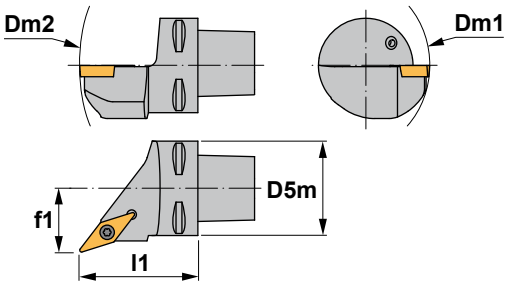
Reference	l	T	d
VBMT33..	0.650	0.187	0.375

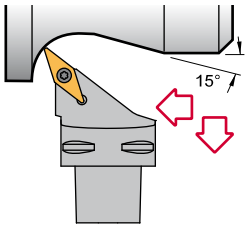


VBMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVHC 107º 30'

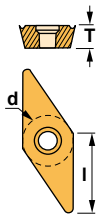
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SVHCR/L22040-11	1.260	3.150	4.882	0.866	1.575	0º	0º	VC..22..	0.465
PSC40-SVHCR/L27050-11	1.575	3.150	5.512	1.063	1.969	0º	0º	VC..22..	0.930
PSC50-SVHCR/L35060-11	1.969	3.150	6.496	1.378	2.362	0º	0º	VC..22..	1.765
PSC40-SVHCR/L27050-16	1.575	4.331	5.512	1.063	1.969	0º	0º	VC..33..	0.930
PSC50-SVHCR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	VC..33..	1.765
PSC63-SVHCR/L45065-16	2.480	4.331	7.480	1.772	2.559	0º	0º	VC..33..	2.425

Reference					Nm
PSC32-SVHCR/L22040-11	1225	5507	-	-	0.9
PSC40-SVHCR/L27050-11	1225	5507	-	-	0.9
PSC50-SVHCR/L35060-11	1225	5507	-	-	0.9
PSC40-SVHCR/L27050-16	1335	5516	3718	1750	3.0
PSC50-SVHCR/L35060-16	1335	5516	3718	1750	3.0
PSC63-SVHCR/L45065-16	1335	5516	3718	1750	3.0

VC..

35º rhombic positive inserts with 7º clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375



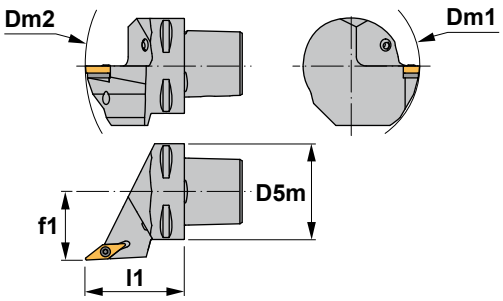
VCGT-AL

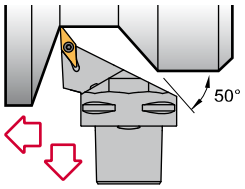
VCGT-AP

VCMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5º positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVJB 93º

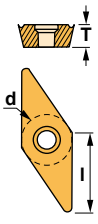
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-SVJBR/L27050-16	1.575	4.331	5.709	1.063	1.969	0º	0º	VBMT33..	0.930
PSC50-SVJBR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	VBMT33..	1.765
PSC63-SVJBR/L45065-16	2.480	4.331	7.480	1.772	2.559	0º	0º	VBMT33..	2.425

Reference					Nm
PSC40-SVJBR/L27050-16	1335	5516	3718	1750	3.0
PSC50-SVJBR/L35060-16	1335	5516	3718	1750	3.0
PSC63-SVJBR/L45065-16	1335	5516	3718	1750	3.0

VBMT

35º rhombic positive insert with 5º clearance. A40

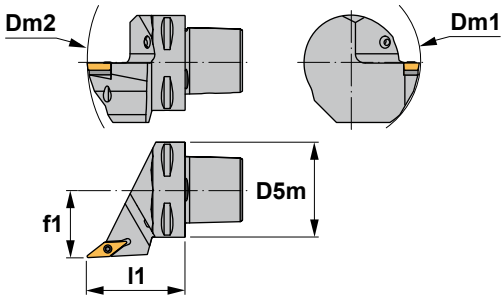
Reference	l	T	d
VBMT33..	0.650	0.187	0.375

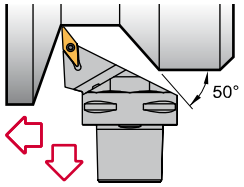


VBMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVJC 93º

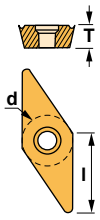
Reference	D5m	Dm1 min.	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SVJCR/L22040-11	1.260	3.150	4.764	0.866	1.575	0º	0º	VC..22..	0.465
PSC40-SVJCR/L27050-11	1.575	3.150	5.709	1.063	1.969	0º	0º	VC..22..	0.930
PSC50-SVJCR/L35060-11	1.969	3.150	6.496	1.378	2.362	0º	0º	VC..22..	1.765
PSC40-SVJCR/L27050-16	1.575	4.331	5.709	1.063	1.969	0º	0º	VC..33..	0.930
PSC50-SVJCR/L35060-16	1.969	4.331	6.496	1.378	2.362	0º	0º	VC..33..	1.765
PSC63-SVJCR/L45065-16	2.480	4.331	7.480	1.772	2.559	0º	0º	VC..33..	2.425

Reference					Nm
PSC32-SVJCR/L22040-11	1225	5507	-	-	0.9
PSC40-SVJCR/L27050-11	1225	5507	-	-	0.9
PSC50-SVJCR/L35060-11	1225	5507	-	-	0.9
PSC40-SVJCR/L27050-16	1335	5516	3718	1750	3.0
PSC50-SVJCR/L35060-16	1335	5516	3718	1750	3.0
PSC63-SVJCR/L45065-16	1335	5516	3718	1750	3.0

VC..

35º rhombic positive inserts with 7º clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375

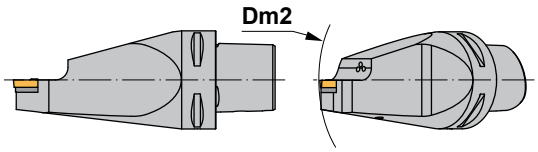


VCGT-AL

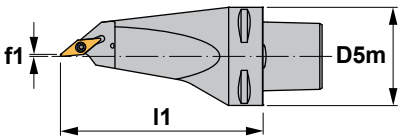
VCGT-AP

VCMT

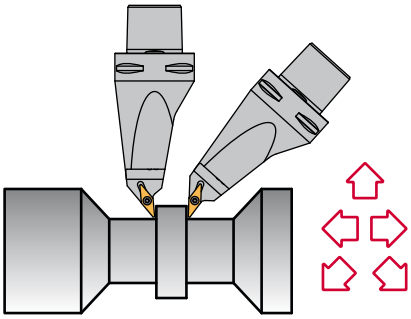
Characteristics:
Toolholder for multi-task machining equipped with rhombic negative inserts (angle 35º).
PSC with internal coolant.



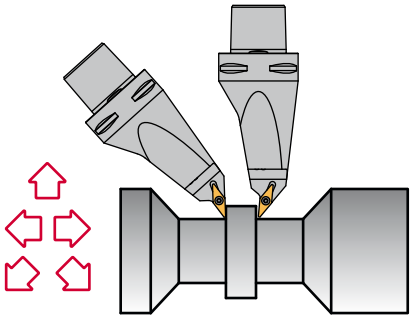
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



Main application



Alternative use



SVMB 50º

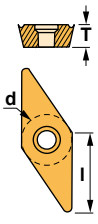
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC63-SVMBR/L00130-16	2.480	4.331	0.047	5.118	0º	0º	VBMT33..	3.725

Reference					Nm
PSC63-SVMBR/L00130-16	1335	5516	3718	1750	3.0

VBMT

35º rhombic positive insert with 5º clearance. A40

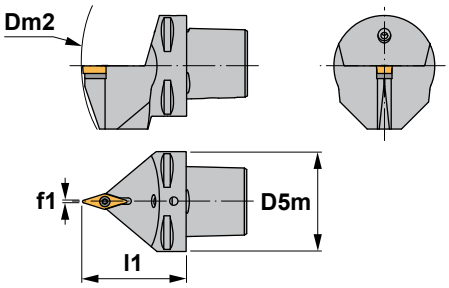
Reference	l	T	d
VBMT33..	0.650	0.187	0.375

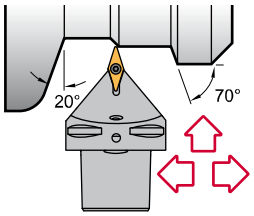


VBMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic 5º positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVVB 72º 30'

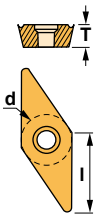
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC40-SVVBN00050-16	1.575	5.512	0.024	1.969	0º	0º	VBMT33..	0.770
PSC50-SVVBN00060-16	1.969	6.496	0.024	2.362	0º	0º	VBMT33..	1.655
PSC63-SVVBN00065-16	2.480	7.480	0.024	2.559	0º	0º	VBMT33..	2.360

Reference					Nm
PSC40-SVVBN00050-16	1335	5516	3718	1750	3.0
PSC50-SVVBN00060-16	1335	5516	3718	1750	3.0
PSC63-SVVBN00065-16	1335	5516	3718	1750	3.0

VBMT

35º rhombic positive insert with 5º clearance. A40

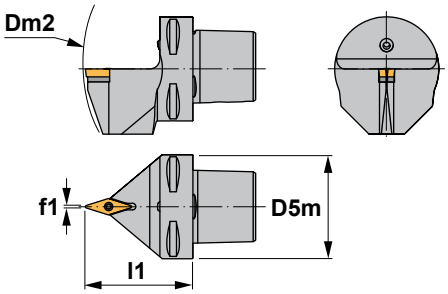
Reference	l	T	d
VBMT33..	0.650	0.187	0.375

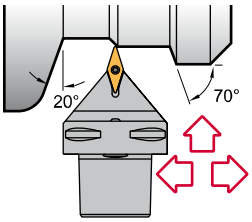


VBMT

Characteristics:
Multipurpose profiling toolholder equipped with rhombic positive insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVVC 72° 30'

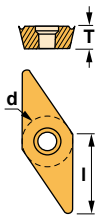
Reference	D5m	Dm2 min.	f1	l1	γ1)	λs2)	Insert size	lbs
PSC32-SVVCN00040-11	1.260	4.882	0.012	1.575	0°	0°	VC..22..	0.350
PSC40-SVVCN00050-11	1.575	5.512	0.012	1.969	0°	0°	VC..22..	0.770
PSC40-SVVCN00050-16	1.575	5.512	0.024	1.969	0°	0°	VC..33..	0.770
PSC50-SVVCN00060-16	1.969	6.496	0.024	2.362	0°	0°	VC..33..	1.655
PSC63-SVVCN00065-16	2.480	7.480	0.024	2.559	0°	0°	VC..33..	2.360

Reference					Nm
PSC32-SVVCN00040-11	1225	5507	-	-	0.9
PSC40-SVVCN00050-11	1225	5507	-	-	0.9
PSC40-SVVCN00050-16	1335	5516	3718	1750	3.0
PSC50-SVVCN00060-16	1335	5516	3718	1750	3.0
PSC63-SVVCN00065-16	1335	5516	3718	1750	3.0

VC..

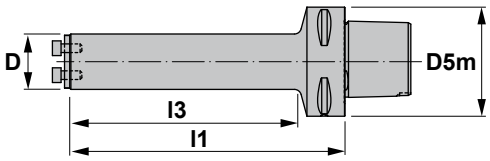
35° rhombic positive inserts with 7° clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375



VCGT-AL	VCGT-AP
	
VCMT	
	

Characteristics:
Antivibratory adaptor.



J..

Reference	D5m	D	l3	l1	lbs
PSC63-J25	2.480	0.984	4.055	5.196	2.865
PSC63-J32	2.480	1.260	5.078	6.300	3.750
PSC63-J40	2.480	1.575	6.653	7.795	5.070
PSC63-J50	2.480	1.969	8.346	9.410	7.275
PSC63-J60	2.480	2.362	10.354	11.300	13.010

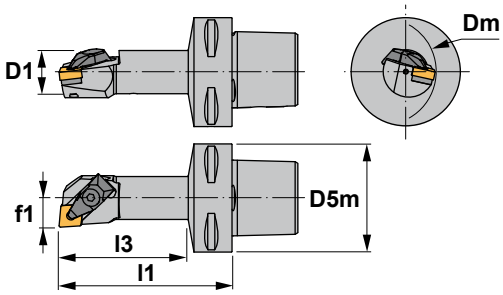
Reference			Nm
PSC63-J25	1924	5025	2.0
PSC63-J32	1925	5003	3.0
PSC63-J40	1926	5004	3.5
PSC63-J50	1928	5005	4.0
PSC63-J60	1928	5005	4.0

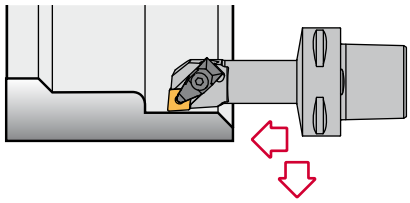
Boring heads for anti-vibration bars. A176-183

MTUN 93º-N	PCLN 95º-N	PDUN 93º-N	PWLN 95º-N
			
SCLC 95º-N	**SDUC 93º-N**	**STFC 90º-N**	**STXN 90º-N**
			

Characteristics:
Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





DCLN 95º

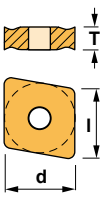
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-DCLNR/L13080-09	0.984	0.787	1.575	0.512	3.150	2.244	-6º	-14º	CN..32..	0.880
PSC50-DCLNR/L13080-09	0.984	0.787	1.969	0.512	3.150	2.205	-6º	-14º	CN..32..	1.260
PSC40-DCLNR/L17090-12	1.260	0.984	1.575	0.669	3.543	2.677	-6º	-12º	CN..43..	1.060
PSC50-DCLNR/L17090-12	1.260	0.984	1.969	0.669	3.543	2.598	-6º	-12º	CN..43..	1.545
PSC63-DCLNR/L17100-12	1.260	0.984	2.480	0.669	3.937	2.835	-6º	-12º	CN..43..	2.205
PSC63-DCLNR/L27140-16	1.969	1.575	2.480	1.063	5.512	4.488	-6º	-16º	CN..54..	3.925

Reference							Nm
PSC40-DCLNR/L13080-09	-	-	2708	1695	4294	5004	3.5
PSC50-DCLNR/L13080-09	-	-	2708	1695	4294	5004	3.5
PSC40-DCLNR/L17090-12	1766	ICSN-422	2712	1696	4295	5004	3.5
PSC50-DCLNR/L17090-12	1766	ICSN-422	2712	1696	4295	5004	3.5
PSC63-DCLNR/L17100-12	1766	ICSN-422	2712	1696	4295	5004	3.5
PSC63-DCLNR/L27140-16	1768	ICSN-533	2716	1696	4295	5004	3.5

CN..

80° rhombic negative inserts. A24-26

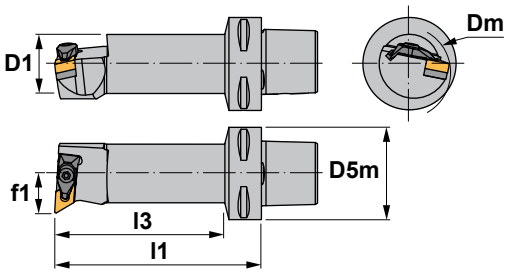
Reference	l	T	d
CN..32..	0.380	0.125	0.375
CN..43..	0.508	0.187	0.500
CN..54..	0.633	0.250	0.625

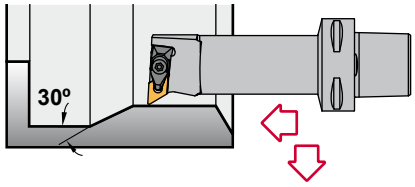


CNMG-CC	CNMG-FC	CNMG-FMC	CNMG-KC	CNMG-MC
				
CNMG-MFC	**CNMG-MHC**	**CNMG-RC**	**CNMG-TC**	**CNMM**
				

Characteristics:
Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





DDUN 93º

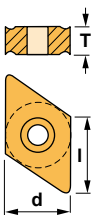
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-DDUNR/L17090-11	1.260	0.984	1.575	0.669	3.543	2.677	-6º	-12º	DN..33..	1.060
PSC50-DDUNR/L17090-11	1.260	0.984	1.969	0.669	3.543	2.598	-6º	-12º	DN..33..	1.545
PSC40-DDUNR/L27080-15	1.969	1.562	1.575	1.063	3.150	2.323	-6º	-11º	DN..44..	1.630
PSC50-DDUNR/L27140-15	1.969	1.575	1.969	1.063	5.512	4.646	-6º	-11º	DN..44..	3.240
PSC63-DDUNR/L27140-15	1.969	1.575	2.480	1.063	5.512	4.488	-6º	-11º	DN..44..	3.925

Reference							Nm
PSC40-DDUNR/L17090-11	1764	IDSN-322	2708	1695	4294	5004	3.5
PSC50-DDUNR/L17090-11	1764	IDSN-322	2708	1695	4294	5004	3.5
PSC40-DDUNR/L27080-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC50-DDUNR/L27140-15	1766	IDSN-432	2712	1696	4295	5004	3.5
PSC63-DDUNR/L27140-15	1766	IDSN-432	2712	1696	4295	5004	3.5

DN..

55º rhombic negative inserts. A28-30

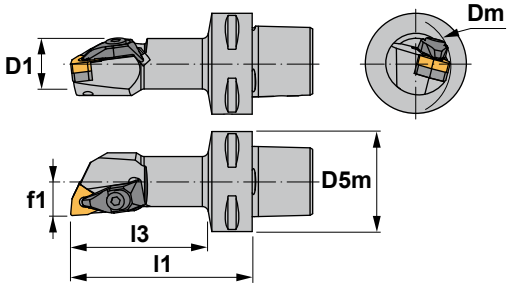
Reference	l	T	d
DN..33..	0.457	0.187	0.375
DN..44..	0.610	0.250	0.500

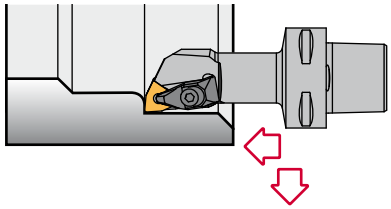


DNMA	DNMG-FC	DNMG-FMC	DNMG-KC
			
DNMG-MC	**DNMG-MHC**	**DNMG-TC**	**DNMX**
			

Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





DWLN 95º

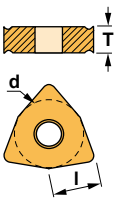
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-DWLNR/L13075-06	1.299	0.787	1.575	0.512	2.953	2.047	-6º	-17º	WNMG33..	0.925
PSC40-DWLNR/L17090-08	1.378	0.984	1.575	0.669	3.543	2.677	-6º	-12º	WNMG43..	1.060
PSC50-DWLNR/L17090-08	1.378	0.984	1.969	0.669	3.543	2.598	-6º	-12º	WNMG43..	1.545

Reference							Nm
PSC40-DWLNR/L13075-06	1764	IWSN-322	2708	1695	4294	5004	3.5
PSC40-DWLNR/L17090-08	1766	IWSN-433	2712	1696	4295	5004	3.5
PSC50-DWLNR/L17090-08	1766	IWSN-433	2712	1696	4295	5004	3.5

WNMG

80º trigon negative inserts. A42-43

Reference	l	T	d
WNMG33..	0.254	0.187	0.375
WNMG43..	0.320	0.187	0.500

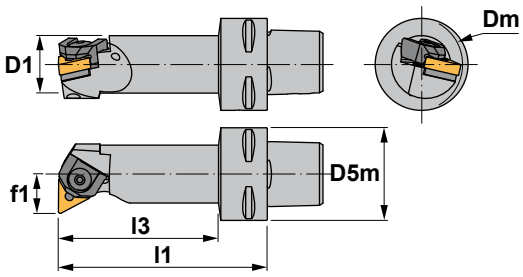


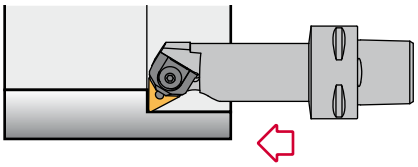
WNMG-FC | WNMG-FMC | WNMG-KC | WNMG-MFC

WNMG-MC | WNMG-MHC | WNMG-TC

Characteristics:
Internal turning and profiling boring bar equipped with triangular negative double-sided insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





MTFN 90°

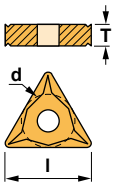
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-MTFNR/L17090-16	1.260	0.984	1.575	0.669	3.543	2.717	-6°	-13°	TNM..33..	1.060
PSC40-MTFNR/L22110-16	1.575	1.260	1.575	0.866	4.331	3.504	-6°	-12°	TNM..33..	1.655
PSC40-MTFNR/L27120-16	1.969	1.575	1.575	1.063	4.724	3.937	-6°	-11°	TNM..33..	2.490
PSC50-MTFNR/L17090-16	1.260	0.984	1.969	0.669	3.543	2.638	-6°	-13°	TNM..33..	1.545
PSC50-MTFNR/L22110-16	1.575	1.260	1.969	0.866	4.331	3.465	-6°	-12°	TNM..33..	2.050
PSC50-MTFNR/L27140-16	1.969	1.575	1.969	1.063	5.512	4.685	-6°	-11°	TNM..33..	3.240
PSC63-MTFNR/L22110-16	1.575	1.260	2.480	0.866	4.331	3.307	-6°	-12°	TNM..33..	2.780
PSC63-MTFNR/L27140-16	1.969	1.575	2.480	1.063	5.512	4.528	-6°	-11°	TNM..33..	3.925

Reference						Nm
PSC40-MTFNR/L17090-16	2017	1644	5025	3414	1813	2.0
PSC40-MTFNR/L22110-16	2017	1644	5025	3414	1393	2.0
PSC40-MTFNR/L27120-16	2017	1644	5025	3414	1393	2.0
PSC50-MTFNR/L17090-16	2017	1644	5025	3414	1393	2.0
PSC50-MTFNR/L22110-16	2017	1644	5025	3414	1393	2.0
PSC50-MTFNR/L27140-16	2017	1644	5025	3414	1393	2.0
PSC63-MTFNR/L22110-16	2017	1644	5025	3414	1393	2.0
PSC63-MTFNR/L27140-16	2017	1644	5025	3414	1393	2.0

TNM..

Triangular negative inserts. A37-38

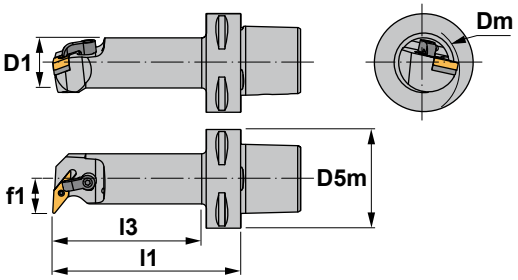
Reference	l	T	d
TNM..33..	0.650	0.187	0.375

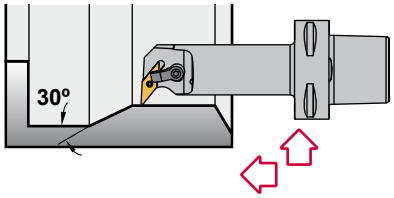


TNMA	TNMG-CC	TNMG-FC	TNMG-FMC	TNMG-KC
TNMG-MC	TNMG-MFC	TNMG-MHC	TNMG-TC	TNMX-R/L

Characteristics:
Internal turning and profiling boring bar equipped with rhombic negative double-sided insert (angle 35°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





MVUN 93°

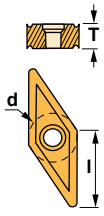
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-MVUNR/L27120-16	1.969	1.575	1.575	1.063	4.724	3.937	-6°	-10°	VN..33..	2.490
PSC50-MVUNR/L27140-16	1.969	1.575	1.969	1.063	5.512	4.685	-6°	-10°	VN..33..	3.240
PSC50-MVUNR/L35150-16	2.480	1.969	1.969	1.378	5.906	5.157	-6°	-10°	VN..33..	4.960
PSC63-MVUNR/L22120-16	1.575	1.260	2.480	0.866	4.724	3.701	-6°	-12°	VN..33..	2.820
PSC63-MVUNR/L35175-16	2.480	1.969	2.480	1.378	6.890	5.984	-6°	-10°	VN..33..	6.285

Reference							Nm
PSC40-MVUNR/L27120-16	2614	5003	IVSN-322	1086	1665	5002	3.0
PSC50-MVUNR/L27140-16	2614	5003	IVSN-322	1086	1665	5002	3.0
PSC50-MVUNR/L35150-16	2614	5003	IVSN-322	1086	1665	5002	3.0
PSC63-MVUNR/L22120-16	2614	5003	IVSN-322	1186	1665	5002	3.0
PSC63-MVUNR/L35175-16	2614	5003	IVSN-322	1086	1665	5002	3.0

VN..

35° rhombic negative inserts. A41

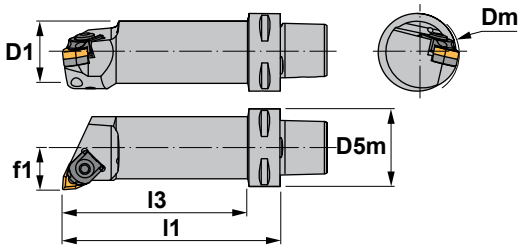
Reference	l	T	d
VN..33..	0.650	0.187	0.375

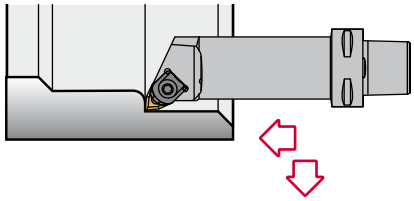


VNGP	VNMG
	
VNMG-TC	
	

Characteristics:
Multipurpose boring bar equipped with trigon negative double-sided insert (angle 80°).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





MWLN 95°

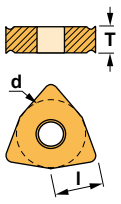
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-MWLNR/L13075-06	0.984	0.787	1.260	0.512	2.953	2.323	-6°	-14°	WNMG33..	0.530
PSC32-MWLNR/L17090-06	1.260	0.984	1.260	0.669	3.543	2.953	-6°	-12°	WNMG33..	0.795
PSC40-MWLNR/L13075-06	0.984	0.787	1.575	0.512	2.953	2.087	-6°	-14°	WNMG33..	0.925
PSC40-MWLNR/L17090-06	1.260	0.984	1.575	0.669	3.543	2.717	-6°	-12°	WNMG33..	1.060
PSC40-MWLNR/L17090-08	1.260	0.984	1.575	0.669	3.543	2.717	-6°	-14°	WNMG43..	1.060
PSC40-MWLNR/L22110-08	1.575	1.260	1.575	0.866	4.331	3.504	-6°	-14°	WNMG43..	1.655
PSC40-MWLNR/L27120-08	1.969	1.575	1.575	1.063	4.724	3.937	-6°	-12°	WNMG43..	2.490
PSC50-MWLNR/L17090-08	1.260	0.984	1.969	0.669	3.543	2.638	-6°	-14°	WNMG43..	1.545
PSC50-MWLNR/L22110-08	1.575	1.260	1.969	0.866	4.331	3.465	-6°	-14°	WNMG43..	2.050
PSC50-MWLNR/L27140-08	1.969	1.575	1.969	1.063	5.512	4.685	-6°	-12°	WNMG43..	3.240

Reference						Nm
PSC32-MWLNR/L13075-06	2006	5025	-	1643	1813	2.0
PSC32-MWLNR/L17090-06	2006	5025	3006	1644	1813	2.0
PSC40-MWLNR/L13075-06	2006	5025	-	1643	1813	2.0
PSC40-MWLNR/L17090-06	2006	5025	3006	1644	1813	2.0
PSC40-MWLNR/L17090-08	2011	5005	-	1647	1814	4.0
PSC40-MWLNR/L22110-08	2011	5005	IWSN-433	1661	1814	4.0
PSC40-MWLNR/L27120-08	2011	5005	IWSN-433	1661	1814	4.0
PSC50-MWLNR/L17090-08	2011	5005	-	1647	1814	4.0
PSC50-MWLNR/L22110-08	2011	5005	IWSN-433	1661	1814	4.0
PSC50-MWLNR/L27140-08	2011	5005	IWSN-433	1661	1814	4.0

WNMG

80° trigon negative inserts. A42-43

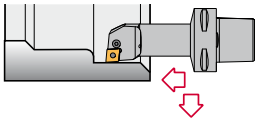
Reference	l	T	d
WNMG33..	0.254	0.187	0.375
WNMG43..	0.320	0.187	0.500

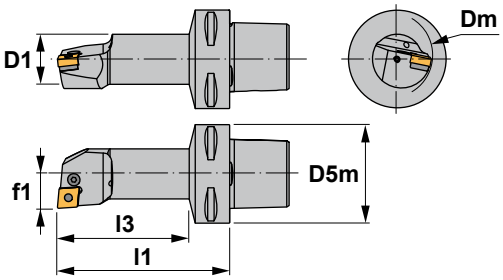


WNMG-FC	WNMG-FMC	WNMG-KC	WNMG-MFC
			
WNMG-MC	**WNMG-MHC**	**WNMG-TC**	
			

PCLN 95º

Characteristics: Boring bar for internal turning applications equipped with rhombic negative inserts (angle 80º). PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.



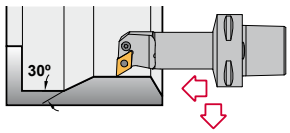


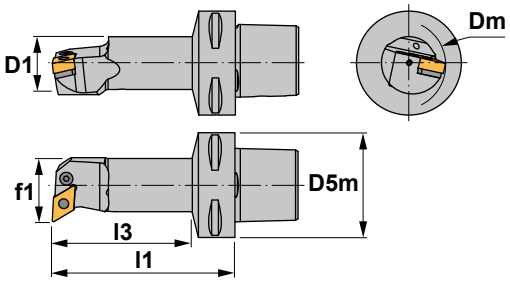
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-PCLNR/L13080-09	0.984	0.787	1.575	0.512	3.150	2.283	-6º	-11º	CN..32..	0.880
PSC50-PCLNR/L13080-09	0.984	0.787	1.969	0.512	3.150	2.205	-6º	-11º	CN..32..	1.260
PSC32-PCLNR/L17090-12	1.260	0.984	1.260	0.669	3.543	2.953	-6º	-11º	CN..43..	0.795
PSC32-PCLNR/L22064-12	1.575	1.260	1.260	0.866	2.520	1.969	-6º	-11º	CN..43..	0.770
PSC32-PCLNR/L22096-12	1.575	1.260	1.260	0.866	3.780	3.228	-6º	-11º	CN..43..	1.215
PSC40-PCLNR/L17090-12	1.260	0.984	1.575	0.669	3.543	2.717	-6º	-11º	CN..43..	1.060
PSC40-PCLNR/L22110-12	1.575	1.260	1.575	0.866	4.331	3.504	-6º	-11º	CN..43..	1.655
PSC40-PCLNR/L27080-12	1.969	1.575	1.575	1.063	3.150	2.362	-6º	-10º	CN..43..	1.630
PSC40-PCLNR/L27120-12	1.969	1.575	1.575	1.063	4.724	3.937	-6º	-11º	CN..43..	2.490
PSC50-PCLNR/L17090-12	1.260	0.984	1.969	0.669	3.543	2.638	-6º	-11º	CN..43..	1.545
PSC50-PCLNR/L22110-12	1.575	1.260	1.969	0.866	4.331	3.465	-6º	-11º	CN..43..	2.050
PSC50-PCLNR/L27140-12	1.969	1.575	1.969	1.063	5.512	4.685	-6º	-10º	CN..43..	3.240
PSC50-PCLNR/L35100-12	2.480	1.969	1.969	1.378	3.937	3.189	-6º	-7º	CN..43..	3.265
PSC63-PCLNR/L17100-12	1.260	0.984	2.480	0.669	3.937	2.913	-6º	-11º	CN..43..	2.205
PSC63-PCLNR/L22110-12	1.575	1.260	2.480	0.866	4.331	3.307	-6º	-11º	CN..43..	2.780
PSC50-PCLNR/L35150-16	2.480	1.969	1.969	1.378	5.906	5.157	-6º	-11º	CN..54..	4.960
PSC63-PCLNR/L27140-16	1.969	1.575	2.480	1.063	5.512	4.528	-6º	-11º	CN..54..	3.925
PSC63-PCLNR/L35175-16	2.480	1.969	2.480	1.378	6.890	5.984	-6º	-11º	CN..54..	6.285

Reference							Nm
PSC40-PCLNR/L13080-09	8005	1605	5002	-	-	-	1.4
PSC50-PCLNR/L13080-09	8005	1605	5002	-	-	-	1.4
PSC32-PCLNR/L17090-12	8212	1626	5025	-	-	-	2.0
PSC32-PCLNR/L22064-12	8312	1648	5003	3612	4112	0012	3.0
PSC32-PCLNR/L22096-12	8312	1648	5003	3612	4112	0012	3.0
PSC40-PCLNR/L17090-12	8212	1626	5025	-	-	-	2.0
PSC40-PCLNR/L22110-12	8312	1648	5003	3612	4112	0012	3.0
PSC40-PCLNR/L27080-12	8012	1608	5003	3612	4112	0012	3.0
PSC40-PCLNR/L27120-12	8012	1608	5003	3612	4112	0012	3.0
PSC50-PCLNR/L17090-12	8212	1626	5025	-	-	-	2.0
PSC50-PCLNR/L22110-12	8312	1648	5003	3612	4112	0012	3.0
PSC50-PCLNR/L27140-12	8012	1608	5003	3612	4112	0012	3.0
PSC50-PCLNR/L35100-12	8012	1608	5003	3612	4112	0012	3.0
PSC63-PCLNR/L17100-12	8212	1626	5025	-	-	-	2.0
PSC63-PCLNR/L22110-12	8312	1648	5003	3612	4112	0012	3.0
PSC50-PCLNR/L35150-16	8016	1618	5003	3616	4115	0015	3.0
PSC63-PCLNR/L27140-16	8016	1618	5003	3616	4115	0015	3.0
PSC63-PCLNR/L35175-16	8016	1618	5003	3616	4115	0015	3.0

CN.. 80º rhombic negative inserts. A24-26

Characteristics:
Boring bar for internal turning and profiling applications equipped with rhombic negative inserts (angle 55º).
PSC with internal coolant.
1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





PDUN 93º

Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-PDUNR/L17090-11	1.260	0.984	1.260	0.669	3.543	2.953	-6º	-11º	DN..33..	0.795
PSC40-PDUNR/L17090-11	1.260	0.984	1.575	0.669	3.543	2.717	-6º	-11º	DN..33..	1.060
PSC40-PDUNR/L22110-11	1.575	1.260	1.575	0.866	4.331	3.504	-6º	-10º	DN..33..	1.655
PSC50-PDUNR/L17090-11	1.260	0.984	1.969	0.669	3.543	2.638	-6º	-11º	DN..33..	1.545
PSC50-PDUNR/L22110-11	1.575	1.260	1.969	0.866	4.331	3.465	-6º	-10º	DN..33..	2.050
PSC63-PDUNR/L17100-11	1.260	0.984	2.480	0.669	3.937	2.913	-6º	-11º	DN..33..	2.205
PSC40-PDUNR/L27080-15	1.969	1.575	1.575	1.063	3.150	2.362	-6º	-11º	DN..44..	1.630
PSC40-PDUNR/L27120-15	1.969	1.575	1.575	1.063	4.724	3.937	-6º	-11º	DN..44..	2.490
PSC50-PDUNR/L27140-15	1.969	1.575	1.969	1.063	5.512	4.685	-6º	-11º	DN..44..	3.240
PSC50-PDUNR/L35100-15	2.480	1.969	1.969	1.378	3.937	3.189	-6º	-10º	DN..44..	3.265
PSC50-PDUNR/L35150-15	2.480	1.969	1.969	1.378	5.906	5.157	-6º	-10º	DN..44..	4.960
PSC63-PDUNR/L22110-15	1.575	1.260	2.480	0.866	4.331	3.307	-6º	-12º	DN..44..	2.780
PSC63-PDUNR/L27140-15	1.969	1.575	2.480	1.063	5.512	4.528	-6º	-11º	DN..44..	3.925
PSC63-PDUNR/L35175-15	2.480	1.969	2.480	1.378	6.890	5.984	-6º	-10º	DN..44..	6.285

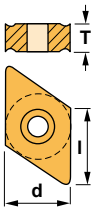
Reference									Nm
PSC32-PDUNR/L17090-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC40-PDUNR/L17090-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC40-PDUNR/L22110-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC50-PDUNR/L17090-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC50-PDUNR/L22110-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC63-PDUNR/L17100-11	8009	1606	5025	3711	4109	0009	3725	4135	2.0
PSC40-PDUNR/L27080-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC40-PDUNR/L27120-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC50-PDUNR/L27140-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC50-PDUNR/L35100-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC50-PDUNR/L35150-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC63-PDUNR/L22110-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC63-PDUNR/L27140-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0
PSC63-PDUNR/L35175-15	8415	1638	5003	3715	4112	0012	3725	4135	3.0

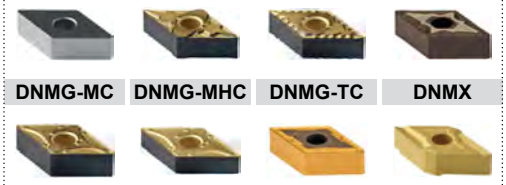
For DN..43.. inserts

DN..

55º rhombic negative inserts. A28-30

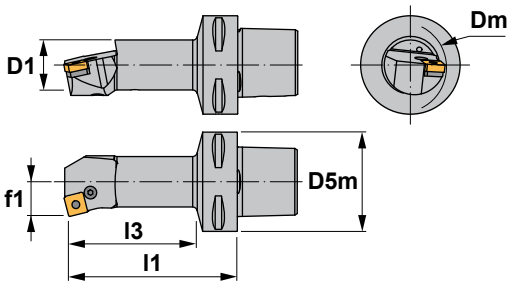
Reference	l	T	d
DN..33..	0.457	0.187	0.375
DN..43..	0.610	0.187	0.500
DN..44..	0.610	0.250	0.500

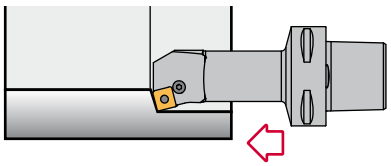




Characteristics:
Boring bar for internal turning applications equipped with square negative inserts.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





PSKN 75º

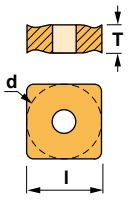
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-PSKNR/L17090-12	1.260	0.984	1.575	0.669	3.543	2.717	-6º	-11º	SNM..43..	1.060
PSC50-PSKNR/L17090-12	1.260	0.984	1.969	0.669	3.543	2.638	-6º	-11º	SNM..43..	1.545
PSC50-PSKNR/L22110-12	1.575	1.260	1.969	0.866	4.331	2.677	-6º	-10º	SNM..43..	2.050
PSC50-PSKNR/L27140-12	1.969	1.575	1.969	1.063	5.512	4.685	-6º	-10º	SNM..43..	3.240
PSC63-PSKNR/L22110-12	1.575	1.260	2.480	0.866	4.331	3.307	-6º	-10º	SNM..43..	2.780

Reference							Nm
PSC40-PSKNR/L17090-12	8212	1626	5025	-	-	-	2.0
PSC50-PSKNR/L17090-12	8212	1626	5025	-	-	-	2.0
PSC50-PSKNR/L22110-12	8312	1648	5003	3512	4112	0012	3.0
PSC50-PSKNR/L27140-12	8012	1608	5003	3512	4112	0012	3.0
PSC63-PSKNR/L22110-12	8012	1608	5003	3512	4112	0012	3.0

SNM..

Square negative inserts. A33-34

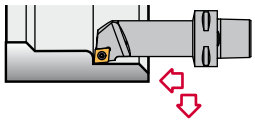
Reference	l	T	d
SNM..43..	0.500	0.187	0.500

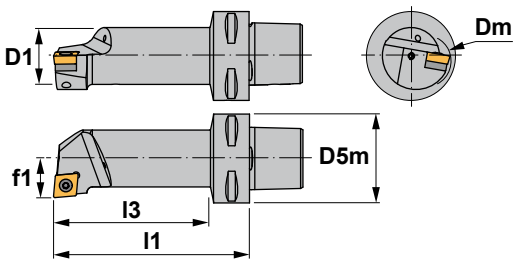


SNMG-FMC	SNMG-KC	SNMG-MHC
SNMG-RC	SNMG-TC	SNMM

SCLC 95º

Characteristics:
Multipurpose boring bar equipped with rhombic positive insert (angle 80º). PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.

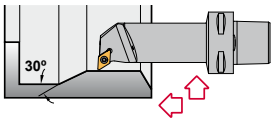


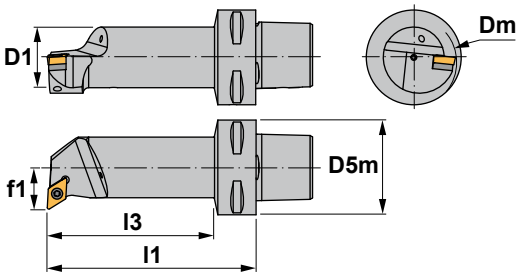


Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-SCLCR/L11065-09	0.787	0.630	1.260	0.433	2.559	1.890	0º	-12º	CC..32.5..	0.400
PSC32-SCLCR/L13075-09	0.984	0.787	1.260	0.512	2.953	2.323	0º	-8º	CC..32.5..	0.530
PSC32-SCLCR/L17090-09	1.260	0.984	1.260	0.669	3.543	2.953	0º	-6º	CC..32.5..	0.795
PSC40-SCLCR/L11070-09	0.787	0.630	1.575	0.433	2.756	1.850	0º	-12º	CC..32.5..	0.730
PSC40-SCLCR/L13080-09	0.984	0.787	1.575	0.512	3.150	2.283	0º	-8º	CC..32.5..	0.880
PSC40-SCLCR/L17090-09	1.260	0.984	1.575	0.669	3.543	2.717	0º	-6º	CC..32.5..	1.060
PSC40-SCLCR/L27080-09	1.969	1.562	1.575	1.063	3.150	2.362	0º	-6º	CC..32.5..	1.630
PSC50-SCLCR/L11070-09	0.787	0.630	1.969	0.433	2.756	1.811	0º	-12º	CC..32.5..	1.100
PSC50-SCLCR/L13080-09	0.984	0.787	1.969	0.512	3.150	2.205	0º	-8º	CC..32.5..	1.260
PSC50-SCLCR/L17090-09	1.260	0.984	1.969	0.669	3.543	2.638	0º	-6º	CC..32.5..	1.545
PSC50-SCLCR/L35100-09	2.480	1.956	1.969	1.378	3.937	3.189	0º	-4º	CC..32.5..	3.265
PSC32-SCLCR/L17090-12	1.260	0.984	1.260	0.669	3.543	2.953	0º	-6º	CC..43..	0.795
PSC32-SCLCR/L22064-12	1.575	1.248	1.260	0.866	2.520	1.969	0º	-10º	CC..43..	0.770
PSC32-SCLCR/L22096-12	1.575	1.366	1.260	0.866	3.780	3.228	0º	-10º	CC..43..	1.215
PSC40-SCLCR/L17090-12	1.260	0.984	1.575	0.669	3.543	2.717	0º	-6º	CC..43..	1.060
PSC40-SCLCR/L22110-12	1.575	1.260	1.575	0.866	4.331	3.504	0º	-10º	CC..43..	1.655
PSC40-SCLCR/L27080-12	1.969	1.562	1.575	1.063	3.150	2.362	0º	-8º	CC..43..	1.630
PSC50-SCLCR/L17090-12	1.260	0.984	1.969	0.669	3.543	2.638	0º	-6º	CC..43..	1.545
PSC50-SCLCR/L22110-12	1.575	1.260	1.969	0.866	4.331	3.465	0º	-10º	CC..43..	2.050
PSC50-SCLCR/L27140-12	1.969	1.575	1.969	1.063	5.512	4.685	0º	-8º	CC..43..	3.240
PSC50-SCLCR/L35100-12	2.480	1.956	1.969	1.378	3.937	3.150	0º	-5º	CC..43..	3.265

Reference					Nm
PSC32-SCLCR/L.....-09	1440	5515	-	-	3.0
PSC40-SCLCR/L.....-09	1440	5515	-	-	3.0
PSC40-SCLCR/L17090-09	1240	5515	-	-	3.0
PSC40-SCLCR/L27080-09	1240	5515	-	-	3.0
PSC50-SCLCR/L.....-09	1440	5515	-	-	3.0
PSC50-SCLCR/L17090-09	1240	5515	-	-	3.0
PSC50-SCLCR/L35100-09	1240	5515	-	-	3.0
PSC32-SCLCR/L17090-12	1250	5515	-	-	3.0
PSC32-SCLCR/L22064-12	1540	5517	3614	1760	3.0
PSC32-SCLCR/L22096-12	1540	5517	3614	1760	3.0
PSC40-SCLCR/L17090-12	1250	5520	-	-	4.0
PSC40-SCLCR/L22110-12	1540	5517	3614	1760	3.0
PSC40-SCLCR/L27080-12	1540	5517	3614	1760	3.0
PSC50-SCLCR/L17090-12	1250	5520	-	-	4.0
PSC50-SCLCR/L22110-12	1540	5517	3614	1760	3.0
PSC50-SCLCR/L27140-12	1540	5517	3614	1760	3.0
PSC50-SCLCR/L35100-12	1540	5517	3614	1760	3.0

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).
PSC with internal coolant.
1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





SDUC 93º

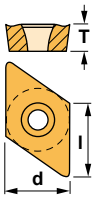
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-SDUCR/L11065-07	0.787	0.630	1.260	0.433	2.559	1.890	0º	-6º	DC..21.5..	0.400
PSC40-SDUCR/L11070-07	0.787	0.630	1.575	0.433	2.756	1.850	0º	-8º	DC..21.5..	0.730
PSC50-SDUCR/L11070-07	0.787	0.630	1.969	0.433	2.756	1.811	0º	-8º	DC..21.5..	1.100
PSC32-SDUCR/L13075-11	0.984	0.787	1.260	0.512	2.953	2.323	0º	-6º	DC..32.5..	0.530
PSC32-SDUCR/L17090-11	1.260	0.984	1.260	0.669	3.543	2.953	0º	-6º	DC..32.5..	0.795
PSC32-SDUCR/L22064-11	1.575	1.248	1.260	0.866	2.520	1.969	0º	-6º	DC..32.5..	0.770
PSC32-SDUCR/L22096-11	1.575	1.248	1.260	0.866	3.780	3.228	0º	-6º	DC..32.5..	1.215
PSC40-SDUCR/L13080-11	0.984	0.787	1.575	0.512	3.150	2.283	0º	-6º	DC..32.5..	0.880
PSC40-SDUCR/L17090-11	1.260	0.984	1.575	0.669	3.543	2.717	0º	-6º	DC..32.5..	1.060
PSC40-SDUCR/L22110-11	1.575	1.260	1.575	0.866	4.331	3.504	0º	-6º	DC..32.5..	1.655
PSC40-SDUCR/L27080-11	1.969	1.575	1.575	1.063	3.150	2.362	0º	-6º	DC..32.5..	1.630
PSC50-SDUCR/L13080-11	0.984	0.787	1.969	0.512	3.150	2.205	0º	-6º	DC..32.5..	1.260
PSC50-SDUCR/L17090-11	1.260	0.984	1.969	0.669	3.543	2.638	0º	-6º	DC..32.5..	1.545
PSC50-SDUCR/L22110-11	1.575	1.260	1.969	0.866	4.331	3.465	0º	-6º	DC..32.5..	2.050
PSC50-SDUCR/L35100-11	2.480	1.956	1.969	1.378	3.937	3.189	0º	-4º	DC..32.5..	3.265

Reference					Nm
PSC32-SDUCR/L11065-07	1225	5507	-	-	0.9
PSC40-SDUCR/L11070-07	1225	5507	-	-	0.9
PSC50-SDUCR/L11070-07	1225	5507	-	-	0.9
PSC32-SDUCR/L13075-11	1240	5515	-	-	3.0
PSC32-SDUCR/L17090-11	1240	5515	-	-	3.0
PSC32-SDUCR/L22064-11	1335	5516	3714	1750	3.0
PSC32-SDUCR/L22096-11	1335	5516	3714	1750	3.0
PSC40-SDUCR/L13080-11	1240	5515	-	-	3.0
PSC40-SDUCR/L17090-11	1240	5515	-	-	3.0
PSC40-SDUCR/L22110-11	1335	5516	3714	1750	3.0
PSC40-SDUCR/L27080-11	1335	5516	3714	1750	3.0
PSC50-SDUCR/L13080-11	1240	5515	-	-	3.0
PSC50-SDUCR/L17090-11	1240	5515	-	-	3.0
PSC50-SDUCR/L22110-11	1335	5516	3714	1750	3.0
PSC50-SDUCR/L35100-11	1335	5516	3714	1750	3.0

DC..

55º rhombic positive inserts with 7º clearance. A27

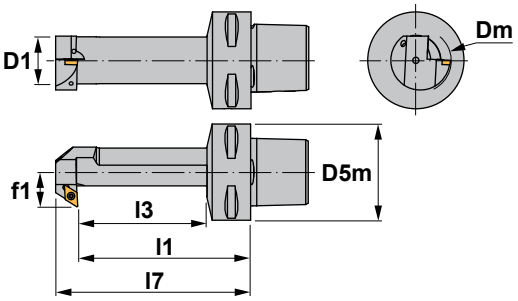
Reference	l	T	d
DC..21.5..	0.305	0.093	0.250
DC..32.5..	0.456	0.156	0.375

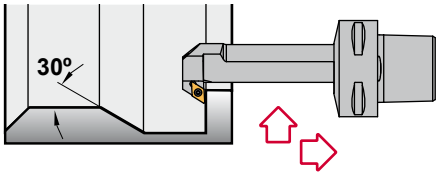


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Backwards multipurpose profiling boring bar equipped with rhombic positive insert (angle 55º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





SDUC-X 93º

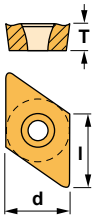
Reference	Dm	D1	D5m	f1	l1	l3	l7	γ1)	λs2)	Insert size	lbs
PSC32-SDUCR/L13070-07X	0.866	0.630	1.260	0.512	2.756	2.126	3.177	0º	-6º	DC..21.5..	0.460
PSC32-SDUCR/L15080-07X	1.063	0.787	1.260	0.591	3.150	2.520	3.177	0º	-3º	DC..21.5..	0.615
PSC40-SDUCR/L13070-07X	0.866	0.630	1.575	0.512	2.756	1.890	3.177	0º	-6º	DC..21.5..	0.730
PSC40-SDUCR/L15080-07X	1.063	0.787	1.575	0.591	3.150	2.283	3.602	0º	-3º	DC..21.5..	0.880
PSC40-SDUCR/L18090-07X	1.260	0.984	1.575	0.709	3.543	2.717	3.996	0º	-3º	DC..21.5..	1.060
PSC50-SDUCR/L15080-07X	1.063	0.787	1.969	0.591	3.150	2.244	3.602	0º	-3º	DC..21.5..	1.280
PSC50-SDUCR/L18090-07X	1.260	0.984	1.969	0.709	3.543	2.638	3.996	0º	-3º	DC..21.5..	1.480

Reference			Nm
PSC32-SDUCR/L13070-07X	1225	5507	0.9
PSC32-SDUCR/L15080-07X	1225	5507	0.9
PSC40-SDUCR/L13070-07X	1225	5507	0.9
PSC40-SDUCR/L15080-07X	1225	5507	0.9
PSC40-SDUCR/L18090-07X	1225	5507	0.9
PSC50-SDUCR/L15080-07X	1225	5507	0.9
PSC50-SDUCR/L18090-07X	1225	5507	0.9

DC..

55º rhombic positive inserts with 7º clearance. A27

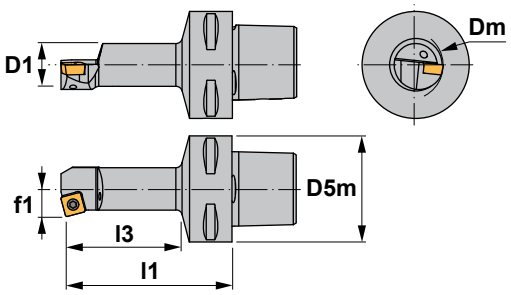
Reference	l	T	d
DC..21.5..	0.305	0.093	0.250

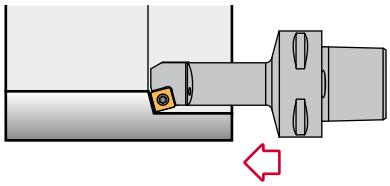


DCGT-AL	DCGT-AP
	
DCMT	**DCMW**
	

Characteristics:
Multipurpose boring bar equipped with square positive insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





SSKC 75º

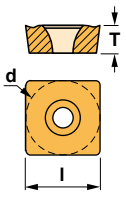
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC40-SSKCR/L13080-09	0.984	0.787	1.575	0.512	3.150	2.283	0º	-6º	SC..32.5..	0.880
PSC50-SSKCR/L13080-09	0.984	0.787	1.969	0.512	3.150	2.205	0º	-6º	SC..32.5..	1.260

Reference			Nm
PSC40-SSKCR/L13080-09	1540	5517	3.0
PSC50-SSKCR/L13080-09	1540	5517	3.0

SC..

Square positive inserts with 7º clearance. A32

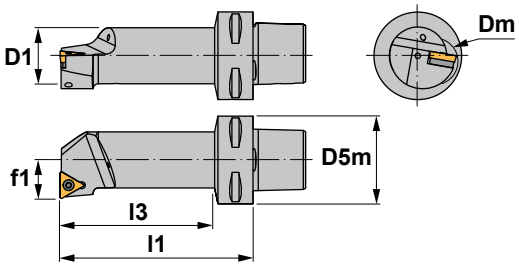
Reference	l	T	d
SC..32.5..	0.375	0.156	0.375

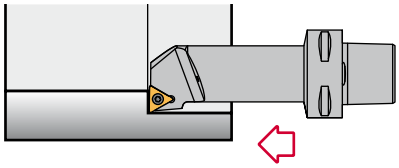


SCGT-AL	SCMT
	
SCMT-39	
	

Characteristics:
Multipurpose boring bar equipped with triangular positive insert.
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





STFC 90º

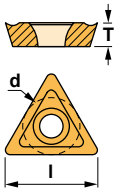
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-STFCR/L11065-11	0.787	0.630	1.260	0.433	2.559	1.890	0º	-4º	TC..21.5..	0.400
PSC32-STFCR/L13075-11	0.984	0.787	1.260	0.512	2.953	2.323	0º	-3º	TC..21.5..	0.530
PSC40-STFCR/L11070-11	0.787	0.630	1.575	0.433	2.756	1.850	0º	-4º	TC..21.5..	0.730
PSC40-STFCR/L13080-11	0.984	0.787	1.575	0.512	3.150	2.244	0º	-3º	TC..21.5..	0.880
PSC50-STFCR/L11070-11	0.787	0.630	1.969	0.433	2.756	1.811	0º	-4º	TC..21.5..	1.100
PSC50-STFCR/L13080-11	0.984	0.787	1.969	0.512	3.150	2.205	0º	-3º	TC..21.5..	1.260
PSC32-STFCR/L17090-16	1.260	0.984	1.260	0.669	3.543	2.913	0º	-3.5º	TC..32.5..	0.795
PSC40-STFCR/L17090-16	1.260	0.984	1.575	0.669	3.543	2.717	0º	-6º	TC..32.5..	1.060
PSC40-STFCR/L22110-16	1.575	1.260	1.575	0.866	4.331	3.504	0º	-10º	TC..32.5..	1.655
PSC50-STFCR/L17090-16	1.260	0.984	1.969	0.669	3.543	2.638	0º	-6º	TC..32.5..	1.545
PSC50-STFCR/L22110-16	1.575	1.260	1.969	0.866	4.331	3.465	0º	-10º	TC..32.5..	2.050

Reference					Nm
PSC32-STFCR/L11065-11	1225	5507	-	-	0.9
PSC32-STFCR/L13075-11	1225	5507	-	-	0.9
PSC40-STFCR/L11070-11	1225	5507	-	-	0.9
PSC40-STFCR/L13080-11	1225	5507	-	-	0.9
PSC50-STFCR/L11070-11	1225	5507	-	-	0.9
PSC50-STFCR/L13080-11	1225	5507	-	-	0.9
PSC32-STFCR/L17090-16	1240	5515	-	-	3.0
PSC40-STFCR/L17090-16	1240	5515	-	-	3.0
PSC40-STFCR/L22110-16	1335	5516	3414	1750	3.0
PSC50-STFCR/L17090-16	1240	5515	-	-	3.0
PSC50-STFCR/L22110-16	1335	5516	3414	1750	3.0

TC..

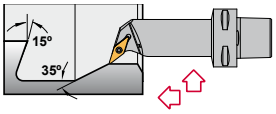
Triangular positive inserts with 7º clearance. A36

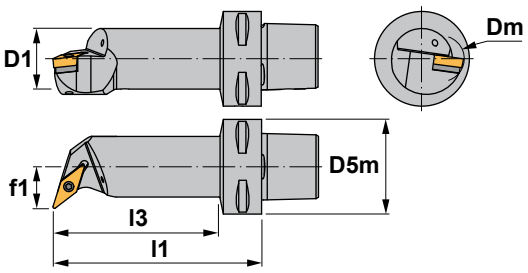
Reference	l	T	d
TC..21.5..	0.433	0.094	0.250
TC..32.5..	0.650	0.156	0.375



TCGT-AL	TCMT
	
TCMW	
	

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.
1) γ= Rake angle (valid with a flat insert).
2) λs= Angle of inclination.





SVQB 107º 30'

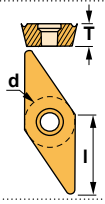
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-SVQBR/L18090-16	1.299	0.984	1.260	0.709	3.543	2.953	0º	-6º	VBMT33..	0.795
PSC32-SVQBR/L22064-16	1.575	1.248	1.260	0.866	2.520	1.930	0º	-7.5º	VBMT33..	0.770
PSC32-SVQBR/L22096-16	1.575	1.248	1.260	0.866	3.780	3.228	0º	-8º	VBMT33..	1.215
PSC40-SVQBR/L18090-16	1.299	0.984	1.575	0.709	3.543	2.717	0º	-6º	VBMT33..	1.060
PSC40-SVQBR/L22110-16	1.575	1.260	1.575	0.866	4.331	3.504	0º	-8º	VBMT33..	1.655
PSC40-SVQBR/L27080-16	1.969	1.575	1.575	1.063	3.150	2.362	0º	-8º	VBMT33..	1.630
PSC40-SVQBR/L27120-16	1.969	1.575	1.575	1.063	4.724	3.937	0º	-8º	VBMT33..	2.490
PSC50-SVQBR/L18090-16	1.299	0.984	1.969	0.709	3.543	2.638	0º	-6º	VBMT33..	1.480
PSC50-SVQBR/L22110-16	1.575	1.260	1.969	0.866	4.331	3.465	0º	-8º	VBMT33..	2.050
PSC50-SVQBR/L27140-16	1.969	1.575	1.969	1.063	5.512	4.685	0º	-8º	VBMT33..	3.240
PSC50-SVQBR/L35100-16	2.480	1.969	1.969	1.378	3.937	3.189	0º	-7º	VBMT33..	3.265
PSC50-SVQBR/L35150-16	2.480	1.969	1.969	1.378	5.906	5.157	0º	-7º	VBMT33..	4.960
PSC63-SVQBR/L22120-16	1.575	1.260	2.480	0.866	4.724	3.701	0º	-8º	VBMT33..	2.820
PSC63-SVQBR/L27145-16	1.969	1.575	2.480	1.063	5.709	4.724	0º	-8º	VBMT33..	3.925
PSC63-SVQBR/L35175-16	2.480	1.969	2.480	1.378	6.890	5.984	0º	-8º	VBMT33..	6.285

Reference					Nm
PSC32-SVQBR/L18090-16	1335	5516	3718	1750	3.0
PSC32-SVQBR/L22064-16	1335	5516	3718	1750	3.0
PSC32-SVQBR/L22096-16	1335	5516	3718	1750	3.0
PSC40-SVQBR/L18090-16	1335	5516	3718	1750	3.0
PSC40-SVQBR/L22110-16	1335	5516	3718	1750	3.0
PSC40-SVQBR/L27080-16	1335	5516	3718	1750	3.0
PSC40-SVQBR/L27120-16	1335	5516	3718	1750	3.0
PSC50-SVQBR/L18090-16	1335	5516	3718	1750	3.0
PSC50-SVQBR/L22110-16	1335	5516	3718	1750	3.0
PSC50-SVQBR/L27140-16	1335	5516	3718	1750	3.0
PSC50-SVQBR/L35100-16	1335	5516	3718	1750	3.0
PSC50-SVQBR/L35150-16	1335	5516	3718	1750	3.0
PSC63-SVQBR/L22120-16	1335	5516	3718	1750	3.0
PSC63-SVQBR/L27145-16	1335	5516	3718	1750	3.0
PSC63-SVQBR/L35175-16	1335	5516	3718	1750	3.0

VBMT

35º rhombic positive insert with 5º clearance. A40

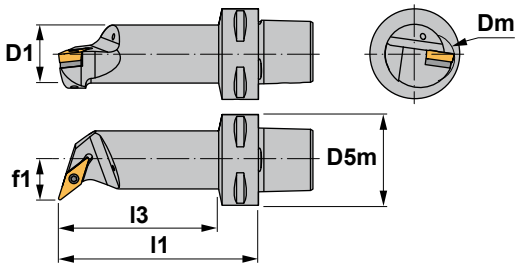
Reference	l	T	d
VBMT33..	0.650	0.187	0.375

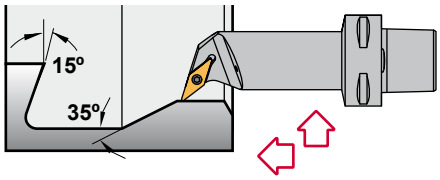


VBMT

Characteristics:
Multipurpose profiling boring bar equipped with rhombic positive insert (angle 35º).
PSC with internal coolant.

1) γ= Rake angle
(valid with a flat insert).
2) λs= Angle of inclination.





SVQC 107º 30'

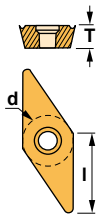
Reference	Dm	D1	D5m	f1	l1	l3	γ1)	λs2)	Insert size	lbs
PSC32-SVQCR/L13070-11	0.866	0.630	1.260	0.512	2.756	2.100	0º	-7º	VC..1103..	0.460
PSC32-SVQCR/L15080-11	1.063	0.787	1.260	0.591	3.150	2.516	0º	-5º	VC..1103..	0.615
PSC40-SVQCR/L13070-11	0.984	0.787	1.575	0.512	2.756	1.886	0º	-5.5º	VC..1103..	0.730
PSC40-SVQCR/L15080-11	1.063	0.787	1.575	0.591	3.150	2.280	0º	-5º	VC..1103..	0.880
PSC40-SVQCR/L18090-16	1.299	0.984	1.575	0.709	3.543	2.717	0º	-12º	VC..1604..	1.060
PSC40-SVQCR/L22110-16	1.575	1.260	1.575	0.866	4.331	3.504	0º	-8º	VC..1604..	1.655
PSC40-SVQCR/L27080-16	1.969	1.575	1.575	1.063	3.150	2.362	0º	-8º	VC..1604..	1.630
PSC40-SVQCR/L27120-16	1.969	1.575	1.575	1.063	4.724	3.937	0º	-8º	VC..1604..	2.490
PSC50-SVQCR/L18090-16	1.299	0.984	1.969	0.709	3.543	2.638	0º	-12º	VC..1604..	1.480
PSC50-SVQCR/L22110-16	1.575	1.260	1.969	0.866	4.331	3.465	0º	-8º	VC..1604..	2.050
PSC50-SVQCR/L27140-16	1.969	1.575	1.969	1.063	5.512	4.685	0º	-8º	VC..1604..	3.240
PSC50-SVQCR/L35100-16	2.480	1.969	1.969	1.378	3.937	3.189	0º	-7º	VC..1604..	3.265
PSC50-SVQCR/L35150-16	2.480	1.969	1.969	1.378	5.906	5.157	0º	-7º	VC..1604..	4.960
PSC63-SVQCR/L22120-16	1.575	1.260	2.480	0.866	4.724	3.701	0º	-8º	VC..1604..	2.820
PSC63-SVQCR/L27145-16	1.969	1.575	2.480	1.063	5.709	4.724	0º	-8º	VC..1604..	3.925
PSC63-SVQCR/L35175-16	2.480	1.969	2.480	1.378	6.890	5.984	0º	-8º	VC..1604..	6.285

Reference					Nm
.....-11	1225	5507	-	-	0.9
.....-16	1335	5516	3718	1750	3.0

VC..

35º rhombic positive inserts with 7º clearance. A40

Reference	l	T	d
VC..22..	0.433	0.125	0.250
VC..33..	0.650	0.187	0.375

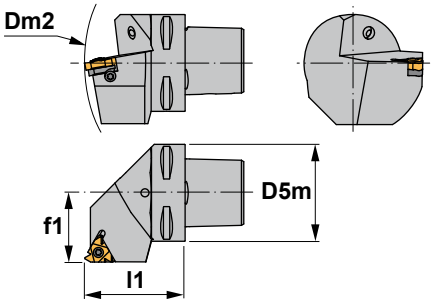


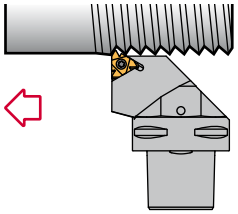
VCGT-AL

VCGT-AP

VCMT

Characteristics:
Multipurpose threading toolholder
for negative lay down inserts.
PSC with internal coolant.





SE 90º

Reference	D5m	Dm2 min.	f1	l1	Insert size	lbs
PSC32-SER/L22040-16	1.260	4.882	0.866	1.575	16ER/L..	0.460
PSC40-SER/L27050-16	1.575	5.512	1.063	1.969	16ER/L..	0.925
PSC50-SER/L35060-16	1.969	6.496	1.378	2.362	16ER/L..	1.765
PSC63-SER/L45065-16	2.480	7.480	1.772	2.559	16ER/L..	2.425
PSC32-SER/L22040-22	1.260	4.882	0.866	1.575	22ER/L..	0.460
PSC40-SER/L27050-22	1.575	5.512	1.063	1.969	22ER/L..	0.925
PSC50-SER/L35060-22	1.969	6.496	1.378	2.362	22ER/L..	1.765
PSC63-SER/L45065-22	2.480	7.480	1.772	2.559	22ER/L..	2.425
PSC80-SER/L55080-22	3.150	9.843	2.165	3.150	22ER/L..	6.040

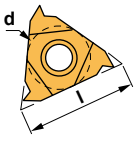
WARNING!! Because of large thread profile, modification may have to be made to the toolholder to achieve full depth of thread.

Reference			R	L		Nm
PSC32-SER/L22040-16	SA3	5510	YE3	YI3	SY3	2.0
PSC40-SER/L27050-16	SA3	5510	YE3	YI3	SY3	2.0
PSC50-SER/L35060-16	SA3	5510	YE3	YI3	SY3	2.0
PSC63-SER/L45065-16	SA3	5510	YE3	YI3	SY3	2.0
PSC32-SER/L22040-22	SA4	5520	YE4	YI4	SY4	4.0
PSC40-SER/L27050-22	SA4	5520	YE4	YI4	SY4	4.0
PSC50-SER/L35060-22	SA4	5520	YE4	YI4	SY4	4.0
PSC63-SER/L45065-22	SA4	5520	YE4	YI4	SY4	4.0
PSC80-SER/L55080-22	SA4	5520	YE4	YI4	SY4	4.0

ER/L

Triangular negative inserts for external threading. C03,05,08,10

Reference	l	d
16ER/L..	0.629	0.374
22ER/L..	0.866	0.500

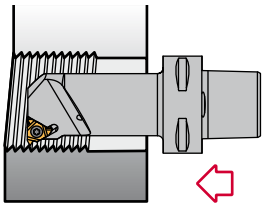


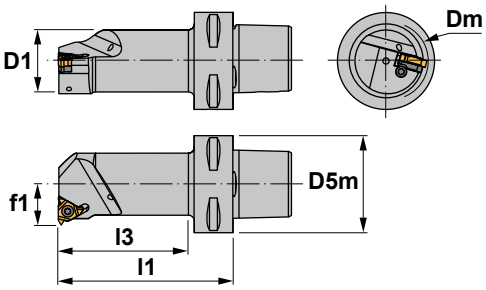
ER/L

ER/L TD

ER/L-LG

Characteristics:
Multipurpose threading boring bar for negative lay down inserts.
PSC with internal coolant.





SI 90º

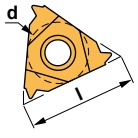
Reference	D1	Dm	D5m	f1	l1	l3	Insert size			R	L		Nm	lbs
PSC32-SIR/L12050-16	0.610	0.787	1.260	0.472	1.969	1.299	16NR/L..	SN3	5510	-	-	-	2.0	0.460
PSC32-SIR/L22085-16	1.240	1.575	1.260	0.866	3.346	2.756	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	1.125
PSC40-SIR/L12060-16	0.610	0.787	1.575	0.472	2.362	1.457	16NR/L..	SN3	5510	-	-	-	2.0	0.660
PSC40-SIR/L14060-16	0.730	0.984	1.575	0.551	2.362	1.496	16NR/L..	SA3T	5510	YI3	YE3	SY3	2.0	0.750
PSC40-SIR/L17070-16	0.964	1.260	1.575	0.669	2.756	1.890	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	0.900
PSC40-SIR/L22090-16	1.260	1.575	1.575	0.866	3.543	2.717	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	1.435
PSC40-SIR/L27080-16	1.555	1.969	1.575	1.063	3.150	2.362	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	1.675
PSC50-SIR/L12060-16	0.610	0.787	1.969	0.472	2.362	1.378	16NR/L..	SN3	5510	-	-	-	2.0	1.080
PSC50-SIR/L14060-16	0.730	0.984	1.969	0.551	2.362	1.417	16NR/L..	SA3T	5510	YI3	YE3	SY3	2.0	1.125
PSC50-SIR/L17070-16	0.964	1.260	1.969	0.669	2.756	1.850	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	1.300
PSC50-SIR/L22090-16	0.964	1.575	1.969	0.866	3.543	2.677	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	1.810
PSC50-SIR/L27105-16	1.575	1.969	1.969	1.063	4.134	3.307	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	2.645
PSC63-SIR/L14070-16	0.730	0.984	2.480	0.551	2.756	1.654	16NR/L..	SA3T	5510	YI3	YE3	SY3	2.0	1.985
PSC63-SIR/L17075-16	0.964	1.260	2.480	0.669	2.953	1.890	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	2.140
PSC63-SIR/L22090-16	1.260	1.575	2.480	0.866	3.543	2.520	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	2.515
PSC63-SIR/L27105-16	1.575	1.969	2.480	1.063	4.134	3.150	16NR/L..	SA3	5510	YI3	YE3	SY3	2.0	3.310
PSC40-SIR/L15065-22	0.730	0.984	1.575	0.591	2.559	1.654	22NR/L..	SN4	5520	-	-	-	4.0	0.770
PSC40-SIR/L19070-22	0.984	1.260	1.575	0.748	2.756	1.890	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	0.925
PSC40-SIR/L22090-22	1.240	1.575	1.575	0.866	3.543	2.717	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	1.435
PSC40-SIR/L27080-22	1.555	1.969	1.575	1.063	3.150	2.362	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	1.675
PSC50-SIR/L15065-22	0.730	0.984	1.969	0.591	2.559	1.614	22NR/L..	SN4	5520	-	-	-	4.0	1.150
PSC50-SIR/L19070-22	0.984	1.260	1.969	0.748	2.756	1.850	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	1.325
PSC50-SIR/L22090-22	1.240	1.575	1.969	0.866	3.543	2.677	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	1.810
PSC50-SIR/L27105-22	1.575	1.969	1.969	1.063	4.134	3.307	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	2.645
PSC63-SIR/L19075-22	0.984	1.260	2.480	0.748	2.953	1.890	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	2.140
PSC63-SIR/L22090-22	1.240	1.575	2.480	0.866	3.543	2.520	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	2.515
PSC63-SIR/L27105-22	1.575	1.969	2.480	1.063	4.134	3.150	22NR/L..	SA4	5520	YI4	YE4	SY4	4.0	3.310

WARNING!! Because of large thread profile, modification may have to be made to the boring bar to achieve full depth of thread.

NR/L

Triangular negative inserts for internal threading. C04,06,07,09,10

Reference	l	d
16NR/L..	0.629	0.374
22NR/L..	0.866	0.500

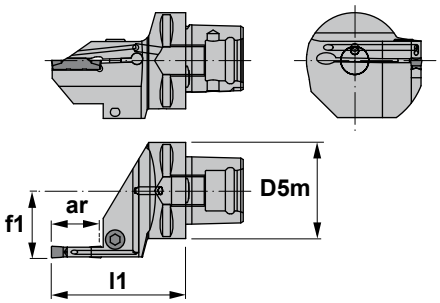


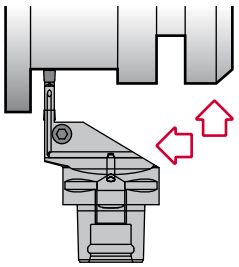
NR/L

NR/L TD

E

Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 0.079 to 0.236 inches thickness.
PSC with internal coolant.





CZCD

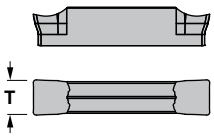
Reference	D5m	f1	l1	ar max	Insert size		Nm	lbs
PSC32-CZCDR/L22055-02	1.260	0.866	2.165	0.591	WDM..02	1296 5005	4.0	0.550
PSC40-CZCDR/L27055-02	1.575	1.063	2.165	0.591	WDM..02	1096 5005	4.0	0.950
PSC50-CZCDR/L35060-02	1.969	1.378	2.362	0.591	WDM..02	1096 5005	4.0	1.765
PSC32-CZCDR/L22055-03	1.260	0.866	2.165	0.787	WDM..03	1296 5005	4.0	0.550
PSC40-CZCDR/L27060-03	1.575	1.063	2.362	0.787	WDM..03	1096 5005	4.0	1.060
PSC50-CZCDR/L35060-03	1.969	1.378	2.362	0.787	WDM..03	1096 5005	4.0	1.765
PSC63-CZCDR/L45065-03	2.480	1.772	2.559	0.787	WDM..03	1096 5005	4.0	2.425
PSC32-CZCDR/L22060-04	1.260	0.866	2.362	0.787	WDM..04	1296 5005	4.0	0.575
PSC40-CZCDR/L27067-04	1.575	1.063	2.638	0.984	WDM..04	1096 5005	4.0	0.970
PSC50-CZCDR/L35067-04	1.969	1.378	2.638	0.984	WDM..04	1096 5005	4.0	1.765
PSC63-CZCDR/L45070-04	2.480	1.772	2.756	0.984	WDM..04	1096 5005	4.0	2.975
PSC40-CZCDR/L27067-05	1.575	1.063	2.638	0.984	WDM..05	1096 5005	4.0	0.970
PSC50-CZCDR/L35067-05	1.969	1.378	2.638	0.984	WDM..05	1096 5005	4.0	1.765
PSC63-CZCDR/L45070-05	2.480	1.772	2.756	0.984	WDM..05	1096 5005	4.0	2.975
PSC40-CZCDR/L27070-06	1.575	1.063	2.756	0.984	WDM..06	1096 5005	4.0	0.970
PSC50-CZCDR/L35070-06	1.969	1.378	2.756	0.984	WDM..06	1096 5005	4.0	1.720
PSC63-CZCDR/L45075-06	2.480	1.772	2.953	0.984	WDM..06	1096 5005	4.0	3.150

For modular blades CZFD, see pages B12 to B13.

WDM..

B04

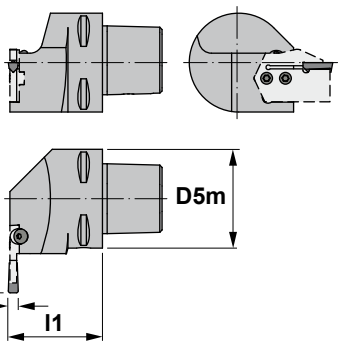
Reference	T
WDM..02	0.079
WDM..03	0.118
WDM..04	0.157
WDM..05	0.197
WDM..06	0.236

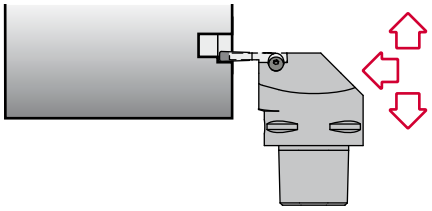


WDMG: Insert for grooving.
WDMP: Insert for parting.
WDMR: Insert for parting with radius.
WDMT: Insert for turning.

WDMG	WDMP
	
WDMR	**WDMT**
	

Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 0.079 to 0.236 inches thickness.





CZFD

Reference	D5m	f1	l1	B	lbs
PSC32-CZFDR/L18040	1.260	0.708	1.574	0.079-0.236	0.550
PSC40-CZFDR/L22050	1.575	0.866	1.968	0.079-0.236	0.950
PSC50-CZFDR/L27060	1.969	1.063	2.362	0.079-0.236	1.765
PSC63-CZFDR/L34065	2.480	1.338	2.560	0.079-0.236	2.425

Reference					Nm
PSC32-CZFDR/L18040	1025	1450	5003	5520	3.0
PSC40-CZFDR/L22050	1025	1450	5003	5520	3.0
PSC50-CZFDR/L27060	1025	1450	5003	5520	3.0
PSC63-CZFDR/L34065	1025	1450	5003	5520	3.0

For modular blades CZFD, see pages B12 to B13.

Modular blades

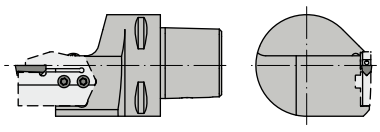
WDM..02
WDM..03
WDM..04
WDM..05
WDM..06

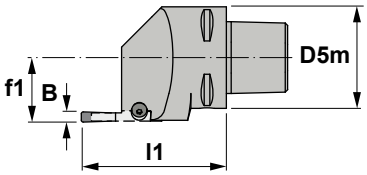
CZFD

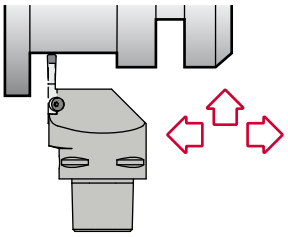
Right-handed holders use left-handed modular blades.

WDM..03
WDM..04
WDM..05
WDM..06

Characteristics:
Parting, grooving and side turning toolholder for modular blades CZFD.
Double-sided inserts 0.079 to 0.236 inches thickness.







CZGD

Reference	D5m	f1	l1	B	lbs
PSC32-CZGDR/L22042	1.260	0.866	1.653	0.079-0.236	0.550
PSC40-CZGDR/L27050	1.575	1.063	1.968	0.079-0.236	0.950
PSC50-CZGDR/L30050	1.969	1.181	1.968	0.079-0.236	1.765
PSC63-CZGDR/L45055	2.480	1.771	2.165	0.079-0.236	2.425

Reference					Nm
PSC32-CZGDR/L22042	1025	1450	5003	5520	3.0
PSC40-CZGDR/L27050	1025	1450	5003	5520	3.0
PSC50-CZGDR/L30050	1025	1450	5003	5520	3.0
PSC63-CZGDR/L45055	1025	1450	5003	5520	3.0

For modular blades CZFD, see pages B12 to B13.

Modular blades

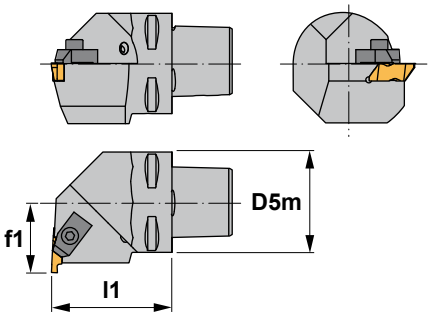
WDM..02
WDM..03
WDM..04
WDM..05
WDM..06

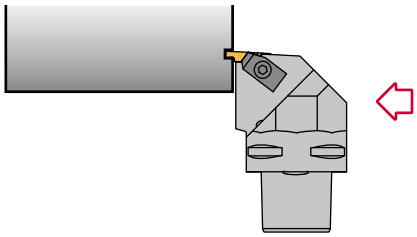
CZGD

WDM..03
WDM..04
WDM..05
WDM..06

Right-handed holders use right-handed modular blades.

Characteristics:
Multipurpose grooving and threading top clamp toolholder.
Right tools require left inserts and vice versa.
PSC with internal coolant.





NE 93º

Reference	D5m	f1	l1	Insert size	lbs
PSC40-NER/L27050-03	1.575	1.063	1.969	N..3	0.925
PSC50-NER/L35060-03	1.969	1.378	2.362	N..3	1.765
PSC63-NER/L45065-03	2.480	1.772	2.559	N..3	2.425

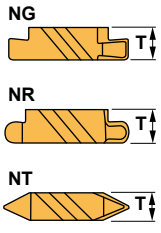
Reference					Nm
PSC40-NER/L27050-03	TF-73	TF-72	5004	1495	3.5
PSC50-NER/L35060-03	TF-73	TF-72	5004	1495	3.5
PSC63-NER/L45065-03	TF-73	TF-72	5004	1495	3.5

N..

B06-07

Reference	T
N..3	0.195

NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.

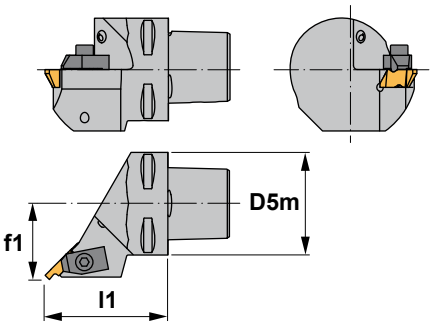


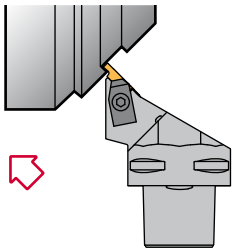
NG

NR

NT

Characteristics:
Specific application grooving toolholder.
Right tools require left inserts and vice versa.
PSC with internal coolant.





NR 45º

Reference	D5m	f1	l1	Insert size	lbs
PSC40-NRR/L27055-03	1.575	1.063	2.165	N..3	0.950
PSC50-NRR/L35060-03	1.969	1.378	2.362	N..3	1.765
PSC63-NRR/L45065-03	2.480	1.772	2.559	N..3	2.425

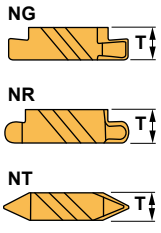
Reference					Nm
PSC40-NRR/L27055-03	TF-73	TF-72	5004	1495	3.5
PSC50-NRR/L35060-03	TF-73	TF-72	5004	1495	3.5
PSC63-NRR/L45065-03	TF-73	TF-72	5004	1495	3.5

N..

B06-07

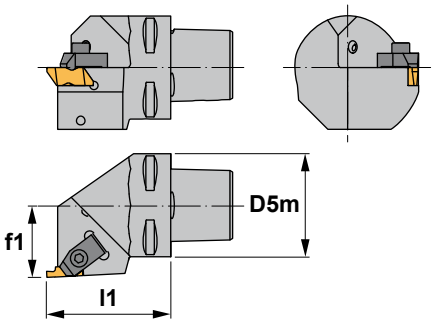
Reference	T
N..3	0.195

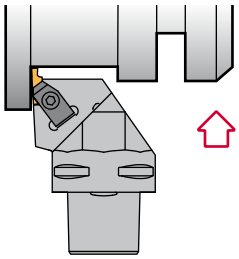
NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.



NG	NR
	
NT	
	

Characteristics:
Multipurpose grooving and threading top clamp toolholder.
PSC with internal coolant.





NS 93º

Reference	D5m	f1	l1	Insert size	lbs
PSC32-NSR22040-02	1.260	0.866	1.575	N..2	1.015
PSC40-NSR/L27050-02	1.575	1.063	1.969	N..2	0.925
PSC32-NSR22045-03	1.260	0.866	1.772	N..3	0.530
PSC40-NSR/L27050-03	1.575	1.063	1.969	N..3	0.925
PSC50-NSR/L35060-03	1.969	1.378	2.362	N..3	1.765
PSC63-NSR/L45065-03	2.480	1.772	2.559	N..3	2.425
PSC40-NSR/L27055-04	1.575	1.063	2.165	N..4	0.950
PSC50-NSR/L35060-04	1.969	1.378	2.362	N..4	1.765
PSC63-NSR/L45065-04	2.480	1.772	2.559	N..4	2.425

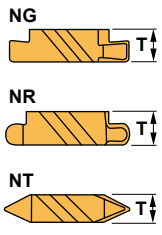
Reference							Nm
PSC32-NSR22040-02	TF-74	TF-75	-	-	5003	1494	3.0
PSC40-NSR/L27050-02	TF-74	TF-75	-	-	5003	1494	3.0
PSC32-NSR22045-03	TF-72	TF-73	-	-	5004	1495	3.5
PSC40-NSR/L27050-03	TF-72	TF-73	-	-	5004	1495	3.5
PSC50-NSR/L35060-03	TF-72	TF-73	-	-	5004	1495	3.5
PSC63-NSR/L45065-03	TF-72	TF-73	-	-	5004	1495	3.5
PSC40-NSR/L27055-04	TF-72	TF-73	3521	1625	5004	1495	3.5
PSC50-NSR/L35060-04	TF-72	TF-73	3521	1625	5004	1495	3.5
PSC63-NSR/L45065-04	TF-72	TF-73	3521	1625	5004	1495	3.5

N..

B06-07

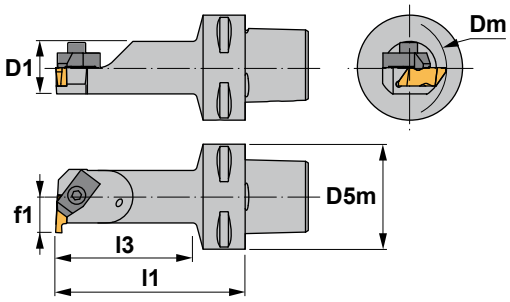
Reference	T
N..2	0.150
N..3	0.195
N..4	0.255

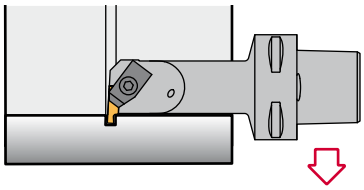
NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.



NG	NR
	
NT	
	

Characteristics:
Multipurpose grooving and threading top clamp boring bar.
Right tools require left inserts and vice versa.
PSC with internal coolant.





NNTO 93º

Reference	Dm	D1	D5m	f1	l1	l3	Insert size	lbs
PSC40-NNTOR/L11070-02	0.866	0.630	1.575	0.433	2.756	1.850	N..2	0.730
PSC40-NNTOR/L13080-02	1.024	0.787	1.575	0.512	3.150	2.283	N..2	0.880
PSC50-NNTOR/L11070-02	0.866	0.630	1.969	0.433	2.756	1.811	N..2	1.100
PSC50-NNTOR/L13080-02	1.024	0.787	1.969	0.512	3.150	2.205	N..2	1.255
PSC50-NNTOR/L17090-02	1.339	0.984	1.969	0.669	3.543	2.638	N..2	1.545
PSC40-NNTOR/L17090-03	1.339	0.984	1.575	0.669	3.543	2.717	N..3	1.060
PSC50-NNTOR/L17090-03	1.339	0.984	1.969	0.669	3.543	2.638	N..3	1.545
PSC50-NNTOR/L22110-03	1.732	1.260	1.969	0.866	4.331	3.465	N..3	2.050
PSC63-NNTOR/L27140-04	2.126	1.575	2.480	1.063	5.512	4.528	N..4	3.925
PSC63-NNTOR/L35175-04	2.756	1.969	2.480	1.378	6.890	5.984	N..4	6.285

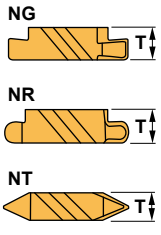
Reference					Nm
PSC40-NNTOR/L11070-02	TF-147	TF-146	5003	1494	3.0
PSC40-NNTOR/L13080-02	TF-75	TF-146	5003	1494	3.0
PSC50-NNTOR/L11070-02	TF-75	TF-146	5003	1494	3.0
PSC50-NNTOR/L13080-02	TF-75	TF-146	5003	1494	3.0
PSC50-NNTOR/L17090-02	TF-75	TF-146	5003	1494	3.0
PSC40-NNTOR/L17090-03	TF-73	TF-72	5004	1495	3.5
PSC50-NNTOR/L17090-03	TF-73	TF-72	5004	1495	3.5
PSC50-NNTOR/L22110-03	TF-73	TF-72	5004	1495	3.5
PSC63-NNTOR/L27140-04	TF-73	TF-72	5004	1495	3.5
PSC63-NNTOR/L35175-04	TF-73	TF-72	5004	1495	3.5

N..

B06-07

Reference	T
N..2	0.150
N..3	0.195
N..4	0.255

NG: Insert for grooving.
NR: Insert for parting with radius.
NT: Insert for threading.

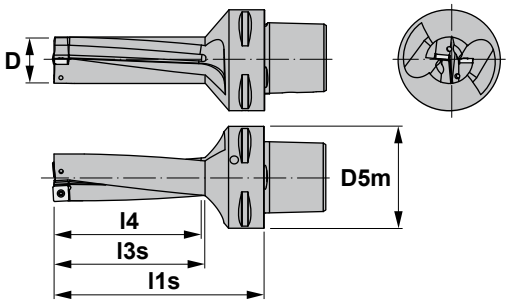


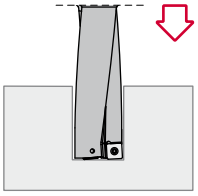
NG

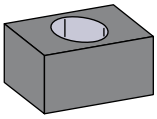
NR

NT

Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down square inserts for stability and clean through-hole putting.
PSC with internal coolant.
Max. hole depth = 3xDiameter (D)







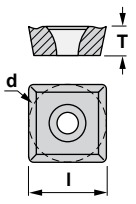
45..

Reference	D5m	D	l1s	l3s	l4	Radial Adj. Dmax	Insert size		Nm	lbs
PSC40-451415	1.575	0.591	3.228	1.890	1.772	+0,40➲15,8	SPMT0603..	1225 5507	0.9	0.730
PSC40-451416	1.575	0.630	3.386	2.008	1.890	+0,30➲16,6	SPMT0603..	1225 5507	0.9	0.795
PSC40-451417	1.575	0.669	3.504	2.126	2.008	+0,60➲18,2	SPMT0603..	1225 5507	0.9	0.815
PSC40-451417,5	1.575	0.689	3.622	2.205	2.087	+0,50➲18,5	SPMT0603..	1225 5507	0.9	0.840
PSC40-451418	1.575	0.709	3.661	2.244	2.126	+0,40➲18,8	SPMT0603..	1225 5507	0.9	0.860
PSC40-451418,5	1.575	0.728	3.740	2.323	2.205	+0,40➲19,3	SPMT0603..	1225 5507	0.9	0.880
PSC40-451419	1.575	0.748	3.780	2.362	2.244	+0,30➲19,6	SPMT0603..	1225 5507	0.9	0.905
PSC40-451420	1.575	0.787	3.976	2.520	2.362	+0,90➲21,8	SPMT0603..	1225 5507	0.9	0.970
PSC40-452421	1.575	0.827	4.114	2.598	2.480	+0,80➲22,6	SPMT0703..	1225 5507	0.9	1.015
PSC40-452422	1.575	0.866	4.213	2.717	2.598	+0,60➲23,2	SPMT0703..	1225 5507	0.9	1.080
PSC40-452423	1.575	0.906	4.370	2.835	2.717	+0,50➲24,0	SPMT0703..	1225 5507	0.9	1.145
PSC40-452424	1.575	0.945	4.528	2.992	2.835	+1,10➲26,2	SPMT0703..	1225 5507	0.9	1.235
PSC40-452425	1.575	0.984	4.685	3.110	2.953	+1,00➲27,0	SPMT0703..	1225 5507	0.9	1.300
PSC40-453426	1.575	1.024	4.803	3.189	3.071	+0,90➲27,8	SPMT0903..	1230 5508	1.2	1.410
PSC40-453427	1.575	1.063	4.921	3.307	3.189	+0,70➲28,4	SPMT0903..	1230 5508	1.2	1.500
PSC40-453428	1.575	1.102	5.079	3.425	3.307	+0,60➲29,2	SPMT0903..	1230 5508	1.2	1.590
PSC40-453429	1.575	1.142	5.197	3.543	3.425	+0,50➲30,0	SPMT0903..	1230 5508	1.2	1.675
PSC40-453430	1.575	1.181	5.393	3.701	3.543	+1,12➲32,2	SPMT0903..	1230 5508	1.2	1.785

SPMT

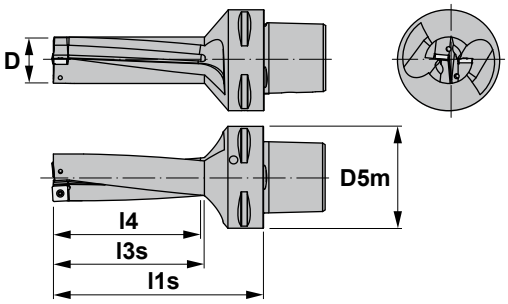
Square positive insert with 11° clearance. H02

Reference	l	T	d
SPMT060304	0.250	0.125	0.250
SPMT070308	0.312	0.125	0.312
SPMT090308	0.374	0.125	0.374



SPMT

Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.



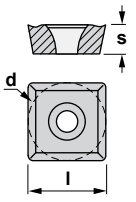
45..

Reference	D5m	D	l1s	l3s	l4	Radial Adj. Dmax	Insert size		Nm	lbs
PSC50-451415	1.969	0.591	3.228	1.890	1.772	+0,40➲15,8	SPMT0603..	1225 5507	0.9	1.280
PSC50-451416	1.969	0.630	3.386	2.008	1.890	+0,30➲16,6	SPMT0603..	1225 5507	0.9	1.300
PSC50-451417	1.969	0.669	3.504	2.126	2.008	+0,60➲18,2	SPMT0603..	1225 5507	0.9	1.325
PSC50-451417,5	1.969	0.689	3.622	2.205	2.087	+0,50➲18,5	SPMT0603..	1225 5507	0.9	1.325
PSC50-451418	1.969	0.709	3.661	2.244	2.126	+0,40➲18,8	SPMT0603..	1225 5507	0.9	1.325
PSC50-451418,5	1.969	0.728	3.740	2.323	2.205	+0,40➲19,3	SPMT0603..	1225 5507	0.9	1.325
PSC50-451419	1.969	0.748	3.780	2.362	2.244	+0,30➲19,6	SPMT0603..	1225 5507	0.9	1.345
PSC50-451420	1.969	0.787	3.976	2.520	2.362	+0,90➲21,8	SPMT0603..	1225 5507	0.9	1.410
PSC50-452421	1.969	0.827	4.114	2.598	2.480	+0,80➲22,6	SPMT0703..	1225 5507	0.9	1.435
PSC50-452422	1.969	0.866	4.213	2.717	2.598	+0,60➲23,2	SPMT0703..	1225 5507	0.9	1.480
PSC50-452423	1.969	0.906	4.370	2.835	2.717	+0,50➲24,0	SPMT0703..	1225 5507	0.9	1.545
PSC50-452424	1.969	0.945	4.528	2.992	2.835	+1,10➲26,2	SPMT0703..	1225 5507	0.9	1.630
PSC50-452425	1.969	0.984	4.685	3.110	2.953	+1,00➲27,0	SPMT0703..	1225 5507	0.9	1.720
PSC50-453426	1.969	1.024	4.803	3.189	3.071	+0,90➲27,8	SPMT0903..	1230 5508	1.2	1.810
PSC50-453427	1.969	1.063	4.921	3.307	3.189	+0,70➲28,4	SPMT0903..	1230 5508	1.2	1.810
PSC50-453428	1.969	1.102	5.079	3.425	3.307	+0,60➲29,2	SPMT0903..	1230 5508	1.2	1.985
PSC50-453429	1.969	1.142	5.197	3.543	3.425	+0,50➲30,0	SPMT0903..	1230 5508	1.2	2.095
PSC50-453430	1.969	1.181	5.393	3.701	3.543	+1,12➲32,2	SPMT0903..	1230 5508	1.2	2.225
PSC50-453431	1.969	1.220	5.551	3.819	3.661	+0,99➲33,0	SPMT0903..	1230 5508	1.2	2.340
PSC50-453432	1.969	1.260	5.669	3.937	3.780	+0,87➲33,7	SPMT0903..	1230 5508	1.2	2.450
PSC50-453433	1.969	1.299	5.827	4.055	3.898	+0,75➲34,5	SPMT0903..	1230 5508	1.2	2.600
PSC50-453434	1.969	1.339	5.945	4.173	4.016	+0,62➲35,2	SPMT0903..	1230 5508	1.2	2.780
PSC50-454435	1.969	1.378	6.102	4.291	4.134	+0,50➲36,0	SPMT1204..	1250 5520	4.0	2.935
PSC50-454436	1.969	1.417	6.260	4.429	4.252	+1,38➲38,8	SPMT1204..	1250 5520	4.0	3.130
PSC50-454437	1.969	1.457	6.378	4.528	4.370	+1,25➲39,5	SPMT1204..	1250 5520	4.0	3.240
PSC50-454438	1.969	1.496	6.535	4.665	4.488	+1,13➲40,2	SPMT1204..	1250 5520	4.0	3.485
PSC50-454439	1.969	1.535	6.653	4.763	4.606	+1,00➲41,0	SPMT1204..	1250 5520	4.0	3.615
PSC50-454440	1.969	1.575	6.811	4.882	4.724	+0,88➲41,8	SPMT1204..	1250 5520	4.0	4.500
PSC50-454441	1.969	1.614	6.970	5.000	4.843	+0,75➲42,5	SPMT1204..	1250 5520	4.0	4.500
PSC50-454442	1.969	1.654	7.322	5.118	4.961	+0,63➲43,2	SPMT1204..	1250 5520	4.0	4.500
PSC50-454443	1.969	1.693	7.480	5.236	5.079	+0,50➲44,0	SPMT1204..	1250 5520	4.0	4.740

SPMT

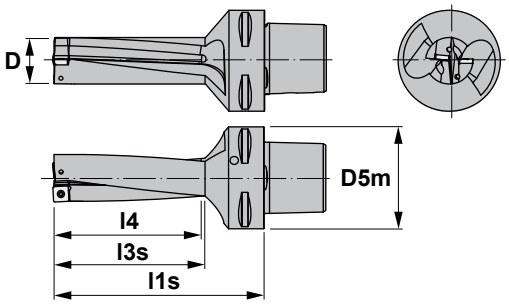
Square positive insert with 11° clearance. H02

Reference	l	T	d
SPMT060304	0.250	0.125	0.250
SPMT070308	0.312	0.125	0.312
SPMT090308	0.374	0.125	0.374
SPMT120408	0.500	0.187	0.500



SPMT

Characteristics:
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.



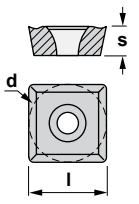
45..

Reference	D5m	D	l1s	l3s	l4	Radial Adj. Dmax	Insert size			Nm	lbs
PSC63-451415	2.480	0.591	3.307	1.890	1.772	+0,40➲15,8	SPMT0603..	1225	5507	0.9	1.850
PSC63-451416	2.480	0.630	3.465	2.008	1.890	+0,30➲16,6	SPMT0603..	1225	5507	0.9	1.895
PSC63-451417	2.480	0.669	3.583	2.126	2.008	+0,60➲18,2	SPMT0603..	1225	5507	0.9	1.920
PSC63-451417,5	2.480	0.689	3.701	2.205	2.087	+0,50➲18,5	SPMT0603..	1225	5507	0.9	1.940
PSC63-451418	2.480	0.709	3.740	2.244	2.126	+0,40➲18,8	SPMT0603..	1225	5507	0.9	1.940
PSC63-451418,5	2.480	0.728	3.819	2.323	2.205	+0,40➲19,3	SPMT0603..	1225	5507	0.9	1.985
PSC63-451419	2.480	0.748	3.858	2.362	2.244	+0,30➲19,6	SPMT0603..	1225	5507	0.9	1.985
PSC63-451420	2.480	0.787	4.055	2.520	2.362	+0,90➲21,8	SPMT0603..	1225	5507	0.9	2.050
PSC63-452421	2.480	0.827	4.173	2.598	2.480	+0,80➲22,6	SPMT0703..	1225	5507	0.9	2.115
PSC63-452422	2.480	0.866	4.291	2.717	2.598	+0,60➲23,2	SPMT0703..	1225	5507	0.9	2.140
PSC63-452423	2.480	0.906	4.449	2.835	2.717	+0,50➲24,0	SPMT0703..	1225	5507	0.9	2.225
PSC63-452424	2.480	0.945	4.606	2.992	2.835	+1,10➲26,2	SPMT0703..	1225	5507	0.9	2.295
PSC63-452425	2.480	0.984	4.763	3.110	2.953	+1,00➲27,0	SPMT0703..	1225	5507	0.9	2.380
PSC63-453426	2.480	1.024	4.882	3.189	3.071	+0,90➲27,8	SPMT0903..	1230	5508	1.2	2.470
PSC63-453427	2.480	1.102	5.000	3.307	3.189	+0,70➲28,4	SPMT0903..	1230	5508	1.2	2.560
PSC63-453428	2.480	1.102	5.173	3.425	3.307	+0,60➲29,2	SPMT0903..	1230	5508	1.2	2.670
PSC63-453429	2.480	1.142	5.275	3.543	3.425	+0,50➲30,0	SPMT0903..	1230	5508	1.2	2.780
PSC63-453430	2.480	1.181	5.472	3.701	3.543	+1,12➲32,2	SPMT0903..	1230	5508	1.2	2.910
PSC63-453431	2.480	1.220	5.630	3.819	3.661	+0,99➲33,0	SPMT0903..	1230	5508	1.2	3.020
PSC63-453432	2.480	1.260	5.748	3.937	3.780	+0,87➲33,7	SPMT0903..	1230	5508	1.2	3.150
PSC63-453433	2.480	1.299	5.906	4.055	3.898	+0,75➲34,5	SPMT0903..	1230	5508	1.2	3.305
PSC63-453434	2.480	1.339	6.023	4.173	4.016	+0,62➲35,2	SPMT0903..	1230	5508	1.2	3.440
PSC63-454435	2.480	1.378	6.181	4.291	4.134	+0,50➲36,0	SPMT1204..	1250	5520	4.0	3.595
PSC63-454436	2.480	1.417	6.339	4.429	4.252	+1,38➲38,8	SPMT1204..	1250	5520	4.0	3.770
PSC63-454437	2.480	1.457	6.456	4.528	4.370	+1,25➲39,5	SPMT1204..	1250	5520	4.0	3.950
PSC63-454438	2.480	1.496	6.614	4.665	4.488	+1,13➲40,2	SPMT1204..	1250	5520	4.0	4.145
PSC63-454439	2.480	1.535	6.732	4.763	4.606	+1,00➲41,0	SPMT1204..	1250	5520	4.0	4.275
PSC63-454440	2.480	1.575	6.890	4.882	4.724	+0,88➲41,8	SPMT1204..	1250	5520	4.0	4.500
PSC63-454441	2.480	1.614	7.047	5.000	4.843	+0,75➲42,5	SPMT1204..	1250	5520	4.0	4.760
PSC63-454442	2.480	1.654	7.165	5.118	4.961	+0,63➲43,2	SPMT1204..	1250	5520	4.0	5.005
PSC63-454443	2.480	1.693	7.322	5.236	5.079	+0,50➲44,0	SPMT1204..	1250	5520	4.0	5.180

SPMT

Square positive insert with 11° clearance. H02

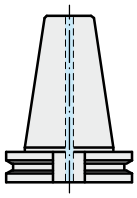
Reference	l	T	d
SPMT060304	0.250	0.125	0.250
SPMT070308	0.312	0.125	0.312
SPMT090308	0.374	0.125	0.374
SPMT120408	0.500	0.187	0.500



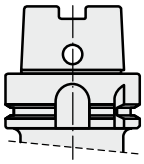
SPMT

CANELA *also offers a full range of adapters.*

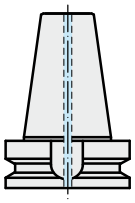
13
ISO 7388
DIN 69871/A



16
HSK
DIN 69893-1

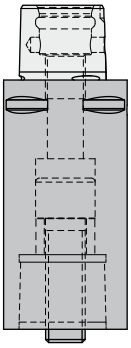


23
ISO
JIS B 6339-BT

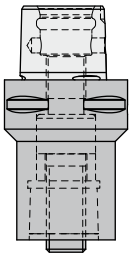


18.218

EXTENSION



REDUCER



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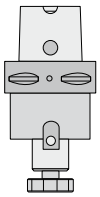

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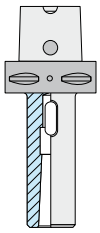

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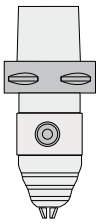

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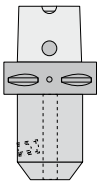

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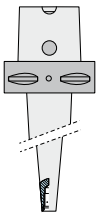

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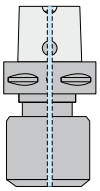

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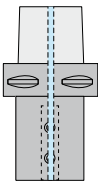

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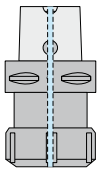

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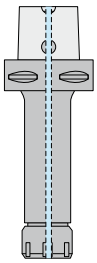

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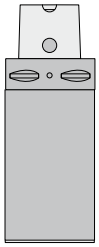

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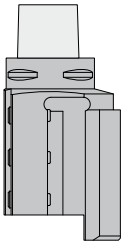

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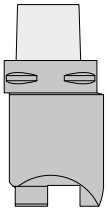

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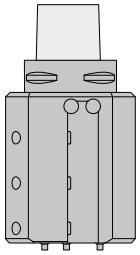

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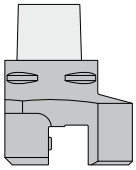

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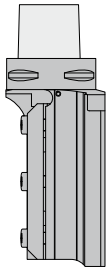

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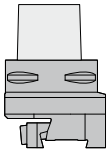

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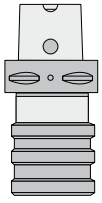

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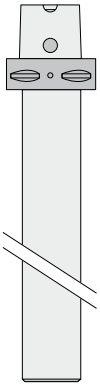
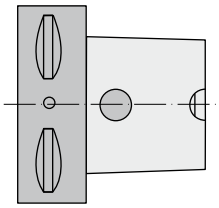


Code system

18	160	050	0125
1	2	3	4

1 Model

PSC ISO 26623-1



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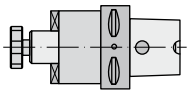
2 Arbor type



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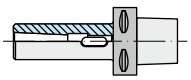

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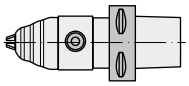

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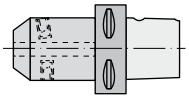

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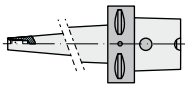

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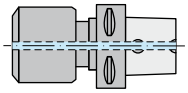

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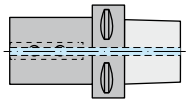

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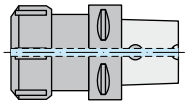

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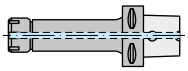

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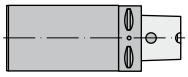

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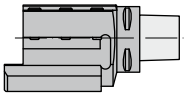

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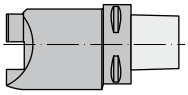

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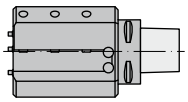

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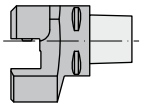

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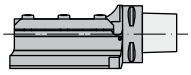

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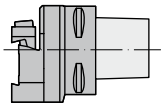

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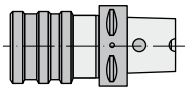

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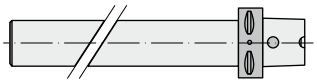
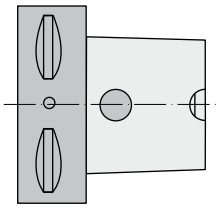


999

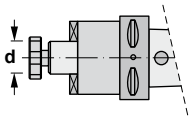
3 Arbor size

PSC ISO 26623-1



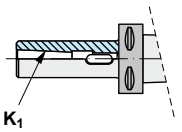
32 | 40 | 50 | 63 | 80 | 100

4 Adaptor size

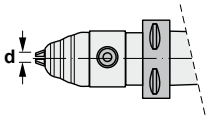


Ø 16 ... Ø 60
0.630 ... 2.362

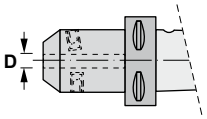
K_1 - MORSE



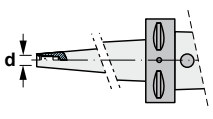
MK2 | MK3 | MK4 | MK5
02 | **03** | **04** | **05**



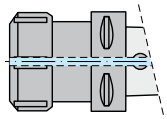
Ø 13 | Ø 16
0.511 | **0.630**



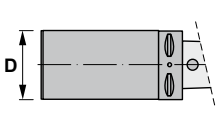
Ø 25 ... Ø 100
0.984 ... 3.937



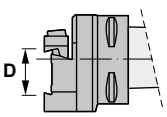
M | M | M | M
M8 | **M10** | **M12** | **M16**



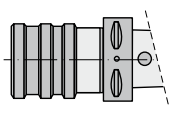
ER16 ... ER50
16 ... 50



Ø 32 ... Ø 200
1.260 ... 7.874



Ø 20 ... Ø 50
0.787 ... 1.969



M3-M12 | M8-M20 | M14-M33
12 | **20** | **33**

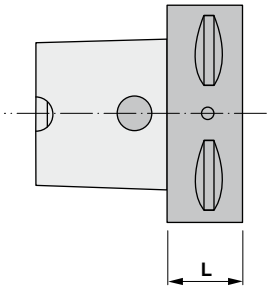
E

AT3 TECHNICAL CHARACTERISTICS OF THE TOOLHOLDERS

MATERIAL:
- Chromium-manganese carburised steel 1.7131 (16MnCr5).

EXECUTION:
- Carburised, hardened and tempered.
- Surface hardness HRC 58±2 (670±40 HV30)
- Depth of carburised layer minimum 0.020 inches.
- Tensile strength in core minimum 800 N/mm2 after carburizing.

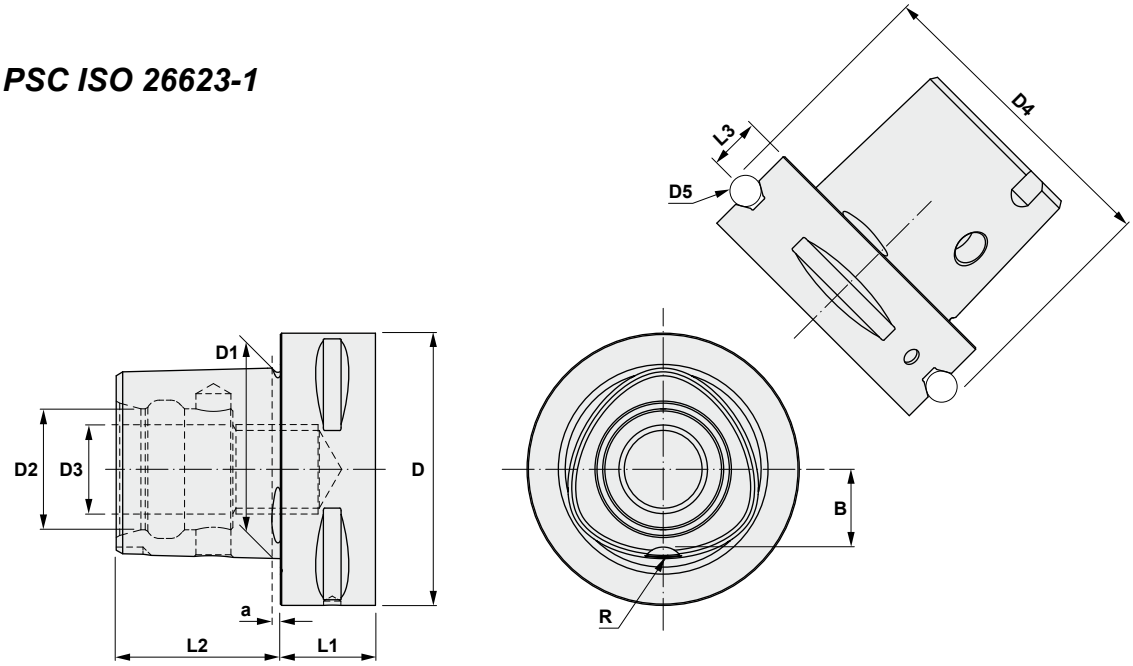
ACCURACY:
- Taper according to DIN 254
- Taper angle:
  tolerance AT 3 DIN 7178 part 1 and DIN 2080 part 1.
- Other tolerances according to DIN 7160 and 7168.
- Taper surface roughness RZ<0.039 inches.



TOLERANCE *AT*:
- Indicates the tolerance of measuring plane D between the real and the theoretical value of the taper conicity.
- This value of measuring plane D must always be less (negative), never more (positive) in order to GUARANTEE a good toolholder fixation at the bigger taper diameter.

K	AT3 mm
ISO 30	0,002
ISO 40	0,003
ISO 45	0,003
ISO 50	0,004
ISO 60	0,005

18 PSC ISO 26623-1



PSC	D	D1	D2	D3	D4	D5	L1 min	L2	L3	a	B	R
32	1.260	0.866	0.591	M12 x 1,5	1.535	0.197	0.591	0.748	0.236	0.096	0.354	0.118
40	1.575	1.102	0.709	M14 x 1,5	1.811	0.197	0.787	0.945	0.315	0.096	0.433	0.118
50	1.969	1.378	0.827	M16 x 1,5	2.335	0.276	0.787	1.181	0.394	0.118	0.551	0.157
63	2.480	1.732	1.102	M20 x 2,0	2.783	0.276	0.866	1.496	0.472	0.118	0.709	0.197
80	3.150	2.165	1.260	M20 x 2,0	3.386	0.276	1.181	1.890	0.472	0.118	0.874	0.236
100	3.937	2.835	1.693	M24 x 2,0	4.331	0.394	1.260	2.362	0.630	0.118	1.150	0.236

Arbors and adaptors PSC ISO 26623-1

18.160

Page E84-85

18.215

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18.296

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18.306

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16.218

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18.218 *Extension*

Page E114

18.218 *Reducer*

Page E115

23.218

Page E116

MC

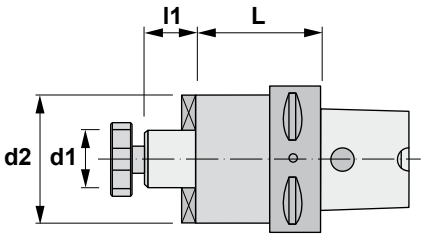
Page E117

AC

Page E117

E

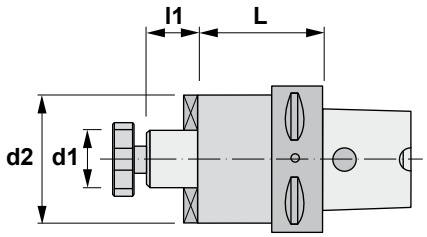
Characteristics:
Shell mill adaptor.
PSC ISO 26623-1
For cutters with driving slot DIN 138.



18.160

Reference	PSC	d1 h6	L	l1	d2				lbs
18.160.040.0075	40	0.750	0.984	0.709	1.575	10107	86207	11103	1.235
18.160.040.0100	40	1.000	1.378	0.709	1.968	10110	86210	11004	1.700
18.160.050.0075	50	0.750	0.984	0.709	1.693	10107	86207	11103	2.250
18.160.050.0100	50	1.000	0.984	0.709	2.126	10110	86210	11004	1.140
18.160.050.0125	50	1.250	1.575	0.709	2.480	10112	86212	11105	1.320
18.160.050.0150	50	1.500	1.772	0.906	3.150	10115	86215	11006	1.810
18.160.063.0075	63	0.750	1.181	0.709	2.047	10107	86207	11103	1.875
18.160.063.0100	63	1.000	1.181	0.709	2.480	10110	86210	11004	1.900
18.160.063.0125	63	1.250	1.181	0.709	2.559	10112	86212	11105	1.965
18.160.063.0150	63	1.500	1.969	0.906	3.150	10115	86215	11006	3.900
18.160.080.0075	80	0.750	1.181	0.709	2.047	10107	86207	11103	3.880
18.160.080.0100	80	1.000	1.181	0.709	2.480	10110	86210	11004	3.950
18.160.080.0125	80	1.250	1.181	0.709	2.835	10112	86212	11105	4.035
18.160.080.0150	80	1.500	2.362	0.906	3.150	10115	86215	11006	5.250

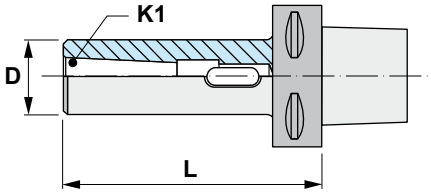
Characteristics:
Shell mill adaptor.
PSC ISO 26623-1
For cutters with driving slot DIN 138.



18.160

Reference	PSC	d1 h6	L	l1	d2				lbs
18.160.040.16	40	0.630	2.165	0.669	1.457	10008	86016	11103	1.235
18.160.040.22	40	0.866	2.165	0.748	1.850	10010	86022	11004	1.700
18.160.050.16	50	0.630	2.362	0.669	1.457	10008	86016	11103	1.720
18.160.050.22	50	0.866	2.362	0.748	1.850	10010	86022	11004	2.250
18.160.050.27	50	1.063	2.362	0.827	2.283	10012	86027	11005	2.800
18.160.050.32	50	1.260	2.362	0.945	2.480	10016	86032	11105	3.310
18.160.063.16	63	0.630	2.480	0.669	1.457	10008	86016	11103	2.360
18.160.063.22	63	0.866	0.984	0.748	1.850	10010	86122	11004	1.810
18.160.063.22/100	63	0.866	3.937	0.748	1.850	10010	86022	11004	3.990
18.160.063.27	63	1.063	0.984	0.827	2.283	10012	86127	11005	1.875
18.160.063.27/100	63	1.063	3.937	0.827	2.283	10012	86027	11005	5.270
18.160.063.32	63	1.260	0.984	0.945	2.480	10016	86132	11105	1.965
18.160.063.32/100	63	1.260	3.937	0.945	2.480	10016	86032	11105	5.975
18.160.063.40	63	1.575	1.575	1.063	3.504	10020	80040	11006	3.900
18.160.063.40/100	63	1.575	3.937	1.063	2.756	10020	86040	11006	7.120
18.160.080.16	80	0.630	1.969	0.669	1.457	10008	86016	11103	4.190
18.160.080.22	80	0.866	1.181	0.748	1.850	10010	86122	11004	3.880
18.160.080.22/100	80	0.866	3.937	0.748	1.850	10010	86022	11004	5.975
18.160.080.27	80	1.063	1.181	0.827	2.283	10012	86127	11005	3.950
18.160.080.27/100	80	1.063	3.937	0.827	2.283	10012	86027	11005	7.145
18.160.080.32	80	1.260	1.181	0.945	2.480	10016	86132	11105	4.035
18.160.080.32/100	80	1.260	3.937	0.945	2.480	10016	86032	11105	7.785
18.160.080.40	80	1.575	1.575	1.063	2.480	10020	86140	11006	5.250
18.160.080.40/100	80	1.575	3.937	1.063	2.756	10020	86040	11006	8.820
18.160.080.60	80	2.362	2.362	1.575	5.118	-	80060	11012	11.950
18.160.100.16	100	0.630	1.969	0.669	1.457	10008	86016	11103	7.190
18.160.100.22	100	0.866	1.969	0.748	1.850	10010	86022	11004	7.450
18.160.100.22/100	100	0.866	3.937	0.748	1.850	10010	86022	11004	8.930
18.160.100.27	100	1.063	1.969	0.827	2.283	10012	86027	11005	7.785
18.160.100.27/100	100	1.063	3.937	0.827	2.283	10012	86027	11005	10.055
18.160.100.32	100	1.260	1.969	0.945	2.480	10016	86032	11105	8.575
18.160.100.32/100	100	1.260	3.937	0.945	2.480	10016	86032	11105	12.920
18.160.100.40	100	1.575	1.969	1.063	2.480	10020	86040	11006	8.775
18.160.100.40/100	100	1.575	3.937	1.063	2.480	10020	86040	11006	13.095
18.160.100.60	100	2.362	2.756	1.575	5.118	-	80060	11012	16.780

Characteristics:
Reducing adaptor.
PSC ISO 26623-1
For tools with Morse taper shank and tang DIN 228-B. Form B.

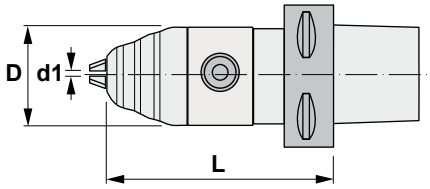


18.215

Reference	PSC	K1 MORSE	L	D	lbs
18.215.050.02	50	2	4.331	1.260	1.895
18.215.050.03	50	3	5.118	1.575	2.710
18.215.063.02	63	2	4.331	1.260	2.515
18.215.063.03	63	3	5.118	1.575	3.310
18.215.063.04	63	4	5.906	2.047	4.960
18.215.080.03	80	3	4.724	1.575	5.160
18.215.080.04	80	4	5.512	2.047	6.570
18.215.080.05	80	5	6.299	2.480	7.675
18.215.100.03	100	3	5.118	1.575	8.335
18.215.100.04	100	4	5.906	2.047	9.875
18.215.100.05	100	5	6.890	2.480	11.310

Characteristics:
CNC-Universal precision drill chucks.
PSC ISO 26623-1
For left and right hand turn.

*** SUPPLIED WITH WRENCH**

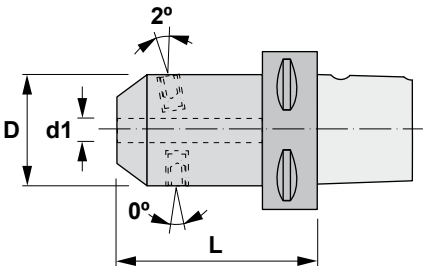


18.296

Reference	PSC	d1	D	L	lbs
18.296.040.13	40	0.020 - 0.512	1.969	4.409	3.440
18.296.050.13	50	0.020 - 0.512	1.969	4.409	3.815
18.296.063.13	63	0.020 - 0.512	1.969	4.409	5.115
18.296.063.16	63	0.118 - 0.630	2.244	4.409	5.180
18.296.080.13	80	0.020 - 0.512	1.969	4.921	6.680
18.296.080.16	80	0.118 - 0.630	2.244	4.921	7.230
18.296.100.13	100	0.020 - 0.512	1.969	5.315	9.370
18.296.100.16	100	0.118 - 0.630	2.244	5.315	9.700

Reference		3x 
18.296.040.13	50706	60313
18.296.050.13	50706	60313
18.296.063.13	50706	60313
18.296.063.16	50706	60313
18.296.080.13	50706	60313
18.296.080.16	50706	60313
18.296.100.13	50706	60313
18.296.100.16	50706	60313

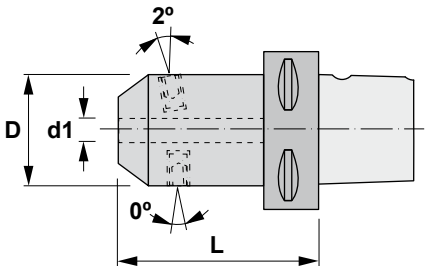
Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch. PSC ISO 26623-1
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.



18.306

Reference	PSC	d1	L	D	2x	lbs
18.306.040.0037	40	0.375	2.008	1.000	15403	0.815
18.306.040.0050	40	0.500	2.205	1.248	15405	1.255
18.306.040.0062	40	0.625	2.165	1.614	15406	1.435
18.306.040.0075	40	0.750	2.362	1.752	15407	1.650
18.306.050.0037	50	0.375	2.165	1.000	15403	1.280
18.306.050.0050	50	0.500	2.362	1.248	15405	1.610
18.306.050.0062	50	0.625	2.362	1.614	15406	1.920
18.306.050.0075	50	0.750	2.362	1.752	15407	2.160
18.306.050.0087	50	0.875	2.953	1.969	15408	2.250
18.306.050.0100	50	1.000	3.347	2.248	4 x 15410	3.570
18.306.050.0125	50	1.250	3.347	2.480	4 x 15410	3.680
18.306.063.0037	63	0.375	2.362	1.000	15403	2.120
18.306.063.0050	63	0.500	2.362	1.248	15405	2.425
18.306.063.0062	63	0.625	2.560	1.614	15406	2.820
18.306.063.0075	63	0.750	2.560	1.752	15407	2.910
18.306.063.0087	63	0.875	3.150	1.969	15408	3.150
18.306.063.0100	63	1.000	3.347	2.248	4 x 15410	4.585
18.306.063.0125	63	1.250	3.347	2.480	4 x 15410	4.610
18.306.063.0150	63	1.500	3.543	2.756	4 x 15414	4.825
18.306.080.0037	80	0.375	2.756	1.000	15403	4.190
18.306.080.0050	80	0.500	2.756	1.248	15405	4.280
18.306.080.0062	80	0.625	2.756	1.614	15406	4.875
18.306.080.0075	80	0.750	2.953	1.752	15407	5.140
18.306.080.0087	80	0.875	3.150	1.969	15408	5.290
18.306.080.0100	80	1.000	3.150	2.248	4 x 15410	6.635
18.306.080.0125	80	1.250	3.150	2.480	4 x 15410	6.840
18.306.080.0150	80	1.500	3.347	2.756	4 x 15414	7.030
18.306.080.0200	80	2.000	4.528	3.681	4 x 15420	8.290

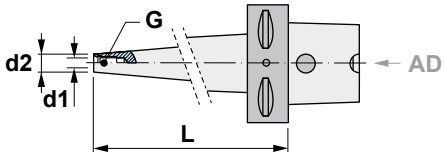
Characteristics:
Combined end mill adaptors type Weldon / Whistle-Notch. PSC ISO 26623-1
For tools with cylindrical shank and tightening inclined flat DIN 1835-B+E.



18.306

Reference	PSC	d1	L	D	2x	lbs
18.306.040.06	40	0.236	1.969	0.984	15106	0.770
18.306.040.08	40	0.315	1.969	1.102	15108	0.815
18.306.040.10	40	0.394	1.969	1.378	15110	0.970
18.306.040.12	40	0.472	2.165	1.654	15212	1.255
18.306.040.16	40	0.630	2.165	1.890	15314	1.435
18.306.050.06	50	0.236	2.165	0.984	15106	1.215
18.306.050.08	50	0.315	2.165	1.102	15108	1.280
18.306.050.10	50	0.394	2.559	1.378	15110	1.610
18.306.050.12	50	0.472	2.559	1.654	15212	1.920
18.306.050.14	50	0.551	2.559	1.654	15212	1.875
18.306.050.16	50	0.630	2.559	1.890	15314	2.160
18.306.050.18	50	0.709	2.559	1.890	15314	2.095
18.306.050.20	50	0.787	2.559	2.047	15216	2.250
18.306.050.25	50	0.984	3.150	2.559	4 x 15218	3.570
18.306.063.06	63	0.236	3.150	0.984	15106	2.030
18.306.063.08	63	0.315	3.150	1.102	15108	2.120
18.306.063.10	63	0.394	3.150	1.378	15110	2.425
18.306.063.12	63	0.472	3.150	1.654	15212	2.820
18.306.063.14	63	0.551	3.150	1.654	15212	2.780
18.306.063.16	63	0.630	3.150	1.890	15314	3.150
18.306.063.18	63	0.709	3.150	1.890	15314	3.090
18.306.063.20	63	0.787	3.150	2.047	15216	3.330
18.306.063.25	63	0.984	3.543	2.559	4 x 15218	4.585
18.306.063.32	63	1.260	3.543	2.835	4 x 15220	4.170
18.306.063.40	63	1.575	3.740	3.150	4 x 15220	3.705
18.306.080.06	80	0.236	3.150	0.984	15106	4.190
18.306.080.08	80	0.315	3.150	1.102	15108	4.280
18.306.080.10	80	0.394	3.150	1.378	15110	4.540
18.306.080.12	80	0.472	3.150	1.654	15212	4.875
18.306.080.14	80	0.551	3.150	1.654	15212	4.830
18.306.080.16	80	0.630	3.150	1.890	15314	5.140
18.306.080.20	80	0.787	3.150	2.047	15216	5.290
18.306.080.25	80	0.984	3.543	2.559	4 x 15218	6.635
18.306.080.32	80	1.260	3.543	2.835	4 x 15220	7.030
18.306.080.40	80	1.575	4.331	3.150	4 x 15220	8.775
18.306.080.50	80	1.969	4.724	3.937	4 x 15024	8.290
18.306.100.12	100	0.472	3.937	1.654	15212	8.270
18.306.100.16	100	0.630	3.937	1.890	15314	8.665
18.306.100.20	100	0.787	3.937	2.047	15216	8.865
18.306.100.25	100	0.984	3.937	2.559	4 x 15218	10.030
18.306.100.32	100	1.260	3.937	2.835	4 x 15220	10.470
18.306.100.40	100	1.575	4.724	3.150	4 x 15220	12.345
18.306.100.50	100	1.969	5.118	3.937	4 x 15024	16.535

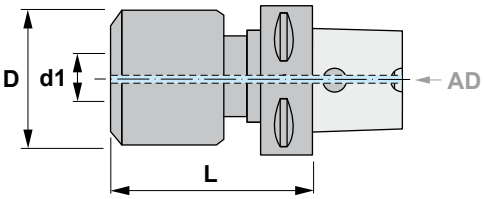
Characteristics:
Mill adaptors.
PSC ISO 26623-1
For frontal end mill support screwed shanks.



18.315

Reference	PSC	L	d1	d2	lbs
18.315.040.08	40	2.756	M8	0.512	0.685
18.315.040.10	40	3.150	M10	0.709	0.860
18.315.040.12	40	3.150	M12	0.827	0.950
18.315.050.08	50	2.756	M8	0.512	1.080
18.315.050.10	50	3.150	M10	0.709	1.255
18.315.050.12	50	3.150	M12	0.827	1.345
18.315.050.16	50	3.150	M16	1.142	1.655
18.315.063.08	63	2.756	M8	0.512	1.700
18.315.063.10	63	3.543	M10	0.709	1.940
18.315.063.12	63	3.937	M12	0.827	2.160
18.315.063.16	63	3.937	M16	1.142	2.580
18.315.080.12	80	3.937	M12	0.827	4.300
18.315.080.16	80	3.937	M16	1.142	4.650
18.315.100.12	100	4.724	M12	0.827	7.915
18.315.100.16	100	4.724	M16	1.142	7.850

Characteristics:
Strong hold collet chuck for cylindrical collets.
PSC ISO 26623-1

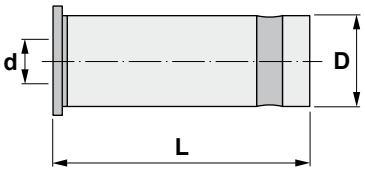


18.400

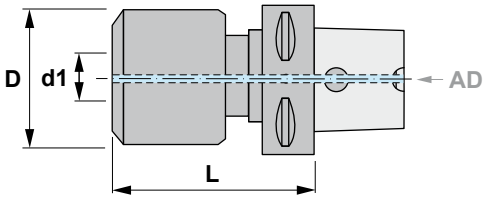
Reference	PSC	L	d1	D	lbs
18.400.063.0075	63	3.661	0.750	2.125	3.725
18.400.080.0075	80	3.503	0.750	2.834	5.490
18.400.080.0125	80	3.976	1.250	2.834	6.925
18.400.100.0125	100	4.724	1.250	2.834	11.375

Complements (Collets type C)

Reference	d	D	L
C2006	0.236	0.787	2.165
C2008	0.315	0.787	2.165
C2010	0.394	0.787	2.165
C2012	0.472	0.787	2.165
C2016	0.630	0.787	2.165
C3206	0.236	1.260	2.559
C3208	0.315	1.260	2.559
C3210	0.394	1.260	2.559
C3212	0.472	1.260	2.559
C3216	0.630	1.260	2.559
C3220	0.787	1.260	2.559
C3225	0.984	1.260	2.559



Characteristics:
Strong hold collet chuck for cylindrical collets.
PSC ISO 26623-1



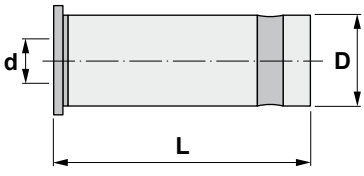
18.400

Reference	PSC	L	d1	D	lbs
18.400.063.20	63	3.661	0.787	2.126	3.725
18.400.080.20	80	3.504	0.787	2.835	5.490
18.400.080.32	80	3.976	1.260	2.835	6.925
18.400.100.32	100	4.724	1.260	2.835	11.375

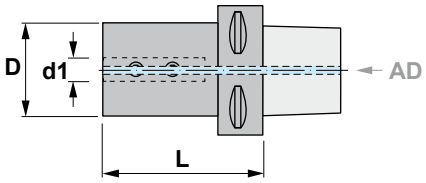
E

Complements (Collets type C)

Reference	d	D	L
C2006	0.236	0.787	2.165
C2008	0.315	0.787	2.165
C2010	0.394	0.787	2.165
C2012	0.472	0.787	2.165
C2016	0.630	0.787	2.165
C3206	0.236	1.260	2.559
C3208	0.315	1.260	2.559
C3210	0.394	1.260	2.559
C3212	0.472	1.260	2.559
C3216	0.630	1.260	2.559
C3220	0.787	1.260	2.559
C3225	0.984	1.260	2.559



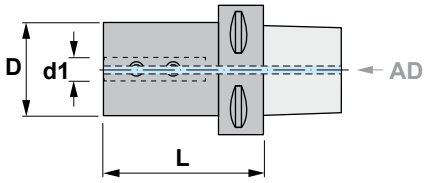
Characteristics:
Boring bar holders.
PSC ISO 26623-1



18.406

Reference	PSC	L	d1	D		lbs
18.406.040.0025	40	1.970	0.250	1.420	14302	1.150
18.406.040.0037	40	1.970	0.375	1.420	14303	1.280
18.406.040.0050	40	1.970	0.500	1.420	14303	1.310
18.406.040.0062	40	1.970	0.625	1.420	14306	1.380
18.406.040.0075	40	2.360	0.750	1.420	14306	1.600
18.406.040.0100	40	3.583	1.000	2.284	14306	1.810
18.406.050.0037	50	2.360	0.375	1.420	14303	1.720
18.406.050.0050	50	2.360	0.500	1.420	14303	1.740
18.406.050.0062	50	2.360	0.625	1.420	14306	1.780
18.406.050.0075	50	2.360	0.750	1.420	14306	1.810
18.406.050.0100	50	2.760	1.000	2.130	14306	2.205
18.406.050.0150	50	4.528	1.500	2.870	14306	3.130
18.406.063.0037	63	2.560	0.375	1.420	14303	2.515
18.406.063.0050	63	2.560	0.500	1.420	14303	2.600
18.406.063.0062	63	2.560	0.625	1.420	14306	2.625
18.406.063.0075	63	2.660	0.750	1.420	14306	2.875
18.406.063.0100	63	2.950	1.000	2.130	14306	3.130
18.406.063.0150	63	4.130	1.500	2.870	14306	7.090
18.406.080.0062	80	3.350	0.625	1.420	14306	5.030
18.406.080.0075	80	3.350	0.750	1.420	14306	5.315
18.406.080.0100	80	3.350	1.000	2.130	14306	5.490
18.406.080.0150	80	3.350	1.500	2.870	14306	9.800

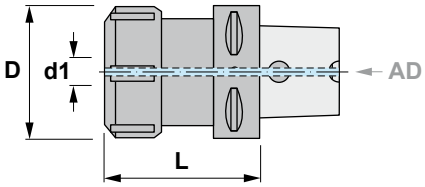
Characteristics:
Boring bar holders.
PSC ISO 26623-1



18.406

Reference	PSC	L	d1	D		lbs
18.406.040.08	40	1.969	0.315	1.732	14206	1.300
18.406.040.10	40	1.969	0.394	1.732	14208	1.280
18.406.040.12	40	1.969	0.472	1.732	14208	1.255
18.406.040.16	40	1.969	0.630	1.732	14210	1.215
18.406.040.20	40	1.969	0.787	1.732	14210	1.125
18.406.040.25	40	2.362	0.984	1.969	14210	1.455
18.406.050.08	50	2.047	0.315	1.732	14206	1.740
18.406.050.10	50	2.047	0.394	1.732	14208	1.720
18.406.050.12	50	2.047	0.472	1.732	14208	1.700
18.406.050.16	50	2.047	0.630	1.732	14210	1.610
18.406.050.20	50	2.047	0.787	1.969	14210	1.810
18.406.050.25	50	2.362	0.984	2.165	14210	2.205
18.406.063.08	63	2.362	0.315	1.732	14206	2.515
18.406.063.10	63	2.362	0.394	1.732	14208	2.495
18.406.063.12	63	2.362	0.472	1.732	14208	2.470
18.406.063.16	63	2.362	0.630	1.732	14210	2.405
18.406.063.20	63	2.362	0.787	1.969	14210	2.625
18.406.063.25	63	2.835	0.984	2.165	14210	3.130
18.406.063.32	63	2.953	1.260	2.165	14210	2.910
18.406.063.40	63	3.346	1.575	2.559	14210	7.190
18.406.080.16	80	3.346	0.630	1.732	14210	5.030
18.406.080.20	80	3.346	0.787	1.969	14210	5.315
18.406.080.25	80	3.346	0.984	2.165	14210	5.490
18.406.080.32	80	3.346	1.260	2.835	14310	6.790
18.406.080.40	80	3.740	1.575	2.559	14310	10.695
18.406.080.50	80	3.937	1.969	2.953	14310	10.320
18.406.100.16	100	3.937	0.630	1.732	14210	7.560
18.406.100.20	100	3.937	0.787	1.969	14210	8.050
18.406.100.25	100	3.937	0.984	2.165	14210	8.600
18.406.100.32	100	3.937	1.260	2.165	14310	10.140
18.406.100.40	100	4.331	1.575	2.559	14310	11.465
18.406.100.50	100	4.724	1.969	2.953	14310	12.300

Characteristics:
Collet chucks for DIN 6499 (ER) collets.
PSC ISO 26623-1
For tools with cylindrical shank DIN 1835-B.

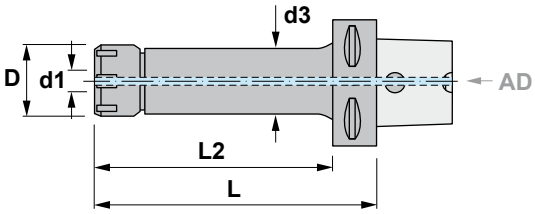


*** SUPPLIED WITHOUT WRENCH**

18.453

Reference	PSC		L	d1	D			lbs
18.453.040.16	40	ER16	2.362	0.020-0.394	1.102	45316	50216	0.925
18.453.040.20	40	ER20	2.362	0.039-0.512	1.339	45320	50220	1.080
18.453.040.25	40	ER25	2.362	0.039-0.630	1.654	45325	50225	1.390
18.453.040.32	40	ER32	2.362	0.079-0.787	1.969	45332	50232	1.875
18.453.050.16	50	ER16	2.362	0.020-0.394	1.102	45316	50216	1.325
18.453.050.16/100	50	ER16	3.937	0.020-0.394	1.102	45316	50216	1.740
18.453.050.20	50	ER20	2.362	0.039-0.512	1.339	45320	50220	1.480
18.453.050.20/100	50	ER20	3.937	0.039-0.512	1.339	45320	50220	1.985
18.453.050.25	50	ER25	2.362	0.039-0.630	1.654	45325	50225	1.785
18.453.050.25/100	50	ER25	3.937	0.039-0.630	1.654	45325	50225	2.535
18.453.050.32	50	ER32	2.362	0.079-0.787	1.969	45332	50232	2.250
18.453.050.32/100	50	ER32	3.937	0.079-0.787	1.969	45332	50232	3.350
18.453.050.40	50	ER40	2.559	0.118-1.181	2.480	45340	50240	3.110
18.453.050.40/100	50	ER40	3.937	0.118-1.181	2.480	45340	50240	4.300
18.453.063.16	63	ER16	2.362	0.020-0.394	1.102	45316	50216	1.920
18.453.063.16/100	63	ER16	3.937	0.020-0.394	1.102	45316	50216	2.340
18.453.063.20	63	ER20	2.362	0.039-0.512	1.339	45320	50220	2.075
18.453.063.20/100	63	ER20	3.937	0.039-0.512	1.339	45320	50220	2.580
18.453.063.25	63	ER25	2.362	0.039-0.630	1.654	45325	50225	2.360
18.453.063.25/100	63	ER25	3.937	0.039-0.630	1.654	45325	50225	3.110
18.453.063.32	63	ER32	2.362	0.079-0.787	1.969	45332	50232	2.820
18.453.063.32/100	63	ER32	3.937	0.079-0.787	1.969	45332	50232	3.990
18.453.063.40	63	ER40	2.756	0.118-1.181	2.480	45340	50240	3.900
18.453.063.40/120	63	ER40	4.724	0.118-1.181	2.480	45340	50240	6.040
18.453.080.32	80	ER32	2.756	0.079-0.787	1.969	45332	50232	5.095
18.453.080.32/160	80	ER32	6.299	0.079-0.787	1.969	45332	50232	7.540
18.453.080.40	80	ER40	2.756	0.118-1.181	2.480	45340	50240	5.865
18.453.080.40/160	80	ER40	6.299	0.118-1.181	2.480	45340	50240	9.590
18.453.100.32	100	ER32	3.937	0.079-0.787	1.969	45332	50232	8.730
18.453.100.32/160	100	ER32	6.299	0.079-0.787	1.969	45332	50232	10.540
18.453.100.40	100	ER40	3.937	0.118-1.181	2.480	45340	50240	9.765
18.453.100.40/160	100	ER40	6.299	0.118-1.181	2.480	45340	50240	12.545
18.453.100.50	100	ER50	3.937	0.236-1.339	3.071	45350	50250	12.040
18.453.100.50/160	100	ER50	6.299	0.236-1.339	3.071	45350	50250	15.850

Characteristics:
Long collet chuck for
DIN 6499 (ER) collets.
PSC ISO 26623-1
For tools with cylindrical shank.
With “mini” collet nut.



*** SUPPLIED WITHOUT WRENCH**

18.455

Reference	PSC		L	d1	D	L2	d3				lbs
18.455.063.16	63	ER16	2.362	0.020-0.394	0.866	-	-	45516	50916	19210	1.895
18.455.063.16/100	63	ER16	3.937	0.020-0.394	0.866	3.071	0.866	45516	50916	19210	2.095
18.455.063.20	63	ER20	2.362	0.039-0.512	1.102	-	-	45520	50920	19212	2.120
18.455.063.20/100	63	ER20	3.937	0.039-0.512	1.102	3.071	1.181	45520	50920	19212	2.470

ERXX

Reference	Accessories
ERXX	Collets with double slot DIN 6499 - Form B (ER)

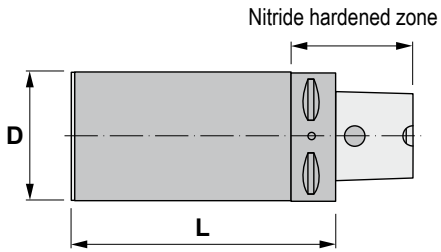
ERCXX

Reference	Accessories
ERCXX	Sealed collets DIN 6499 (ER)

ERTXX

Reference	Accessories
ERTXX	Collets DIN 6499 - Form Mexin (ER)

Characteristics:
Blank adaptors.
PSC ISO 26623-1

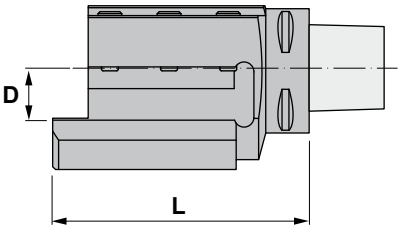


18.470

Reference	PSC	D	L	lbs
18.470.032.032/090	32	1.260	3.543	1.300
18.470.032.040/110	32	1.575	4.331	2.315
18.470.032.050/125	32	1.969	4.921	3.990
18.470.032.060/090	32	2.362	3.543	3.925
18.470.032.070/060	32	2.756	2.362	3.240
18.470.032.090/070	32	3.543	2.756	6.305
18.470.040.040/095	40	1.575	3.740	2.185
18.470.040.040/120	40	1.575	4.724	2.735
18.470.040.060/165	40	2.362	6.496	7.630
18.470.040.080/075	40	3.150	2.953	5.335
18.470.040.080/120	40	3.150	4.724	9.240
18.470.040.100/085	40	3.937	3.346	9.390
18.470.050.050/125	50	1.969	4.921	4.520
18.470.050.050/150	50	1.969	5.906	5.360
18.470.050.063/180	50	2.480	7.087	9.570
18.470.050.075/175	50	2.953	6.890	12.790
18.470.050.090/080	50	3.543	3.150	7.540
18.470.050.095/150	50	3.740	5.906	16.890
18.470.050.110/090	50	4.331	3.543	12.460
18.470.063.063/180	63	2.480	7.087	10.210
18.470.063.075/195	63	2.953	7.677	14.795
18.470.063.110/085	63	4.331	3.346	11.930
18.470.063.110/120	63	4.331	4.724	17.680
18.470.063.120/180	63	4.724	7.087	32.475
18.470.063.130/095	63	5.118	3.740	32.500
18.470.080.080/200	80	3.150	7.874	18.585
18.470.080.100/200	80	3.937	7.874	26.900
18.470.080.120/160	80	4.724	6.299	29.235
18.470.080.130/090	80	5.118	3.543	17.570
18.470.080.150/200	80	5.906	7.874	55.780
18.470.080.160/120	80	6.299	4.724	35.120
18.470.100.100/100	100	3.937	3.937	16.050
18.470.100.100/200	100	3.937	7.874	29.650
18.470.100.150/100	100	5.906	3.937	27.600
18.470.100.150/200	100	5.906	7.874	58.180
18.470.100.160/150	100	6.299	5.906	47.865
18.470.100.200/100	100	7.874	3.937	43.760


XLC TN 3203 M04-H

Characteristics:
Adaptor with axial mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

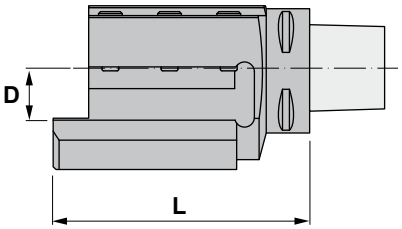


18.500

Reference	PSC	D	L	lbs
18.500.050.0075R/L	50	0.750	3.858	4.520
18.500.063.0075R/L	63	0.750	3.937	5.645
18.500.063.0100R/L	63	1.000	5.118	8.025
18.500.080.0125R/L	80	1.250	5.512	8.795

Reference	3x	
18.500.050.0075R/L	17207	29708
18.500.063.0075R/L	17207	29708
18.500.063.0100R/L	17207	29708
18.500.080.0125R/L	17207	29710

Characteristics:
Adaptor with axial mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

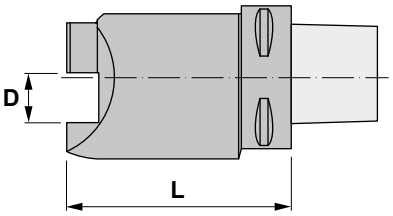


18.500

Reference	PSC	D	L	lbs
18.500.050.20R/L	50	0.787	3.858	4.520
18.500.063.20R/L	63	0.787	3.937	5.645
18.500.063.25R/L	63	0.984	5.118	8.025
18.500.063.32R/L	63	1.260	5.275	8.795
18.500.080.32R/L	80	1.260	5.512	11.885
18.500.100.32R/L	100	1.260	5.906	22.265

Reference	3x 	
18.500.050.20R/L	17010	29708
18.500.063.20R/L	17110	29708
18.500.063.25R/L	17012	29708
18.500.063.32R/L	17012	29708
18.500.080.32R/L	17012	29710
18.500.100.32R/L	17012	29710

Characteristics:
Adaptor with angular mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

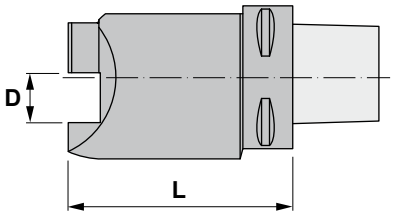


18.510

Reference	PSC	D	L	lbs
18.510.050.0075R/L	50	0.750	3.819	3.900
18.510.063.0075R/L	63	0.750	3.898	4.810
18.510.080.0125R/L	80	1.250	5.315	14.725

Reference		
18.510.050.0075R/L	17207	29708
18.510.063.0075R/L	17207	29708
18.510.080.0125R/L	17212	29710

Characteristics:
Adaptor with angular mounting.
PSC ISO 26623-1
Adaptor for square turning toolholder left / right hand.

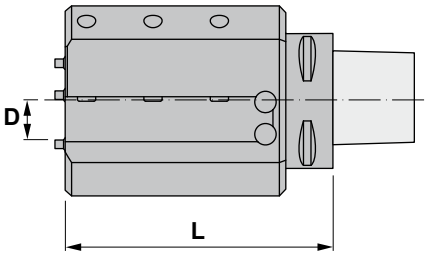


18.510

Reference	PSC	D	L	lbs
18.510.050.20R/L	50	0.787	3.819	3.900
18.510.063.20R/L	63	0.787	3.898	4.810
18.510.063.25R/L	63	0.984	5.118	9.765
18.510.080.32R/L	80	1.260	5.315	14.725
18.510.100.32R/L	100	1.260	5.709	22.115

Reference		
18.510.050.20R/L	17110	29708
18.510.063.20R/L	17110	29708
18.510.063.25R/L	17012	29708
18.510.080.32R/L	17012	29710
18.510.100.32R/L	17012	29710

Characteristics:
Mini-turret with axial mounting.
PSC ISO 26623-1
Multipurpose mini-turret for square toolholders.

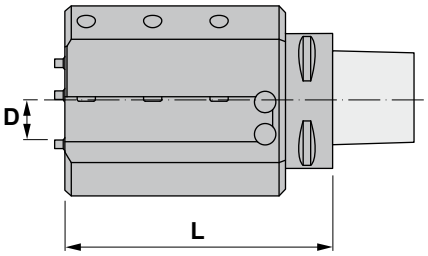


18.520

Reference	PSC	D	L	lbs
18.520.050.0075R/L	50	0.750	4.842	8.315
18.520.063.0075R/L	63	0.750	4.921	9.370
18.520.080.0125R/L	80	1.250	5.906	17.150

Reference		
18.520.050.0075R/L	17207	29708
18.520.063.0075R/L	17207	29708
18.520.080.0125R/L	17212	29710

Characteristics:
Mini-turret with axial mounting.
PSC ISO 26623-1
Multipurpose mini-turret for square toolholders.

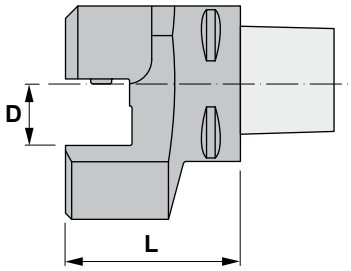


18.520

Reference	PSC	D	L	lbs
18.520.050.20R/L	50	0.787	4.842	8.315
18.520.063.20R/L	63	0.787	4.921	9.370
18.520.063.25R/L	63	0.984	5.118	11.330
18.520.080.32R/L	80	1.260	5.906	17.150
18.520.100.32R/L	100	1.260	6.299	25.130

Reference		
18.520.050.20R/L	17012	29708
18.520.063.20R/L	17012	29708
18.520.063.25R/L	17012	29708
18.520.080.32R/L	17012	29710
18.520.100.32R/L	17012	29710

Characteristics:
Adaptor with radial mounting.
PSC ISO 26623-1
Multipurpose adaptor for square toolholders.

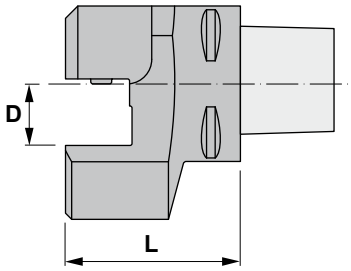


18.530

Reference	PSC	D	L	lbs
18.530.050.0075	50	0.750	2.244	3.220
18.530.063.0075	63	0.750	2.323	3.950
18.530.063.0100	63	1.000	2.795	6.305
18.530.080.0125	80	1.250	3.337	10.470

Reference		
18.530.050.0075	17307	29708
18.530.063.0075	17307	29708
18.530.063.0100	17207	29708
18.530.080.0125	17207	29710

Characteristics:
Adaptor with radial mounting.
PSC ISO 26623-1
Multipurpose adaptor for square toolholders.

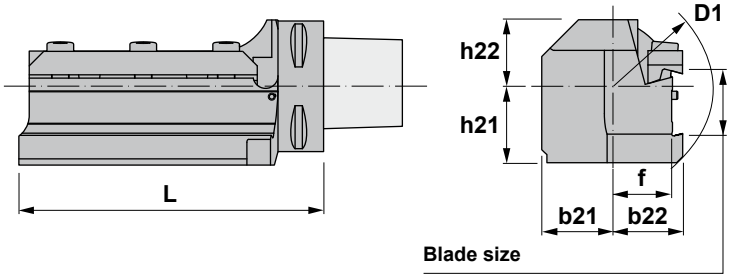


18.530

Reference	PSC	D	L	lbs
18.530.050.20	50	0.787	2.283	3.220
18.530.063.20	63	0.787	2.362	3.950
18.530.063.25	63	0.984	2.795	6.305
18.530.063.32	63	1.260	2.795	7.275
18.530.080.32	80	1.260	3.346	10.470
18.530.100.32	100	1.260	3.543	14.265

Reference		
18.530.050.20	17112	29708
18.530.063.20	17112	29708
18.530.063.25	17012	29708
18.530.063.32	17012	29708
18.530.080.32	17012	29710
18.530.100.32	17012	29710

Characteristics:
Adaptor with axial mounting for blades.
PSC ISO 26623-1

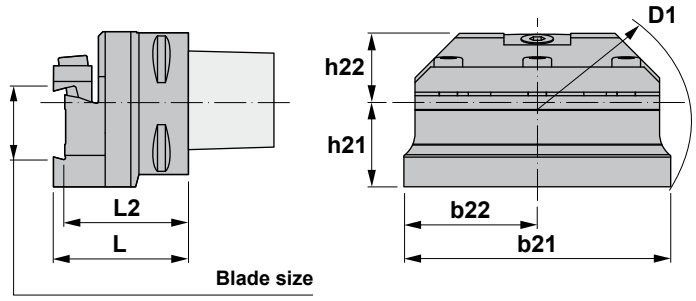


18.540

Reference	PSC	Blade size	D1	b21	b22	f	h21	h22	L	lbs
18.540.050.26R/L	50	26	3.465	0.984	1.260	1.063	1.181	1.024	3.740	3.310
18.540.063.32R/L	63	32	4.173	1.260	1.555	1.260	1.496	1.260	5.787	7.275
18.540.080.32R/L	80	32	4.961	1.594	1.890	1.594	1.594	1.594	6.102	11.465
18.540.100.32R/L	100	32	5.709	1.969	2.283	1.988	1.988	1.969	6.299	20.370
18.540.100.52R/L	100	52/53	6.890	1.969	2.283	1.988	2.559	1.969	7.874	27.360

Reference		
18.540.050.26R/L	80526	11008
18.540.063.32R/L	80632	11108
18.540.080.32R/L	80632	11108
18.540.100.32R/L	80632	11108
18.540.100.52R/L	81052	11108

Characteristics:
Adaptor with radial mounting for blades.
PSC ISO 26623-1

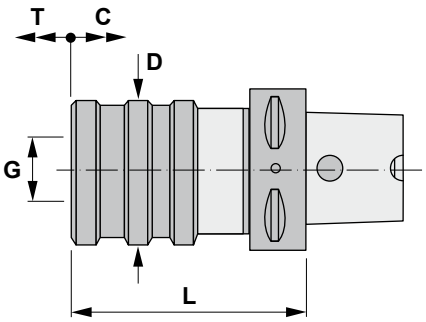


18.550

Reference	PSC	Blade size	D1	b21	b22	h21	h22	L	L2	lbs
18.550.050.26	50	26	3.937	3.150	1.575	1.181	0.992	2.283	2.087	2.865
18.550.063.32	63	32	5.551	4.724	2.362	1.457	1.260	2.480	2.186	5.070
18.550.080.32	80	32	5.709	4.724	2.362	1.594	1.575	2.795	2.500	7.720
18.550.100.32	100	32	5.709	4.724	2.362	1.988	1.969	2.953	2.657	12.280
18.550.100.52	100	52/53	7.677	6.299	3.150	2.559	1.969	2.953	2.657	14.200

Reference		
18.550.050.26	80526	11008
18.550.063.32	81632	11108
18.550.080.32	81632	11108
18.550.100.32	81632	11108
18.550.100.52	81052	11108

Characteristics:
Quick change tapping head with axial compensation.
PSC ISO 26623-1
With Bilz system tap chucks bushings.
Compensation in compression (C) and tension (T).



18.620

Reference	PSC	N°.	G Ø	d1	L	D	C	T			lbs
18.620.040.12	40	1	19	M3-M12	2.559	1.496	0.354	0.354	710XX	750XX	1.125
18.620.050.12	50	1	19	M3-M12	2.559	1.496	0.354	0.354	710XX	750XX	1.520
18.620.063.12	63	1	19	M3-M12	2.756	1.496	0.354	0.354	710XX	750XX	2.140
18.620.063.20	63	2	31	M8-M20	3.740	2.165	0.591	0.591	720XX	760XX	3.770
18.620.063.33	63	3	48	M14-M33	5.512	3.110	0.945	0.945	730XX	770XX	7.830
18.620.080.12	80	1	19	M3-M12	3.150	1.496	0.354	0.354	710XX	750XX	4.520
18.620.080.20	80	2	31	M8-M20	3.937	2.165	0.591	0.591	720XX	760XX	6.000
18.620.080.33	80	3	48	M14-M33	5.906	3.110	0.945	0.945	730XX	770XX	11.110
18.620.100.12	100	1	19	M3-M12	3.543	1.496	0.354	0.354	710XX	750XX	7.650
18.620.100.20	100	2	31	M8-M20	4.331	2.165	0.591	0.591	720XX	760XX	9.215
18.620.100.33	100	3	48	M14-M33	6.299	3.110	0.945	0.945	730XX	770XX	14.595

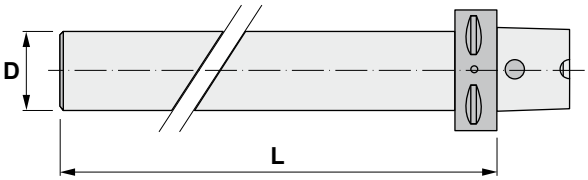
710XX..730XX

Reference	Accessories
710XX..730XX	Quick change adapters without overload clutch

750XX..770XX

Reference	Accessories
750XX..770XX	Quick change adapters with overload clutch

Characteristics:
Test arbors.
PSC ISO 26623-1

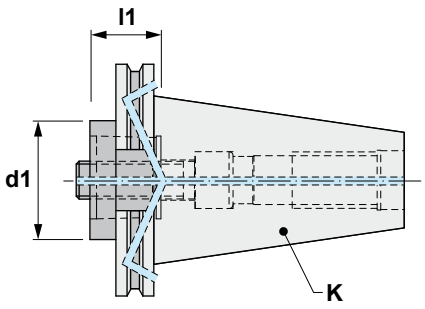


18.999

Reference	PSC	L	D	lbs
18.999.050	50	10.039	1.260	4.210
18.999.063	63	12.677	1.575	7.190
18.999.080	80	13.028	1.575	10.320

E

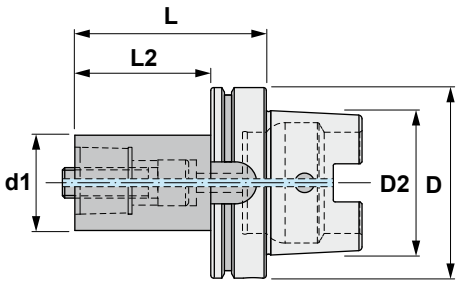
Characteristics:
Adaptor DIN 69871-A
to PSC ISO 26623-1.



13.218

Reference	K ISO	PSC	d1	l1	lbs
13.218.30.32/030	30	32	1.260	1.181	0.880
13.218.30.32/060	30	32	1.260	2.362	1.210
13.218.40.32/030	40	32	1.260	1.181	1.875
13.218.40.32/060	40	32	1.260	2.362	2.205
13.218.40.40/030	40	40	1.575	1.181	1.875
13.218.40.40/060	40	40	1.575	2.362	2.425
13.218.40.50/030	40	50	1.969	1.181	1.875
13.218.40.50/070	40	50	1.969	2.756	3.090
13.218.40.63/085	40	63	2.480	3.346	4.190
13.218.50.32/030	50	32	1.260	1.181	5.950
13.218.50.32/060	50	32	1.260	2.362	6.615
13.218.50.40/030	50	40	1.575	1.181	1.875
13.218.50.40/060	50	40	1.575	2.362	6.615
13.218.50.50/030	50	50	1.969	1.181	5.840
13.218.50.50/070	50	50	1.969	2.756	7.075
13.218.50.63/030	50	63	2.480	1.181	5.755
13.218.50.63/080	50	63	2.480	3.150	8.270
13.218.50.80/070	50	80	3.150	2.756	8.600
13.218.50.80/120	50	80	3.150	4.724	12.235

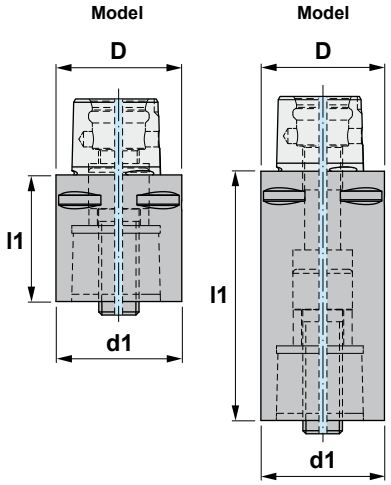
Characteristics:
Adaptor HSK DIN 69893-1
to PSC ISO 26623-1.



16.218

Reference	HSK	PSC	d1	D	D2	L	L2	lbs
16.218.063.32/075	63	32	1.260	2.480	1.890	2.953	1.929	1.985
16.218.063.40/080	63	40	1.575	2.480	1.890	3.150	2.126	2.425
16.218.063.50/090	63	50	1.969	2.480	1.890	3.543	2.520	3.200
16.218.100.32/080	100	32	1.260	3.937	2.953	3.150	2.008	5.095
16.218.100.40/090	100	40	1.575	3.937	2.953	3.543	2.402	5.620
16.218.100.50/100	100	50	1.969	3.937	2.953	3.937	2.795	6.505
16.218.100.63/110	100	63	2.480	3.937	2.953	4.331	3.189	8.160
16.218.100.80/120	100	80	3.150	3.937	2.953	4.724	3.583	10.800

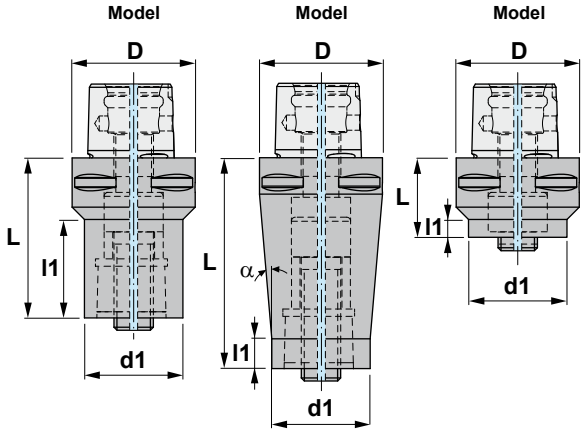
Characteristics:
Extension
PSC ISO 26623-1.



18.218

Reference	Model	Side PSC / Machine	d1	D	l1	lbs
18.218.32.32/035	1	32	1.260	1.260	1.378	0.440
18.218.32.32/060	2	32	1.260	1.260	2.362	0.795
18.218.32.32/080	2	32	1.260	1.260	3.150	1.080
18.218.40.40/040	1	40	1.575	1.575	1.575	0.815
18.218.40.40/060	2	40	1.575	1.575	2.362	1.320
18.218.40.40/080	2	40	1.575	1.575	3.150	1.765
18.218.50.50/050	1	50	1.969	1.969	1.969	1.610
18.218.50.50/080	2	50	1.969	1.969	3.150	2.735
18.218.50.50/100	2	50	1.969	1.969	3.937	3.305
18.218.63.63/060	1	63	2.480	2.480	2.362	2.980
18.218.63.63/100	2	63	2.480	2.480	3.937	5.180
18.218.63.63/140	2	63	2.480	2.480	5.512	7.275
18.218.80.80/065	1	80	3.150	3.150	2.559	5.180
18.218.80.80/100	2	80	3.150	3.150	3.937	8.270
18.218.80.80/125	2	80	3.150	3.150	4.921	10.470

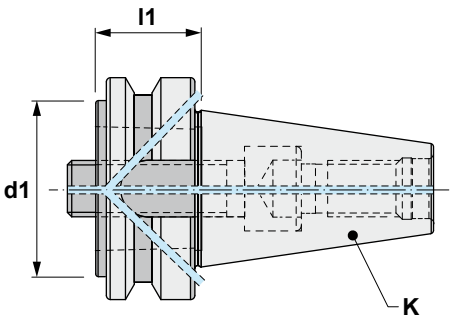
Characteristics:
Reducer
PSC ISO 26623-1.



18.218

Reference	Model	Side Machine	Side PSC	D	d1	L	l1	α	lbs
18.218.40.32/055	1	40	32	1.575	1.260	2.165	1.220	-	0.950
18.218.40.32/070	2	40	32	1.575	1.260	2.756	0.472	6.0º	1.235
18.218.50.32/060	1	50	32	1.969	1.260	2.362	1.370	-	1.410
18.218.50.40/065	1	50	40	1.969	1.575	2.559	1.575	-	1.765
18.218.50.40/085	2	50	40	1.969	1.575	3.346	0.472	5.4º	2.490
18.218.50.32/033	3	50	32	1.969	1.260	1.299	0.394	-	1.035
18.218.50.40/040	3	50	40	1.969	1.575	1.575	0.709	-	1.210
18.218.63.32/070	1	63	32	2.480	1.260	2.756	1.535	-	2.140
18.218.63.40/080	1	63	40	2.480	1.575	3.150	2.024	-	2.645
18.218.63.50/080	1	63	50	2.480	1.969	3.150	2.028	-	3.305
18.218.63.50/110	2	63	50	2.480	1.969	4.331	0.472	4.9º	4.960
18.218.63.32/032	3	63	32	2.480	1.260	1.260	0.236	-	1.675
18.218.63.40/040	3	63	40	2.480	1.575	1.575	0.433	-	1.765
18.218.63.50/050	3	63	50	2.480	1.969	1.969	1.043	-	2.205
18.218.80.32/060	1	80	32	3.150	1.260	2.362	1.153	-	4.190
18.218.80.40/070	1	80	40	3.150	1.575	2.756	1.437	-	4.410
18.218.80.50/080	1	80	50	3.150	1.969	3.150	1.941	-	5.070
18.218.80.63/080	1	80	63	3.150	2.480	3.150	2.090	-	5.840
18.218.80.63/120	2	80	63	3.150	2.480	4.724	0.472	6.2º	9.480
18.218.80.50/045	3	80	50	3.150	1.969	1.772	0.394	-	3.970
18.218.80.63/055	3	80	63	3.150	2.480	2.165	0.787	-	4.410

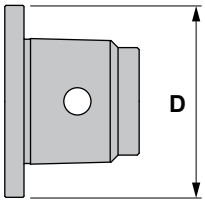
Characteristics:
Adaptor JIS B 6339-BT
to PSC ISO 26623-1.



23.218

Reference	K ISO	PSC	d1	l1	lbs
23.218.30.32/030	30	32	1.260	1.181	0.880
23.218.30.32/060	30	32	1.260	2.362	1.320
23.218.40.32/030	40	32	1.260	1.181	2.205
23.218.40.32/060	40	32	1.260	2.362	2.645
23.218.40.40/030	40	40	1.575	1.181	2.095
23.218.40.40/060	40	40	1.575	2.362	2.755
23.218.40.50/030	40	50	1.969	1.181	1.985
23.218.40.50/070	40	50	1.969	2.756	3.305
23.218.40.63/075	40	63	2.480	2.953	4.190
23.218.50.32/040	50	32	1.260	1.575	8.050
23.218.50.32/070	50	32	1.260	2.756	8.490
23.218.50.40/040	50	40	1.575	1.575	8.050
23.218.50.40/070	50	40	1.575	2.756	8.600
23.218.50.50/040	50	50	1.969	1.575	7.830
23.218.50.50/080	50	50	1.969	3.150	9.150
23.218.50.63/040	50	63	2.480	1.575	7.605
23.218.50.63/090	50	63	2.480	3.543	10.250
23.218.50.80/070	50	80	3.150	2.756	9.260
23.218.50.80/120	50	80	3.150	4.724	13.560

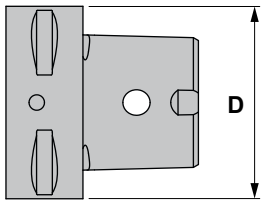
Characteristics:
Manual caps.



MC

Reference	Manual Cap	lbs
PSC32-MC	1.260	0.175
PSC40-MC	1.575	0.330
PSC50-MC	1.969	0.400
PSC63-MC	2.480	0.925
PSC80-MC	3.150	2.205

Characteristics:
Automatic caps.



AC

Reference	Automatic Cap	lbs
PSC40-AC	1.575	0.550
PSC50-AC	1.969	0.980
PSC63-AC	2.480	1.545
PSC80-AC	3.150	3.750

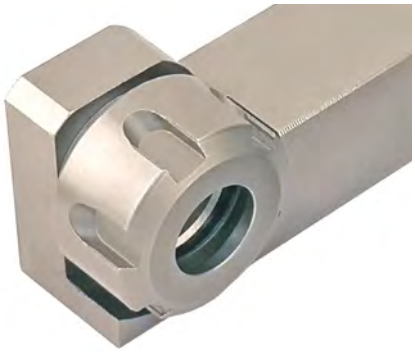
ARBORS AND ADAPTORS

F

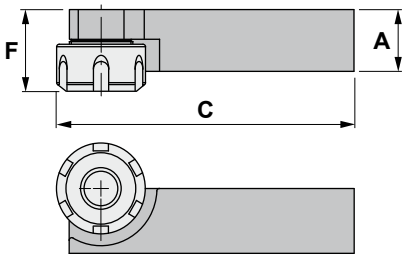
Square Shank
Center Drill Holder

The Center Drill Holder's additional benefits:

1 - Is not limited to combined center/spotting drills alone, counter sinks, drills, and boring bars may be used.
2 - Frees up drill chucks and collet holders on your tool turret.
3 - Allows you to utilize unused turning tool pockets on your turret.
4 - Increases tooling arrangement flexibility.
5 - Can be used on manual and CNC tool room lathes.



Characteristics:
Square shank toolholder that will allow you to get into the narrow space between the end of the part and the tail stock of your CNC lathe.



ER20

Reference		A	C	F	lbs
ER20-0.750L	ER20	0.750	4.5	1.125	1.255
ER20-0.750R	ER20	0.750	4.5	1.125	1.255
ER20-1.000L	ER20	1.000	6.0	1.125	1.690
ER20-1.000R	ER20	1.000	6.0	1.125	1.690

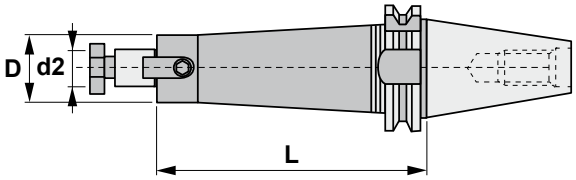
Reference	
ER20-0.750L	45320
ER20-0.750R	45320
ER20-1.000L	45320
ER20-1.000R	45320

SET ER20

Reference		CAP	nº	Ø
SET-ER20-0.750L	ER20	1/8-1/2	7	1/8 - 3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2
SET-ER20-0.750R	ER20	1/8-1/2	7	1/8 - 3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2
SET-ER20-1.000L	ER20	1/8-1/2	7	1/8 - 3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2
SET-ER20-1.000R	ER20	1/8-1/2	7	1/8 - 3/16 - 1/4 - 5/16 - 3/8 - 7/16 - 1/2

Characteristics:
Antivibratory shell mill adaptor.
Conical.

CAT 50



A14.160

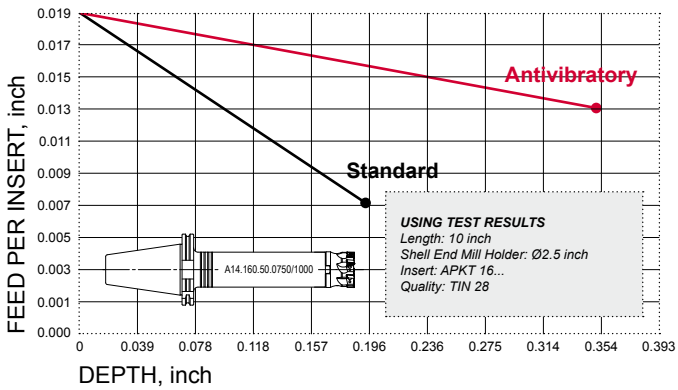
Reference	CAT	D	d2	L	lbs
A14.160.50.0750/1000-C	50	1.750	0.750	10”	14.440
A14.160.50.0750/1200-C	50	1.750	0.750	12”	16.270
A14.160.50.0750/1600-C	50	1.750	0.750	16”	22.985
A14.160.50.0750/2000-C	50	1.750	0.750	20”	25.420

Reference			
A14.160.50.0750/1000-C	10107	90.16.0750	11103
A14.160.50.0750/1200-C	10107	90.16.0750	11103
A14.160.50.0750/1600-C	10107	90.16.0750	11103
A14.160.50.0750/2000-C	10107	90.16.0750	11103

SPECIAL FOR MOULD AND DIE MAKERS

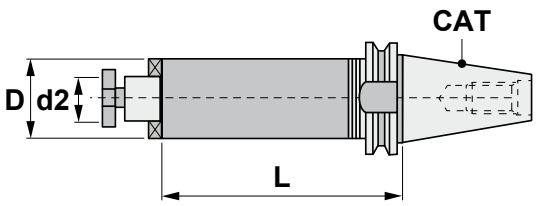
Vibration reduced up to 60% compared to any other conventional shell mill adaptor, as they are manufactured with materials and mechanisms having antivibration properties.

COMPARISON WHEN USING AN ANTIVIBRATORY TOOLHOLDER



Characteristics:
Antivibratory shell mill adaptor.
Cylindrical.

CAT 50



A14.160

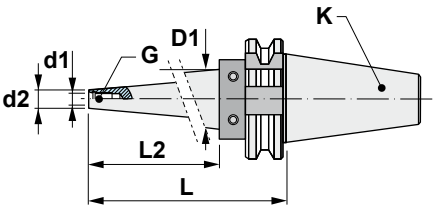
Reference	CAT	D	d2	L				lbs
A14.160.40.0750/0600	40	1.900	0.750	6”	10107	86207	11103	5.225
A14.160.40.0750/0800	40	1.900	0.750	8”	10107	86207	11103	6.770
A14.160.40.0750/1000	40	1.900	0.750	10”	10107	86207	11103	9.215
A14.160.40.0750/1200	40	1.900	0.750	12”	10107	86207	11103	10.780
A14.160.40.1000/0600	40	2.400	1.000	6”	10110	86210	11004	6.285
A14.160.40.1000/0800	40	2.400	1.000	8”	10110	86210	11004	8.000
A14.160.40.1000/1000	40	2.400	1.000	10”	10110	86210	11004	9.790
A14.160.40.1000/1200	40	2.400	1.000	12”	10110	86210	11004	11.795
A14.160.50.0750/0600	50	1.900	0.750	6”	10107	86207	11103	13.230
A14.160.50.0750/0800	50	1.900	0.750	8”	10107	86207	11103	13.890
A14.160.50.0750/1000	50	1.900	0.750	10”	10107	86207	11103	14.330
A14.160.50.0750/1200	50	1.900	0.750	12”	10107	86207	11103	15.435
A14.160.50.0750/1600	50	1.900	0.750	16”	10107	86207	11103	16.040
A14.160.50.0750/2000	50	1.900	0.750	20”	10107	86207	11103	18.675
A14.160.50.1000/0600	50	2.400	1.000	6”	10110	86210	11004	13.890
A14.160.50.1000/0800	50	2.400	1.000	8”	10110	86210	11004	15.095
A14.160.50.1000/1000	50	2.400	1.000	10”	10110	86210	11004	15.720
A14.160.50.1000/1600	50	2.400	1.000	16”	10110	86210	11004	15.875
A14.160.50.1000/2000	50	2.400	1.000	20”	10110	86210	11004	17.945
A14.160.50.1250/0600	50	2.900	1.250	6”	10112	86212	11105	15.875
A14.160.50.1250/0800	50	2.900	1.250	8”	10112	86212	11105	16.660
A14.160.50.1250/1200	50	2.900	1.250	12”	10112	86212	11105	23.320
A14.160.50.1250/1600	50	2.900	1.250	16”	10112	86212	11105	28.830
A14.160.50.1250/2000	50	2.900	1.250	20”	10112	86212	11105	35.445

F

Characteristics:

Antivibratory end mill adaptors.

For frontal end mill support screwed shanks. Manufactured with materials and mechanisms having antivibration properties. Standard and extra long lengths, suitable for moulding and special manufactures.



DIN 69871-A

A11.315

Reference	ISO	L2	D1	L	D	d1	G	d2	lbs
A11.315.40.10/200	40	6.496	1.378	7.875	1.968	0.413	M10	0.708	3.835
A11.315.40.10/250	40	8.465	1.615	9.843	1.968	0.413	M10	0.708	4.762
A11.315.40.10/300	40	10.433	1.811	11.811	1.968	0.413	M10	0.708	6.065
A11.315.40.12/200	40	6.496	1.496	7.875	1.968	0.492	M12	0.827	4.652
WARNING!! Modular Extensions (Pages F07 to F13).									
A11.315.40.12/300	40	10.433	1.929	11.811	1.968	0.492	M12	0.827	6.790
A11.315.40.16/200	40	6.496	1.811	7.875	1.968	0.669	M16	1.142	5.100
A11.315.40.16/250	40	8.465	1.890	9.843	1.968	0.669	M16	1.142	6.040
A11.315.40.16/300	40	10.433	1.969	11.811	1.968	0.669	M16	1.142	7.495
A11.315.50.12/250	50	8.465	1.732	9.843	3.150	0.492	M12	0.827	10.560
A11.315.50.12/300	50	10.433	1.930	11.811	3.150	0.492	M12	0.827	11.290
A11.315.50.12/400	50	14.370	2.362	15.748	3.150	0.492	M12	0.827	15.325
A11.315.50.16/250	50	8.465	2.048	9.843	3.150	0.669	M16	1.142	12.150
A11.315.50.16/300	50	10.433	2.244	11.811	3.150	0.669	M16	1.142	13.540
A11.315.50.16/400	50	14.370	2.677	15.748	3.150	0.669	M16	1.142	16.715
A11.315.50.16/500	50	18.307	3.070	19.685	3.150	0.669	M16	1.142	25.750

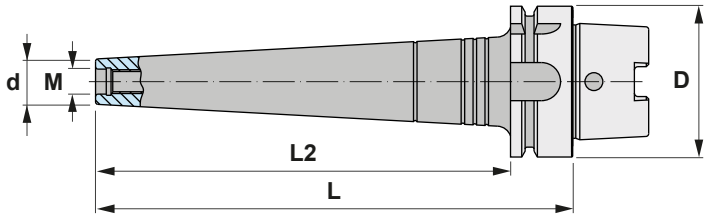
A11.315IK

Reference	ISO	L2	D1	L	D	d1	G	d2	lbs
A11.315.40.10/200IK	40	6.496	1.380	7.875	1.968	0.413	M10	0.708	3.835
A11.315.40.10/250IK	40	8.465	1.615	9.843	1.968	0.413	M10	0.708	4.762
A11.315.40.12/200IK	40	6.496	1.496	7.875	1.968	0.492	M12	0.827	4.652
A11.315.40.12/250IK	40	8.465	1.732	9.843	1.968	0.492	M12	0.827	5.315
A11.315.40.16/250IK	40	8.465	1.890	9.843	1.968	0.669	M16	1.142	6.040
A11.315.50.12/300IK	50	10.433	1.930	11.811	3.150	0.492	M12	0.827	11.290
A11.315.50.16/300IK	50	10.433	2.244	11.811	3.150	0.669	M16	1.142	13.540

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16‡906	55_506	87_06
				

Characteristics:
Antivibratory end mill adaptors.
HSK DIN 69893-1
For frontal end mill support screwed shanks.
Manufactured with materials and mechanisms having antivibration properties.
Standard and extra long lengths, suitable for moulding and special manufactures.
With internal coolant.



A16.315IK

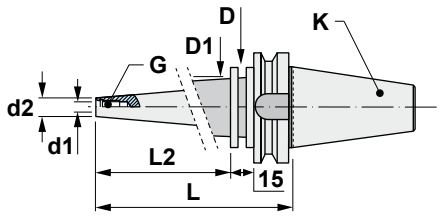
Reference	HSK	L	d	M	L2	D	lbs
A16.315.063.10/200IK	63	7.875	0.709	M10	6.850	2.480	2.845
A16.315.063.10/250IK	63	9.843	0.709	M10	8.819	2.480	3.310
A16.315.063.12/200IK	63	7.875	0.827	M12	6.850	2.480	2.955
A16.315.063.12/250IK	63	9.843	0.827	M12	8.819	2.480	3.420
A16.315.063.16/250IK	63	9.843	1.142	M16	8.819	2.480	4.695
A16.315.100.12/300IK	100	11.811	0.827	M12	10.670	3.937	7.895
A16.315.100.16/300IK	100	11.811	1.142	M16	10.670	3.937	9.700

F

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16‡906	55_506	87_06
				

Characteristics:
Antivibratory end mill adaptors.
JIS B 6339-BT
For frontal end mill support screwed shanks.
Manufactured with materials and mechanisms having antivibration properties. Standard and extra long lengths, suitable for moulding and special manufactures.



A20.315

Reference	BT	L2	D1	L	D	d1	G	d2	lbs
A20.315.40.10/200	40	6.220	1.378	7.874	1.968	0.413	M10	0.709	4.345
A20.315.40.10/250	40	8.189	1.575	9.842	1.968	0.413	M10	0.709	4.985
A20.315.40.10/300	40	10.157	1.771	11.811	1.968	0.413	M10	0.709	6.220
A20.315.40.12/200	40	6.220	1.496	7.874	1.968	0.492	M12	0.827	4.410
A20.315.40.12/250	40	8.189	1.692	9.842	1.968	0.492	M12	0.827	5.490
A20.315.40.12/300	40	10.157	1.732	11.811	1.968	0.492	M12	0.827	6.900
A20.315.40.16/200	40	6.220	1.692	7.874	1.968	0.669	M16	1.142	5.490
A20.315.40.16/250	40	8.189	1.732	9.842	1.968	0.669	M16	1.142	6.195
A20.315.40.16/300	40	10.157	1.850	11.811	1.968	0.669	M16	1.142	7.605
A20.315.50.12/250	50	7.755	1.653	9.842	3.150	0.492	M12	0.827	11.575
A20.315.50.12/300	50	9.724	1.850	11.811	3.150	0.492	M12	0.827	13.030
A20.315.50.12/400	50	13.661	2.244	15.748	3.150	0.492	M12	0.827	16.715
A20.315.50.16/300	50	9.724	2.165	11.811	3.150	0.669	M16	1.142	14.990
A20.315.50.16/400	50	13.661	2.559	15.748	3.150	0.669	M16	1.142	19.845
A20.315.50.16/500	50	17.598	2.992	19.685	3.150	0.669	M16	1.142	26.455

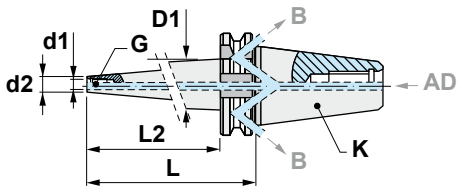
F

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16‡906	55_506	87_06
				

Characteristics:
Mill adaptors.
For frontal end mill support screwed shanks.

DIN 69871-A



13.315

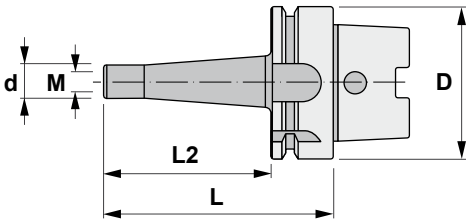
Reference	DIN	L	d1	G	d2	L2	D1	lbs
13.315.40.10/045	40	1.772	0.413	M10	0.708	0.984	0.787	2.005
13.315.40.10/070	40	2.755	0.413	M10	0.708	1.968	0.905	2.115
13.315.40.10/120	40	4.724	0.413	M10	0.708	3.937	1.141	2.535
13.315.40.12/045	40	1.772	0.492	M12	0.826	0.984	0.944	2.030
13.315.40.12/070	40	2.755	0.492	M12	0.826	1.968	1.023	2.160
13.315.40.12/120	40	4.724	0.492	M12	0.826	3.937	1.259	2.780
13.315.40.16/045	40	1.772	0.669	M16	1.141	0.984	1.259	2.050
13.315.40.16/070	40	2.755	0.669	M16	1.141	1.968	1.377	2.295
13.315.40.16/120	40	4.724	0.669	M16	1.141	3.937	1.574	3.375
13.315.50.12/070	50	2.755	0.492	M12	0.826	1.968	1.023	6.195
13.315.50.12/120	50	4.724	0.492	M12	0.826	3.937	1.259	6.860
13.315.50.12/170	50	6.693	0.492	M12	0.826	5.905	1.456	7,605
13.315.50.16/070	50	2.755	0.669	M16	1.141	1.968	1.377	6.415
13.315.50.16/120	50	4.724	0.669	M16	1.141	3.937	1.574	7.430
13.315.50.16/170	50	6.693	0.669	M16	1.141	5.905	1.771	8.620

F

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16‡906	55_506	87_06
				

Characteristics:
Milling cutter arbors for screw-on type milling cutters.
DIN 69893-1 / HSK Form A.



16.315

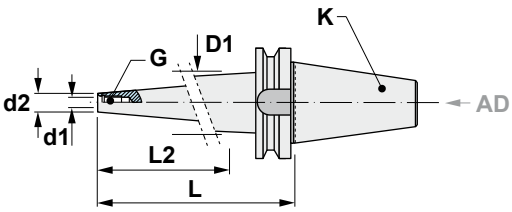
Reference	HSK	L	d	M	L2	D	lbs
16.315.063.10/050	63	2.992	0.708	10	1.968	2.480	1.675
16.315.063.10/100	63	4.960	0.708	10	3.937	2.480	2.250
16.315.063.12/050	63	2.992	0.826	12	1.968	2.480	1.720
16.315.063.12/100	63	4.960	0.826	12	3.937	2.480	2.360
16.315.063.16/050	63	2.992	1.141	16	1.968	2.480	1.985
16.315.063.16/100	63	4.960	1.141	16	3.937	2.480	2.670
16.315.100.10/100	100	5.078	0.708	10	3.937	3.937	5.140
16.315.100.10/150	100	7.047	0.708	10	5.905	3.937	5.535
16.315.100.12/100	100	5.078	0.826	12	3.937	3.937	5.205
16.315.100.12/150	100	7.047	0.826	12	5.905	3.937	5.645
16.315.100.16/100	100	5.078	1.141	16	3.937	3.937	5.380
16.315.100.16/150	100	7.047	1.141	16	5.905	3.937	5.975

F

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16 2 906	55_506	87_06
				

Characteristics:
Mill adaptors.
JIS B 6339-BT
For frontal end mill support screwed shanks.
Similar to DIN 69871 - Form AD+B



23.315

Reference	BT	L	d1	G	d2	L2	D1	lbs
23.315.40.10/055	40	2.165	0.413	M10	0.708	0.984	0.787	2.295
23.315.40.10/080	40	3.150	0.413	M10	0.708	1.968	0.905	2.450
23.315.40.10/130	40	5.118	0.413	M10	0.708	3.937	1.141	2.980
23.315.40.12/055	40	2.165	0.492	M12	0.826	0.984	0.944	2.425
23.315.40.12/080	40	3.150	0.492	M12	0.826	1.968	1.023	2.515
23.315.40.12/130	40	5.118	0.492	M12	0.826	3.937	1.259	3.155
23.315.40.16/055	40	2.165	0.669	M16	1.141	0.984	1.259	2.425
23.315.40.16/080	40	3.150	0.669	M16	1.141	1.968	1.377	2.645
23.315.40.16/130	40	5.118	0.669	M16	1.141	3.937	1.574	3.770
23.315.50.12/090	50	3.543	0.492	M12	0.826	1.968	1.023	9.040
23.315.50.12/140	50	5.511	0.492	M12	0.826	3.937	1.259	9.150
23.315.50.12/190	50	7.480	0.492	M12	0.826	5.905	1.456	9.880
23.315.50.16/090	50	3.543	0.669	M16	1.141	1.968	1.377	8.710
23.315.50.16/140	50	5.511	0.669	M16	1.141	3.937	1.574	9.615
23.315.50.16/190	50	7.480	0.669	M16	1.141	5.905	1.771	10.915

F

Modular milling cutters. G22, G26, G41,G47 and G66

122006 90º	123006 90º	16‡906	55_506	87_06
				

Instruction Manual

1

2

Step 1 2 : Clean

Please be sure to remove dirt and debris on all adjoining surfaces before assembling. (air preferred).

3

4

Step 3 4 : Assembly

Mount the modular head onto the shank by hand until it fits then use the supplied wrench to tighten.

5

6

Step 5 6 : Final Check

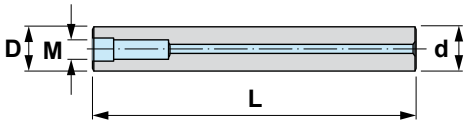
Re-check that there is no gap.

Thread M	Clamping Torque (Nm)
M6	6.5
M8	10.0
M10	12.0
M12	15.0
M16	20.0

Please tighten the screw with designated torque, too much torque will damage the screw.

F

Characteristics:
Steel cylindric shanks for modular milling heads.
HD= Antivibration shank.



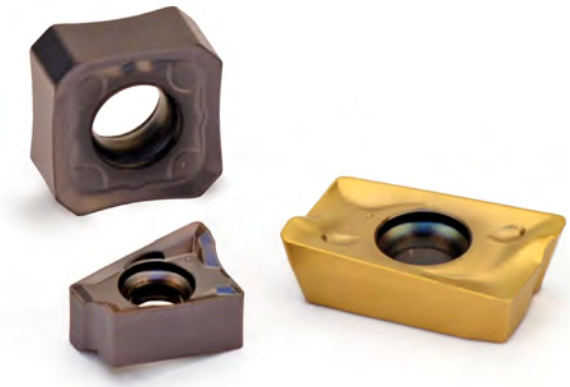
06.0 0 1 2

Reference	d	L	M	D	lbs
06.0750.00.10	0.750	5.000	M10	0.709	0.660
06.1000.00.12	1.000	5.000	M12	0.827	0.990
06.0500.00.06HD	0.500	5.000	M6	0.394	0.506
06.0625.00.08HD	0.625	5.000	M8	0.551	0.891
06.0500.01.06HD	0.500	6.000	M6	0.394	0.583
06.0625.01.08HD	0.625	6.000	M8	0.551	1.034
06.0750.01.10HD	0.750	6.000	M10	0.709	1.661
06.1000.01.12HD	1.000	6.000	M12	0.827	2.431
06.0750.02.10HD	0.750	8.000	M10	0.709	2.211
06.1000.02.12HD	1.000	8.000	M12	0.827	3.212

F

Modular milling cutters. G22, G26, G41,G47 and G66

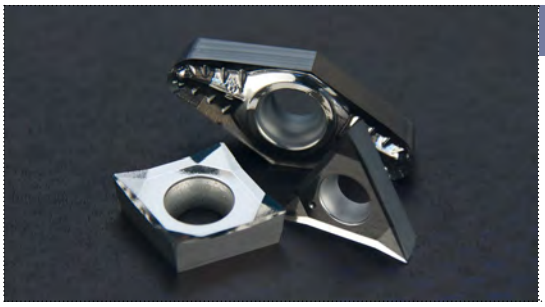
122006 90º	123006 90º	16 2 906	55_506	87_06
				



INSERTS

G

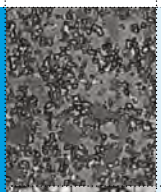
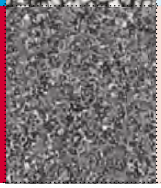
UNCOATED CARBIDE



UNCOATED CARBIDE

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

Features of UNCOATED CARBIDE

Material		Grade	Colour	Composition	Definition
P Steel		***PM25***		WC+TiC+TaC+Co	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. PM25 provides toughness and resistance to deformation in roughing and semi-finishing applications.
		***PM40***		WC+TiC+TaC+Co	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.
K Cast iron		***KM15***		WC+Co	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.

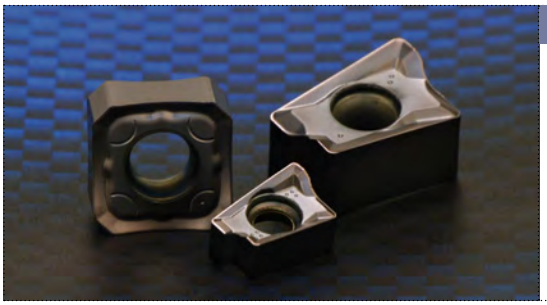
Application

ISO	Composition	Features	Workpiece
P	WC+TiC+TaC+Co	Heat resistance, excellent plastic deformation resistance.	Carbon steel, alloy steel, stainless steel.
M	WC+TiC+TaC+Co	General tools stable heat resistance with strength.	Carbon steel, alloy steel, stainless steel, cast steel.
K	WC+Co	High strength and superior wear resistance.	Carbon iron, non-ferrous metal, plastic, etc.

Properties

Grade	Hardness (HRA)	TRS (Kgf/mm²)	Young's modulus (103Kgf/mm²)	Thermal expansion coefficient (10^{-6}/°C)	Thermal conductivity (cal/cm·sec·°C)
KM15	90.9	250	63	-	105
PM25	91.9	200	56	5.2	45
PM40	91.3	230	53	5.2	-

CVD / PVD



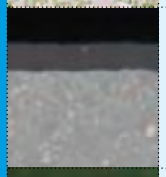
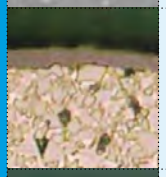
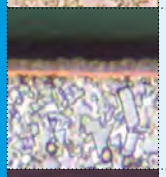
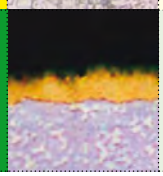
CVD coated carbide

CVD coatings provide a high wear resistance due to its excellent adhesion to cemented carbide.
They are the first choice in a large turning range where wear resistance is important.

PVD coated carbide

PVD coatings offer wear resistance due to their hardness.
They are recommended when sharp cutting edges are needed.

Features of CVD and PVD coated carbide

Material		Grade	Colour	Coating composition	Definition
P Steel		***TL10***	●	TiAlN	A K10 substrate premium grade with built-in wear resistance and a TiAlN-PVD coating for extended life during finishing applications. Used in ball nose finishing and back draft inserts for the die and mould industry, it is capable of running at moderate to high cutting speeds.
		***TL20***	●	TiAlN	Carbide with TiAlN and lubricity layer PVD coating. It has a lower friction coefficient and a lower cutting energy during finishing. The sharper cutting edge reduces the built-up edge damage and gives the workpiece an excellent surface finish. Recommended for alloyed steel.
		***TL40***	●	TiAlN	A tough, general-purpose TiAlN-PVD-coated carbide grade for medium to heavy milling applications for use in all steels, stainless steels and cast irons. TL40 can be used either wet or dry.
		***TIN21***	●	$TiCN+AL_2O_3$	A multilayered TiN-TiCN-Al_2O_3-TiN-PVD-coated carbide grade with a tough substrate used for medium machining of all steels and ductile cast irons. Best results when machining dry, but it can be used wet.
		***TIN25***	●	TiN-TiC-TiN	Coated with TiN-TiC-TiN. The CVD coating has a thickness of 3-5 microns for use on steel, alloyed steel and stainless steel, with or without coolant.
M Stainless		***TIN28***	●	TiCN	A thin PVD coated TiCN layer on a tough substrate, for milling, parting and grooving on stainless and alloyed steels at low to medium cutting speeds and for unstable machining conditions.
		***ML30***	●	TiAlSiN	Fine grained carbide substrate with thin, smooth PVD coating. Ideal grade for milling of austenitic stainless steels and materials from the Duplex group with low to medium cutting speeds. Also for wet machining, although minimum coolant supply is recommended.
N Non ferrous materials		***ZR10***	●	TiB_2	Micrograin grade with an extremely hard single TiB_2 layer for machining aluminium, copper alloys and plastics.

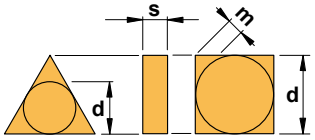
G

ISO Code key

INSERT SHAPE		
V	Rhombic 35°	
D	Rhombic 55°	
E	Rhombic 75°	
C	Rhombic 80°	
M	Rhombic 86°	
K	Parallelogram 55°	
B	Parallelogram 82°	
A	Parallelogram 85°	
L	Rectangular 90°	
P	Pentagonal 108°	
H	Hexagonal 120°	
O	Octagonal 135°	
R	Round	
S	Square 90°	
T	Triangular 60°	
W	Trigon 80°	
X	Special design	

TOLERANCES

	m	Ø d	s
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.013
J	±0.005	±0.05 - ±0.15	±0.025
K	±0.013	±0.05 - ±0.15	±0.025
L	±0.025	±0.05 - ±0.15	±0.025
M	±0.08 - ±0.20	±0.05 - ±0.15	±0.13
N	±0.08 - ±0.20	±0.05 - ±0.15	±0.025
U	±0.13 - ±0.38	±0.08 - ±0.25	±0.13

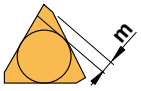


Detail of M Class insert tolerance (Tolerance of nose height **m**)

D.I.C	△	□	80°	55°	35°	○
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	-
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	-
12.70	±0.13	±0.13	±0.13	±0.15	-	-
15.875	±0.15	±0.15	±0.15	±0.18	-	-
19.05	±0.15	±0.15	±0.15	±0.18	-	-
25.40	-	±0.18	-	-	-	-
31.75	-	±0.20	-	-	-	-

Detail of M Class insert tolerance (Tolerance of inscribed circle **d**)

D.I.C	△	□	80°	55°	35°	○
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	-
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
12.70	±0.08	±0.08	±0.08	±0.08	-	±0.08
15.875	±0.10	±0.10	±0.10	±0.10	-	±0.10
19.05	±0.10	±0.10	±0.10	±0.10	-	±0.10
25.40	-	±0.13	-	-	-	±0.13
31.75	-	±0.15	-	-	-	±0.15



Triangular insert with a facet (Secondary cutting edge)

S E K N

CLEARANCE ANGLE		
A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	

SYMBOL FOR FIXING AND/OR FOR CHIPBREAKER (Metric)

	Hole	Hole configuration	Chipbreaker	Figure
N	Without hole	-	No	
R	Without hole	-	One-sided	
F	Without hole	-	Double-sided	
A	With hole	Cylindrical hole	No	
M	With hole	Cylindrical hole	One-sided	
G	With hole	Cylindrical hole	Double-sided	
W	With hole	Cylindrical hole + One countersink (40-60°)	No	
T	With hole		One-sided	
Q	With hole	Cylindrical hole + Double countersink (40-60°)	No	
U	With hole		Double-sided	
B	With hole	Cylindrical hole + One countersink (70-90°)	No	
H	With hole		One-sided	
C	With hole	Cylindrical hole + Double countersink (70-90°)	No	
J	With hole		Double-sided	
X	-	-	-	Special

G

SYMBOL FOR INSERT SIZE								
V	D	C	S	T	W	R		
	04	03	03	06			5/32	3,97
08	05	04	04	08				4,76
09	06	05	05	09	03		7/32	5,56
						06		6,00
11	07	06	06	11	04		1/4	6,35
13	09	08	07	13	05			7,94
						08		8,00
16	11	09	09	16	06		3/8	9,52
						10		10,00
						12		12,00
22	15	12	12	22	08		1/2	12,70
	19	16	15	27	10		5/8	15,87
						16		16,00
	23	19	19	33	13		3/4	19,00
						20		20,00
	27	22	22	38				22,22
						25		25,00
	31	25	25	44			1	25,40
	38	32	31	54				31,75
						32		32,00

SYMBOL FOR INSERT SIZE (inch.)	
2	1/4
3	3/8
4	1/2
5	5/8
6	3/4
8	1

INSERT CORNER r			
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
SECONDARY CUTTING EDGE			
A	45°	F	85°
D	60°	P	90°
E	75°		
CLEARANCE ANGLE			
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°	Z	Special

CUTTING DIRECTION

R

L

N

12	03	AF	04	E	N	3	A
4	2						

SYMBOL FOR INSERT THICKNESS		
SYMBOL	inch.	mm
01	1/16	1,59
02	3/32	2,38
03	1/8	3,18
T3	5/32	3,97
04	3/16	4,76
05	7/32	5,56
06	1/4	6,35
07	5/16	7,94
09	3/8	9,52

S

SYMBOL FOR INSERT THICKNESS (inch.)	
1	1/16
2	1/8
3	3/16
4	1/4
5	5/16
6	3/8

T

SYMBOL FOR CUTTING EDGE CONDITION	
SYMBOL	CUTTING EDGE
F	Sharp
E	Honed
T	Chamfered
S	Chamfered and honed
K	Double-chamfered
P	Double-chamfered and honed

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

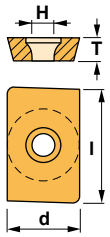
CUTTING EDGE	
≤1,2	1
1,4	2
2,0	3
2,4	4

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

G

G

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

ADMW-R

15°

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
ADMW1503R0.031	0.590	0.125	0.375	1/32					●					
ADMW1503R0.046	0.590	0.125	0.375	3/64					●					
ADMW1503R0.062	0.590	0.125	0.375	1/16					●					
ADMW1503R0.078	0.590	0.125	0.375	5/64					●					
ADMW1503R0.093	0.590	0.125	0.375	3/32					●					
ADMW1503R0.109	0.590	0.125	0.375	7/64					●					
ADMW1503R0.125	0.590	0.125	0.375	1/8					●					
ADMW1503R0.156	0.590	0.125	0.375	5/32					●					
ADMW1503R0.171	0.590	0.125	0.375	11/64					●					
ADMW1503R0.187	0.590	0.125	0.375	3/16					●					

APHT-AL

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APHT1003PDFR-AL	0.375	0.125	0.250	-	0.110	●									●
APHT1604PDFR-AL	0.669	0.187	0.375	-	0.110	●									●

APKT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APKT1003PDR	0.375	0.125	0.250	0.016	0.110						●				
APKT1003PDTR	0.375	0.125	0.250	0.016	0.110		●		●	●					
APKT1604PDR	0.630	0.187	0.375	0.031	0.110		●		●	●	●				
APKT160416	0.630	0.187	0.375	0.060	0.110					●	●				
APKT160424	0.630	0.187	0.375	0.094	0.173					●					
APKT160432	0.630	0.187	0.375	0.125	0.173					●					

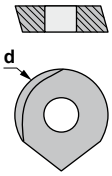
APMT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APMT1604PDER	0.630	0.187	0.375	0.031	0.173	●	●			●				●	

G

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

HIBF

11°

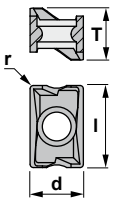
Reference	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
HIBF0375	0.375							●	●		
HIBF0500	0.500							●	●		
HIBF0625	0.625							●	●		
HIBF0750	0.750							●	●		
HIBF1000	1.000							●	●		
HIBF1250	1.250							●	●		

HIBS

11°

Reference	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
HIBS0375	0.375							●	●		
HIBS0500	0.500							●	●		
HIBS0625	0.625							●	●		
HIBS0750	0.750							●	●		
HIBS1000	1.000							●	●		
HIBS1250	1.250							●	●		

Rectangular inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

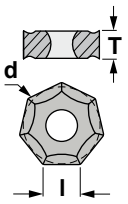
AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

LNMM

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
LNMM100605	0.394	0.256	0.256	0.020						●			●	
LNMM151008	0.590	0.394	0.394	0.031						●			●	

Heptagonal inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

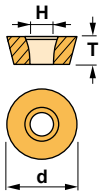
AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

NNMU

Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
NNMU200708	0.323	0.285	0.787						●			●	

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RDHW

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDHW0702M0	0.094	0.275	0.108								●		
RDHW1003M0	0.125	0.394	0.159								●	●	
RDHW12T3M0	0.156	0.472	0.165								●	●	
RDHW1604M0	0.187	0.630	0.201								●	●	
RDHW2006M0	0.250	0.787	0.219								●		

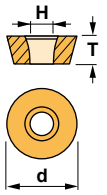
RDMT

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMT1003M0	0.125	0.394	0.159									●	
RDMT12T3M0	0.156	0.472	0.165									●	
RDMT1604M0	0.187	0.630	0.200									●	

G

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RDMW

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMW1003M0	0.125	0.394	0.165								●	●	
RDMW12T3M0	0.156	0.472	0.165								●	●	
RDMW1204M0	0.187	0.472	0.165								●	●	
RDMW1604M0	0.187	0.630	0.200									●	

RPMT

11°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMT120400-39	0.187	0.500	0.203		●			●					
RPMT1204M0	0.187	0.472	0.203				●	●					

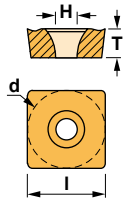
RPMW

11°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMW0802M0	0.094	0.315	0.126		●			●				●	
RPMW1003M0	0.125	0.394	0.165		●			●				●	
RPMW1204M0	0.187	0.472	0.165										
RPMW1204M0T	0.187	0.472	0.165				●	●					

G

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SDMT

15°

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SDMT09T308	0.375	0.156	0.375	0.031				●					●	
SDMT120508	0.486	0.197	0.486	0.031				●					●	

SEHT

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHT43AFN	0.500	0.187	0.500	0.203				●	●					

SEHT-AL

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHT1204AFFN-AL	0.500	0.125	0.500	0.203	●									●

SEHW

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHW43AFEN001	0.500	0.187	0.500	0.203	●									
SEHW43AFSN151	0.500	0.187	0.500	0.203		●		●	●					

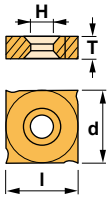
SEMT

20°

Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEMT1204AFTN	0.500	0.187	0.500						●				

G

Square inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

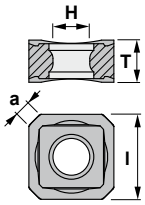
		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SNHX

Reference	l	T	d	H
SNHX1102XX	0.433	0.094	0.433	0.165
SNHX1103XX	0.433	0.106	0.433	0.165
SNHX1203XX	0.500	0.125	0.500	0.203
SNHX12045XX	0.500	0.177	0.500	0.203
SNHX1205XX	0.500	0.213	0.500	0.203
SNHX1207XX	0.500	0.276	0.500	0.203

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SNHX1102XX					●				●	
SNHX1103XX					●				●	
SNHX1203XX					●				●	
SNHX12045XX					●				●	
SNHX1205XX					●				●	
SNHX1207XX					●				●	

Square inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

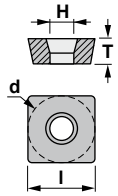
		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SNMX

Reference	l	T	a
SNMX1206ANSN	0.500	0.250	0.093

	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
SNMX1206ANSN						●			●	

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

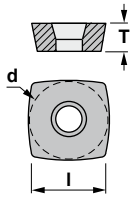
SPMT

11°

Reference	l	T	d	r	H
SPMT060304	0.250	0.125	0.250	0.016	0.105
SPMT070308	0.312	0.125	0.312	0.031	0.105
SPMT090308	0.375	0.125	0.375	0.031	0.133
SPMT120408	0.500	0.187	0.500	0.031	0.220

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SPMT060304									●	
SPMT070308									●	
SPMT090308									●	
SPMT120408									●	

High feed inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SPMT

11°

Reference	l	T	d
SPMT073505	0.275	0.137	0.275
SPMT094506	0.380	0.173	0.380
SPMT115506	0.457	0.212	0.457

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
SPMT073505								●		
SPMT094506								●		
SPMT115506								●		

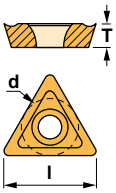
SPMX

11°

Reference	l	T	d
SPMX073505	0.275	0.137	0.275
SPMX094506	0.380	0.173	0.380
SPMX115506	0.457	0.212	0.457

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SPMX073505								●		
SPMX094506								●		
SPMX115506								●		

Triangular inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

TCGT-AL

7°

Reference	l	T	d	r	H
TCGT21.50-AL	0.433	0.094	0.250	0.008	0.110
TCGT21.51-AL	0.433	0.094	0.250	0.016	0.110
TCGT32.50-AL	0.650	0.156	0.375	0.008	0.173
TCGT32.51-AL	0.650	0.156	0.375	0.016	0.173
TCGT32.52-AL	0.650	0.156	0.375	0.031	0.173

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCGT21.50-AL	●									○
TCGT21.51-AL	●									○
TCGT32.50-AL	●									○
TCGT32.51-AL	●									○
TCGT32.52-AL	●									○

TCMT-39

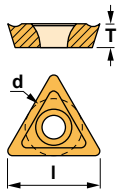
7°

Reference	l	T	d	r	H
TCMT32.52-39	0.650	0.156	0.375	0.031	0.173
TCMT32.53-39	0.650	0.156	0.375	0.047	0.173

	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCMT32.52-39		●			●				●	
TCMT32.53-39		●			●					

G

Triangular inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

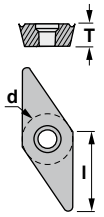
		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		●	✣	●	✣	✣	●	●	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

TCMW

7°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCMW21.51	0.433	0.094	0.250	0.016	0.016	○	●								
TCMW32.51	0.650	0.156	0.375	0.016	0.016	●									
TCMW32.52	0.650	0.156	0.375	0.031	0.031	●	●							○	

35º Rhombic inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check Availability

		KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
P	Steel		✣	✣	●	●	◔	✣					✣	
M	Stainless		✣		●				◔					
K	Cast iron	◔	✣		●					◔				
N	Non ferrous materials	◔												◔
S	Heat-resistant alloys										◔	✣		
H	Hard materials													

VCGT-AL

7°

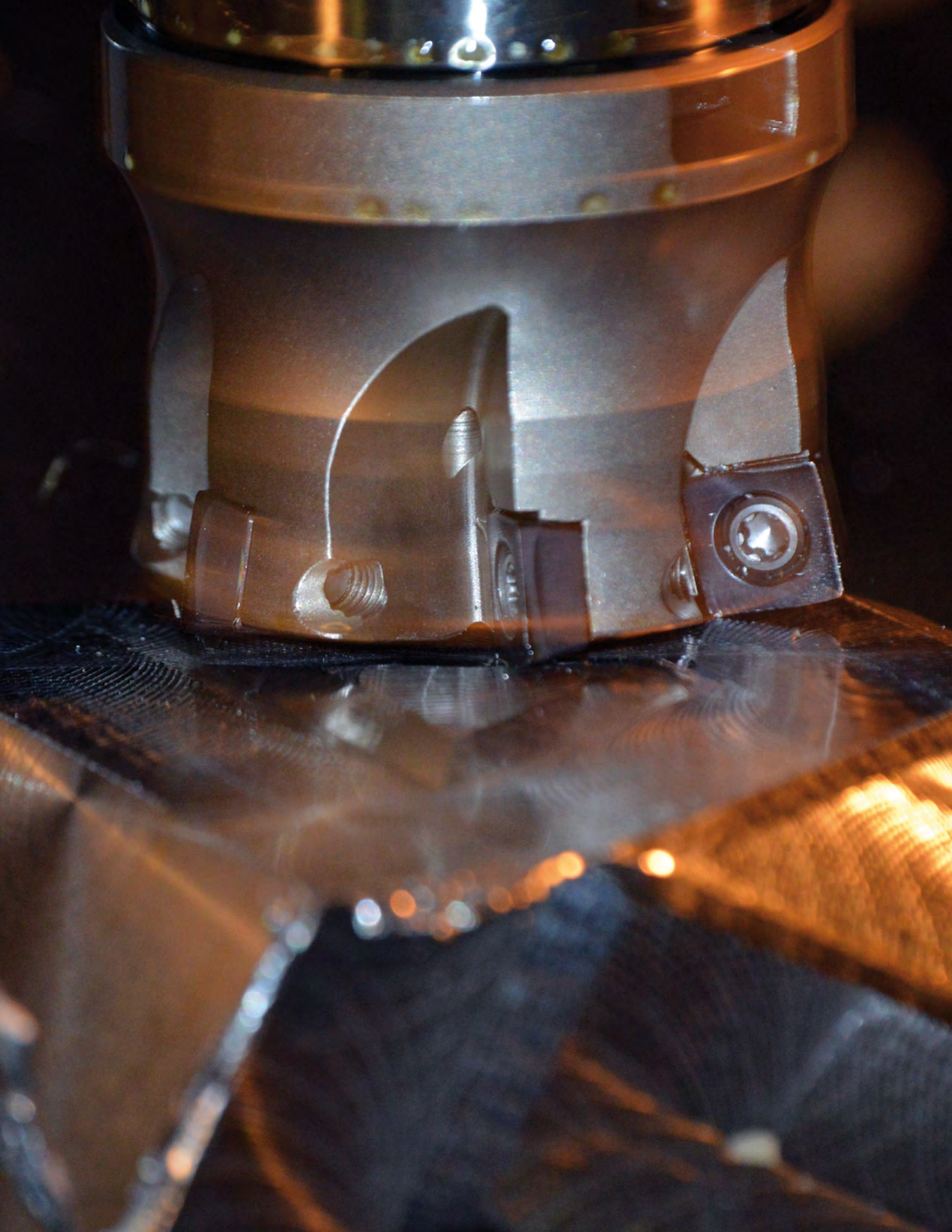
Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VCGT331-AL	0.650	0.187	0.375	0.016	●												○
VCGT332-AL	0.650	0.187	0.375	0.031	●												○
VCGT333-AL	0.650	0.187	0.375	0.047	●												○
VCGT220530-AL	0.870	0.219	0.500	0.118	●												○

VCGT-AP

7°

Reference	l	T	d	r	KM15	PM25	PM40	NC25	TN15	TN20	TN30	TN35	TK15	TS15	TS20	TIN25	ZR10
VCGT331-AP	0.650	0.187	0.375	0.016	●												○
VCGT332-AP	0.650	0.187	0.375	0.031	●												○
VCGT333-AP	0.650	0.187	0.375	0.047	●												○
VCGT220530-AP	0.870	0.219	0.500	0.118	●												○

G

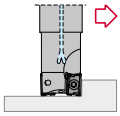


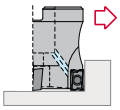

8
12
13
14

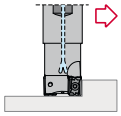
MILLING CUTTERS

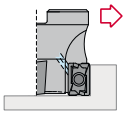
G

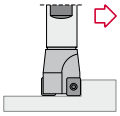
Facing square shoulder cutters

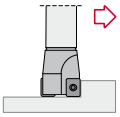
122237
First choice 90º

Page G18 LNMM1006..

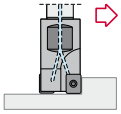
122293
First choice 90º

Page G18 LNMM1006..

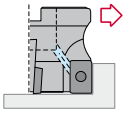
123237
First choice 90º

Page G20 LNMM1510..

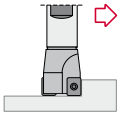
123293 90º
First choice 90º

Page G20 LNMM1510..

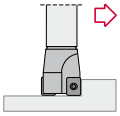
122021 90º
General application 90º

Page G22 AP..1003..

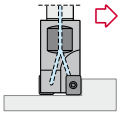
122022 90º
General application 90º

Page G22 AP..1003..

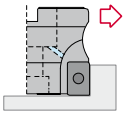
122006 90º
General application 90º

Page G24 AP..1003..

122093 90º
General application 90º

Page G24 AP..1003..

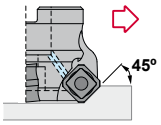
123021 90º
General application 90º

Page G26 AP..1604..

123022 90º
General application 90º

Page G26 AP..1604..

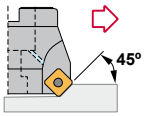
123006 90º
General application 90º

Page G28 AP..1604..

123090 90º
General application 90º

Page G28 AP..1604..

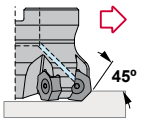
Face milling cutters

174293 45º
Soft materials 45º


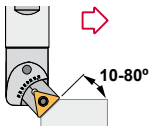
Page G32 SNMX1206..

174890 45º
Soft materials 45º


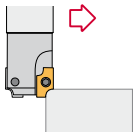
SEH..1204..
Page G34 SEMT1204..

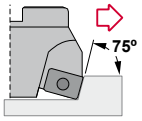
185293 45º
Multipurpose milling 45º


Page G36 NNMU2007..

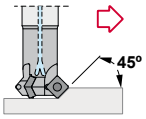
16^{2}_{3}421
Chamfering cutters 10-80º


TC..21.5..
TC..32.5.. *Page G44*

123507
Concave milling cutters

Page G46 ADMW1503..

143090 75º
General application 75º


Page G38 AP..1604..

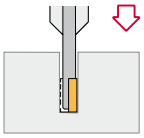
073503 45º
Chamfering 45º


Page G42 SDMT09T3..

G

Slot cutters

194290 Slot milling 89º

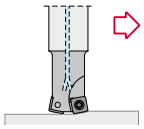


SNHX1102..
SNHX1207..

Page G48

High feed

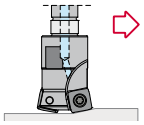
16 2/4 903 High feed



SP..0735..
SP..0945..
SP..1155..

Page G52

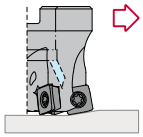
16 2/4 906 High feed



SP..0735..
SP..0945..
SP..1155..

Page G52

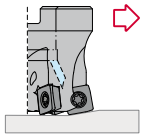
163993 High feed



SP..0945..

Page G54

164993 High feed

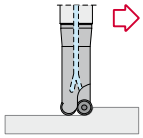


SP..1155..

Page G54

Round inserts

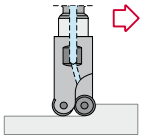
55_5 Facing and copying



RD..1003..
RD..1604..

Page G58

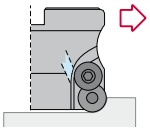
55_506
Facing and copying



RD..1003..
RD..1604..

Page G58

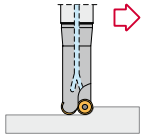
55 4/5 590
Facing and copying



RD..1204..
RD..1604..

Page G60

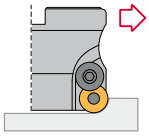
5549 01/02
Facing and copying



RPM..1204..

Page G62

554990
Facing and copying

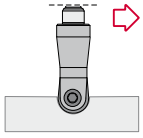


RPM..1204..

Page G64

Finishing ball nose

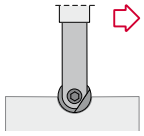
87_06 Copy applications (Finishing Modular)



HIB..0375
HIB..1250

Page G66

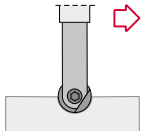
87_00 Copy applications (Finishing Cylindric)



HIB..0375
HIB..1250

Page G67

87_01 Copy applications (Finishing Cylindric)

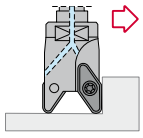


HIB..0375
HIB..1250

Page G67

Aluminium die cutting

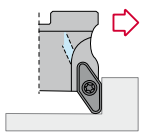
034406
General application



VCGT33..
VCGT2205..

Page G70

034490
General application

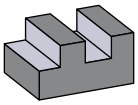


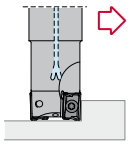
VCGT2205..

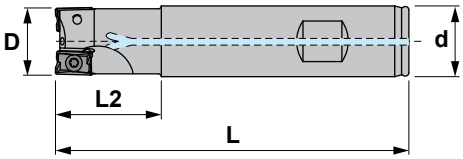
Page G70

G

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.





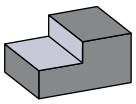


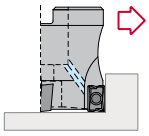
122237

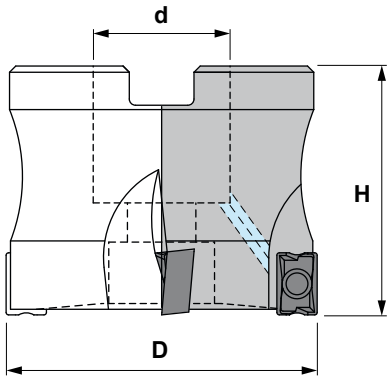
Reference		D	L	d	L2	Insert size	lbs
1222370075	2	0.750	3.500	0.750	1.250	LNMM1006..	0.485
1222370100	3	1.000	3.500	1.000	1.250	LNMM1006..	0.750

Reference			Nm
1222370075	1230	5508	1.2
1222370100	1230	5508	1.2

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.





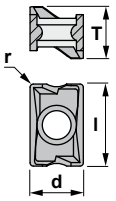


122293 90º

Reference		D	H	d	Insert size	lbs
1222930150	5	1.500	1.750	0.500	LNMM1006..	0.530
1222930200	7	2.000	1.750	0.750	LNMM1006..	0.794

Reference				Nm
1222930150	1230	5508	UNF.14	1.2
1222930200	1230	5508	UNF.38	1.2

Rectangular inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

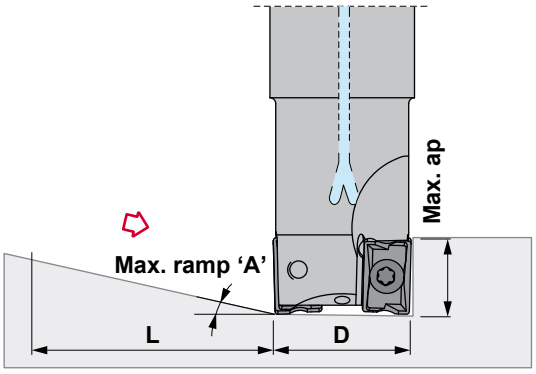
AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

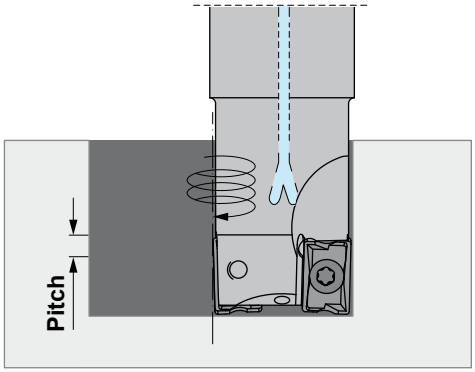
LNMM

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
LNMM100605	0.394	0.256	0.256	0.020						●			●	

Straight ramping



Helical ramping

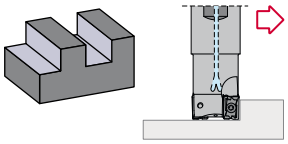


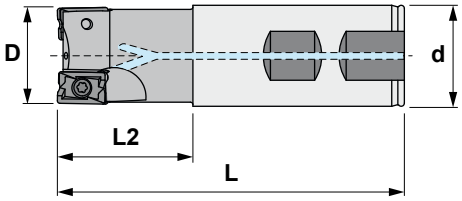
Ramping data for facing square shoulder cutters (122237 / 122293)

Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 1.000	1.5	.350	16.535	1.180		.010
					1.970	.065
Ø 1.500	0.8	.350	31.025	2.365		.025
					3.150	.060
Ø 2.000	0.6	.350	41.380	3.150		.030
					3.940	.055

G

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.



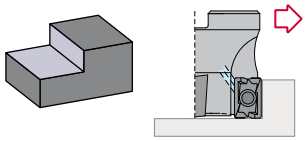


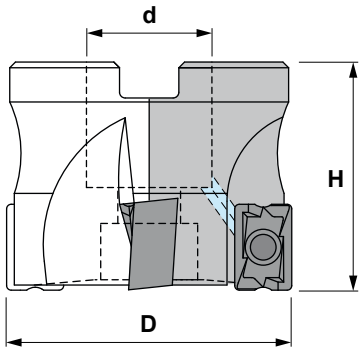
123237

Reference		D	L	d	L2	Insert size	lbs
1232370100	2	1.000	3.500	1.000	1.250	LNMM1510..	0.730
1232370125	3	1.250	3.750	1.000	1.250	LNMM1510..	1.345

Reference			Nm
1232370100	1240	5515	3.0
1232370125	1240	5515	3.0

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.



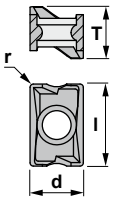


123293 90º

Reference		D	H	d	Insert size	lbs
1232930150	3	1.500	1.750	0.500	LNMM1510..	0.440
1232930200	4	2.000	1.750	0.750	LNMM1510..	0.660
1232930250	6	2.500	2.000	1.000	LNMM1510..	1.435
1232930300	7	3.000	2.000	1.000	LNMM1510..	2.535

Reference				Nm
1232930150	1240	5515	UNF.14	3.0
1232930200	1240	5515	UNF.38	3.0
1232930250	1240	5515	UNF.12	3.0
1232930300	1240	5515	UNF.12	3.0

Rectangular inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

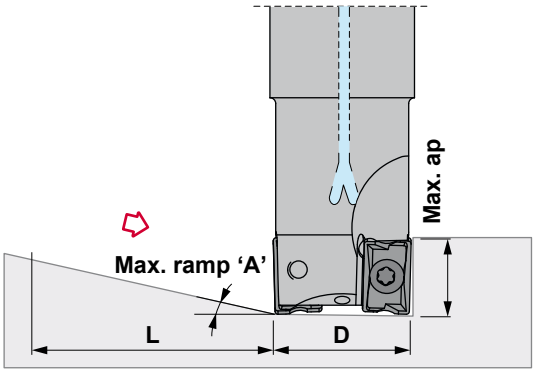
AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

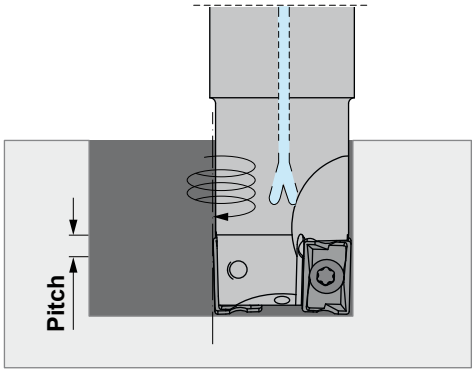
LNMM

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
LNMM151008	0.590	0.394	0.394	0.031						●			●	

Straight ramping



Helical ramping

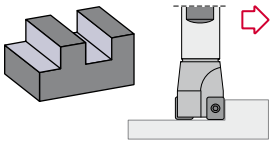


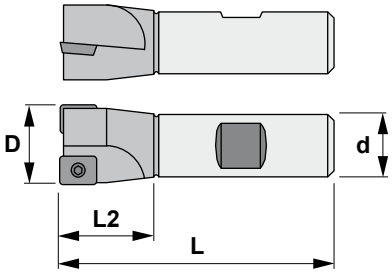
Ramping data for facing square shoulder cutters (123237 / 123293)

Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 1.250	1.2	.550	28.190	1.730		.030
					2.520	.070
Ø 1.500	0.9	.550	37.600	2.365		.030
					3.150	.065
Ø 2.000	0.8	.550	42.325	3.150		.045
					3.940	.075
Ø 2.500	0.6	.550	56.420	4.175		.050
					4.960	.070
Ø 3.000	0.45	.550	75.240	5.510		.050
					6.300	.065

G

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.

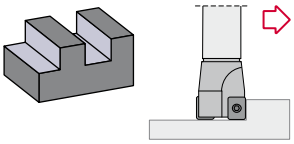


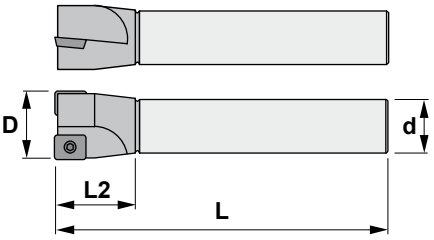


122021 90º

Reference		D	L	L2	d	Insert size			Nm	lbs
1220210062	2	0.625	3.250	1.000	0.625	AP..1003..	1425	5507	0.9	0.440
1220210075	3	0.750	3.500	1.250	0.750	AP..1003..	1425	5507	0.9	0.440
1220210100	4	1.000	3.500	1.250	1.000	AP..1003..	1225	5507	0.9	0.770
1220210125	5	1.250	3.750	1.250	1.000	AP..1003..	1225	5507	0.9	0.965
1220210150	6	1.500	4.000	1.250	1.250	AP..1003..	1225	5507	0.9	1.590

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.



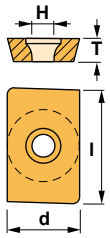


Long series

122022 90º

Reference		D	L	L2	d	Insert size			Nm	lbs
1220220062	2	0.625	6.000	1.000	0.625	AP..1003..	1425	5507	0.9	0.680
1220220075	3	0.750	8.000	1.250	0.750	AP..1003..	1425	5507	0.9	1.000
1220220100	4	1.000	8.000	1.250	1.000	AP..1003..	1225	5507	0.9	1.730
1220220125	5	1.250	10.000	1.250	1.000	AP..1003..	1225	5507	0.9	2.300
1220220150	6	1.500	10.000	1.250	1.250	AP..1003..	1225	5507	0.9	3.700

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

APHT-AL

11°

Reference	l	T	d	r	H
APHT1003PDFR-AL	0.375	0.125	0.250	-	0.110

KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
●									●

APKT

11°

Reference	l	T	d	r	H
APKT1003PDR	0.375	0.125	0.250	0.016	0.110
APKT1003PDTR	0.375	0.125	0.250	0.016	0.110

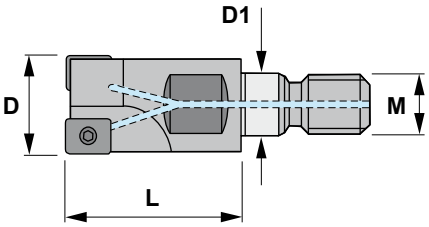
KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
					●				
	●		●	●					

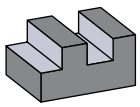
Ramping data for facing square shoulder cutters (122021 / 122022)

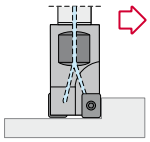
Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 0.625	12.5	.350	2.125	.690		.020
					1.250	.375
Ø 0.750	6.8	.350	3.980	.980		.065
					1.575	.250
Ø 1.000	8.0	.350	3.340	1.375		.145
					1.970	.370
Ø 1.250	5.0	.350	5.395	1.925		.150
					2.520	.295
Ø 1.500	3.5	.350	7.715	2.555		.160
					3.150	.255

G

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.







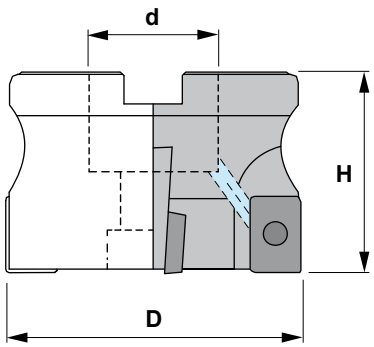
122006 90º

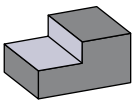
Reference		D	L	M	D1	Insert size	lbs
1220060062	2	0.625	0.905	M8	0.335	AP..1003..	0.090
1220060075	3	0.750	1.181	M10	0.413	AP..1003..	0.155
1220060100	3	1.000	1.378	M12	0.492	AP..1003..	0.240

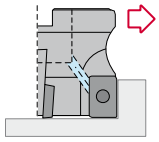
WARNING!! Modular Extensions (Pages F07 to F13).

Reference			Nm
1220060062	1425	5507	0.9
1220060075	1225	5507	0.9
1220060100	1225	5507	0.9

Characteristics:
Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.





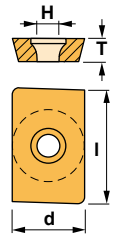


122093 90º

Reference		D	H	d	Insert size	lbs
1220930150	6	1.500	1.750	0.500	AP..1003..	0.530
1220930200	7	2.000	1.750	0.750	AP..1003..	0.880
1220930250	9	2.500	2.000	1.000	AP..1003..	1.980

Reference				Nm
1220930150	1425	5507	UNF.14	0.9
1220930200	1225	5507	UNF.38	0.9
1220930250	1225	5507	UNF.12	0.9

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

APHT-AL

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APHT1003PDFR-AL	0.375	0.125	0.250	-	0.110	●									●

APKT

11°

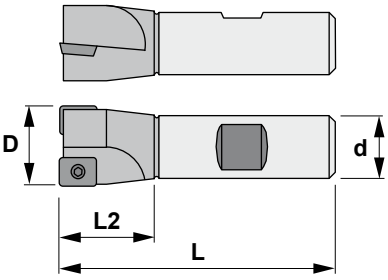
Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APKT1003PDR	0.375	0.125	0.250	0.016	0.110						●				
APKT1003PDTR	0.375	0.125	0.250	0.016	0.110		●		●	●					

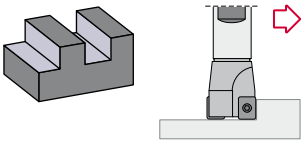
Ramping data for facing square shoulder cutters (122006 / 122093)

Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 0.625	12.5	.350	2.125	.690		.020
					1.250	.375
Ø 0.750	6.8	.350	3.980	.980		.065
					1.575	.250
Ø 1.000	8.0	.350	3.340	1.375		.145
					1.970	.370
Ø 1.500	3.5	.350	7.715	2.555		.160
					3.150	.255
Ø 2.000	2.5	.350	10.825	3.340		.190
					3.940	.230
Ø 2.500	1.7	.350	15.950	4.370		.180
					4.960	.200

G

Characteristics:
Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.

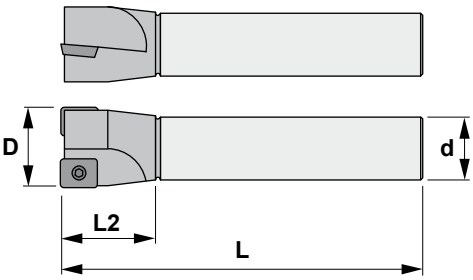




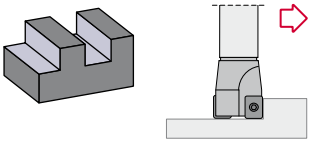
123021 90º

Reference		D	L	L2	d	Insert size			Nm	lbs
1230210075	1	0.750	3.500	1.250	0.750	AP..1604..	1440	5515	3.0	0.440
1230210100	2	1.000	3.500	1.250	1.000	AP..1604..	1440	5515	3.0	0.770
1230210125	3	1.250	3.750	1.250	1.000	AP..1604..	1240	5515	3.0	1.320
1230210150	4	1.500	4.000	1.250	1.250	AP..1604..	1240	5515	3.0	1.430

Characteristics:
Positive multi-tooth milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.



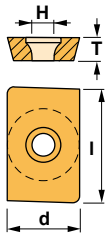
Long series



123022 90º

Reference		D	L	L2	d	Insert size			Nm	lbs
1230220075	1	0.750	8.000	1.250	0.750	AP..1604..	1440	5515	3.0	0.440
1230220100	2	1.000	8.000	1.250	1.000	AP..1604..	1440	5515	3.0	0.770
1230220125	3	1.250	10.000	1.250	1.000	AP..1604..	1240	5515	3.0	1.320
1230220150	4	1.500	10.000	1.250	1.250	AP..1604..	1240	5515	3.0	1.430

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

APHT-AL

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APHT1604PDFR-AL	0.669	0.187	0.375	-	0.110	●									●

APKT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APKT1604PDR	0.630	0.187	0.375	0.031	0.110		●		●	●	●				
APKT160416	0.630	0.187	0.375	0.060	0.110					●	●				
APKT160424	0.630	0.187	0.375	0.094	0.173					●					
APKT160432	0.630	0.187	0.375	0.125	0.173					●					

APMT

11°

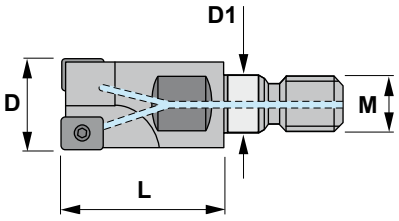
Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APMT1604PDER	0.630	0.187	0.375	0.031	0.173	●	●			●				●	

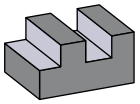
Ramping data for facing square shoulder cutters (123021 / 123022)

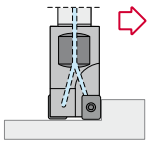
Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 0.750	8.0	.550	4.530	.870		.030
					1.575	.295
Ø 1.000	5.0	.550	7.245	1.200		.050
					1.970	.230
Ø 1.250	9.0	.550	4.015	1.755		.210
					2.520	.530
Ø 1.500	5.0	.550	7.245	2.385		.190
					3.150	.370

G

Characteristics:
Positive milling cutter for diversified manufacture with an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.





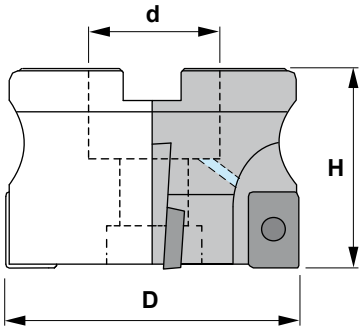


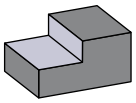
123006 90º

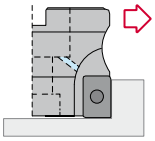
Reference		D	L	M	D1	Insert size			Nm	lbs
1230060100	2	1.000	1.378	M12	0.492	AP..1604..	1440	5515	3.0	0.242
1230060125	3	1.250	1.693	M16	0.669	AP..1604..	1240	5515	3.0	0.528

WARNING!! Modular Extensions (Pages F07 to F13).

Characteristics:
Positive milling cutter for diversified manufacture with internal coolant and an exact angle of 90º that uses very strong inserts allowing deep passes and high feed per teeth.
Recommended for conventional milling machines and machining centers.





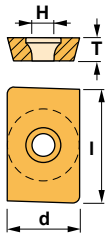


123090 90º

Reference		D	H	d	Insert size	lbs
1230900150	4	1.500	1.750	0.500	AP..1604..	0.440
1230900200	5	2.000	1.750	0.750	AP..1604..	0.660
1230900250	6	2.500	2.000	1.000	AP..1604..	1.430
1230900300	7	3.000	2.000	1.000	AP..1604..	2.530
1230900400	8	4.000	2.000	1.250	AP..1604..	3.740
1230900500	8	5.000	2.000	1.500	AP..1604..	6.270
1230900600	9	6.000	2.000	1.500	AP..1604..	9.680

Reference					Nm
1230900150	1240	5515	-	UNF.14	3.0
1230900200	1240	5515	-	UNF.38	3.0
1230900250	1240	5515	-	UNF.12	3.0
1230900300	1240	5515	-	UNF.12	3.0
1230900400	1240	-	5615	-	3.0
1230900500	1240	-	5615	-	3.0
1230900600	1240	-	5615	-	3.0

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

APHT-AL

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APHT1604PDFR-AL	0.669	0.187	0.375	-	0.110	●									●

APKT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APKT1604PDR	0.630	0.187	0.375	0.031	0.110		●		●	●	●				
APKT160416	0.630	0.187	0.375	0.060	0.110					●	●				
APKT160424	0.630	0.187	0.375	0.094	0.173					●					
APKT160432	0.630	0.187	0.375	0.125	0.173					●					

APMT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APMT1604PDER	0.630	0.187	0.375	0.031	0.173	●	●			●				●	

Ramping data for facing square shoulder cutters (123006 / 123093)

Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.	Max. dia.	Max. pitch/rev.
Ø 1.000	5.0	.550	7.245	1.200		.050
					1.970	.230
Ø 1.250	9.0	.550	4.015	1.755		.210
					2.520	.530
Ø 1.500	5.0	.550	7.245	2.385		.190
					3.150	.370
Ø 2.000	4.4	.550	8.230	3.175		.250
					3.940	.405
Ø 2.500	3.2	.550	11.340	4.200		.255
					4.960	.370
Ø 3.000	2.3	.550	15.970	5.535		.255
					6.300	.340
Ø 4.000	1.8	.550	20.200	7.110		.270
					7.875	.330
Ø 5.000	1.4	.550	25.945	9.080		.270
					9.845	.320
Ø 6.000	1.0	.550	36.340	11.835		.260
					12.600	.295

G

Cutting data for facing square shoulder cutters

Material P	Type of treatment	Alloy	Hardness HB
Non alloyed steel	Annealed Annealed Tempered	≤ .15% C .15% - .45% C ≥ .45% C	125 150-250 300
Low alloyed steel	Annealed Tempered Tempered		180 250-300 350
High alloyed steel	Annealed Tempered		200 350
Corrosion-resistant steel	Annealed Tempered	ferritic martensitic	200 325
Material M	**Type of treatment**	**Alloy**	**Hardness HB**
Stainless steel	Annealed Quenched Quenched Hardened	ferritic / martensitic austenitic duplex martensitic / austenitic	200 180 230-260 330
Material K	**Type of treatment**	**Alloy**	**Hardness HB**
Gray cast iron		pearlitic / ferritic pearlitic / martensitic	180 260
Spheroidal cast iron		ferritic pearlitic	160 -
Malleable cast iron		ferritic pearlitic	130 230
Material N	**Type of treatment**	**Alloy**	**Hardness HB**
Aluminium wrought alloys	Non hardened Hardened		60 100
Aluminium cast alloys	Non hardened Hardened Non hardened	< 12% Si < 12% Si < 12% Si	80 90 130
Copper and copper alloys (bronze, brass)		machining alloy stock (1% Pb) brass, red bronze bronze lead-free copper and electrolytic copper	- 90 100 100
Non-metallic materials		thermosetting plastics fiber-reinforced plastics hard rubber	- - -
Material S	**Type of treatment**	**Alloy**	**Hardness HB**
Heat-resistant alloys	Annealed Hardened Annealed Hardened Cast	Fe-base Fe-base Ni or Co-base Ni or Co-base 30 - 58 HRC Ni or Co-base 1500 - 2200 N/mm^2	200 280 250 - -
Titanium alloys		pure titanium alpha + beta alloys	R_m 440* R_m 1050*
Material H	**Type of treatment**	**Alloy**	**Hardness HB**
Tempered steel	Hardened and tempered Hardened and tempered		55 HRC 60 HRC
Chilled castings	Cast		400
Tempered cast iron	Hardened and tempered		55 HRC

*** R_m = ultimate tensile strength, measured in MPa**

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	252-722	328-525	689-1148	427-656	328-722	230-590	492-853	295-590	656-919	427-689
-	-	328-459	295-492	558-1050	361-591	328-722	230-590	492-853	295-590	558-820	361-591
-	-	394-591	262-459	492-919	295-492	328-722	230-590	492-853	295-590	492-722	295-492
-	-	394-591	262-459	429-820	262-459	328-722	230-558	262-722	230-525	459-656	262-459
-	-	361-558	262-459	459-689	197-394	328-722	230-558	262-722	230-525	427-591	197-427
-	-	328-525	230-361	328-591	197-361	328-722	230-558	262-722	230-525	328-525	197-361
-	-	328-525	197-328	459-689	197-361	262-590	197-459	295-590	230-459	328-525	197-361
-	-	295-492	197-328	328-558	197-361	262-590	197-459	295-590	230-459	295-459	197-328
-	-	-	-	459-623	262-459	262-590	197-459	230-590	197-459	427-591	262-459
-	-	-	-	328-558	230-394	262-590	197-459	230-590	197-459	295-492	230-427

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	361-656	-	197-656	131-459	197-656	197-459	-	230-459
-	-	-	-	394-689	-	197-656	131-459	197-656	197-459	-	230-427
-	-	-	-	-	-	197-656	131-459	197-656	197-459	-	197-361
-	-	-	-	262-459	-	197-656	131-459	197-656	197-459	-	230-427

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
295-525	295-525	-	-	525-722	394-591	-	-	-	-	-	-
262-427	262-427	-	-	328-558	262-492	-	-	-	-	-	-
328-525	328-525	-	-	328-656	262-558	-	-	-	-	-	-
295-492	295-492	-	-	295-591	230-459	-	-	-	-	-	-
328-525	328-525	-	-	295-591	230-459	-	-	-	-	-	-
230-492	230-492	-	-	262-525	230-426	-	-	-	-	-	-

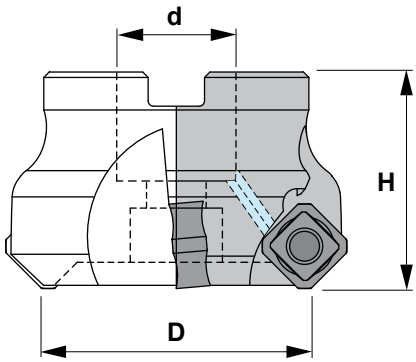
Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	656-9842	-	-	-	-	-	-	-	-	-	-
-	656-6562	-	-	-	-	-	-	-	-	-	-
-	656-6562	-	-	-	-	-	-	-	-	-	-
-	656-5905	-	-	-	-	-	-	-	-	-	-
-	656-3281	-	-	-	-	-	-	-	-	-	-
-	656-1968	-	-	-	-	-	-	-	-	-	-
820-3281	820-3281	-	-	-	-	-	-	-	-	-	-
-	492-1312	-	-	-	-	-	-	-	-	-	-
-	984-2625	-	-	-	-	-	-	-	-	-	-
262-3281	262-3281	-	-	-	-	-	-	-	-	-	-
230-1640	230-1640	-	-	-	-	-	-	-	-	-	-
262-984	262-984	-	-	-	-	-	-	-	-	-	-

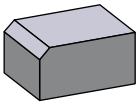
Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	-	197-295	-	-	-	66-197	-	197-328
-	-	-	-	-	197-295	-	-	-	66-197	-	197-328
-	-	-	-	-	-	-	-	-	66-197	-	164-262
-	-	-	-	-	-	-	-	-	66-98	-	131-246
-	-	-	-	-	-	-	-	-	66-98	-	148-246
-	-	-	-	-	-	-	-	-	131-230	-	66-1310
-	-	-	-	-	-	-	-	-	66-131	-	-

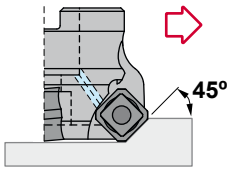
Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	230-427	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

Characteristics:

Super positive milling cutter with 45º entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on hard steels, alloyed steels, stainless steels, refractory casts and aluminium alloys.







174293 45º

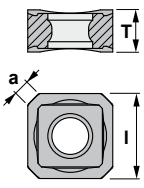
Reference		D	H	d	Insert size	lbs
1742930200	4	2.000	1.750	0.750	SNMX1206..	0.770
1742930250	6	2.500	2.000	1.000	SNMX1206..	1.765
1742930300	7	3.000	2.000	1.000	SNMX1206..	2.535
1742930400	8	4.000	2.000	1.250	SNMX1206..	3.750
1742930500	10	5.000	2.500	1.500	SNMX1206..	6.065

Reference					Nm
1742930200	1550	5520	-	UNF.38	4.0
1742930250	1550	5520	-	UNF.12	4.0
1742930300	1550	5520	-	UNF.12	4.0
1742930400	1550	-	5620	-	4.0
1742930500	1550	-	5620	-	4.0

SNMX

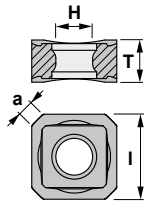
Square negative insert. G12

Reference	l	T	a
SNMX1206..	0.500	0.250	0.093



SNMX

Square inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SNMX

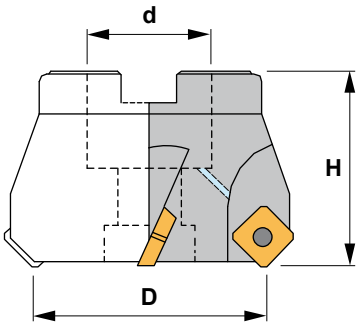
Reference	l	T	a	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
SNMX1206ANSN	0.500	0.250	0.093						●			●	

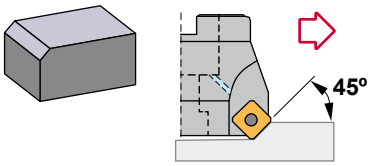
G

Characteristics:

Super positive face milling cutter with 45º entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.

It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.





174890 45º

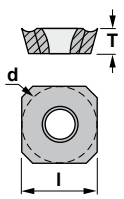
Reference		D	H	d	Insert size	lbs
1748900200	4	2.000	1.750	0.750	SE..1204..	0.770
1748900250	5	2.500	2.000	1.000	SE..1204..	1.760
1748900300	6	3.000	2.000	1.000	SE..1204..	2.530
1748900400	6	4.000	2.000	1.250	SE..1204..	3.740
1748900500	7	5.000	2.000	1.500	SE..1204..	6.050
1748900600	8	6.000	2.000	1.500	SE..1204..	10.120
1748900800	10	8.000	2.500	2.500	SE..1204..	14.520

Reference					DIN 2079	Nm
1748900200	1550	5520	-	UNF.38	-	4.0
1748900250	1550	5520	-	UNF.12	-	4.0
1748900300	1550	5520	-	UNF.12	-	4.0
1748900400	1550	-	5620	-	-	4.0
1748900500	1550	-	5620	-	-	4.0
1748900600	1550	-	5620	-	40	4.0
1748900800	1550	-	5620	UNF.34	50	4.0

SE..

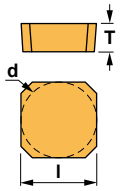
Square positive inserts with 20º clearance. G11

Reference	l	T	d
SEH..1204..	0.500	0.187	0.500
SEMT1204..	0.500	0.187	0.500



SEHT	SEHT-AL
	
SEHW	**SEMT**
	

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SEHT

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHT43AFN	0.500	0.187	0.500	0.203				●	●					

SEHT-AL

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHT1204AFFN-AL	0.500	0.125	0.500	0.203	●									●

SEHW

20°

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEHW43AFEN001	0.500	0.187	0.500	0.203	●									
SEHW43AFSN151	0.500	0.187	0.500	0.203		●		●	●					

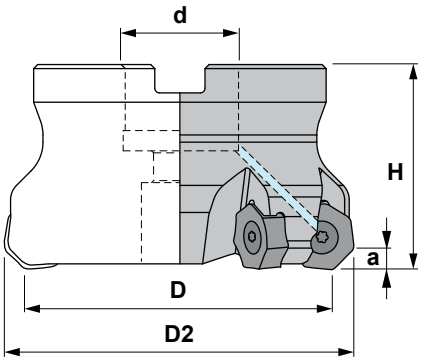
SEMT

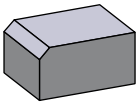
20°

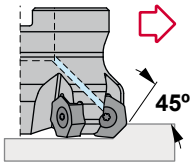
Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SEMT1204AFTN	0.500	0.187	0.500						●				

G

Characteristics:
Positive face chamfering milling cutter with 45º entering angle that decreases cutting forces and allows a quick feed in a limited capacity machine.
It works well on steels, stainless steel, alloyed steels, cast iron and aluminium alloys.







185293 45º

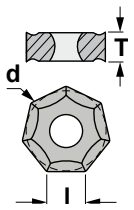
Reference		D	D2	H	d	a	Insert size	lbs
1852930250	5	2.500	2.994	2.000	0.750	0.236	NNMU2007..	1.765
1852930300	6	3.000	3.494	2.000	1.000	0.236	NNMU2007..	2.540
1852930400	7	4.000	4.494	2.000	1.250	0.236	NNMU2007..	3.750

Reference					Nm
1852930250	1250	5520	-	UNF.38	4.0
1852930300	1250	5520	-	-	4.0
1852930400	1250	-	5620	-	4.0

NNMU

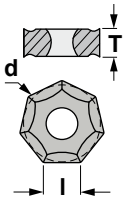
Heptagonal positive insert with 15º clearance. G09

Reference	l	T	d
NNMU2007..	0.323	0.285	0.787



NNMU

Heptagonal inserts / Negative



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

NNMU

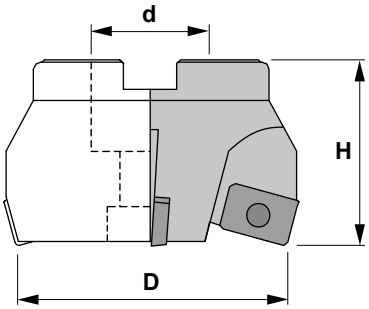
Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	ML30	TL10	TL20	TL40	ZR10
NNMU200708	0.323	0.285	0.787						●			●	

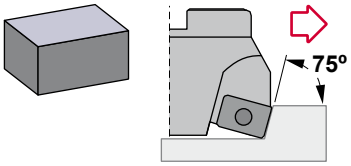
Characteristics:

Positive milling cutter with 75º entering angle.

Recommended for manual machines as well as for C.N.C. machines.

It allows to use the edges of APMT and APKT inserts that are not used currently.





143090 75º

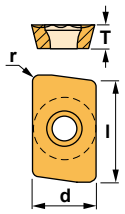
Reference		D	H	d	Insert size	lbs
1430900200	3	2.000	1.750	0.750	AP..1604..	0.770
1430900250	4	2.500	2.000	1.000	AP..1604..	1.540
1430900300	5	3.000	2.000	1.000	AP..1604..	2.420
1430900400	6	4.000	2.000	1.250	AP..1604..	4.180

Reference					Nm
1430900200	1240	5515	-	UNF.38	3.0
1430900250	1240	5515	-	UNF.12	3.0
1430900300	1240	5515	-	UNF.12	3.0
1430900400	1240	-	5615	-	3.0

AP..

Parallelogram positive inserts with 11º clearance. G07

Reference	l	T	d
AP..1604..	0.630	0.187	0.375



APHT-AL

APKT

APMT

-AL

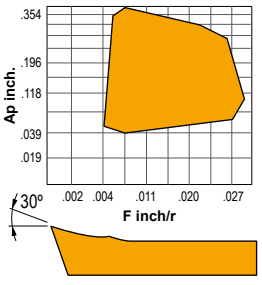
Aluminium

- Excellent thermal crack resistance makes it possible to machine in wet cutting conditions.
- Cemented carbide can be applied for various workpieces.
- High toughness and low cutting force.
- Low affinity to workpiece.

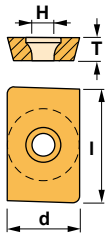
This geometry can be used for turning aluminium, light alloys, non ferrous materials, high-melting metals, plastics, glass fiber, reinforced plastics, laminated board, carbon and fine ceramics.

Main application area: Cutting depth (Ap): 0.039 - 0.393 inch.
Feed (f): 0.004 - 0.029 inch.

G07



Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

APHT-AL

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APHT1604PDFR-AL	0.669	0.187	0.375	-	0.110	●									●

APKT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APKT1604PDR	0.630	0.187	0.375	0.031	0.110		●		●	●	●				
APKT160416	0.630	0.187	0.375	0.060	0.110					●	●				
APKT160424	0.630	0.187	0.375	0.094	0.173					●					
APKT160432	0.630	0.187	0.375	0.125	0.173					●					

APMT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
APMT1604PDER	0.630	0.187	0.375	0.031	0.173	●	●			●				●	

G

Cutting data for face milling cutters

Material P	Type of treatment	Alloy	Hardness HB
Non alloyed steel	Annealed Annealed Tempered	≤ .15% C .15% - .45% C ≥ .45% C	125 150-250 300
Low alloyed steel	Annealed Tempered Tempered		180 250-300 350
High alloyed steel	Annealed Tempered		200 350
Corrosion-resistant steel	Annealed Tempered	ferritic martensitic	200 325
Material M	**Type of treatment**	**Alloy**	**Hardness HB**
Stainless steel	Annealed Quenched Quenched Hardened	ferritic / martensitic austenitic duplex martensitic / austenitic	200 180 230-260 330
Material K	**Type of treatment**	**Alloy**	**Hardness HB**
Gray cast iron		pearlitic / ferritic pearlitic / martensitic	180 260
Spheroidal cast iron		ferritic pearlitic	160 -
Malleable cast iron		ferritic pearlitic	130 230
Material N	**Type of treatment**	**Alloy**	**Hardness HB**
Aluminium wrought alloys	Non hardened Hardened		60 100
Aluminium cast alloys	Non hardened Hardened Non hardened	< 12% Si < 12% Si < 12% Si	80 90 130
Copper and copper alloys (bronze, brass)		machining alloy stock (1% Pb) brass, red bronze bronze lead-free copper and electrolytic copper	- 90 100 100
Non-metallic materials		thermosetting plastics fiber-reinforced plastics hard rubber	- - -
Material S	**Type of treatment**	**Alloy**	**Hardness HB**
Heat-resistant alloys	Annealed Hardened Annealed Hardened Cast	Fe-base Fe-base Ni or Co-base Ni or Co-base 30 - 58 HRC Ni or Co-base 1500 - 2200 N/mm^2	200 280 250 - -
Titanium alloys		pure titanium alpha + beta alloys	R_m 440* R_m 1050*
Material H	**Type of treatment**	**Alloy**	**Hardness HB**
Tempered steel	Hardened and tempered Hardened and tempered		55 HRC 60 HRC
Chilled castings	Cast		400
Tempered cast iron	Hardened and tempered		55 HRC

*** R_m = ultimate tensile strength, measured in MPa**

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	252-722	328-525	689-1148	427-656	328-722	230-590	492-853	295-590	656-919	427-689
-	-	328-459	295-492	558-1050	361-591	328-722	230-590	492-853	295-590	558-820	361-591
-	-	394-591	262-459	492-919	295-492	328-722	230-590	492-853	295-590	492-722	295-492
-	-	394-591	262-459	429-820	262-459	328-722	230-558	262-722	230-525	459-656	262-459
-	-	361-558	262-459	459-689	197-394	328-722	230-558	262-722	230-525	427-591	197-427
-	-	328-525	230-361	328-591	197-361	328-722	230-558	262-722	230-525	328-525	197-361
-	-	328-525	197-328	459-689	197-361	262-590	197-459	295-590	230-459	328-525	197-361
-	-	295-492	197-328	328-558	197-361	262-590	197-459	295-590	230-459	295-459	197-328
-	-	-	-	459-623	262-459	262-590	197-459	230-590	197-459	427-591	262-459
-	-	-	-	328-558	230-394	262-590	197-459	230-590	197-459	295-492	230-427

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	361-656	-	197-656	131-459	197-656	197-459	-	230-459
-	-	-	-	394-689	-	197-656	131-459	197-656	197-459	-	230-427
-	-	-	-	-	-	197-656	131-459	197-656	197-459	-	197-361
-	-	-	-	262-459	-	197-656	131-459	197-656	197-459	-	230-427

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
295-525	295-525	-	-	525-722	394-591	-	-	-	-	-	-
262-427	262-427	-	-	328-558	262-492	-	-	-	-	-	-
328-525	328-525	-	-	328-656	262-558	-	-	-	-	-	-
295-492	295-492	-	-	295-591	230-459	-	-	-	-	-	-
328-525	328-525	-	-	295-591	230-459	-	-	-	-	-	-
230-492	230-492	-	-	262-525	230-426	-	-	-	-	-	-

Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	656-9842	-	-	-	-	-	-	-	-	-	-
-	656-6562	-	-	-	-	-	-	-	-	-	-
-	656-6562	-	-	-	-	-	-	-	-	-	-
-	656-5905	-	-	-	-	-	-	-	-	-	-
-	656-3281	-	-	-	-	-	-	-	-	-	-
-	656-1968	-	-	-	-	-	-	-	-	-	-
820-3281	820-3281	-	-	-	-	-	-	-	-	-	-
-	492-1312	-	-	-	-	-	-	-	-	-	-
-	984-2625	-	-	-	-	-	-	-	-	-	-
262-3281	262-3281	-	-	-	-	-	-	-	-	-	-
230-1640	230-1640	-	-	-	-	-	-	-	-	-	-
262-984	262-984	-	-	-	-	-	-	-	-	-	-

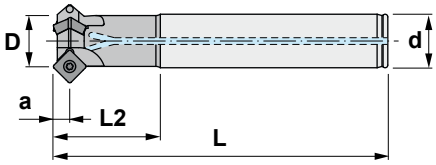
Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	-	197-295	-	-	-	66-197	-	197-328
-	-	-	-	-	197-295	-	-	-	66-197	-	197-328
-	-	-	-	-	-	-	-	-	66-197	-	164-262
-	-	-	-	-	-	-	-	-	66-98	-	131-246
-	-	-	-	-	-	-	-	-	66-98	-	148-246
-	-	-	-	-	-	-	-	-	131-230	-	66-1310
-	-	-	-	-	-	-	-	-	66-131	-	-

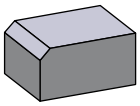
Uncoated carbide				Coated carbide							
KM15		PM25		TIN21		TIN25		TIN28		TL40	
V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)	V_c (sfm)
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	230-427	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

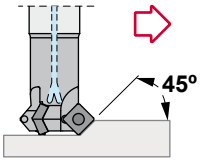
Characteristics:

Chamfering milling cutter for diversified manufacture.

Recommended for small conventional milling machines and machining centers.





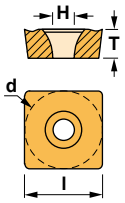


073503 45º

Reference		D	L	d	L2	a	Insert size	lbs
0735030062	2	0.625	5.00	0.625	1.000	0.235	SDMT09T3..	0.410
0735030075	3	0.750	6.00	0.750	1.000	0.235	SDMT09T3..	0.484

Reference			Nm
0735030062	1230	5508	1.2
0735030075	1230	5508	1.2

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SDMT

15°

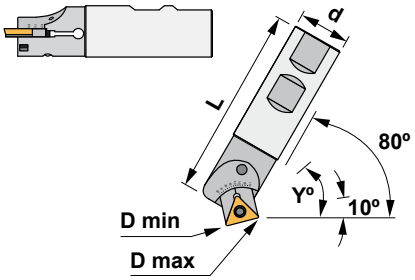
Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SDMT09T308	0.375	0.156	0.375	0.031				●					●	

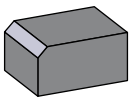
Cutting data for chamfer milling cutter

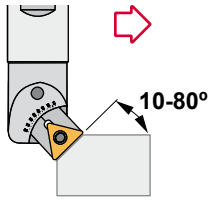
Material	Cutting Speed Vc (sfm)	Feed rate in/tooth		
		Max. Chamfering 0.059 in	Max. Chamfering 0.098 in	Max. Chamfering 0.157 in
P				
Carbon steel C<0.3%	492-820-1148	0.002~0.004	0.003~0.009	0.003~0.009
Carbon steel C>0.3%	656-984-1312	0.002~0.003	0.003~0.007	0.003~0.009
Low alloyed steel C<0.3%	590-787-853	0.002~0.003	0.003~0.007	0.003~0.007
High alloy steel C>0.3%	393-492-656	0.002~0.003	0.003~0.005	0.003~0.005
M				
Stainless steel	393-492-590	0.002~0.003	0.002~0.005	0.003~0.007
K				
Casting iron	393-492-590	0.002~0.003	0.003~0.005	0.003~0.007
N				
Al, and non-ferrous metal	656-1312-1968	0.002~0.005	0.003~0.009	0.003~0.009
H				
Hardened steel<50 HRC	262-295-328	0.002~0.003	0.002~0.004	0.003~0.005

G

Characteristics:
Adjustable chamfering milling cutter for specific operations.
Recommended for small conventional milling machines and machining centers.







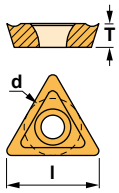
16 2/3 421

Reference		d	L	Y	Dmin	Dmax	Insert size	lbs
1624210075	1	0.750	3.937	10º - 80º	0.197	1.024	TC..21.5..	0.550
1634210100	1	0.750	3.937	10º - 80º	0.197	1.260	TC..32.5..	0.550

Reference					Nm
1624210075	6921	1225	1905	5507	0.9
1634210100	6926	1240	1296	5515	3.0

G

Triangular inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◕			◕	✣				
K	Cast iron	◕	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

TCGT-AL

7°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCGT21.50-AL	0.433	0.094	0.250	0.008	0.110	●									○
TCGT21.51-AL	0.433	0.094	0.250	0.016	0.110	●									○
TCGT32.50-AL	0.650	0.156	0.375	0.008	0.173	●									○
TCGT32.51-AL	0.650	0.156	0.375	0.016	0.173	●									○
TCGT32.52-AL	0.650	0.156	0.375	0.031	0.173	●									○

TCMT-39

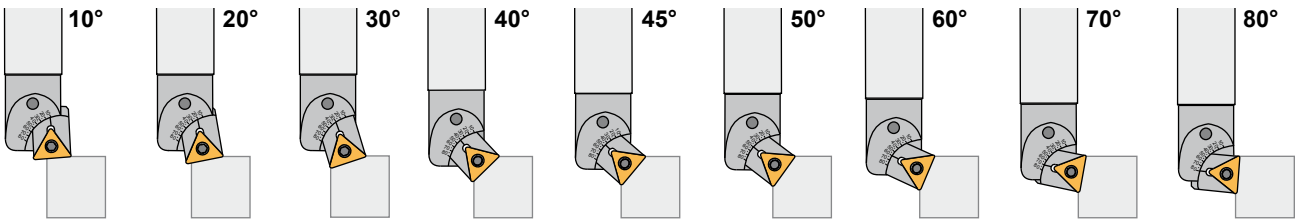
7°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCMT32.52-39	0.650	0.156	0.375	0.031	0.173		●			●				●	
TCMT32.53-39	0.650	0.156	0.375	0.047	0.173		●			●					

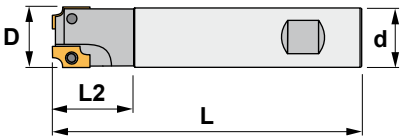
TCMW

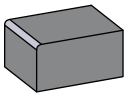
7°

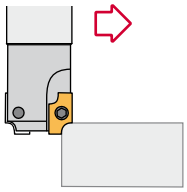
Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
TCMW21.51	0.433	0.094	0.250	0.016	0.016	○	●								
TCMW32.51	0.650	0.156	0.375	0.016	0.016	●									
TCMW32.52	0.650	0.156	0.375	0.031	0.031	●	●							○	



Characteristics:
Milling cutter with concave radius.
It works well on steels, alloyed steels, stainless steels and refractories.







123507

Reference		d	D	L	L2	Insert size	lbs
123507010001	2	1.000	1.000	6.00	1.500	ADMW1503R0.031/0.093	0.700
123507010003	2	1.000	1.000	6.00	1.500	ADMW1503R0.109/0.187	1.170

Reference			Nm
123507010001	1440	5515	3.0
123507010003	1440	5515	3.0

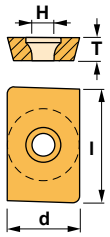
123507010001

ADMW1503R0.031	ADMW1503R0.046	ADMW1503R0.062	ADMW1503R0.078	ADMW1503R0.093
				

123507010003

ADMW1503R0.109	ADMW1503R0.125	ADMW1503R0.156	ADMW1503R0.171	ADMW1503R0.187
				

Parallelogram inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

ADMW-R

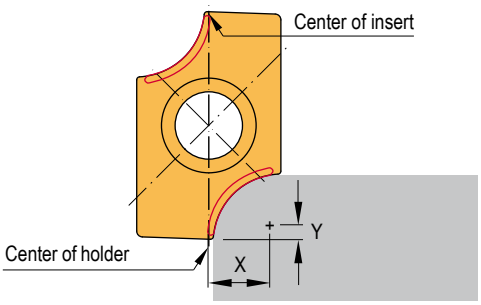
15°

Reference	l	T	d	r	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
ADMW1503R0.031	0.590	0.125	0.375	1/32					●					
ADMW1503R0.046	0.590	0.125	0.375	3/64					●					
ADMW1503R0.062	0.590	0.125	0.375	1/16					●					
ADMW1503R0.078	0.590	0.125	0.375	5/64					●					
ADMW1503R0.093	0.590	0.125	0.375	3/32					●					
ADMW1503R0.109	0.590	0.125	0.375	7/64					●					
ADMW1503R0.125	0.590	0.125	0.375	1/8					●					
ADMW1503R0.156	0.590	0.125	0.375	5/32					●					
ADMW1503R0.171	0.590	0.125	0.375	11/64					●					
ADMW1503R0.187	0.590	0.125	0.375	3/16					●					

Cutting data for slot side and face milling cutters

Determine spindle speed and feed:
To decide running speed of the tools and feed rate, please claculate spindle speed and feed rate according to the following formula and cutting data:

Feed nominal values



d = 2 x X in.

$$S = \frac{Vc \times 1000}{d \times \pi} \text{ r.p.m}$$

F = S x f in/min.

TL = TL'-Y,
H = X

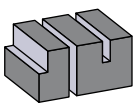
Calculate spindle speed
- **d =** diameter of the tool for calculation purpose.
- **X =** tool radius offset.
- **Vc =** Cutting Speed (sfm).
- **S =** Spindle Speed (rpm).
- **F =** in/min.
- **f =** in/rev.

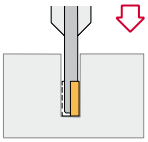
Calculate tool length offset on machining center
- **X =** tool radius offset.
- **Y =** distance to the center of radius.
- **TL' =** tool length.
- **TL =** tool length offset.
- **H =** tool radius offset.

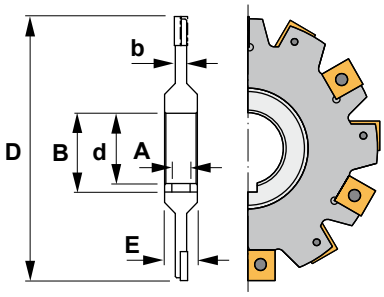
Material		Vc (sfm)	f (in/rev.)
Carbon steel	P	492~1049	0.001~0.003
Alloy steel		328~820	0.001~0.003
High alloy steel		262~492	0.001~0.003
Stainless steel	M	213~410	0.001~0.003
Cast iron	K	492~820	0.001~0.003
Aluminium, Al-alloy Si < 12%	N	492~1049	0.001~0.003
Al-alloy Si < 12%		328~984	0.001~0.003
Cu		656~820	0.001~0.003
Brass and Bronze		492~820	0.001~0.003

G

Characteristics:
Slot cutter with an angle of 92º that uses strong inserts allowing deep passes and high feed per teeth. Positive chip forming inserts are available to machine sticky materials.
Warning!! Not suitable for flat bottom applications.



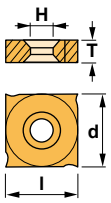




194290

Reference		D	b	d	A	E	B		Insert size	lbs
194290040016	12	4.000	0.161	1.000	0.250	0.472	1.110	1735 5607	SNHX1102..	0.440
194290050016	14	5.000	0.161	1.250	0.315	0.472	1.375	1735 5607	SNHX1102..	0.770
194290040018	12	4.000	0.187	1.000	0.250	0.472	1.110	1835 5607	SNHX1103..	0.550
194290050018	14	5.000	0.187	1.250	0.315	0.472	1.375	1835 5607	SNHX1103..	0.880
194290060018	18	6.000	0.187	1.250	0.315	0.472	1.375	1835 5607	SNHX1103..	1.430
194290040025	10	4.000	0.250	1.250	0.315	0.472	1.375	1745 5615	SNHX1203..	0.660
194290050025	12	5.000	0.250	1.250	0.315	0.472	1.375	1745 5615	SNHX1203..	0.990
194290060025	16	6.000	0.250	1.500	0.378	0.472	1.689	1745 5615	SNHX1203..	1.650
194290080025	18	8.000	0.250	1.500	0.378	0.472	1.689	1745 5615	SNHX1203..	2.530
194290040031	10	4.000	0.312	1.250	0.315	0.472	1.375	1846 5615	SNHX1204..	0.770
194290050031	12	5.000	0.312	1.250	0.315	0.472	1.375	1846 5615	SNHX1204..	1.210
194290060031	16	6.000	0.312	1.500	0.378	0.472	1.689	1846 5615	SNHX1204..	2.090
194290080031	18	8.000	0.312	1.500	0.378	0.472	1.689	1846 5615	SNHX1204..	3.410
194290040037	10	4.000	0.375	1.250	0.315	0.472	1.375	1845 5615	SNHX1205..	0.880
194290050037	12	5.000	0.375	1.250	0.315	0.472	1.375	1845 5615	SNHX1205..	1.540
194290060037	16	6.000	0.375	1.500	0.378	0.472	1.689	1845 5615	SNHX1205..	2.530
194290080037	18	8.000	0.375	1.500	0.378	0.472	1.689	1845 5615	SNHX1205..	4.180
194290040050	10	4.000	0.500	1.250	0.315	0.630	1.375	1847 5615	SNHX1207..	1.100
194290050050	12	5.000	0.500	1.250	0.315	0.630	1.375	1847 5615	SNHX1207..	1.870
194290060050	16	6.000	0.500	1.500	0.378	0.630	1.689	1847 5615	SNHX1207..	3.080
194290080050	18	8.000	0.500	1.500	0.378	0.630	1.689	1847 5615	SNHX1207..	5.170

Square inserts / Negative



SNHX

Reference	l	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SNHX1102XX	0.433	0.094	0.433	0.165					●				●	
SNHX1103XX	0.433	0.106	0.433	0.165					●				●	
SNHX1203XX	0.500	0.125	0.500	0.203					●				●	
SNHX12045XX	0.500	0.177	0.500	0.203					●				●	
SNHX1205XX	0.500	0.213	0.500	0.203					●				●	
SNHX1207XX	0.500	0.276	0.500	0.203					●				●	

Cutting data for slot side and face milling cutters

Cutting speed nominal values - hm 0.002-0.005

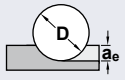
Material P	HB	TIN25	TL40
		Cutting speed m/min.	
Unalloyed steel	110-310	140-240	130-250
Low alloyed steel	125-450	130-210	85-180
High alloyed steel	150-500	120-80	60-120
Stainless	150-270		
Steel castings	150-250	130-210	55-115
Material M	**HB**	**TIN25**	**TL40**
		Cutting speed m/min.	
Austenitic, Stainless steel		40-90	
Titanium			20-80
Material K	**HB**	**TIN25**	
		Cutting speed m/min.	
Malleable cast iron	110-230	55-100	
Grey cast iron	180-260	60-120	
Nodular cast iron-S. graphite	160-250	40-80	
Alumimium alloys	30-100		
Bronze and brass alloys	60-150		

Feed nominal values

The chip average thickness (h_m) must be 0.004".

This corresponds to a feed per tooth of 0.012" in most of the operations made by a side and face milling cutter.

If the radial cutting depth (a2) is too small compared with the milling cutter diameter, use the following formula:



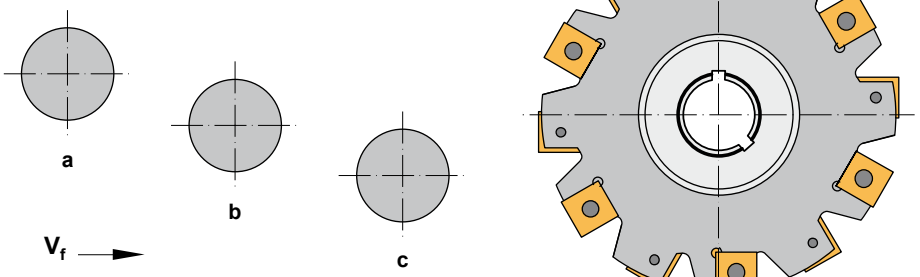
$$f_z = 0.004 \sqrt{\frac{D}{a_e}}$$

NOTE:
In order to calculate the table feeds, use the half of the inserts in a three cut milling cutter and a face milling cutter in order to get the effective number of teeth.

Table feed = rpm x number of effective teeth x f_z

Machining example

Working piece

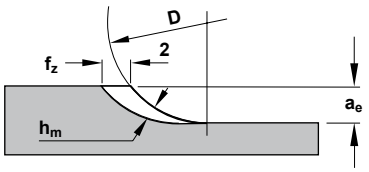


Examples	Average chip thickness (h_m) inch
a	0.003 - 0.0035
b	0.003
c	0.0025 - 0.003

Example a: $f_z \sim h_m$ **Example c:** $f_z = h_m \sqrt{\frac{D}{a_e}}$

Example b: f_z must be calculated between examples "a" and "b".

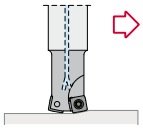
f_z = Feed per tooth
D = Milling cutter diameter
a_e = Radial cutting depth
h_m = Average chip thickness



G

High feed

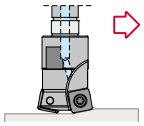
16 2/4 903 High feed



SP..0735..
SP..0945..
SP..1155..

Page G52

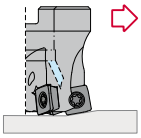
16 2/4 906 High feed



SP..0735..
SP..0945..
SP..1155..

Page G52

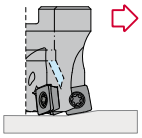
163993 High feed



SP..0945..

Page G54

164993 High feed



SP..1155..

Page G54

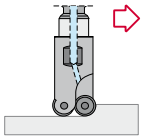
Round inserts

55_5 Facing and copying

RD..1003..
RD..1604..

Page G58

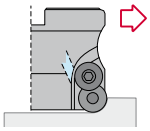
55_506
Facing and copying



RD..1003..
RD..1604..

Page G58

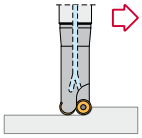
55 4/5 590
Facing and copying



RD..1204..
RD..1604..

Page G60

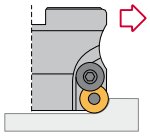
5549 01/02
Facing and copying



RPM..1204..

Page G62

554990
Facing and copying

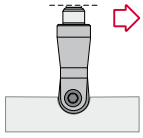


RPM..1204..

Page G64

Finishing ball nose

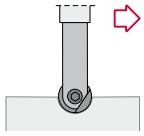
87_06 Copy applications (Finishing Modular)



HIB..0375
HIB..1250

Page G66

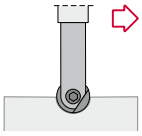
87_00 Copy applications (Finishing Cylindric)



HIB..0375
HIB..1250

Page G67

87_01 Copy applications (Finishing Cylindric)

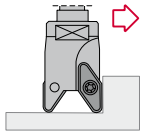


HIB..0375
HIB..1250

Page G67

Aluminium die cutting

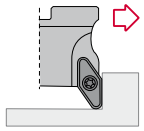
034406
General application



VCGT33..
VCGT2205..

Page G70

034490
General application

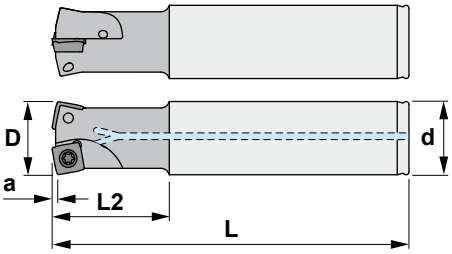


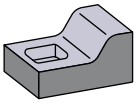
VCGT2205..

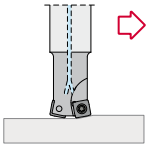
Page G70

G

Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.



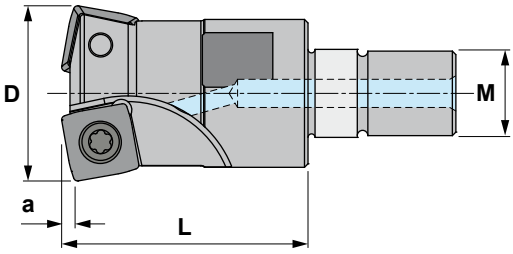


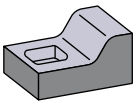


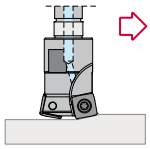
16$\frac{2}{4}$903

Reference		D	L	L2	d	a	Insert size			Nm	lbs
1629030075	3	0.750	6.00	1.181	0.750	0.035	SP..0735..	1430-IP	5510-IP	2.5	0.660
1629030100	4	1.000	6.00	1.378	1.000	0.035	SP..0735..	1430-IP	5510-IP	2.5	0.970
1639030100	2	1.000	6.00	1.378	1.000	0.055	SP..0945..	1440-IP	5515-IP	2.5	0.970
1639030125	4	1.250	8.00	1.693	1.250	0.055	SP..0945..	1440-IP	5515-IP	3.5	1.720
1649030125	3	1.250	8.00	1.693	1.250	0.070	SP..1155..	1240-IP	5515-IP	3.5	1.675

Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.







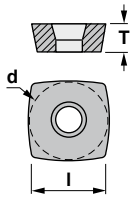
16$\frac{2}{4}$906

Reference		D	L	M	a	Insert size	lbs
1629060075	3	0.750	1.181	M10	0.035	SP..0735..	0.132
1629060100	4	1.000	1.378	M12	0.035	SP..0735..	0.209
1629060125	5	1.250	1.693	M16	0.035	SP..0735..	0.506
1639060100	2	1.000	1.378	M12	0.055	SP..0945..	0.175
1649060125	3	1.250	1.693	M16	0.070	SP..1155..	0.375

WARNING!! Modular Extensions (Pages F07 to F13).

Reference			Nm
1629060075	1430-IP	5510-IP	2.5
1629060100	1430-IP	5510-IP	2.5
1629060125	1430-IP	5510-IP	2.5
1639060100	1440-IP	5515-IP	3.5
1649060125	1240-IP	5515-IP	3.5

High feed inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SPMT

Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
SPMT073505	0.275	0.137	0.275								●		
SPMT094506	0.380	0.173	0.380								●		
SPMT115506	0.457	0.212	0.457								●		

SPMX

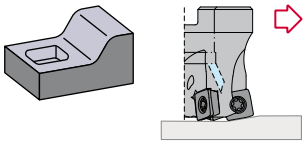
Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SPMX073505	0.275	0.137	0.275								●		
SPMX094506	0.380	0.173	0.380								●		
SPMX115506	0.457	0.212	0.457								●		

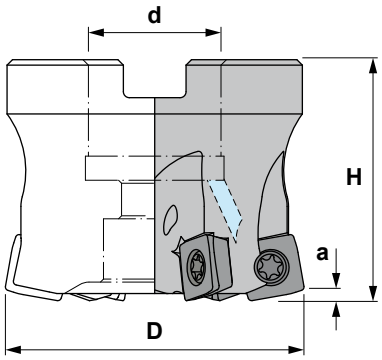
Note:

For more infromation see pages G56 and G57.

G

Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.



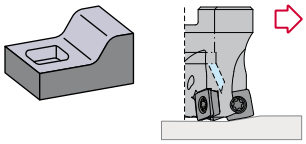


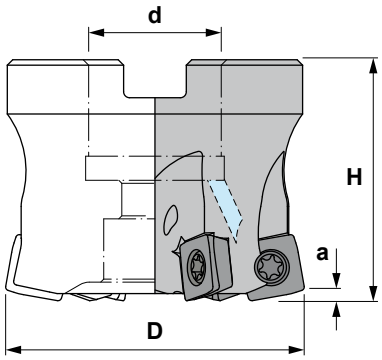
163993

Reference		D	H	d	a	Insert size	lbs
1639930150	5	1.500	1.750	0.500	0.055	SP..0945..	0.440
1639930200	6	2.000	2.000	0.750	0.055	SP..0945..	0.990

Reference				Nm
1639930150	1440-IP	5515-IP	UNF.14	3.5
1639930200	1440-IP	5515-IP	UNF.38	3.5

Characteristics:
High feed square insert cutter for peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for machining centers.





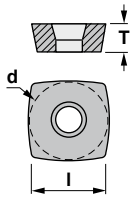
164993

Reference		D	H	d	a	Insert size	lbs
1649930200	5	2.000	2.000	0.750	0.070	SP..1155..	0.640
1649930250	6	2.500	2.000	1.000	0.070	SP..1155..	1.590
1649930300	8	3.000	2.000	1.000	0.070	SP..1155..	2.000

Reference				Nm
1649930200	1240-IP	5515-IP	UNF.38	3.5
1649930250	1240-IP	5515-IP	UNF.12	3.5
1649930300	1240-IP	5515-IP	UNF.12	3.5

G

High feed inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SPMT

11°

Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	ML30	TL40	ZR10
SPMT094506	0.380	0.173	0.380								●		
SPMT115506	0.457	0.212	0.457								●		

SPMX

11°

Reference	l	T	d	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SPMX094506	0.380	0.173	0.380								●		
SPMX115506	0.457	0.212	0.457								●		

Note:

For more infromation see pages G56 and G57.

G

Recommended cutting conditions

Material P	Hardness	Insert	Grade	Standard milling				High feed milling			
				Vc	fz	ap	ae	Vc	fz	ap	ae
Mild steel	<180HB	SPMT/X073505	TL20	170 (120-220)	1.0	0.3/0.8	100%/DC	200	1.0	0.4	100%/DC
		SPMT/X094506			1.2	0.5/1.0	100%/DC		1.4	0.5	100%/DC
		SPMT/X115506			1.5	0.8/1.5	100%/DC		1.4	0.8	100%/DC
Carbon steel, alloyed steel	180-280HB	SPMT/X073505	TL20	150 (100-200)	0.9	0.3/0.5	100%/DC	200			100%/DC
		SPMT/X094506			1.0	0.5/0.7	100%/DC		1.2	0.5	100%/DC
		SPMT/X115506			1.2	0.6/1.5	100%/DC		1.2	0.8	100%/DC
Carbon steel, alloyed steel	280-350HB	SPMT/X073505	TL20	120 (80-150)	0.9	0.3/0.5	100%/DC	180	0.9	0.3	100%/DC
		SPMT/X094506			1.0	0.5/0.7	100%/DC		1.2	0.4	100%/DC
		SPMT/X115506			1.2	0.5/1.0	100%/DC		1.2	0.6	100%/DC
Alloyed tool steel	<350HB	SPMT/X073505	TL20	120 (80-140)	0.75	0.3/0.5	100%/DC	180	0.75	0.3	100%/DC
		SPMT/X094506			1.0	0.5/0.7	100%/DC		0.8	0.4	100%/DC
		SPMT/X115506			1.0	0.5/1.0	100%/DC		0.8	0.6	100%/DC
Prehardened steel	35-45HRC	SPMT/X073505	TL20	100 (70-130)	0.75	0.25/0.4	100%/DC	150	0.75	0.3	100%/DC
		SPMT/X094506			0.8	0.4/0.6	100%/DC		0.8	0.4	100%/DC
		SPMT/X115506			0.8	0.4/0.8	100%/DC		0.8	0.5	100%/DC

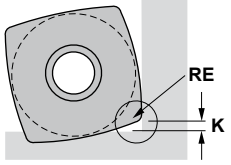
Material M	Hardness	Insert	Grade	Standard milling				High feed milling			
				Vc	fz	ap	ae	Vc	fz	ap	ae
Stainless steel	<200HB	SPMT073505	ML30	100 (60-120)	0.3	0.4/0.8	100%/DC	-	-	-	-
		SPMT094506			0.4	0.5/1.0	100%/DC		-	-	-
		SPMT115506			0.4	0.6/1.5	100%/DC		-	-	-
PH, Duplex	<200HB	SPMT073505	ML30	70 (50-90)	0.3	0.25/0.4	100%/DC	-	-	-	-
		SPMT094506			0.4	0.3/0.5	100%/DC		-	-	-
		SPMT115506			0.4	0.4/0.8	100%/DC		-	-	-

Material K	Hardness	Insert	Grade	Standard milling				High feed milling			
				Vc	fz	ap	ae	Vc	fz	ap	ae
Grey cast iron	<200HB	SPMX073505	TL20	150 (100-200)	1.0	0.3/0.6	100%/DC	-			
		SPMX094506			1.2	0.5/0.8	100%/DC		-	-	-
		SPMX115506			1.2	0.6/1.5	100%/DC		-	-	-
Ductile cast iron	<450MPa	SPMX073505	TL20	120 (80-160)	0.8	0.25/0.5	100%/DC	-			
		SPMX094506			1.0	0.4/0.6	100%/DC		-	-	-
		SPMX115506			1.0	0.5/0.8	100%/DC		-	-	-

Material H	Hardness	Insert	Grade	Standard milling				High feed milling			
				Vc	fz	ap	ae	Vc	fz	ap	ae
Hardened steel	40-55HRC	SPMX073505	TL20	70 (50-90)	0.5	0.25/0.4	100%/DC	120	0.5	0.25	100%/DC
		SPMX094506			0.6	0.3/0.5	100%/DC		0.6	0.3	100%/DC
		SPMX115506			0.6	0.3/0.6	100%/DC		0.6	0.4	100%/DC

Configuration note

When using the milling cutter 1629, 1639 or 1649 it must be configurated as a milling cutter with radius RE.
The approximate uncut portions cut of the configurations are the following:

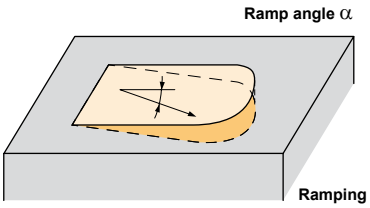


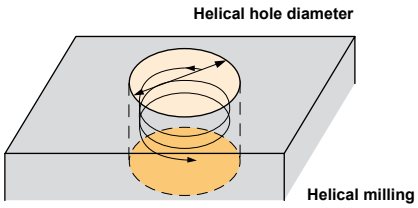
Insert size	RE	K mm
SPMX073505	1.7	0.82
SPMX094506	2.3	1.6
SPMX115506	2.7	2.1

G

Processing by direct milling is also possible

Since the cutting flute does not extend to the center, there are limitations on the ramp angle and hole diameter, but as shown below, processing by direct milling without a pilot hole is possible for ramping and helical milling.





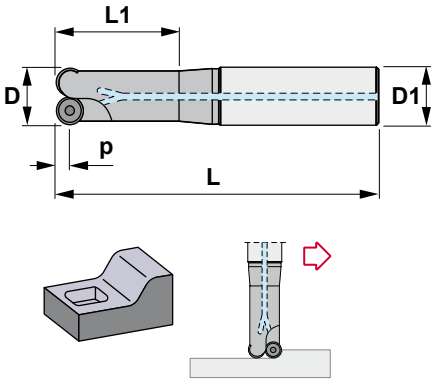
Insert size	SPMX0735..		
Tool diameter	**Ø0.750**	**Ø1.000**	**Ø1.250**
Maximum ramp angle α	2°	2°	1°
Hole diameter	Ø1.07-1.42	Ø1.57-1.92	Ø2.07-2.42

Insert size	SPMX0945..			
Tool diameter	**Ø1.000**	**Ø1.250**	**Ø1.500**	**Ø2.000**
Maximum ramp angle α	2°	2°	1°	1°
Hole diameter	Ø1.45-1.92	Ø1.95-2.42	Ø2.45-2.92	Ø3.45-3.92

Insert size	SPMX1155..			
Tool diameter	**Ø1.250**	**Ø2.000**	**Ø2.500**	**Ø3.000**
Maximum ramp angle α	2°	1°	0.5°	0.5°
Hole diameter	Ø1.83-2.42	Ø3.33-3.92	Ø4.33-4.92	Ø5.33-5.92

Note
- The ramp angle α should be set within the ranges listed above. Use at ramp angles of 1° or less recommended.
- For hole diameters outside the ranges listed above, a pilot hole should be drilled before milling.

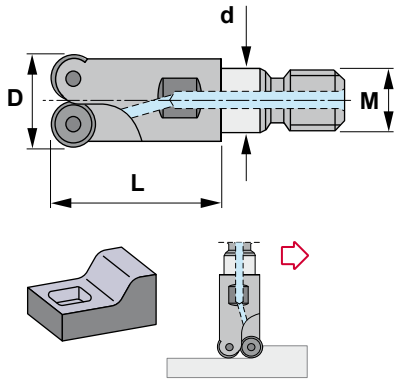
Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.



55_5

Reference		D	L	D1	L1	p	Insert size			Nm	lbs
5535000075	2	0.750	4	0.750	1.637	0.197	RD..1003M0	1435	5515	3.0	0.484
5535010075	2	0.750	6	0.750	3.637	0.197	RD..1003M0	1435	5515	3.0	0.748
5545000100	2	1.000	5	1.000	1.850	0.236	RD..1204M0	1435	5515	3.0	1.012
5545010100	2	1.000	7	1.000	3.850	0.236	RD..1204M0	1435	5515	3.0	1.474
5545000125	3	1.250	5	1.250	1.850	0.236	RD..1204M0	1435	5515	3.0	1.628
5545010125	3	1.250	8	1.250	4.850	0.236	RD..1204M0	1435	5515	3.0	2.376
5555000125	2	1.250	5	1.250	1.850	0.315	RD..1604M0	1445	5515	3.0	2.376
5555010125	2	1.250	8	1.250	4.850	0.315	RD..1604M0	1445	5515	3.0	2.376

Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.



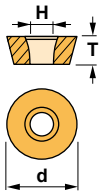
55_506

Reference		D	L	M	d	Insert size	lbs
5535060075	2	0.750	1.181	M10	0.413	RD..1003..	0.132
5545060100	2	1.000	1.378	M12	0.492	RD..1204..	0.209
5545060125	3	1.250	1.693	M16	0.669	RD..1204..	0.506
5555060125	2	1.250	1.693	M16	0.669	RD..1604..	0.506

WARNING!! Modular Extensions (Pages F07 to F13).

Reference			Nm
5535060075	1435	5515	3.0
5545060100	1435	5515	3.0
5545060125	1435	5515	3.0
5555060125	1445	5515	3.0

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			◔			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RDHW

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDHW1003M0	0.125	0.394	0.159								●	●	
RDHW12T3M0	0.156	0.472	0.165								●	●	
RDHW1604M0	0.187	0.630	0.201								●	●	

RDMT

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMT1003M0	0.125	0.394	0.159									●	
RDMT12T3M0	0.156	0.472	0.165									●	
RDMT1604M0	0.187	0.630	0.200									●	

RDMW

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMW1003M0	0.125	0.394	0.165								●	●	
RDMW12T3M0	0.156	0.472	0.165								●	●	
RDMW1204M0	0.187	0.472	0.165								●	●	
RDMW1604M0	0.187	0.630	0.200									●	

Recommended cutting conditions (End Mill & Modular Head Style)

Material	Insert Grade	TOOL DIAMETER 0.750" MAX D.O.C. 0.08" N r.p.m	F inch/min	1.000" 0.10" N r.p.m	F inch/min	1.250" 0.12" N r.p.m	F inch/min	1.500" 0.14" N r.p.m	F inch/min	2.000" 0.16" N r.p.m	F inch/min
Low Carbon steels (125-180 HB)	TL20 - TL40	4.000	110	3.100	85	2.450	70	2.000	55	1.600	45
Carbon steels (170-220 HB)	TL20 - TL40	3.500	95	2.700	75	2.200	60	1.750	50	1.400	40
Alloyed steels (200-260 HB)	TL20 - TL40	2.500	70	2.200	55	1.700	45	1.400	35	1.100	30
Tool & Die steels (280-370 HB)	TL20 - TL40	2.200	60	1.900	50	1.500	40	1.200	30	950	25
Stainless steels (150-270 HB)	TL20 - TL40	2.800	70	2.200	55	1.700	45	1.350	35	1.100	30
Gray Cast Iron (200-250 HB)	TL20 - TL40	3.000	100	2.400	80	1.900	60	1.500	50	1.200	40
Nodular Cast Iron (180-250 HB)	TL20 - TL40	2.400	80	1.900	65	1.500	50	1.200	40	950	30

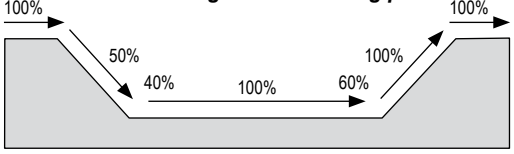
Note: Above data is relevant to tools with ratio (Reach/Dia.) of 4xs and below. For tools above 4xs, see Table 3.

Additional cutting data for longer tools

Reach/Dia.	~4.0	4.0~4.5	4.5~5.3	5.3~5.7	5.7~6.2	6.3~
rpm %	100	90	80	80	75	70
Feed %	100	90	90	80	75	70

Note: The above percentages should be applied for longer tools.

Reduced cutting data for cutting pattern



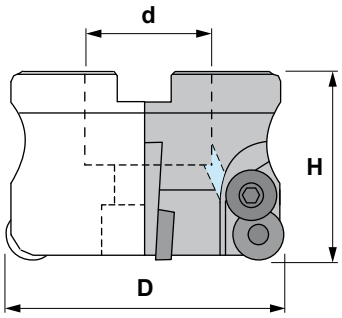
Note: Feed should be reduced when cutting the above pattern.

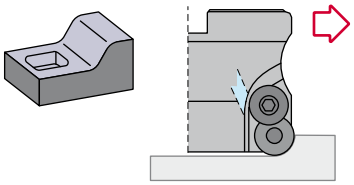
G

Characteristics:

Round insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.





55 4/5 90

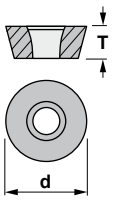
Reference		D	H	d	Insert size	lbs
5545900200	5	2.000	2.000	0.750	RD..1204..	0.990
5545900250	6	2.500	2.000	1.000	RD..1204..	1.694
5545900300	7	3.000	2.000	1.000	RD..1204..	2.640
5555900200	4	2.000	2.000	0.750	RD..1604..	0.770
5555900250	5	2.500	2.000	1.000	RD..1604..	1.540
5555900300	6	3.000	2.000	1.000	RD..1604..	2.310
5555900400	7	4.000	2.000	1.250	RD..1604..	3.960

Reference						Nm
5545900200	1235	2009	UNF.38	5515	-	3.0
5545900250	1235	2009	UNF.12	5515	-	3.0
5545900300	1235	2009	UNF.12	5515	-	3.0
5555900200	1245	2010	UNF.38	5515	-	3.0
5555900250	1245	2010	UNF.12	5515	-	3.0
5555900300	1245	2010	UNF.12	5515	-	3.0
5555900400	1245	2010	-	-	5615	3.0

RD..

Round positive inserts with 15° clearance. G08-09

Reference	T	d
RD..1204M0	0.187	0.472
RD..1604M0	0.187	0.630

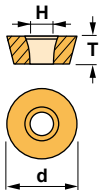


RDHW

RDMT

RDMW

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RDHW

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDHW12T3M0	0.156	0.472	0.165								●	●	
RDHW1604M0	0.187	0.630	0.201								●	●	

RDMT

15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMT12T3M0	0.156	0.472	0.165									●	
RDMT1604M0	0.187	0.630	0.200									●	

RDMW

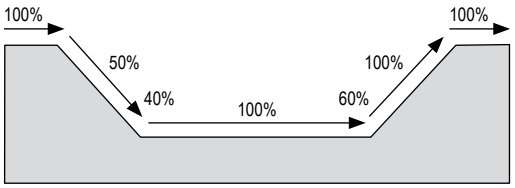
15°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RDMW12T3M0	0.156	0.472	0.165								●	●	
RDMW1204M0	0.187	0.472	0.165								●	●	
RDMW1604M0	0.187	0.630	0.200									●	

Recommended cutting conditions (Face Mill Style)

Material	Insert Grade	TOOL DIAMETER (teeth)													
		2.00" (3/4/5 teeth)		2.25" (4 teeth)		2.50" (5/6 teeth)		3.00" (5/6/7 teeth)		4.00" (6/7 teeth)		5.00" (7/8 teeth)		6.00" (8/9 teeth)	
		MAX D.O.C.													
		0.160"		0.200"		0.200" / 0.160"		.240"/.200/.160"		0.240" / 0.200"		0.240" / 0.200"		0.240" / 0.200"	
		N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min
Low Carbon steels (125-180 HB)	TL20 - TL40	1.400	50/65/85	1.280	60	1.090	63/78	900	57/64/72	720	70/77	570	48/53	450	57/63
Carbon steels (170-220 HB)	TL20 - TL40	1.250	45/60/75	1.150	55	950	55/67	750	48/53/80	610	60/67	500	43/47	400	50/55
Alloyed steels (200-260 HB)	TL20 - TL40	900	35/45/55	820	40	670	40/47	500	30/35/42	400	43/47	350	30/33	280	35/40
Tool & Die steels (30-40 HRC)	TL20 - TL40	750	27/35/45	680	32	580	35/42	450	27/32/37	350	35/41	300	25/28	200	30/35
Stainless steels (150-270 HB)	TL20 - TL40	1.050	40/50/82	950	45	820	47/57	550	40/48/53	520	51/57	400	32/35	320	43/47
Gray Cast Iron (200-250 HB)	TL20 - TL40	1.080	50/68/85	980	62	850	50/80	700	55/66/77	560	72/80	450	50/55	360	45/50
Nodular Cast Iron (180-250 HB)	TL20 - TL40	900	43/57/70	820	52	700	42/67	600	48/57/66	460	60/67	370	40/45	300	40/45

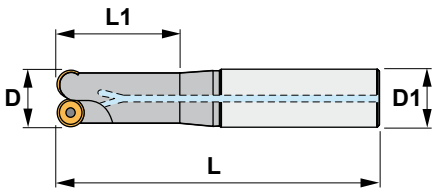
Reduced cutting data for cutting pattern

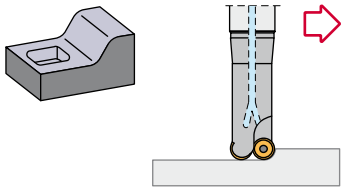


Note: Feed rate should be reduced when cutting the above pattern.

G

Characteristics:
Round insert end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.





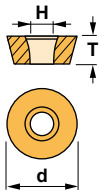
5549 01 02

Reference		D	L	D1	L1	Insert size	lbs
5549010100	2	1.000	6.00	1.000	2.00	RPM..1204M0	1.474
5549020100	2	1.000	8.00	1.000	3.00	RPM..1204M0	1.474
5549010125	3	1.250	6.00	1.250	2.00	RPM..1204M0	2.376
5549020125	3	1.250	8.00	1.250	3.00	RPM..1204M0	2.376

Reference			Nm
5549010100	1435	5515	3.0
5549020100	1435	5515	3.0
5549010125	1435	5515	3.0
5549020125	1435	5515	3.0

G

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RPMT

11°

Reference	T	d	H
RPMT120400-39	0.187	0.500	0.203
RPMT1204M0	0.187	0.472	0.203

Reference	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMT120400-39		●			●					
RPMT1204M0				●	●					

RPMW

11°

Reference	T	d	H
RPMW1204M0	0.187	0.472	0.165
RPMW1204M0T	0.187	0.472	0.165

Reference	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMW1204M0										
RPMW1204M0T				●	●					

Recommended cutting conditions (End Mill & Modular Head Style)

Material	Insert Grade	TOOL DIAMETER 0.750" MAX D.O.C. 0.08" N r.p.m	F inch/min	1.000" 0.10" N r.p.m	F inch/min	1.250" 0.12" N r.p.m	F inch/min	1.500" 0.14" N r.p.m	F inch/min	2.000" 0.16" N r.p.m	F inch/min
Low Carbon steels (125-180 HB)	TL20 - TL40	4.000	110	3.100	85	2.450	70	2.000	55	1.600	45
Carbon steels (170-220 HB)	TL20 - TL40	3.500	95	2.700	75	2.200	60	1.750	50	1.400	40
Alloyed steels (200-260 HB)	TL20 - TL40	2.500	70	2.200	55	1.700	45	1.400	35	1.100	30
Tool & Die steels (280-370 HB)	TL20 - TL40	2.200	60	1.900	50	1.500	40	1.200	30	950	25
Stainless steels (150-270 HB)	TL20 - TL40	2.800	70	2.200	55	1.700	45	1.350	35	1.100	30
Gray Cast Iron (200-250 HB)	TL20 - TL40	3.000	100	2.400	80	1.900	60	1.500	50	1.200	40
Nodular Cast Iron (180-250 HB)	TL20 - TL40	2.400	80	1.900	65	1.500	50	1.200	40	950	30

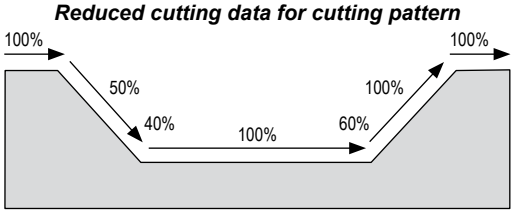
Note: Above data is relevant to tools with ratio (Reach/Dia.) of 4xs and below. For tools above 4xs, see Table 3.

Additional cutting data for longer tools

Reach/Dia.	~4.0	4.0~4.5	4.5~5.3	5.3~5.7	5.7~6.2	6.3~
rpm %	100	90	80	80	75	70
Feed %	100	90	90	80	75	70

Note: The above percentages should be applied for longer tools.

Reduced cutting data for cutting pattern



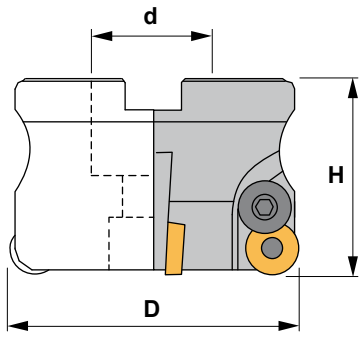
Note: Feed should be reduced when cutting the above pattern.

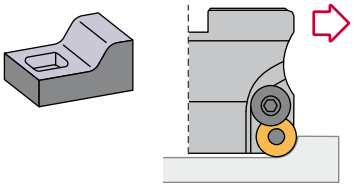
G

Characteristics:

Round insert cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.

It can be used in only one pass (roughing and finishing) and it is recommended for conventional milling machines and machining centers.



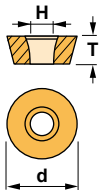


554990

Reference		D	H	d	Insert size	lbs
5549900150	3	1.500	1.750	0.500	RPM..1204M0	0.440
5549900200	5	2.000	2.000	0.750	RPM..1204M0	0.660
5549900250	5	2.500	2.000	1.000	RPM..1204M0	1.430
5549900300	6	3.000	2.000	1.000	RPM..1204M0	2.530
5549900400	7	4.000	2.000	1.250	RPM..1204M0	3.850

Reference								Nm
5549900150	1235	2009	5003	1240	5515	-	UNF.14	3.0
5549900200	1235	2009	5003	1240	5515	-	UNF.38	3.0
5549900250	1235	2009	5003	1240	5515	-	UNF.12	3.0
5549900300	1235	2009	5003	1240	5515	-	UNF.12	3.0
5549900400	1235	2009	5003	1240	-	5615	-	3.0

Round inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◔	✣	◔	✣	✣	●	◔	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◔	✣		✣			●			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

RPMT

11°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMT120400-39	0.187	0.500	0.203		●			●					
RPMT1204M0	0.187	0.472	0.203				●	●					

RPMW

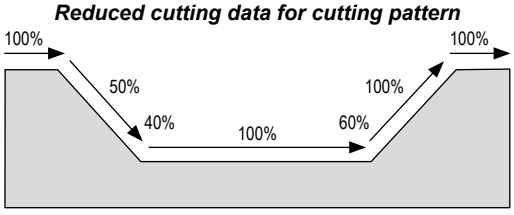
11°

Reference	T	d	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
RPMW1204M0	0.187	0.472	0.165										
RPMW1204M0T	0.187	0.472	0.165				●	●					

Recommended cutting conditions (Face Mill Style)

Material	Insert Grade	TOOL DIAMETER (teeth)													
		2.00" (3/4/5 teeth)		2.25" (4 teeth)		2.50" (5/6 teeth)		3.00" (5/6/7 teeth)		4.00" (6/7 teeth)		5.00" (7/8 teeth)		6.00" (8/9 teeth)	
		MAX D.O.C.													
		0.160"		0.200"		0.200" / 0.160"		.240"/.200/.160"		0.240" / 0.200"		0.240" / 0.200"		0.240" / 0.200"	
		N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min	N r.p.m	F inch/min
Low Carbon steels (125-180 HB)	TL20 - TL40	1.400	50/65/85	1.280	60	1.090	63/78	900	57/64/72	720	70/77	570	48/53	450	57/63
Carbon steels (170-220 HB)	TL20 - TL40	1.250	45/60/75	1.150	55	950	55/67	750	48/53/80	610	60/67	500	43/47	400	50/55
Alloyed steels (200-260 HB)	TL20 - TL40	900	35/45/55	820	40	670	40/47	500	30/35/42	400	43/47	350	30/33	280	35/40
Tool & Die steels (30-40 HRC)	TL20 - TL40	750	27/35/45	680	32	580	35/42	450	27/32/37	350	35/41	300	25/28	200	30/35
Stainless steels (150-270 HB)	TL20 - TL40	1.050	40/50/82	950	45	820	47/57	550	40/48/53	520	51/57	400	32/35	320	43/47
Gray Cast Iron (200-250 HB)	TL20 - TL40	1.080	50/68/85	980	62	850	50/80	700	55/66/77	560	72/80	450	50/55	360	45/50
Nodular Cast Iron (180-250 HB)	TL20 - TL40	900	43/57/70	820	52	700	42/67	600	48/57/66	460	60/67	370	40/45	300	40/45

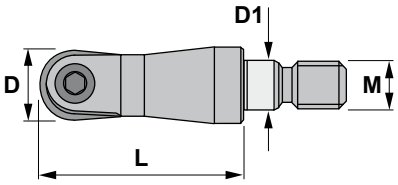
Reduced cutting data for cutting pattern

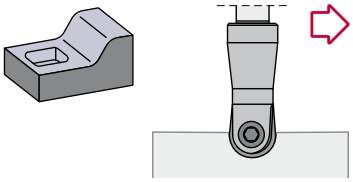


Note: Feed rate should be reduced when cutting the above pattern.

G

Characteristics:
Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.





87_06

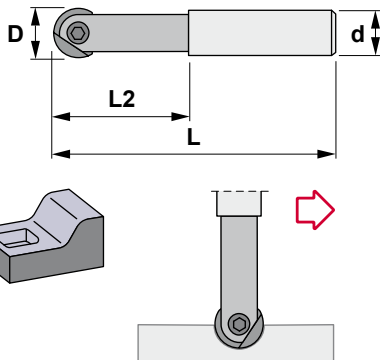
Reference		D	L	M	D1	Insert size	lbs
8750060062	2	0.625	1.300	M8	0.335	HIB..0625	0.095
8760060075	2	0.750	1.600	M10	0.413	HIB..0750	0.160
8780060100	2	1.000	1.900	M12	0.492	HIB..1000	0.245
8790060125	2	1.250	2.300	M16	0.669	HIB..1250	0.540

WARNING!! Modular Extensions (Pages F07 to F13).

Reference		Nm
8750060062	1627	4.0
8760060075	1637	4.0
8780060100	1647	7.0
8790060125	1687	7.0

G

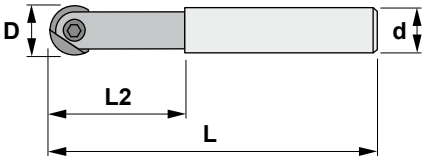
Characteristics:
Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.



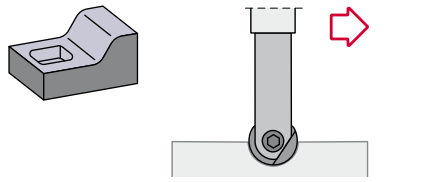
87_00

Reference		D	D2	L	L2	Insert size		Nm	lbs
8730000037	2	0.375	0.375	4.00	1.250	HIB..0375	1607	3.0	0.220
8740000050	2	0.500	0.500	4.00	1.250	HIB..0500	1617	4.0	0.530
8750000062	2	0.625	0.625	5.00	1.250	HIB..0625	1627	4.0	0.575
8760000075	2	0.750	0.750	6.00	1.250	HIB..0750	1637	4.0	1.100
8780000100	2	1.000	1.000	6.00	1.250	HIB..1000	1647	7.0	1.655
8790000125	2	1.250	1.250	6.00	1.250	HIB..1250	1687	7.0	3.420

Characteristics:
Indexable ball nose semi-finishing and finishing cutter equipped with a positive insert that provides low cutting forces and reduced vibration.
It works well on steels, hardened steels, stainless steels and casts.



Long series



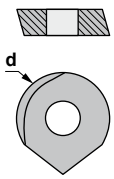
87_01

Reference		D	D2	L	L2	Insert size		Nm	lbs
8730010037	2	0.375	0.375	6.00	2.000	HIB..0375	1607	3.0	0.440
8740010050	2	0.500	0.500	6.00	2.000	HIB..0500	1617	4.0	0.660
8750010062	2	0.625	0.625	8.00	2.000	HIB..0625	1627	4.0	0.880
8760010075	2	0.750	0.750	8.00	2.000	HIB..0750	1637	4.0	1.475
8780010100	2	1.000	1.000	10.00	2.000	HIB..1000	1647	7.0	2.535
8790010125	2	1.250	1.250	10.00	2.000	HIB..1250	1687	7.0	3.420

HIB..

Round positive inserts with 11° clearance. G08

Reference	d
HIB..0375	0.375
HIB..0500	0.500
HIB..0625	0.625
HIB..0750	0.750
HIB..1000	1.000
HIB..1250	1.250



HIBF	HIBS
	

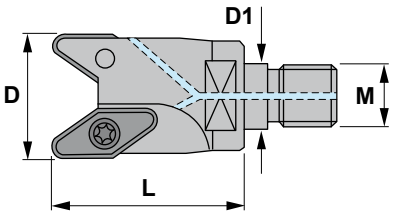
Recommended cutting conditions (End Mill & Modular Head Style)

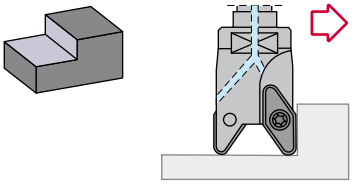
Material	Operation	Insert Grade	TOOL DIAMETER					
			0.375"		0.500"		0.625"	
			No. of flutes					
			2		2		2	
			General	High Feed	General	High Feed	General	High Feed
Carbon Steel Alloy Steel (<30 HRC)	N(rpm)	TL10 - TL20	6360	9550	5300	7960	3180	4770
	Vc(sfm)		656	984	656	984	656	984
	Vf(in/min)		100	301	83	250	63	188
	fz(in/t)		0.008	0.016	0.008	0.016	0.010	0.020
	doc(in)		0.010	0.006	0.012	0.008	0.031	0.016
	woc(in)		0.039	0.031	0.047	0.035	0.063	0.043
Tool Steel Alloy Steel (30-40 HRC)	N(rpm)	TL10 - TL20	5730	7960	4770	6630	2860	3980
	Vc(sfm)		591	820	591	820	591	820
	Vf(in/min)		90	250	75	209	56	157
	fz(in/t)		0.008	0.016	0.008	0.016	0.010	0.020
	doc(in)		0.010	0.006	0.012	0.008	0.031	0.016
	woc(in)		0.039	0.031	0.047	0.035	0.063	0.043
Tool Steel Pre-hardened (40-50 HRC)	N(rpm)	TL10 - TL20	4770	6360	3980	5300	2380	3180
	Vc(sfm)		492	656	492	656	492	656
	Vf(in/min)		56	125	47	104	28	63
	fz(in/t)		0.006	0.010	0.006	0.010	0.006	0.010
	doc(in)		0.010	0.006	0.012	0.008	0.031	0.016
	woc(in)		0.039	0.031	0.047	0.035	0.063	0.043
Tool Steel (55-65 HRC)	N(rpm)	TL10 - TL20	5730	7960	4770	6630	2860	3980
	Vc(sfm)		591	820	591	820	591	820
	Vf(in/min)		90	188	75	156	45	94
	fz(in/t)		0.008	0.012	0.008	0.012	0.008	0.012
	doc(in)		0.004	0.004	0.005	0.005	0.006	0.006
	woc(in)		0.008	0.008	0.010	0.010	0.013	0.013
Cast Iron	N(rpm)	TL10 - TL20	6360	9550	5300	7960	3180	4770
	Vc(sfm)		656	984	656	984	656	984
	Vf(in/min)		150	376	125	376	87	225
	fz(in/t)		0.012	0.020	0.012	0.024	0.014	0.024
	doc(in)		0.010	0.006	0.012	0.008	0.031	0.016
	woc(in)		0.039	0.031	0.047	0.035	0.063	0.043

Recommended cutting conditions (End Mill & Modular Head Style)

Material	Operation	Insert Grade	TOOL DIAMETER					
			0.750"		1.000"		1.250"	
			No. of flutes					
			2		2		2	
			General	High Feed	General	High Feed	General	High Feed
Carbon Steel Alloy Steel (<30 HRC)	N(rpm)	TL10 - TL20	3180	4770	2540	3830	1590	2090
	Vc(sfm)		656	984	656	984	524	688
	Vf(in/min)		63	188	50	151	31	82
	fz(in/t)		0.010	0.020	0.010	0.020	0.009	0.019
	doc(in)		0.039	0.020	0.049	0.024	0.062	0.043
	woc(in)		0.079	0.059	0.098	0.071	0.125	0.094
Tool Steel Alloy Steel (30-40 HRC)	N(rpm)	TL10 - TL20	2860	3980	2290	3180	1190	1590
	Vc(sfm)		591	820	591	820	393	524
	Vf(in/min)		56	157	45	125	23	62
	fz(in/t)		0.010	0.020	0.010	0.020	0.009	0.019
	doc(in)		0.039	0.020	0.049	0.024	0.062	0.043
	woc(in)		0.079	0.059	0.098	0.071	0.125	0.094
Tool Steel Pre-hardened (40-50 HRC)	N(rpm)	TL10 - TL20	2380	3180	1910	2540	1000	1490
	Vc(sfm)		492	656	492	656	328	492
	Vf(in/min)		28	63	22	50	9	28
	fz(in/t)		0.006	0.010	0.006	0.010	0.004	0.009
	doc(in)		0.039	0.020	0.049	0.024	0.062	0.043
	woc(in)		0.079	0.059	0.098	0.071	0.125	0.094
Tool Steel (55-65 HRC)	N(rpm)	TL10 - TL20	2860	3980	2290	3180	800	1190
	Vc(sfm)		591	820	591	820	262	393
	Vf(in/min)		45	94	36	75	7	22
	fz(in/t)		0.008	0.012	0.008	0.012	0.004	0.009
	doc(in)		0.008	0.008	0.010	0.010	0.062	0.043
	woc(in)		0.016	0.016	0.020	0.020	0.125	0.094
Cast Iron	N(rpm)	TL10 - TL20	3180	4770	2540	3820	1590	2090
	Vc(sfm)		656	984	656	984	524	688
	Vf(in/min)		87	225	70	180	43	115
	fz(in/t)		0.014	0.024	0.014	0.024	0.013	0.027
	doc(in)		0.039	0.020	0.049	0.024	0.062	0.043
	woc(in)		0.079	0.059	0.098	0.071	0.125	0.094

Characteristics:
General application end mill for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
Recommended for the machining of aluminium, plastics and exotic materials.

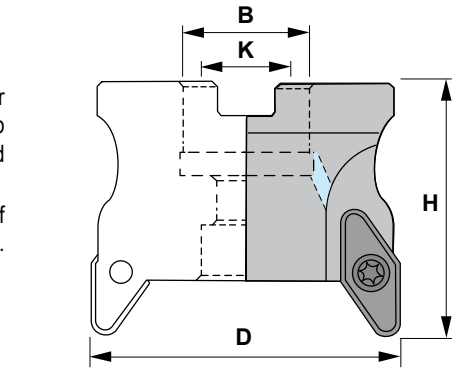


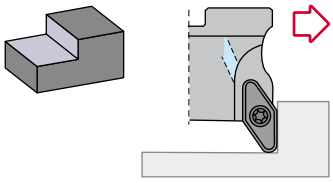


034406

Reference		D	L	M	d	D1	Insert size			Nm	lbs
0344060062	2	0.625	1.378	M8	0.551	0.335	VCGT22..	1225	5507	0.9	0.088
0344060075	2	0.750	1.378	M10	0.708	0.413	VCGT22..	1225	5507	0.9	0.154
0344060100	2	1.000	1.968	M12	0.827	0.492	VCGT33..	1341	5515	3.0	0.242
0344060125	2	1.250	1.968	M16	1.142	0.669	VCGT2205..	1250	5520	4.0	0.528

Characteristics:
General application bottom cutter for slot milling, peripheral milling, ramp milling and drilling, pocket milling and copy milling.
Recommended for the machining of aluminium, plastics and exotic materials.





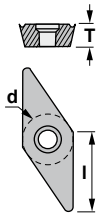
034490

Reference		D	H	K	B	Insert size				Nm	lbs
0344900150	3	1.500	2.000	0.25	0.500	VCGT2205..	1250	5520	UNF.14	0.9	0.396
0344900200	3	2.000	2.000	5/16	0.750	VCGT2205..	1250	5520	UNF.38	0.9	0.770
0344900250	4	2.500	2.125	3/8	1.000	VCGT2205..	1250	5520	UNF.12	3.0	1.760
0344900300	5	3.000	2.125	3/8	1.000	VCGT2205..	1250	5520	UNF.12	4.0	2.530

VCGT

35° rhombic positive inserts with 7° clearance. G14

Reference	l	T	d	r
VCGT221..	0.437	0.125	0.250	0.016
VCGT222..	0.437	0.125	0.250	0.031
VCGT331..	0.650	0.187	0.375	0.016
VCGT332..	0.650	0.187	0.375	0.031
VCGT333..	0.650	0.187	0.375	0.047
VCGT2205..	0.870	0.219	0.500	0.118



VCGT-AL

VCGT-AP

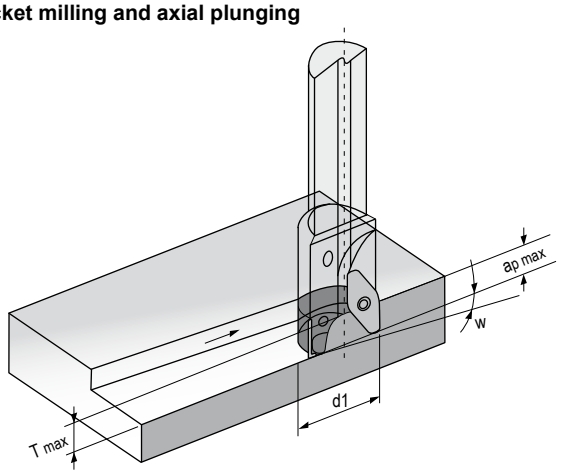
Recommended cutting conditions

Material		Cutting speed ZR 10 Vc (inch/min)	KM 15 Vc (inch/min)
Aluminium alloys	Rm < 280 N/mm²	59.055	39.370
	Rm < 280 N/mm²	39.370	31.496
Copper alloys	Long chipping	11.811	9.842
Thermoplastics			11.811
Aluminium alloys	Si < 12 %	3.937	31.496
	Si < 12 %	7.874	
Copper alloys	Short chipping	19.685	15.748
Magnesium alloys			15.748
Duroplastics		7.874	5.905

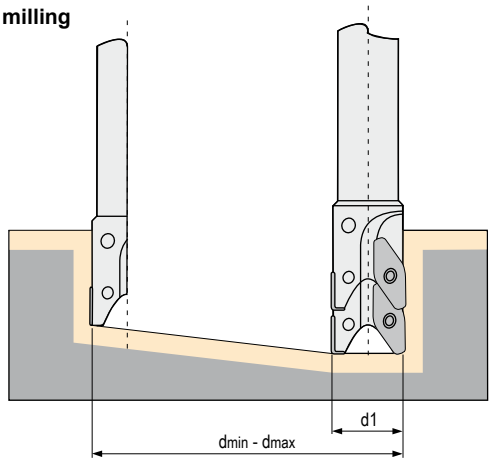
Maximum feed per tooth fz (inch/z) in inches	
VCGT33..	VCGT2205..
0.013	0.019
0.011	0.015

Recommendations for further applications

Pocket milling and axial plunging

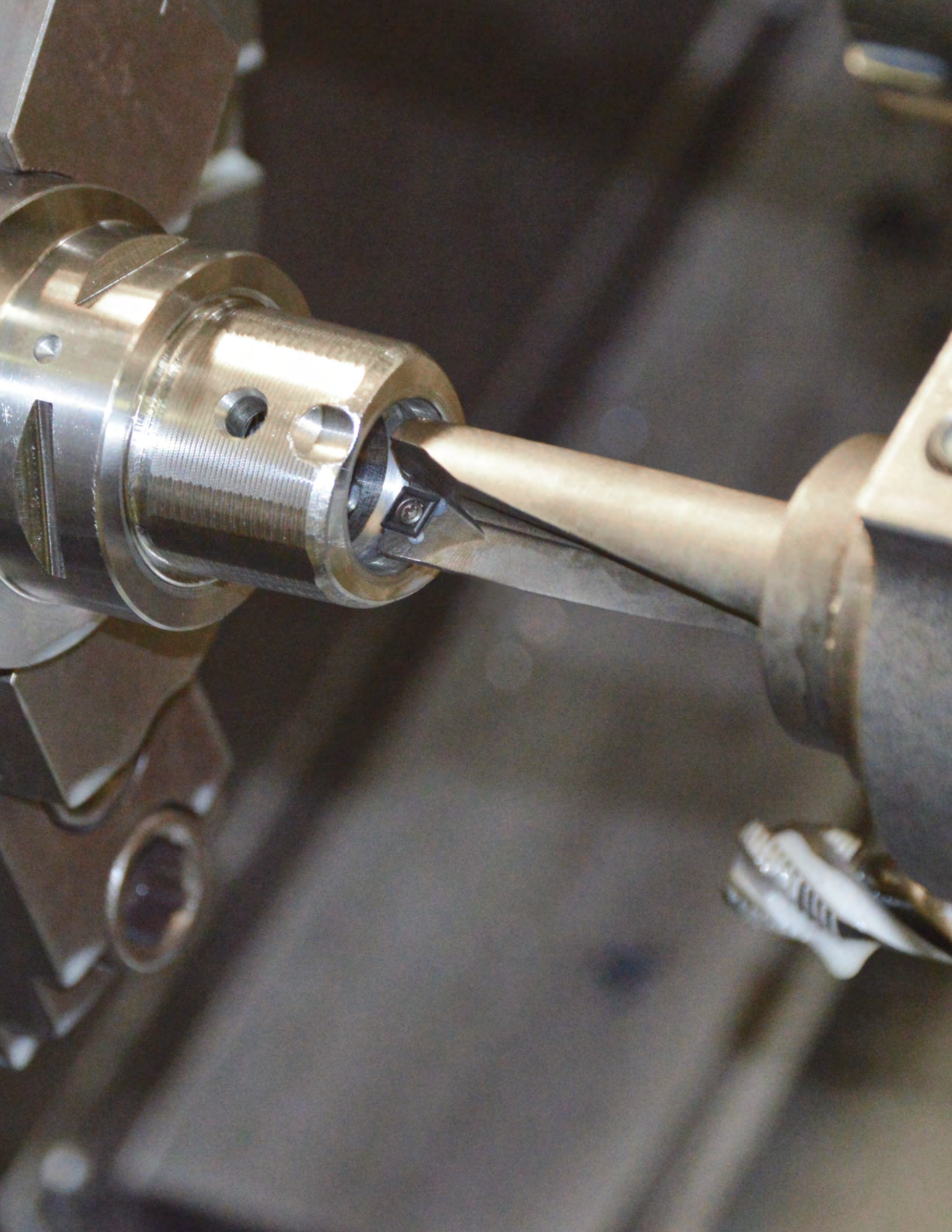


Circular milling



Helix angle W1 max and internal depth of cut Tmax		
	VCGT 33..-ALM	VCGT 220530-ALM
ap max	0.531	0.590
T max	0.314	0.354
W1 max degree		
0.625		
0.750		
1.000	0.944	
1.250		0.866
1.500		0.590
2.000		0.472
2.500		0.354
3.000		0.275

d1 inch	dmin inch	dmax inch
0.625	0.625	0.625
0.750	0.750	0.750
1.000	1.000	1.000
1.250	1.250	1.250
1.500	1.500	1.500
2.000	2.000	2.000
2.500	2.500	2.500
3.000	3.000	3.000



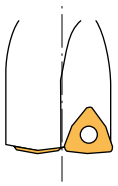
DRILLS

H

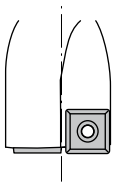
Code system

4 2	3	4	65	0125
1	2	3	4	5

1 *Drill type*



42

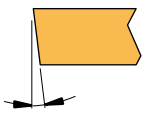


45

2 *Insert size*

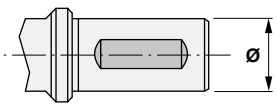
1	2	3	4	5
 WCMX0302	 WCMX0402	 WCMX0503	 WCMX06T3	 WCMX0804
 SPMT0603	 SPMT0703	 SPMT0903	 SPMT1204	

3 *Clearance angle of insert*



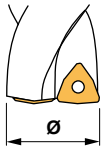
4

4 *Shank size*



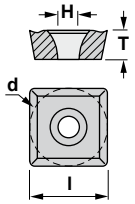
Ø1.250 **65** | Ø1.500 **66**

5 *Diameter, inch.*



H

Square inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

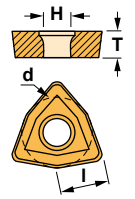
		KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

SPMT

11°

Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TL10	TL20	TL40	ZR10
SPMT060304	0.250	0.125	0.250	0.016	0.105									●	
SPMT070308	0.312	0.125	0.312	0.031	0.105									●	
SPMT090308	0.375	0.125	0.375	0.031	0.133									●	
SPMT120408	0.500	0.187	0.500	0.031	0.220									●	

80º Trigon inserts / Positive



USE CLASSIFICATION
- Continuous
- Slight interruption
- Interruption

AVAILABILITY
- Standard item
- Check availability

		KM15	PM25	PM40	TIN21	TIN25	TIN28	TN30	TL20	TL40	ZR10
P	Steel		◕	✣	◕	✣	✣	●	◕	✣	
M	Stainless		◔			◔	✣				
K	Cast iron	◕	✣		✣			◕			
N	Non ferrous materials	✣									✣
S	Heat-resistant alloys										
H	Hard materials										

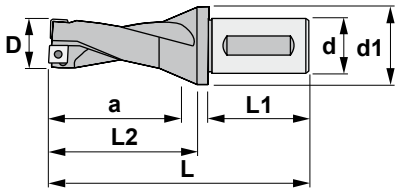
WCMX

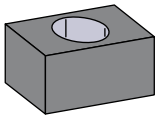
7°

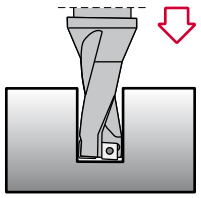
Reference	l	T	d	r	H	KM15	PM25	PM40	TIN21	TIN25	TIN28	TN30	TL20	TL40	ZR10
WCMX030208	0.136	0.094	0.219	0.031	0.098							●		●	
WCMX040208	0.157	0.094	0.250	0.031	0.110							●		●	
WCMX050308	0.200	0.125	0.312	0.031	0.118							●		●	
WCMX06T308	0.242	0.156	0.375	0.031	0.173							●		●	
WCMX080412	0.320	0.187	0.500	0.047	0.203							●		●	

H

Characteristics:
Helical flute indexable insert drill that provides faster cutting speeds and efficient chip removal for use on conventional and C.N.C. machines.
It works well on steels, alloyed steels, stainless steels and refractories.
Max. hole depth = 3 x Diameter (D)







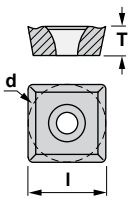
45..

Reference	D	L	L1	L2	a	d	d1			Nm	Insert size	lbs
4514650069	0.687	5.375	2.250	3.125	2.060	1.250	1.500	1225	5507	0.9	SPMT0603..	0.550
4514650072	0.718	5.437	2.250	3.218	2.150	1.250	1.500	1225	5507	0.9	SPMT0603..	0.570
4514650075	0.750	5.500	2.250	3.312	2.250	1.250	1.500	1225	5507	0.9	SPMT0603..	-
4514650078	0.781	5.625	2.250	3.406	2.340	1.250	1.500	1225	5507	0.9	SPMT0603..	0.590
4524650081	0.812	5.750	2.250	3.500	2.430	1.250	1.500	1225	5507	0.9	SPMT0703..	0.605
4524650084	0.844	5.843	2.250	3.609	2.530	1.250	1.500	1225	5507	0.9	SPMT0703..	0.560
4524650087	0.875	5.968	2.250	3.703	2.620	1.250	1.500	1225	5507	0.9	SPMT0703..	0.580
4524650091	0.906	6.062	2.250	3.797	2.710	1.250	1.500	1225	5507	0.9	SPMT0703..	0.590
4524650094	0.937	6.156	2.250	3.891	2.810	1.250	1.500	1225	5507	0.9	SPMT0703..	0.650
4524650097	0.968	6.187	2.250	3.891	2.900	1.250	1.500	1225	5507	0.9	SPMT0703..	0.660
4524650100	1.000	6.187	2.250	3.891	3.000	1.250	1.500	1225	5507	0.9	SPMT0703..	0.670
4534650103	1.031	6.281	2.250	3.891	3.090	1.250	1.500	1230	5508	1.2	SPMT0903..	0.675
4534650106	1.062	6.375	2.250	4.032	3.180	1.250	1.500	1230	5508	1.2	SPMT0903..	0.690
4534650109	1.093	6.468	2.250	4.187	3.270	1.250	1.500	1230	5508	1.2	SPMT0903..	-
4534650112	1.125	6.562	2.250	4.281	3.370	1.250	1.500	1230	5508	1.2	SPMT0903..	0.740
4534650116	1.156	6.656	2.250	4.343	3.460	1.250	1.500	1230	5508	1.2	SPMT0903..	0.755
4534650119	1.187	6.718	2.250	4.437	3.560	1.250	1.500	1230	5508	1.2	SPMT0903..	0.780
4534650122	1.218	6.756	2.250	4.500	3.650	1.250	1.500	1230	5508	1.2	SPMT0903..	-
4534650125	1.250	6.812	2.250	4.562	3.750	1.250	1.500	1230	5508	1.2	SPMT0903..	0.835
4534650131	1.312	7.031	2.250	4.781	3.930	1.250	1.500	1230	5508	1.2	SPMT0903..	0.860
4544660137	1.375	7.468	2.250	5.203	4.120	1.250	1.500	1250	5520	4.0	SPMT1204..	-
4544660144	1.437	8.156	2.750	5.453	4.310	1.500	2.000	1250	5520	4.0	SPMT1204..	1.285
4544660150	1.500	8.468	2.750	5.703	4.500	1.500	2.000	1250	5520	4.0	SPMT1204..	1.470
4544660156	1.562	8.812	2.750	5.891	4.680	1.500	2.000	1250	5520	4.0	SPMT1204..	1.510
4544660162	1.625	9.187	2.750	6.156	4.870	1.500	2.000	1250	5520	4.0	SPMT1204..	1.540

SPMT

Square positive insert with 11° clearance. H03

Reference	l	T	d
SPMT060304	0.250	0.125	0.250
SPMT070308	0.312	0.125	0.312
SPMT090308	0.374	0.125	0.374
SPMT120408	0.500	0.187	0.500



SPMT

H

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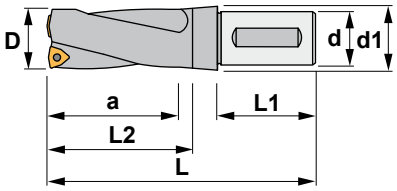
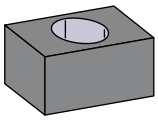
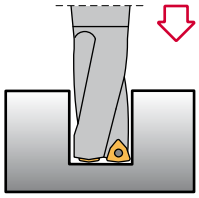
Max. hole depth = 3 x Diameter (D)







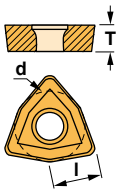
42..

Reference	D	L	L1	L2	a	d	d1		Nm	Insert size	lbs
4214650069	0.687	5.375	2.250	3.125	2.060	1.250	1.500	1622 5507	0.9	WCMX0302..	0.550
4214650072	0.718	5.437	2.250	3.218	2.150	1.250	1.500	1622 5507	0.9	WCMX0302..	0.570
4214650075	0.750	5.500	2.250	3.312	2.250	1.250	1.500	1622 5507	0.9	WCMX0302..	-
4214650078	0.781	5.625	2.250	3.406	2.340	1.250	1.500	1622 5507	0.9	WCMX0302..	0.590
4214650081	0.812	5.750	2.250	3.500	2.430	1.250	1.500	1622 5507	0.9	WCMX0302..	0.605
4224650084	0.844	5.843	2.250	3.609	2.530	1.250	1.500	1225 5507	0.9	WCMX0402..	0.560
4224650087	0.875	5.968	2.250	3.703	2.620	1.250	1.500	1225 5507	0.9	WCMX0402..	0.580
4224650091	0.906	6.062	2.250	3.797	2.710	1.250	1.500	1225 5507	0.9	WCMX0402..	0.590
4224650094	0.937	6.156	2.250	3.891	2.810	1.250	1.500	1225 5507	0.9	WCMX0402..	0.650
4224650097	0.968	6.187	2.250	3.891	2.900	1.250	1.500	1225 5507	0.9	WCMX0402..	0.660
4224650100	1.000	6.187	2.250	3.891	3.000	1.250	1.500	1225 5507	0.9	WCMX0402..	0.670
4224650103	1.031	6.281	2.250	3.891	3.090	1.250	1.500	1225 5507	0.9	WCMX0402..	0.675
4234650106	1.062	6.375	2.250	4.032	3.180	1.250	1.500	1630 5509	1.4	WCMX0503..	0.690
4234650109	1.093	6.468	2.250	4.187	3.270	1.250	1.500	1630 5509	1.4	WCMX0503..	-
4234650112	1.125	6.562	2.250	4.281	3.370	1.250	1.500	1630 5509	1.4	WCMX0503..	0.740
4234650116	1.156	6.656	2.250	4.343	3.460	1.250	1.500	1630 5509	1.4	WCMX0503..	0.755
4234650119	1.187	6.718	2.250	4.437	3.560	1.250	1.500	1630 5509	1.4	WCMX0503..	0.780
4234650122	1.218	6.756	2.250	4.500	3.650	1.250	1.500	1630 5509	1.4	WCMX0503..	-
4234650125	1.250	6.812	2.250	4.562	3.750	1.250	1.500	1630 5509	1.4	WCMX0503..	0.835
4244660131	1.312	7.031	2.250	4.781	3.930	1.250	1.500	1635 5510	2.0	WCMX06T3..	0.860
4244660137	1.375	7.468	2.250	5.203	4.120	1.250	1.500	1635 5510	2.0	WCMX06T3..	-
4244660144	1.437	8.156	2.750	5.453	4.310	1.500	2.000	1635 5510	2.0	WCMX06T3..	1.285
4244660150	1.500	8.468	2.750	5.703	4.500	1.500	2.000	1635 5510	2.0	WCMX06T3..	1.470
4244660156	1.562	8.812	2.750	5.891	4.680	1.500	2.000	1635 5510	2.0	WCMX06T3..	1.510
4254660162	1.625	9.187	2.750	6.156	4.870	1.500	2.000	1640 5515	3.0	WCMX0804..	1.540
4254660169	1.687	9.562	2.750	6.656	5.060	1.500	2.000	1640 5515	3.0	WCMX0804..	1.640
4254660175	1.750	9.937	2.750	7.172	5.250	1.500	2.500	1640 5515	3.0	WCMX0804..	1.850
4254660181	1.812	10.125	2.750	7.359	5.430	1.500	2.500	1640 5515	3.0	WCMX0804..	1.850
4254660187	1.875	10.312	2.750	7.547	5.620	1.500	2.500	1640 5515	3.0	WCMX0804..	1.940
4254660194	1.937	10.500	2.750	7.734	5.810	1.500	2.500	1640 5515	3.0	WCMX0804..	2.100
4254660200	2.000	10.687	2.750	7.922	6.000	1.500	2.500	1640 5515	3.0	WCMX0804..	2.280

WCMX

80º trigon positive insert with 7º clearance. H03

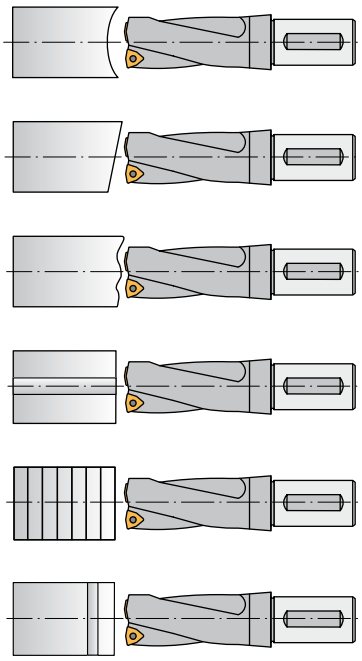
Reference	l	T	d
WCMX0302..	0.136	0.093	0.219
WCMX0402..	0.157	0.093	0.250
WCMX0503..	0.200	0.125	0.313
WCMX06T3..	0.242	0.156	0.375
WCMX0804..	0.320	0.187	0.500



WCMX

H

Drills - Recommendations for the assembly



Drills for indexable inserts

A concave surface is not normally recommended because there is the possibility that the tool turns away from the center. Feed should be reduced to 1/3 of the recommended.

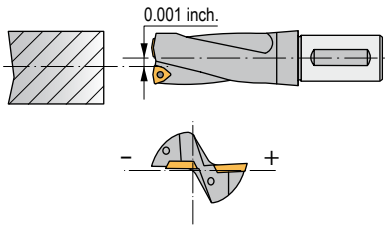
The surface of the tool to be drilled on should be preferably even. If the angles exceed 2º, feed should be reduced to 1/3 of the recommended.

If the starting surface is an uneven surface of the component, feed should be reduced so that the chip of the cutting edges can be avoided. The same can also happen at the way out from the tool.

When working with a hole made beforehand, this should not be bigger than 1/4 of the final size, because the tool could turn away.

There is the possibility to drill sets of more than one piece.

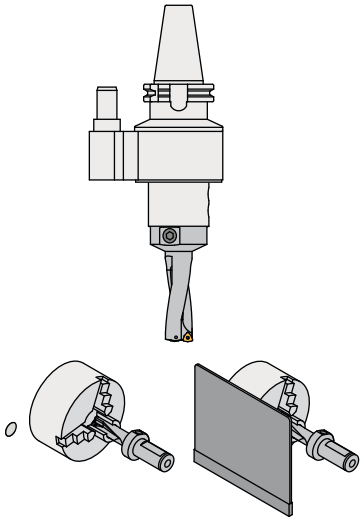
When the tool has a crossed hole, which is 1/4 bigger than the diameter of the drill, feed should be reduced when going through it.



Fixed drills

The axis of the tool should not be deviated from the center of the piece more than 0.0012 inch. so that the pointed tolerances are acquired.

The tool should be assembled in a way that the face of the central insert goes parallel to the cross movement axis of the machine.



Drilling with drill-holders with housing for cutting fluid supply

When a drillholder with a housing supplier of cutting fluid is used, it has to have a fixed top so as to avoid that the housing turns around.
If the cutting fluid has some dirty rests, this could lock the rotary housing and, consequently, the supplier tube would roll up around it, which could cause a serious accident.
If the drillholder has not been used for a long time, check if it turns round in the housing before the spindle starts working.

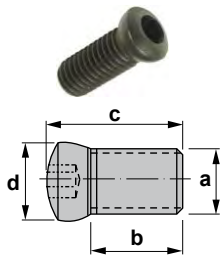
Drilling of through-holes

When through-holes are drilled, a disk is produced after the drill has finished the hole. This disk is often thrown away at high speed and can cause injuries and accidents.
In order to avoid this accident, a suitable safety system has to be placed around the dish.

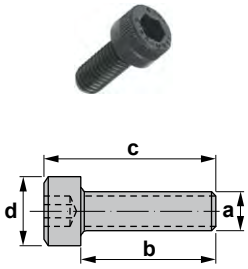
Material	HB	Condition	D inch.	Feed inch./Rev.	Cutting speed ft./min.
Unalloyed steel **P**	90-200	Non-hardened 0.05-0.25%C	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.001-0.003 0.002-0.004 0.003-0.005 0.003-0.005	328-820
Unalloyed steel	125-225 150-225 180-225	Non-hardened 0.25-0.55%C Non-hardened 0.55-0.80%C High carbon & carbon tool steel	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.001-0.005 0.003-0.007 0.004-0.008 0.006-0.010	328-820
Low alloyed steel	150-260	Non-hardened	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.003-0.005 0.004-0.006 0.004-0.008 0.006-0.009	295-820
Low alloyed steel	220-400	Hardened	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.002-0.004 0.003-0.006 0.003-0.006 0.004-0.008	262-722
High alloyed steel	150-250 150-250	Annealed Annealed HSS	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.003-0.005 0.004-0.007 0.004-0.009 0.006-0.010	328-722
High alloyed steel	250-350 250-400	Hardened tool steel Hardened steel	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.003-0.005 0.004-0.006 0.004-0.007 0.005-0.008	295-656
Stainless steel	150-270	Ferritic, Martensitic 13-25%Cr	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.001-0.005 0.004-0.006 0.004-0.007 0.004-0.007	295-623
Steel castings	150-270	Unalloyed	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.002-0.004 0.002-0.004 0.004-0.006 0.004-0.007	328-754
Steel castings	90-225	Low alloyed (alloying elements < 5%)	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.003-0.005 0.004-0.006 0.005-0.008 0.006-0.009	295-656
Stainless steel **M**	150-250	Austenitic Ni > 8%, 18-25% Cr	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.001-0.005 0.004-0.006 0.004-0.007 0.004-0.007	230-492
Malleable cast iron **K**	110-145	Ferritic (short chipping)	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.007 0.006-0.009 0.007-0.010 0.007-0.012	295-656
Malleable cast iron	150-270	Pearlitic (long chipping)	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.004-0.007 0.005-0.008 0.006-0.009	262-590
Grey cast iron	150-220	Low tensile strength	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.006-0.009 0.006-0.010 0.007-0.011	262-590
Grey cast iron	200-330	High tensile strength	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.005-0.008 0.006-0.009 0.006-0.010	230-492
Nodular cast iron	125-230	Ferritic	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.006-0.009 0.006-0.010 0.007-0.011	262-590
Nodular cast iron	200-300	Pearlitic	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.005-0.008 0.006-0.009 0.006-0.012	230-492
Aluminium alloys	75-150 40-100 70-125	Wrought, solution treated & aged Cast Cast, solution treated & aged	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.003-0.005 0.004-0.007 0.007-0.011 0.007-0.011	492-1230
Copper and copper alloys	50-160	Free cutting alloys (pb>1%) Brass and leaded bronzes (pb<1%)	0.689-1.000 1.024-1.181 1.220-1.626 1.654-3.150	0.004-0.006 0.004-0.006 0.006-0.010 0.006-0.010	262-525

SPARE PARTS

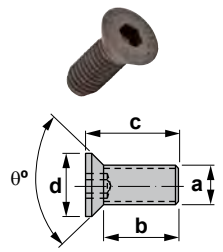
Screws (Allen)



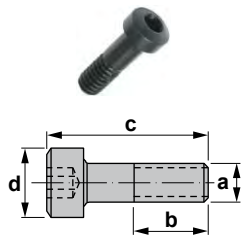
Reference	a	b	c	d	Wrench	Torque (N.m)
1006	M6x1	0.440	0.670	0.354	A4	3.5



Reference	a	b	c	d	Wrench	Torque (N.m)
1075	M5x0.8	0.984	1.185	0.328	A4	3.5
1076	M6x1	1.181	1.417	0.393	A5	4.0
1096	M6x1	0.984	1.220	0.393	A5	4.0
1291	6-32 UNC	0.496	0.630	0.220	A3/32”	2.0
1296	M6x1	0.393	0.551	0.385	A5	4.0
1297	3/16-32 BSF	0.757	0.940	0.309	A5/32”	2.0
1393	M3x0.5	0.157	0.275	0.216	A2.5	2.0
1394	M4	0.240	0.338	0.271	A2.5	2.0
1494	M4x0.7	0.472	0.630	0.275	A3	3.0
1495	M5x0.8	0.629	0.834	0.330	A4	3.5
1695	M5x0.8	0.787	0.929	0.326	A4	3.5
1696	M6x1	0.984	1.141	0.394	A4	3.5
1905	M5x0.8	0.472	0.665	0.326	A4	3.5
1906	M6x1	0.787	1.023	0.393	A5	4.0
1916	M6x1	0.472	0.708	0.393	A5	4.0
1924	M4x0.7	0.472	0.582	0.275	A2.5	2.0
1925	M5x0.8	0.472	0.610	0.334	A3	3.0
1926	M6x1	0.472	0.630	0.393	A4	3.5
1928	M8x1.25	0.629	0.670	0.511	A5	4.0

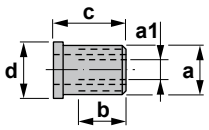


Reference	a	b	c	d	θº	Wrench	Torque (N.m)
1059	M10x1.5	0.519	0.728	0.452	60	A6	-
1192	M8x1.25	0.543	0.787	0.555	70	A5	4.0

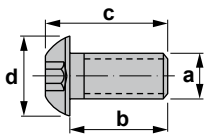


Reference	a	b	c	d	Wrench	Torque (N.m)
1614	W1/4	0.472	0.984	0.393	A4	3.5

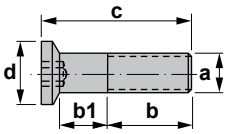
Screws (Allen)



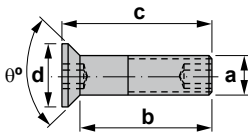
Reference	a	a1	b	c	d	Wrench	Torque (N.m)
1750	M5x0.5	M3.5x0.6	0.196	0.334	0.244	A3.5	-
1760	M6x0.75	M4x0.5	0.216	0.393	0.303	A4	3.5
1764	M5x0.8	-	0.228	0.315	0.248	A2	1.4
1765	M6x0.75	M4x0.5	0.177	0.393	0.295	A4	3.5
1766	M6x1	-	0.256	0.393	0.307	A2.5	2.0
1768	M6x1	-	0.523	0.610	0.409	A3	3.0
1770	M6x1	-	0.433	0.590	0.468	A3	3.0



Reference	a	b	c	d	Wrench	Torque (N.m)
1801	10-32 UNF	0.500	0.586	0.346	A1/8”	3.0
1803	M3	0.314	0.370	0.216	A2	1.4
1804	M4x0.7	0.393	0.476	0.295	A2.5	2.0
1806	M6x1	0.984	1.110	0.413	A4	3.5
1808	M8x1.25	1.181	1.350	0.551	A5	4.0
1810	M10x1.5	1.574	1.783	0.708	A6	-
1813	M3	0.177	0.232	0.216	A2	1.4
1814	M4	0.137	0.216	0.295	A2.5	2.0
1815	M5x0.8	0.492	0.590	0.366	A3	3.0
1816	M6x1	0.787	0.913	0.413	A4	3.5

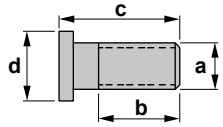


Reference	a	b	b1	c	d	Wrench	Torque (N.m)
1937	10-32 UNF	0.413	0.251	0.748	0.350	A3/32”	2.0



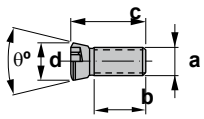
Reference	a	b	c	d	θº	Wrench	Torque (N.m)
1936	10-32 UNF	0.624	0.750	0.307	90	A3/32”	2.0

Screws (Torx)

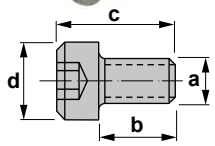


Reference	a	b	c	d	Wrench	Torque (N.m)
1150	M5x0.8	0.393	0.531	0.251	T9	1.4
1160	M6x1	0.374	0.531	0.307	T20	4.0
1161	M6x1	0.255	0.413	0.311	T20	4.0
1180	M8x1	0.374	0.531	0.433	T25	5.0

Screws (Torx)

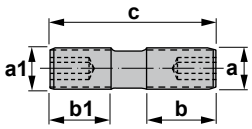


Reference	a	b	c	d	θº	Wrench	Torque (N.m)
1182	M8x1	0.374	0.531	0.413	60	T25	5.0
1225	M2.5x0.45	0.157	0.275	0.130	55	T7	0.9
1226	M2.5	0.236	0.326	0.157	94	T8	1.2
1230	M3x0.5	0.220	0.354	0.173	55	T8	1.2
1240	M4x0.7	0.244	0.433	0.208	55	T15	3.0
1244	M4x0.7	0.314	0.472	0.275	55	T20	4.0
1250	M5x0.8	0.236	0.472	0.275	55	T20	4.0
1255	M5x0.8	0.354	0.472	0.275	94	T20	4.0
1260	M6x1	0.452	0.630	0.311	55	T25	5.0
1335	M3.5x0.6	0.401	0.590	0.208	55	T20	3.0
1350	M5x0.8	0.700	0.866	0.275	55	T20	4.0
1425	M2.5x0.45	0.118	0.216	0.130	55	T7	0.9
1440	M4x0.7	0.125	0.295	0.208	55	T15	3.0
1450	M5x0.8	0.433	0.669	0.275	55	T20	4.0
1535	M3.5	0.295	0.393	0.196	94	T10	2.0
1540	M4x0.5	0.311	0.555	0.267	60	T15	3.0
1625	M2.5x0.45	0.141	0.255	0.149	60	T8	1.2
SA3	5-40UNC-3A	0.472	0.590	0.216	60	T10	2.0
SA3T	5-40UNC-3A	0.374	0.492	0.216	60	T10	2.0
SA4	8-UNC	0.433	0.590	0.295	60	T20	4.0
SA5	10-32UNF	0.661	0.866	0.322	60	T25	5.0
SN3	5-40UNC-3A	0.255	0.374	0.216	60	T10	2.0
SN4	8-UNC	0.315	0.472	0.295	60	T20	4.0



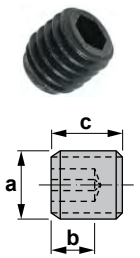
Reference	a	b	c	d	Wrench	Torque (N.m)
SY3	5-40UNC	0.165	0.271	0.212	T10	2.0
SY4	8-32UNC	0.208	0.358	0.267	T20	4.0
SY5	10-32UNF	0.228	0.362	0.330	T25	5.0

Clamp screws



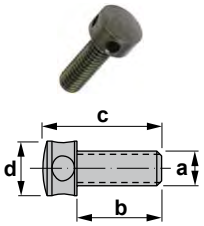
Reference	a	a1	b	b1	c	Wrench	Torque (N.m)
1085	M5x0.8L	M5x0.8R	0.311	0.311	0.838	A2.5	2.0
1086	M6x1L	M6x1R	0.448	0.448	1.157	A3	3.0
1186	M6x1R	M6x1L	0.177	0.177	0.807	A3	3.0
1466	M6x0.75R	M6x0.75L	0.350	0.409	0.921	A7/64	3.0
1488	M8x1L	M8x1R	0.393	0.393	1.023	A4	3.5
XNS-34	10-32 UNF L	10-32 UNF R	0.280	0.280	0.531	A3/32”	2.0
XNS-36	10-32 UNF R	10-32 UNF L	0.251	0.251	0.751	A3/32”	2.0
XNS-47	1/4-28 UNF R	1/4-28 UNF L	0.267	0.267	0.807	A1/8”	3.0
XNS-48	1/4-28 UNF R	1/4-28 UNF L	0.377	0.377	1.000	A1/8”	3.0
XNS-58	5/16-24 UNF R	5/16-24 UNF L	0.279	0.500	1.000	A5/32”	3.5
XNS-510	5/16-24 UNF R	5/16-24 UNF L	0.500	0.500	1.248	A5/32”	3.5

Screws



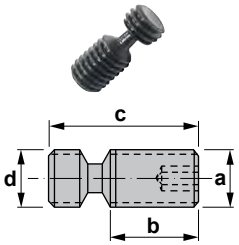
Reference	a	b	c	Wrench	Torque (N.m)
1503	M3x0.5	0.078	0.157	A1.5	0.6
1504	M4x0.7	0.078	0.157	A2	1.4
1505	M5x0.8R	0.118	0.196	A2.5	2.0
1506	M6x1R	0.157	0.196	A3	3.0
1508	M8x1.25R	0.196	0.314	A4	3.5

Adjustable screws

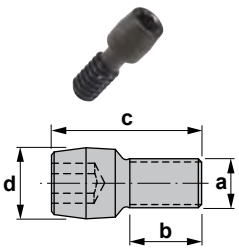


Reference	a	b	c	d	Wrench	Torque (N.m)
1403	M3x0.5	0.255	0.374	0.157	A4	3.5
1404	M4x0.7	0.354	0.492	0.275	A2.5	2.0
1405	M5x0.8	0.413	0.650	0.354	A2	1.4
1406	M6x1	0.472	0.708	0.433	A2.5	2.0
1408	M8x1.25	0.590	0.826	0.511	A3	3.0

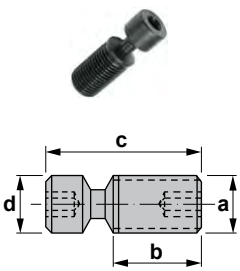
Lever lock system - Screws



Reference	a	b	c	d	Wrench	Torque (N.m)
1605	M5x0.8	0.240	0.472	0.196	A2	1.4

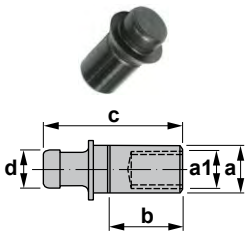


Reference	a	b	c	d	Wrench	Torque (N.m)
1676	6-32 UNC	0.216	0.444	0.196	A3/32”	2.0
1677	10-24 UNC	0.283	0.681	0.244	A3/32”	2.0

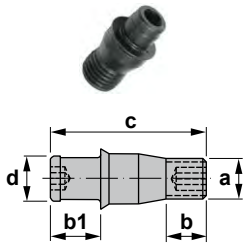


Reference	a	b	c	d	Wrench	Torque (N.m)
1606	M6x1	0.338	0.657	0.236	A2.5	2.0
1608	M8x1	0.342	0.814	0.314	A3	3.0
1610	M10x1	0.523	1.070	0.393	A4	3.5
1612	M12x1	0.681	1.417	0.472	A5	4.0
1618	M8x1	0.440	0.885	0.314	A3	3.0
1626	M6x1	0.314	0.527	0.236	A2.5	2.0
1638	M8x1	0.405	0.830	0.314	A3	3.0
1648	M8x1	0.358	0.670	0.314	A3	3.0
1708	M8x1	0.480	0.925	0.314	A3	3.0
1710	M10x1	0.681	1.196	0.393	A4	3.5

Lock pins

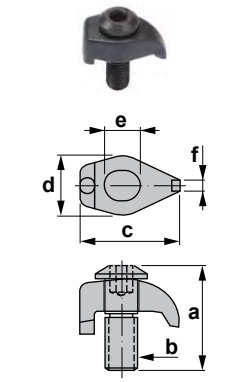


Reference	a	a1	b	c	d
1642	0.177	M3x0.5	0.300	0.519	0.145
1643	0.177	M3x0.5	0.133	0.334	0.145
1644	0.177	M3x0.5	0.196	0.397	0.145
1647	0.236	M4x0.7	0.122	0.334	0.196
1661	0.236	M4x0.7	0.220	0.531	0.196
1682	0.314	M6x1	0.362	0.650	0.303



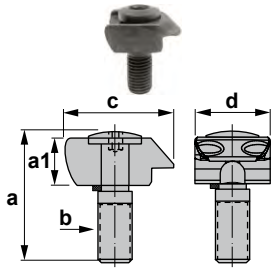
Reference	a	b	b1	c	d	Wrench	Torque (N.m)
1657	M6x1	0.196	0.275	0.732	0.196	A2.5	2.0
1665	M5x0.8	0.090	0.196	0.511	0.141	A2	1.4
1673	M6	0.189	0.248	0.866	0.248	A3	3.0
1674	M6	0.177	0.248	0.862	0.303	A4	3.5
1675	M5x0.8	0.133	0.196	0.637	0.141	A2	1.4
1678	8-32 UNC	0.263	0.279	0.578	0.196	A3/32”	2.0
1679	10-24 UNC	0.251	0.279	0.748	0.246	A3/32”	2.0
NL-23	8-32 UNF	0.137	0.125	0.320	0.082	A1/16”	0.6
NL-33	12-32 UNF	0.137	0.129	0.346	0.145	A5/64”	1.4
NL-33L	12-32 UNF	0.137	0.196	0.413	0.145	A5/64”	1.4
NL-34	10-32 UNF	0.133	0.138	0.450	0.219	A5/64”	1.4
NL-34L	10-32 UNF	0.133	0.196	0.511	0.145	A5/64”	1.4
NL-44	1/4-28 UNF	0.177	0.216	0.519	0.196	A3/32”	2.0
NL-46	1/4-28 UNF	0.251	0.220	0.677	0.188	A3/32”	2.0
NL-46S	1/4-28 UNF	0.177	0.220	0.657	0.188	A3/32”	2.0
NL-58	5/16-24 UNF	0.196	0.267	0.858	0.236	A1/8”	3.0
NL-68	3/8-24 UNF	0.196	0.267	0.858	0.295	A9/64”	3.5
NL-68L	3/8-24 UNF	0.196	0.362	0.952	0.307	A9/64”	3.5
NL-810	7/16-20 UNF	0.236	0.377	1.165	0.354	A5/32”	2.0

Top clamp (C) system - Clamps



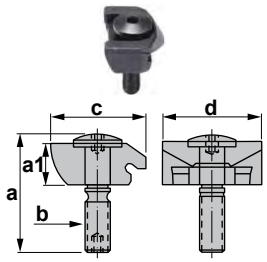
Reference	a	b	c	d	e	f	Wrench	Torque (N.m)
2304	0.551	M4x0.7	0.519	0.314	0.196	0.078	A2.5	2.0
2305	0.736	M5x0.8	0.661	0.393	0.216	0.078	A3	3.0

Wedge clamp (W) system - Clamps

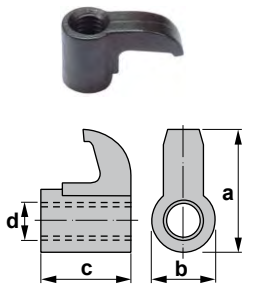


Reference	a	a1	b	c	d	Wrench	Torque (N.m)
2006	0.767	0.267	M5x0.5	0.578	0.433	A2.5	2.0
2007	0.767	0.271	M5x0.5	0.578	0.433	A7/64”	3.0
2011	1.023	0.318	M8x1	0.866	0.669	A5	4.0
2012	1.023	0.468	M8x1	0.846	0.472	A3/16”	4.0
2013	1.023	0.326	M8x1	0.842	0.590	A3/16”	4.0
2014	1.023	0.326	M8x1	0.842	0.590	A5	4.0
2024	0.944	0.362	M8x1	0.885	0.669	A5	4.0

Wedge clamp (M) system - Clamps

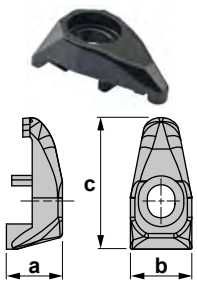


Reference	a	a1	b	c	d	Wrench	Torque (N.m)
2017	0.944	0.315	M5x0.8	0.618	0.732	A2.5	2.0
2019	1.023	0.299	M8x1	0.870	0.472	A3	3.0
2029	1.023	0.330	M8x1	0.879	0.670	A3	3.0



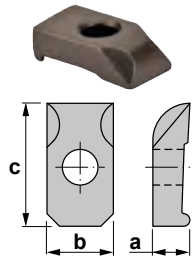
Reference	a	b	c	d
2604	0.582	0.311	0.440	M5x0.8L
2613	0.728	0.374	0.531	M6x1L
2614	0.854	0.374	0.531	M6x1L
CL-6	0.580	0.310	0.440	10-32 TPI UNF L
CL-7	0.640	0.310	0.310	10-32 TPI UNF L
CL-12	0.881	0.430	0.660	5/16-24 TPI UNF L
CL-20	0.730	0.370	0.379	1/4-28 TPI L
CL-22	0.854	0.374	0.531	1/4-28L
CL-30	1.000	0.425	0.661	5/16-24L

Dimple lock system - Clamps

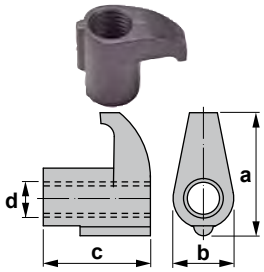


Reference	a	b	c
2708	0.444	0.507	0.952
2712	0.496	0.543	1.165
2716	0.559	0.543	1.334
2719	0.559	0.543	1.393

Threading - Clamps

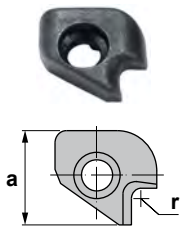


Reference	a	b	c	Wrench	Torque (N.m)
2101	0.208	0.374	0.700	T15	0.6

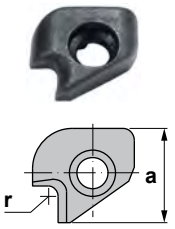


Reference	a	b	c	d
2722	0.756	0.370	0.653	M6x0.75L
2727	0.795	0.425	0.653	M8x1L

KNUX - Clamps

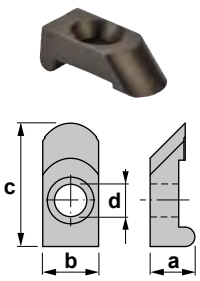


Reference	a	r
2316	0.925	0.098



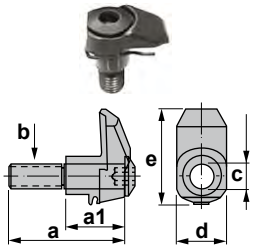
Reference	a	r
2326	0.925	0.098

Ceramic tools - Clamps

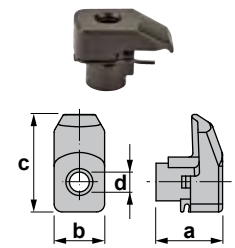


Reference	a	b	c	d	θº	Wrench	Torque (N.m)
2121	0.271	0.338	0.748	0.295	45	T20	4.0
2122	0.334	0.464	0.972	0.322	45	T25	5.0

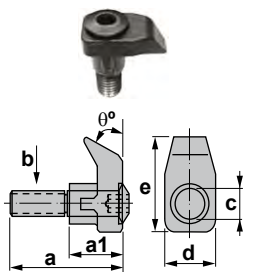
Ceramic tools - Clamps



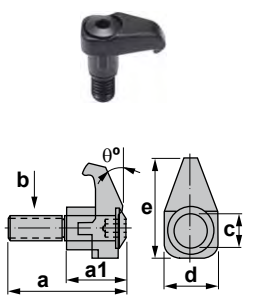
Reference	a	a1	b	c	d	e	Wrench	Torque (N.m)
2413	1.169	0.630	M8x1.25	0.322	0.500	0.862	A4	3.5
2417	1.169	0.692	M8x1.25	0.314	0.500	0.968	A4	3.5



Reference	a	b	c	d	Wrench	Torque (N.m)
2713	0.322	0.500	0.881	0.196	A3	3.0
2717	0.318	0.500	0.968	0.196	A3	3.0

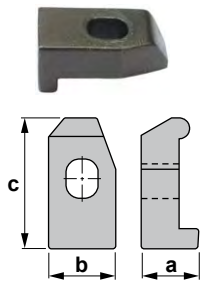


Reference	a	a1	b	c	d	e	θº	Wrench	Torque (N.m)
2414	1.169	0.594	M8x1.25	0.322	0.500	0.885	20	A4	3.5

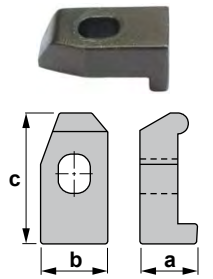


Reference	a	a1	b	c	d	e	θº	Wrench	Torque (N.m)
2415	1.169	0.618	M8x1.25	0.322	0.511	1.019	8	A4	3.5
2428	1.169	0.618	M8x1.25	0.322	0.511	1.125	7	A4	3.5
2432	1.169	0.618	M8x1.25	0.322	0.511	1.125	7	A4	3.5
2471	1.169	0.618	M8x1.25	0.322	0.511	1.019	8	A4	3.5

Notch tools - Clamps

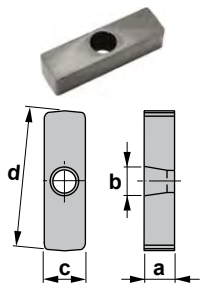


Reference	a	b	c
TF-146	0.216	0.354	0.539
TF-72	0.381	0.444	0.866
TF-74	0.283	0.354	0.539



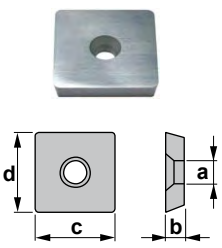
Reference	a	b	c
TF-147	0.216	0.354	0.539
TF-73	0.381	0.444	0.866
TF-75	0.283	0.354	0.539

Shim seat



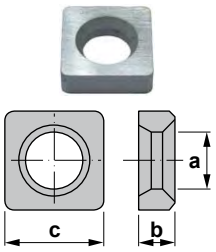
Reference	a	b	c	d
3521	0.187	0.165	0.248	0.874

Square shim seats

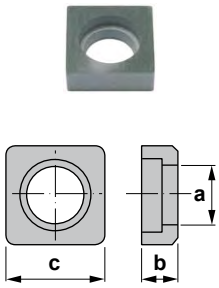


Reference	a	b	c	d
3109	0.090	0.125	0.320	0.320
3112	0.090	0.125	0.444	0.444
3119	0.130	0.125	0.681	0.681

Square shim seats

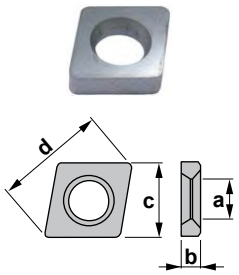


Reference	a	b	c
3512	0.251	0.125	0.456
3515	0.311	0.187	0.574
3519	0.377	0.187	0.700
3525	0.503	0.250	0.952

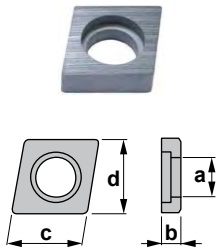


Reference	a	b	c
3514	0.260	0.156	0.448
ISSN-322	0.225	0.125	0.365
ISSN-422	0.315	0.125	0.488
ISSN-432	0.291	0.187	0.488
ISSN-434	0.291	0.187	0.488
ISSN-442	0.291	0.250	0.488
ISSN-454	0.291	0.312	0.488
ISSN-533	0.366	0.187	0.614
ISSN-534	0.377	0.187	0.618
ISSN-633	0.444	0.187	0.740
ISSN-846	0.576	0.251	0.998

80º Rhombic shim seats

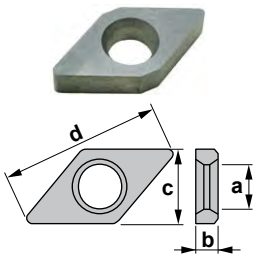


Reference	a	b	c	d
3612	0.252	0.125	0.456	0.673
3616	0.311	0.187	0.574	0.822
3619	0.378	0.187	0.700	1.023
3625	0.503	0.250	0.952	1.417

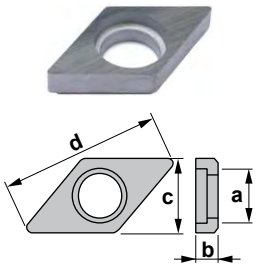


Reference	a	b	c	d
3614	0.260	0.156	0.448	0.448
ICSN-332	0.244	0.196	0.354	0.354
ICSN-422	0.283	0.118	0.492	0.492
ICSN-432	0.291	0.187	0.488	0.488
ICSN-434	0.291	0.187	0.488	0.488
ICSN-442	0.290	0.250	0.490	0.490
ICSN-454	0.291	0.312	0.488	0.488
ICSN-523	0.390	0.125	0.614	0.614
ICSN-533	0.390	0.187	0.614	0.614
ICSN-534	0.390	0.187	0.614	0.614
ICSN-623	0.444	0.125	0.740	0.740
ICSN-633	0.444	0.187	0.740	0.740

55º Rhombic shim seats

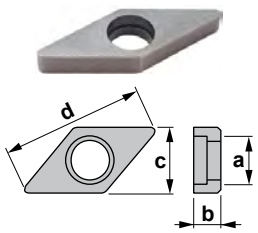


Reference	a	b	c	d
3711	0.192	0.106	0.334	0.669
3715	0.251	0.125	0.456	0.921
3725	0.255	0.187	0.460	0.921



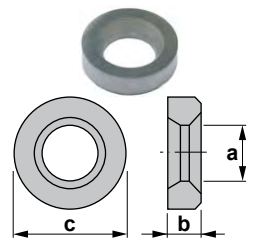
Reference	a	b	c	d
3714	0.260	0.125	0.334	0.685
IDSN-322	0.251	0.125	0.369	0.716
IDSN-422	0.322	0.187	0.496	1.007
IDSN-432	0.322	0.187	0.492	1.007
IDSN-434	0.222	0.187	0.492	0.921
IDSN-442	0.322	0.250	0.492	0.921
IDSN-533	0.452	0.187	0.614	1.220

35º Rhombic shim seats

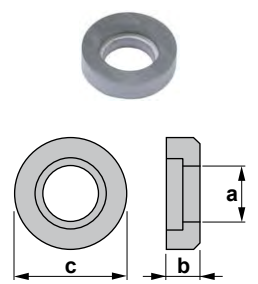


Reference	a	b	c	d
3718	0.263	0.125	0.330	1.023
IVSN-322	0.260	0.125	0.370	1.019
IVSN-433	0.330	0.187	0.494	1.426

Round shim seats

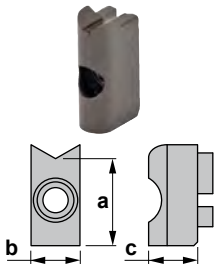


Reference	a	b	c
3816	0.251	0.187	0.533
3820	0.314	0.187	0.680
3825	0.377	0.250	0.862
3832	0.496	0.250	1.102
3919	0.378	0.187	0.724
3925	0.507	0.250	0.976

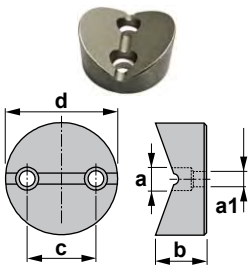


Reference	a	b	c
3811	0.208	0.125	0.346
3814	0.208	0.125	0.417
IRSN-42	0.291	0.125	0.490
IRSN-43	0.291	0.187	0.490
IRSN-44	0.287	0.251	0.490
IRSN-45	0.291	0.311	0.490
IRSN-53	0.385	0.187	0.614
IRSN-63	0.444	0.187	0.740
IRSN-84	0.570	0.250	0.990

Round shim seats

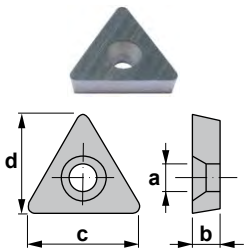


Reference	a	b	c
3849	0.541	0.303	0.303
3852	0.598	0.437	0.425

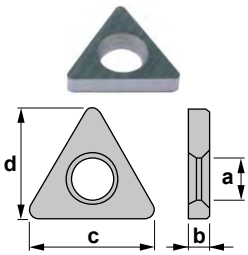


Reference	a	a1	b	c	d
3817	0.177	0.118	0.305	0.275	0.533
3819	0.177	0.118	0.335	0.330	0.651

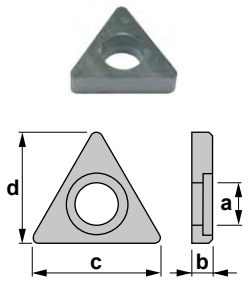
Triangular shim seats



Reference	a	b	c	d
3116	0.090	0.125	0.512	0.452
3122	0.130	0.125	0.676	0.594

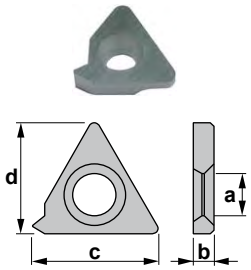


Reference	a	b	c	d
3416	0.192	0.108	0.532	0.468
3422	0.248	0.125	0.744	0.653

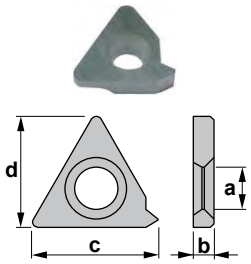


Reference	a	b	c	d
3414	0.208	0.125	0.533	0.470
ITSN-322	0.232	0.125	0.574	0.507
ITSN-324	0.224	0.130	0.561	0.503
ITSN-342	0.232	0.250	0.586	0.515
ITSN-433	0.291	0.187	0.775	0.681
ITSN-443	0.301	0.250	0.795	0.700
ITSN-533	0.389	0.187	0.994	0.874
ITSN-637	0.515	0.187	1.143	1.015

Shim seats for threading

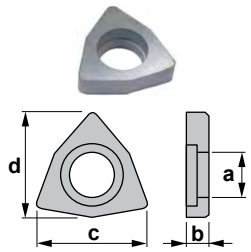


Reference	a	b	c	d
YE3	0.155	0.125	0.500	0.488
YE4	0.208	0.157	0.681	0.681
YE5	0.248	0.228	0.929	0.877



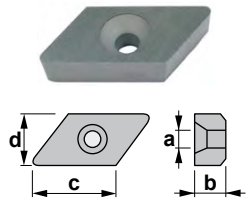
Reference	a	b	c	d
3420	0.311	0.125	0.751	0.590
3421	0.377	0.125	0.751	0.590
YI3	0.155	0.125	0.503	0.503
YI4	0.208	0.157	0.681	0.681
YI5	0.248	0.228	0.930	0.877

Trigon shim seats

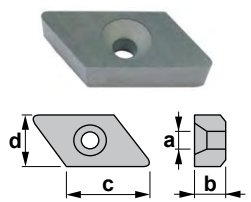


Reference	a	b	c	d
3006	0.200	0.125	0.444	0.425
3008	0.251	0.125	0.622	0.598
IWSN-322	0.248	0.125	0.470	0.451
IWSN-433	0.287	0.187	0.630	0.602

KNUX - Shim seats

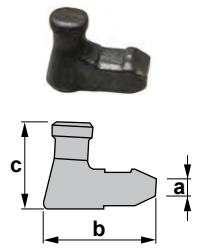


Reference	a	b	c	d
3226	0.130	0.187	0.570	0.364

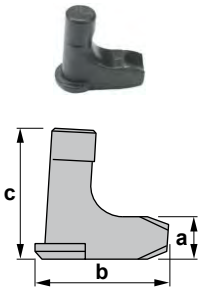


Reference	a	b	c	d
3236	0.130	0.187	0.570	0.364

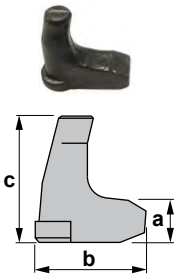
Levers



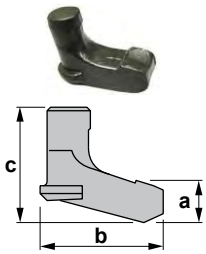
Reference	a	b	c
8005	0.090	0.397	0.307



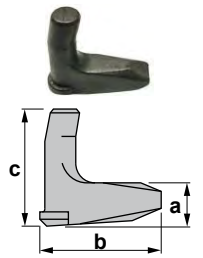
Reference	a	b	c
8009	0.133	0.401	0.472
8012	0.165	0.531	0.515
8016	0.212	0.649	0.673
8019	0.322	0.811	0.826
8025	0.322	1.011	0.992



Reference	a	b	c
8120	0.267	0.803	0.724
8125	0.299	0.933	0.901
8132	0.354	1.188	1.051

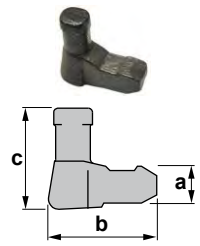


Reference	a	b	c
8212	0.185	0.527	0.476

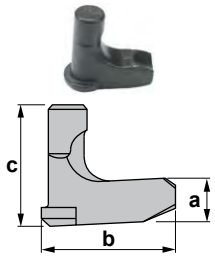


Reference	a	b	c
8312	0.165	0.531	0.519

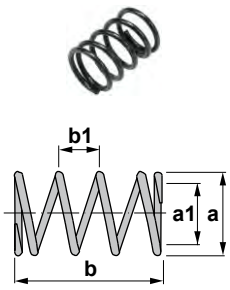
Levers and others



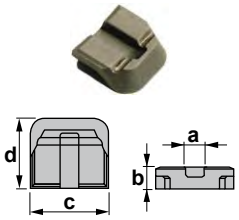
Reference	a	b	c
8216	0.133	0.397	0.374



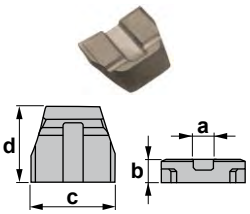
Reference	a	b	c
8415	0.232	0.637	0.578



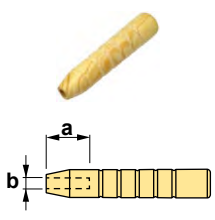
Reference	a	a1	b	b1
4294	0.271	0.208	0.492	0.098
4295	0.374	0.275	0.650	0.137



Reference	a	b	c	d
9414	0.102	0.078	0.496	0.433

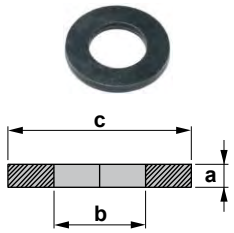


Reference	a	b	c	d
9416	0.118	0.137	0.496	0.433

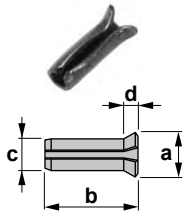


Reference	a	b
0009	0.590	0.157
0012	0.590	0.196
0015	0.590	0.248
0019	0.472	0.334
0025	0.551	0.472

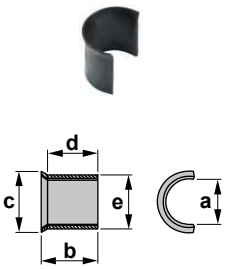
Others



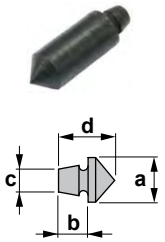
Reference	a	b	c
2803	0.019	0.126	0.267
2804	0.031	0.169	0.354
2806	0.059	0.252	0.472
2808	0.063	0.330	0.630
2810	0.098	0.413	0.826



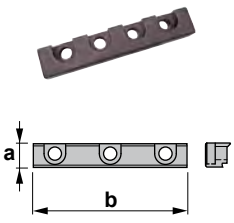
Reference	a	b	c	d
4002	0.106	0.393	0.082	0.043
4012	0.141	0.393	0.118	0.059



Reference	a	b	c	d	e
4109	0.173	0.204	0.224	0.181	0.192
4112	0.216	0.232	0.275	0.204	0.260
4115	0.275	0.362	0.354	0.303	0.322
4119	0.334	0.444	0.413	0.385	0.381
4125	0.393	0.468	0.598	0.381	0.519
4135	0.216	0.303	0.283	0.267	0.260

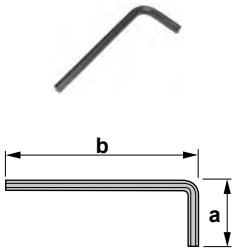


Reference	a	b	c	d
4203	0.189	0.122	0.098	0.492
4204	0.189	0.122	0.098	0.570



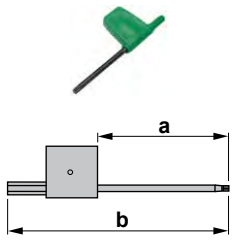
Reference	a	b
2916	0.393	2.520
2920	0.637	2.952
2930	0.760	3.307
2935	0.760	3.700
2942	0.760	4.094
2950	0.826	4.330

Wrenches (Allen)



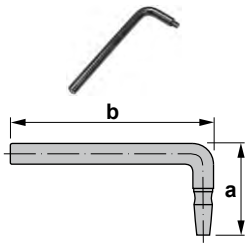
Reference	a	b	Wrench	Torque (N.m)
5002	0.708	2.027	A2	1.4
5003	0.874	2.535	A3	3.0
5004	1.086	2.858	A4	3.5
5005	1.260	3.267	A5	4.0
5006	1.456	3.780	A6	-
5015	0.567	1.791	A1.5	0.6
5025	0.748	2.256	A2.5	2.0
5100	0.590	1.773	A1/16”	0.6
5102	0.679	2.007	A5/64”	1.4
5103	0.895	2.622	A1/8”	3.0
5105	1.208	3.250	A3/16”	3.0
5124	0.748	2.244	A3/32”	2.0
5126	0.856	2.560	A7/64”	3.0
5135	0.966	2.756	A9/64”	3.5

Wrenches (Torx)

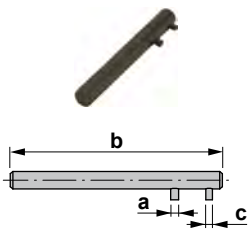


Reference	a	b	Wrench	Torque (N.m)
5507	1.377	2.480	T7	0.9
5508	1.732	2.834	T8	1.2
5510	1.496	2.913	T10	2.0
5515	1.791	3.248	T15	3.0
5516	1.681	3.413	T15 / A3.5	3.0 / -
5517	1.800	3.767	T15 / A4	3.0 / 3.5
5520	1.807	3.150	T20	4.0
5525	2.086	3.622	T25	5.0

Wrenches for blades

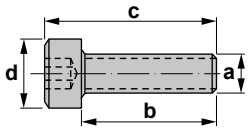


Reference	a	b
5732	1.082	3.189

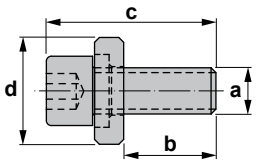


Reference	a	b	c
5735	0.118	3.150	0.098

Screws (Allen)

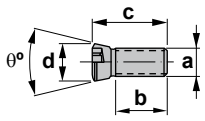


Reference	a	b	c	d	Wrench	Torque (N.m)
1296	M6x1	0.393	0.551	0.385	A5	4.0
1905	M5x0.8	0.472	0.665	0.326	A4	3.5
UNF.12	1/2-20 UNF	1.250	1.750	0.750	A3/8”	-
UNF.14	14-28 UNF	1.348	1.500	0.374	A5/32”	2.0
UNF.34	5/8-18 UNF	2.000	2.625	0.937	A1/2”	-
UNF.38	3/8-24 UNF	1.000	1.375	0.562	A5/16”	-

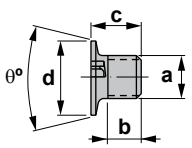


Reference	a	b	c	d	Wrench	Torque (N.m)
10107	3/8-24 UNF	0.858	1.375	0.868	A5/16”	-
10110	1/2-20 UNF	1.128	1.750	1.189	A3/8”	-
10112	5/8-18 UNF	1.100	1.866	1.500	A1/2”	-

Screws (Torx)



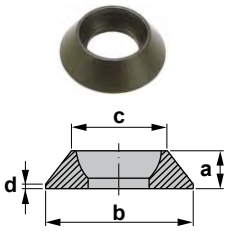
Reference	a	b	c	d	θº	Wrench	Torque (N.m)
1225	M2.5x0.45	0.157	0.275	0.130	55	T7	0.9
1230	M3x0.5	0.220	0.354	0.173	55	T8	1.2
1235	M3.5	0.255	0.374	0.208	55	T15	3.0
1240	M4x0.7	0.244	0.433	0.208	55	T15	3.0
1240-IP	M4x0.7	0.260	0.393	0.208	60	T15-IP	3.5
1245	M4.5x0.75	0.291	0.448	0.251	55	T15	3.0
1250	M5x0.8	0.236	0.472	0.275	55	T20	4.0
1341	M4x0.7	0.185	0.354	0.208	55	T15	3.0
1425	M2.5x0.45	0.118	0.216	0.130	55	T7	0.9
1430-IP	M3x0.5	0.157	0.263	0.153	60	T10-IP	2.5
1435	M3.5	0.122	0.275	0.208	55	T15	3.0
1440	M4x0.7	0.125	0.295	0.208	55	T15	3.0
1440-IP	M4x0.7	0.165	0.314	0.208	60	T15-IP	3.5
1445	M4.5x0.75	0.212	0.354	0.248	55	T15	3.0
1550	M5x0.8	0.232	0.433	0.251	43	T20	4.0
1622	M2.2x0.45	0.157	0.236	0.133	60	T7	0.9
1630	M3x0.5	0.204	0.326	0.169	60	T9	1.4
1635	M3.5x0.6	0.216	0.354	0.185	60	T10	2.0
1640	M4	0.275	0.413	0.216	60	T15	3.0
1845	M4.5x0.75	0.271	0.354	0.255	90	T15	3.0
1846	M4.5x0.75	0.255	0.440	0.255	90	T15	3.0
1847	M4.5x0.75	0.314	0.433	0.263	90	T15	3.0



Reference	a	b	c	d	θº	Wrench	Torque (N.m)
1735	M3.5	0.039	0.118	0.204	90	T7	0.9
1745	M4.5x0.75	0.149	0.204	0.263	100	T15	3.0
1835	M3.5x0.6	0.078	0.157	0.204	90	T7	0.9

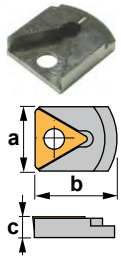
I

Washers



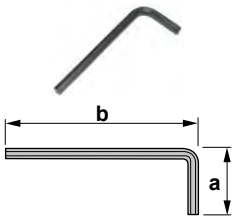
Reference	a	b	c	d
2009	0.118	0.354	0.244	0.015
2010	0.125	0.393	0.283	0.023

Seats



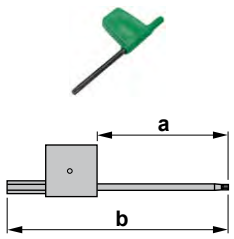
Reference	a	b	c
6921	0.433	0.507	0.114
6926	0.630	0.767	0.188

Wrenches (Allen)

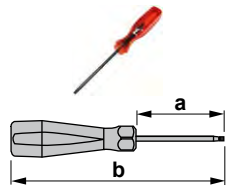


Reference	a	b	Wrench	Torque (N.m)
5003	0.874	2.535	A3	3.0

Wrenches (Torx)



Reference	a	b	Wrench	Torque (N.m)
5507	1.377	2.480	T7	0.9
5508	1.732	2.834	T8	1.2
5509	1.496	2.913	T9	1.4
5510	1.496	2.913	T10	2.0
5510-IP	1.496	2.913	T10-IP	2.5
5515	1.791	3.248	T15	3.0
5515-IP	1.791	3.248	T15-IP	3.5
5520	1.807	3.149	T20	4.0



Reference	a	b	Wrench	Torque (N.m)
5607	2.000	5.090	T7	0.9
5615	2.622	3.897	T15	3.0
5620	3.937	8.177	T20	4.0

TECHNICAL INFORMATION

Reference list of materials (Steels)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
P Unalloyed steel	1.0038	RSt.37-2	A570.36	STKM 12A;C	-	4360 40 C	-	1311	E 24-2 Ne	-
	1.0038	GS-CK16	1115	-	-	030A04	1A	1325	-	-
	1.0116	St.37-3	A573-81 65	-	F.111	4360 40 B	-	1312	E 24-U	Fe37-3
	1.0401	C15	1015	-	F.112	080M15	-	1350	CC12	C15C16
	1.0402	C22	1020	-	11SMn28	050A20	2C/2D	1450	CC20	C20C21
	1.0715	9SMn28	1213	SUM22	11SMnPb28	230M07	-	1912	S250	CF9SMn28
	1.0718	9SMnPb28	12L13	SUM22L	10SPb20	-	-	1914	S250Pb	CF9SMnPb28
	1.0722	10SPb20	-	-	12SMn35	-	-	-	10PbF2	CF10Pb20
	1.0736	9SMn36	1215	-	12SMnPb36	240M07	1B	-	S300	CF9SMn36
	1.0737	9SMnPb36	12L14	-	C15K	-	-	1926	S300Pb	CF9MnPb36
	1.1141	Ck15	1015	S15C	-	080M15	32C	1370	XC12	C16
	1.1158	Ck25	1025	S25C	-	-	-	-	-	-
	1.8900	StE 380	A572-60	-	-	4360 55 E	-	2145	-	FeE390KG
	-	17 MnV 6	A572-60	-	-	4360 55 E	-	2142	NFA 35-501 E36	-
	1.0501	C35	1035	-	F.113	060A35	-	1550	CC35	C35
	1.0503	C45	1045	-	F.114	080M46	-	1650	CC45	C45
	1.0726	35S20	1140	-	F210G	212M36	8M	1657	35MF4	-
	1.1157	40Mn4	1039	-	-	150M36	15	-	35M5	-
	1.1167	36Mn5	1335	SMn438(H)	36Mn5	-	-	2120	40M5	-
	1.1170	28Mn6	1330	SCMn1	-	150M28	14A	-	20M5	C28Mn
	1.1183	Cf35	1035	S35C	-	060A35	-	1572	XC38TS	C36
	1.1191	Ck45	1045	S45C	C45K	080M46	-	1672	CX42	C45
	1.1213	Cf53	1050	S50C	-	060A52	-	1674	XC48TS	C53
	1.0535	C55	1055	-	-	070M55	-	1655	-	C55
	1.0601	C60	1060	-	-	080A62	43D	-	CC55	C60
	1.1203	Ck55	1055	S55c	C55K	070M55	-	-	XC55	C50
	1.1221	Ck60	1060	S58C	-	080A62	43D	1678	XC60	C60
	1.1274	CK 101	1095	-	F-5117	060A96	-	1870	XC100	-
	1.1545	C105W1	W 1	SK 3	F-5118	BW1A	-	1880	Y105	C36KU
	1.1545	C105W1	W210	SUP4	F.515	BW2	-	2900	Y120	C120KU
P Low alloyed steel	1.0144	St.44-2	A573-81	SM400A;B;C	-	4360 43C	-	1412	E28-3	-
	1.0570	St.52-3	-	SM490A;B;YA;YB	-	4360 50B	-	2132	E36-3	Fe52BFN/Fe52CFN
	1.0841	St.52-3	5120	-	F-431	150 M 19	-	2172	20 MC 5	Fe52
	1.0904	55Si7	9255	-	56Si7	250A53	45	2085	55S7	55Si8
	1.0961	60SiCr7	9262	-	60SiCr8	-	-	-	60SC7	60SiCr8
	1.3505	100Cr	52100	SUJ2	F.131	534A99	31	2258	100C6	100Cr6
	1.5415	15Mo3	ASTM A204Gr.A	-	16Mo3	1501-240	-	2912	15D3	16Mo3KW
	1.5423	16Mo5	4520	-	16Mo5	1503-245-420	-	-	-	16Mo5
	1.5622	14Ni6	ASTM A350LF5	-	15Ni6	-	-	-	16N6	14Ni6
	1.6523	21NiCrMo2	8620	SNCM220(H)	20NiCrMo2	805M20	362	2506	20NCD2	20NiCrMo2
	1.6546	40NiCrMo22	8740	SNCM240	40NiCrMo2	311-Type7	-	-	-	40NiCrMo2(KB)
	1.6587	17CrNiMo6	-	-	14NiCrMo13	820A16	-	-	18NCD6	-
	1.7015	15Cr3	5015	SCr415(H)	-	523M15	-	-	12C3	-
	1.7045	42Cr4	5140	SCr440	42Cr4	-	-	2245	-	-
	1.7176	55Cr3	5155	SUP9(A)	-	527A60	48	-	55C3	-
	1.7262	15CrMo5	-	SCM415(H)	12CrMo4	-	-	2216	12CD4	-
	1.7335	13CrMo4 4	ASTM A182F11;F12	-	14CrMo45	1501-620Gr27	-	-	15CD3.5	14CrMo4 5
	1.7380	10CrMo9 10	ASTM A182F.22	-	TU.H	1501-622Gr31;45	-	2218	12CD9, 10	12CrMo9, 10

Reference list of materials (Steels)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
P Low alloyed steel	1.7715	14MoV6 3	-	-	13MoCrV6	1503-660-440	-	-	-	-
	1.8515	31 CeMo 12	-	-	F-1712	722 M 24	-	2240	-	30CrMo12
	1.8523	39CrMoV13 9	-	-	-	897M39	-	-	30 CD 12	36CrMoV12
	1.7039	34MoCrS4 G	L1	-	-	524A14	40C	2092	-	105WCR 5
	1.5419	20MoCrS4	8620	-	F520.S	605A32	-	2108	-	-
	1.7228	55NiCrMoV6G	-	-	-	823M30	-	2512	-	653M31
	1.7139	16MnCr5	-	-	-	-	33	2127	-	-
	-	31NiCrMo134	-	-	F-1270	830M31	-	2534	-	-
	1.271	50NiCr13	L6	-	F-528	-	-	2550	55NCV6	-
	1.5710	36NiCr6	3135	SNC236	-	640A35	111A	-	35NC6	-
	1.5732	14NiCr10	3415	SNC415(H)	15NiCr11	-	-	-	14NC11	16NiCr11
	1.5752	14NiCr14	3415;3310	SNC815(H)	-	655M13;A12	36A	-	12NC15	-
	1.0904	55Si7	9255	-	-	-	-	2090	55S7	-
	1.6511	36CrNiMo4	9840	-	35NiCrMo4	816M40	110	-	40NCD3	38NiCrMo4(KB)
	1.6582	35CrNiMo6	4340	-	-	817M40	24	2541	35NCD6	35NiCrMo6(KB)
	1.7033	34Cr4	5132	SCr430(H)	35Cr4	530A32	18B	-	32C4	34Cr4(KB)
	1.7035	41Cr4	5140	SCr440(H)	42Cr4	530A40	18	-	42C4	41Cr4
	1.7131	16MnCr5	5115	-	16MnCr5	(527M20)	-	2511	16MC5	16MnCr5
	1.7218	25CrMo4	4130	SCM420;SCM430	55Cr3	1717CDS110	-	2225	25CD4	25CrMo4(KB)
	1.7220	34CrMo4	4137;4135	SCM432;SCCRM3	34CrMo4	708A37	19B	2234	35CD4	35CrMo4
	1.7223	41CrMo4	4140;4142	SCM440	42CrMo4	708M40	19A	2244	42CD4TS	41CrMo4
	1.7225	42CrMo4	4140	SCM440(H)	42CrMo4	708M40	19A	2244	42CD4	42CrMo4
	1.7361	32CrMo12	-	-	F.124.A	722M24	40B	2240	30CD12	32CrMo12
	1.8159	50CrV4	6150	SUP10	51CrV4	735A50	47	2230	50CV4	50CrV4
	1.8509	41CrAlMo7	-	-	41CrAlMo7	905M39	41B	2940	40CAD6,12	41CrAlMo7
	1.2067	100Cr6	L3	-	100Cr6	BL3	-	-	Y100C6	-
	1.2419	105WCr6	-	SKS31,SKS2,SKS3	105WCr5	-	-	2140	105WC13	10WCr6
	1.2713	55NiCrMoV6	L6	SKT4	F.520.S	-	-	-	55NCDV7	-
P High alloyed steel	1.5662	X8Ni9	ASTM A353	-	XBNi09	1501-509;510	-	-	-	X10Ni9
	1.5680	12Ni19	2515	-	-	-	-	-	Z18N5	-
	1.6657	14NiCrMo134	-	-	14NiCrMo131	832M13	36C	-	-	15NiCrMo131
	1.2.080	X210Cr12	D3	SKD1	X210Cr12	BD3	-	-	Z200C12	X210Cr13KU
	1.2083	-	-	-	-	-	-	2314	-	X250Cr12KU
	1.2344	X40CrMoV5 1	H13	SKD61	X40CrMoV5	BH13	-	2242	Z40CDV5	X35CrMoV05KU
	1.2363	X100CrMoV5 1	A2	SKD12	X100CrMoV5	BA2	-	2260	Z100CDV5	X40CrMoV511KU
	1.2436	X210CrW12	-	SKD2	X210CrW12	-	-	2312	-	X100CrMoV51KU
	1.2542	45WCrV7	S1	-	45WCrSi8	BS1	-	2710	-	X215CrW12 1KU
	1.2581	X30wCrV9 3	H21	SKD5	X30WCrV9	BH21	-	-	Z30WCV9	45WCrV8KU
	1.2601	X165CrMoV 12	-	-	X160CrMoV12	-	-	2310	-	X28W09KU
	1.4718	X45GrSi93	HW3	SUH1	F322	401S45	52	-	Z45CS9	X160CrMoV12
	1.3343	S6-5-2	D3	SUH3	-	4959BA2	-	2715	Z40CSD10	F322
	1.3343	S6/5/2	M 2	SKH 51	F-5603	BM 2	-	2722	Z 85 WDCV	-
	1.3243	S6/5/2/5	M 35	SKH 55	F-5613	BM 35	-	2723	6-5-2-5	F-5603
	1.3348	S2/9/2	M 7	-	F-5607	-	-	2782	-	F-5607
	1.2379	X210Cr12 G	HNV3	-	-	-	-	2736	-	-
P Steel castings	-	-	-	-	-	-	-	2223	-	-
	1.3401	G-X210Mn12	-	SCMnH/1	X120Mn12	Z120M12	-	-	Z120M12	XG120Mn12
	1.3401	-	-	SEMn H1	F-8251	BW 10	-	2183	2120 M12	Gx120 Mn12

Reference list of materials (Stainless steels)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
M Stainless steel (Ferritic / martensitic)	1.4000	X7Cr13	403	SUS403	F.3110	403S17	-	2301	Z6Cr13	X6Cr13
	1.4001	X7Cr14	-	-	F.8401	-	-	-	-	-
	1.4005	X12CrS13	416	SUS416	F-3411	416 S 21	-	2380	Z11CF13	X12 CrS 13
	1.4016	X8Cr17	430	SUS430	F3113	430S15	960	2320	Z8C17	X8Cr17
	1.4006	X10Cr13	410	SUS410	F.3401	410S21	56A	2302	Z10C14	X12Cr13
	-	X8Cr17	430	SUS430	F.3113	430S17	60	2320	Z8C17	X8Cr17
	1.4034	X46Cr13	-	SUS420J2	F.3405	420S45	56D	2304	Z40CM	X40Cr14
	-	-	-	-	-	-	-	-	Z38C13M	-
	1.4003	-	405	-	-	405S17	-	-	Z8CA12	X6CrAl13
	1.4021	-	420	-	-	420S37	-	2303	Z20C13	X20Cr13
	1.4057	X22CrNi17	431	SUS431	F.3427	431S29	57	2321	Z15CNi6.02	X16CrNi16
	1.4104	X12CrMoS17	430F	SUS430F	F.3117	-	-	2383	Z10CF17	X10CrS17
	1.4113	X6CrMo17	434	SUS434	-	434S17	-	2325	Z8CD17.01	X8CrMo17
	1.4313	X5CrNi13 4	CA6-NM	SCS5	-	425C11	-	2385	Z4CND13.4M	(G)X6CrNi304
	1.4724	X10CrA113	405	SUS405	F.311	403S17	-	-	Z10C13	X10CrA112
	1.4742	X10CrA118	430	SUS430	F.3113	430S15	60	-	Z10CAS18	X8Cr17
	1.4747	X80CrNiSi20	HNV6	SUH4	F.320B	443S65	59	-	Z80CSN20.02	X80CrSiNi20
	1.4762	X10CrA124	446	SUH446	-	-	-	2322	Z10CAS24	X16Cr26
	1.4871	X53CrMnNiN21 9	EV8	SUH35, SUH36	-	349S54	-	-	Z52CMN21.09	X53CrMnNiN219
	1.4521	X1CrMoTi18 2	S44400	-	-	-	-	2326	-	-
	1.4922	X20CrMoV12-1	-	-	-	-	-	2317	-	X20CrMoNi 12 01
	1.4542/ 1.4548	-	630	-	-	-	-	-	Z7CNU17-04	-
M Stainless steel (Austenitic)	1.4306	-	304L	-	-	304S11	-	2352	Z2CrNi18 11	X2CrNi18 11
	1.4350	X5CrNi189	304	SUS304	F.3551	304S31	58E	2332/2333	Z6CN18.09	X5CrNi18 10
	-	-	-	-	F.3541	-	-	-	-	-
	-	-	-	-	F.3504	-	-	-	-	-
	1.4305	X12CrNiS18 8	303	SUS303	F.3508	303S21	58M	2346	Z10CNF 18.09	X10CrNiS 18.09
	1.4301	X5CrNi189	304	SUS304	F.3551	304S15	58E	2332	Z6CN18.09	X5CrNi18 10
	-	-	-	SUS304L	-	304C12	-	2333	Z3CN19.10	-
	1.4306	X2CrNi18 9	304L	SCS19	F.3503	304S12	-	2352	Z2CrNi18 10	X2CrNi18 11
	1.4310	X12CrNi17 7	301	SUS301	F.3517	-	-	2331	Z12CN17.07	X12CrNi17 07
	1.4311	X2CrNiN18 10	304LN	SUS304LN	-	304S62	-	2371	Z2CN18.10	-
	1.4401	X5CrNiMo18 10	316	SUS316	F.3543	316S16	58J	2347	Z6CND17.11	X5CrNiMo17 12
	1.4429	X2CrNiMoN18 13	316LN	SUS316LN	-	-	-	2375	Z2CND17.13	-
	1.4404	-	316L	-	-	316S13	-	2348	Z2CND17-12	X2CrNiMo1712
	1.4435	X2CrNiMo18 12	316L	SCS16	-	316S13	-	2353	Z2CND17.12	X2CrNiMo17 12
	-	-	-	SUS316L	-	-	-	-	-	-
	1.4436	-	316	-	-	316S33	-	2343	Z6CND18-12-03	X8CrNiMo1713
	-	-	-	-	-	-	-	2347	-	-
	1.4438	X2CrNiMo18 16	317L	SUS317L	-	317S12	-	2367	Z2 NCDU25-20	X2CrNiMo18 16
	1.4539	X1NiCrMo	UNS V 0890A	-	-	-	-	2562	Z6CNT18.10	-
	1.4541	X10CrNiTi18 9	321	SUS321	F.3553	321S12	58B	2337	-	X6CrNiTi18 11
	-	-	-	-	F.3523	-	-	-	Z6CNNb18.10	-
	1.4550	X10CrNiNb18 9	347	SUS347	F.3552	347S17	58F	2338	-	X6CrNiNb18 11
	-	-	-	-	F.3524	-	-	-	-	-
	1.4571	X10CrNiMoTi18 10	316Ti	-	F.3535	320S17	58J	2350	Z6NDT17.12	X6CrNiMoNb17 13
	1.4583	X10CrNiMoNb 18 12	318	-	-	-	-	-	Z6CNDNb17 13B	-
	1.4828	X15CrNiSi20 12	309	SUH309	-	309S24	-	-	Z15CNS20.12	X6CrNi25 20

Reference list of materials (Stainless steels)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
M Stainless steel (Austenitic)	1.4845	X12CrNi25 21	310S	SUH310	F.331	310S24	-	2361	Z12CN25 20	-
	1.4406	X10CrNi18.08	308	SCS17	F.8414	301S21	58C	2370	Z1NCDU25.20	-
	1.4418	X4 CrNiMo16 5	-	-	-	-	-	2387	Z6CND16-04-01	X2CrNiMo1712
	1.4568/ 1.4504	-	17-7PH	-	-	316S111	-	-	Z8CNA17-07	-
	1.4563	-	NO8028	-	-	-	-	2584	Z1NCDU31-27-03	-
	-	-	S31254	-	-	-	-	2378	Z1CNDU20-18-06AZ	-
M Stainless steel (Austenitic / ferritic (duplex))	1.4417	X2CrNiMoSi19 5	S31500	-	-	-	-	2376	-	-
	-	X8CrNiMo27 5	S32900	-	-	-	-	2324	-	-
	-	X2CrNiN23 4	S322304	-	-	-	-	2327	Z2CN23-04AZ	-
	-	-	-	-	-	-	-	2328	-	-
	-	X2CrNiMoN22 53	S31803	-	-	-	-	2377	Z2CND22-05-03	-

Reference list of materials (Castings)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
K Malleable cast iron	-	-	-	FCMB310	-	8 290/6	-	0814	MN 32-8	-
	-	GTS-35	32510	FCMW330	-	B 340/12	-	0815	MN 35-10	-
	0.8145	GTS-45	40010	FCMW370	-	P 440/7	-	0852	Mn 450	GMN 45
	0.8155	GTS-55	50005	FCMP490	-	P 510/4	-	0854	MP 50-5	GMN 55
	-	GTS-65	70003	FCMP540	-	P 570/3	-	0858	MP 60-3	-
	0.8165	GTS-65-02	A220-70003	FCMP590	-	P570/3	-	0856	Mn 650-3	GMN 65
	0.8170	GTS-70-02	A220-80002	FCMP690	-	P690/2	-	0862	Mn700-2	GMN 70
K Cast iron	-	-	-	-	-	-	-	0100	-	-
	-	GG10	No 20 B	FC100	-	-	-	0110	Ft 10 D	-
	0.6015	GG15	No 25 B	FC150	FG 15	Grade 150	-	0115	Ft 15 D	G 15
	0.6020	GG20	No 30 B	FC200	-	Grade 220	-	0120	Ft 20 D	G 20
	0.6025	GG25	No 35 B	FC250	FG25	Grade 260	-	0125	Ft 25 D	G 25
	-	-	No 40 B	-	-	-	-	-	-	-
	0.6030	GG30	No 45 B	FC300	FG30	Grade 300	-	0130	Ft 30D	G 30
	0.6035	GG35	No 50 B	FC350	FG35	Grade 350	-	0135	Ft 35 D	G 35
	0.6040	GG40	No 55 B	-	-	Grade 400	-	0140	Ft 40 D	-
	0.6660	GGL-NiCr202	A436 Type 2	-	-	L-NiCuCr202	-	0523	L-NC 202	-
K Nodular SG iron	0.7040	GGG 40	60-40-18	FCD400	FGE 38-17	SNG 420/12	-	0717-02	FCS 400-12	GS 370-17
	-	GGG 40.3	-	-	-	SNG 370/17	-	0717-12	FGS 370-17	-
	0.7033	GGG 35.3	-	-	-	-	-	0717-15	-	-
	0.7050	GGG 50	80-55-06	FCD500	FGE 50-7	SNG 500/7	-	0727-02	FGS 500-7	GS 500
	0.7660	GGG-NiCr202	A43D2	-	-	Grade S6	-	0776	S-NC 202	-
	-	GGG 60	-	FCD600	-	SNG 600/3	-	0732-03	FGS 600-3	-
	0.7070	GGG 70	100-70-03	FCD700	FGS 70-2	SNG 700/2	-	0737-01	FGS 700-2	GS 700-2

Reference list of materials (Non ferrous materials)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
N Non ferrous materials	3.2373	G-AlSi9MgWA	SC64D	C4BS	-	-	-	4251	A-STG	-
	-	G-ALMG5	GD-AlSi12	AC4A	-	LM5	-	4252	A-SU12	-
	-	-	356.1	A5052	-	LM25	-	4244	-	-
	-	GD-AlSi12	A413.0	A6061	-	-	-	4247	-	-
	-	GD-AlSi8Cu3	A380.1	A7075	-	LM24	-	4250	-	-
	-	G-AlSi12(Cu)	A413.1	ADC12	-	LM20	-	4260	-	-
	-	G-AlSi12	A413.2	-	-	LM6	-	4261	-	-
	-	G-AlSi10Mg(Cu)	A360.2	-	-	LM9	-	4253	-	-

Reference list of materials (Heat resistant super-alloys)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
S Heat resistant super-alloys	1.4864	X12NiCrSi36 16	330	SUH330	-	-	-	-	Z12NCS35.16	F-3313
	1.4865	G-X40NiCrSi38 18	-	SCH15	-	330C11	-	-	-	XG50NiCr39 19
	2.4603	-	5390A	-	-	-	-	-	NC22FeD	-
	2.4856	NiCr22Mo9Nb	5666	-	-	-	-	-	NC22FeDNB	-
	2.4630	NiCr20Ti	-	-	-	HR5,203-4	-	-	NC20T	-
	LW2.4662	NiFe35Cr14MoTi	5660	-	-	-	-	-	ZSNCDT42	-
	LW2.4670	S-NiCr13A16MoNb	5391	-	-	3146-3	-	-	NC12AD	-
	LW2.4668	NiCr19Fe19NbMo	5383	-	-	HR8	-	-	NC19eNB	-
	2.4375	NiCu30Al	4676	-	-	3072-76	-	-	-	-
	2.4631	NiCr20TiAk	-	-	-	Hr401,601	-	-	NC20TA	-
	2.4973	NiCr19Co11MoTi	AMS 5399	-	-	-	-	-	NC19KDT	-
	LW2.4668	NiCr19Fe19NbMo	AMS 5544	-	-	-	-	-	NC20K14	-
	LW2.4674	NiCo15Cr10MoAlTi	AMS 5397	-	-	-	-	-	-	-
	LW2.4964	CoCr20W15Ni	5537C	-	-	-	-	-	KC20WN	-
	-	CoCr22W14Ni	AMS 5772	-	-	-	-	-	KC22WN	-
S Titanium alloys	-	TiAl5Sn2.5	AMS R54520	-	-	TA14/17	-	-	T-A5E	-
	-	TiAl6V4	AMS R56400	-	-	TA10-13/TA28	-	-	T-A6V	-
	-	TiAl6V4ELI	AMS R56401	-	-	TA11	-	-	-	-
	-	TiAl4MoSn4Si0.5	-	-	-	-	-	-	-	-

Reference list of materials (Hardened materials)

ISO	Germany		U.S.A	Japan	Spain	U.K.		Sweden	France	Italy
	W.-nr.	DIN	AISI/SAE	JIS	UNE	BS	EN	SS	AFNOR	UNI
H Hardened materials	1.4108	X100CrMo13	440A	C4BS	-	-	-	-	-	-
	1.4111	X110CrMoV15	610	AC4A	-	-	-	-	-	-
	-	X65CrMo14	0-2	AC4A	-	-	-	-	-	-

Turning inserts

Turning inserts

Ceramic inserts

CBN/PCD inserts

Inserts for parting and grooving

Threading inserts

Toolholders

Toolholders

Boring bars

Boring bars

Cartridges

Parting and grooving

Threading

Ceramic tools

PSC Toolholders

PSC Adaptor

PSC Boring bars

PSC Threading

PSC Parting and grooving

PSC Drills

PSC Arbors and adaptors

Arbors and adaptors

Milling inserts

Face and chamfering

Facing square shoulder cutters

Slot cutters

High feed

Round inserts

Finishing ball nose

Aluminium die cutting

Drills

CANELA Corporation

Conditions of sale
All sales are made in accordance with our standard conditions of sale, current at the time orders are accepted. Specifications and prices subject to change without notice.

Product warranty
Canela Corporation will repair or replace any of its products, which in its judgement, are found to be defective in material of workmanship. All claims must be made in writing within thirty days after receipt of product. No claims for labor or damages will be allowed. In no event shall Canela Corporation be liable for consequential or special damages of any kind.

Special tool quotation
Orders for special tools must be confirmed in writing before manufacturing can begin. Special items and non-stock standard items cannot be cancelled or returned for exchange or credit.

Delivery terms
Full transportation costs will be charged to the buyer. Specify shipment to be made by other than regular means of transportation.

Claims
Claims for loss in transit must be made against the transportation company. The foregoing shall constitute the sole and exclusive remedies of the customer and are in lieu of all other warranties, expressed, implied or statutory, including but not limited to any implied warranty of merchantability or fitness.

Returns
No merchandise will be accepted for return after 30 days of shipment. All returns must be pre-paid and must be accompanied by our Return Goods Authorization (RGA) number. This number must appear on the outside of the box. Merchandise must be received in good condition or will be refused.

Conditions, terms, and prices are subject to change without notice.
Any typographical or other error in this catalog is subject to correction.

CANELA Corporation

This catalog contains information and specifications concerning cutting tools sold by Canela Corporation. Although some of the cutting tools made from carbides are very tough and resist breakage, most are brittle and special safety precautions are required when using them.

Small fragment and chips may be thrown from a cutting tool when a fracture occurs. Since these fragments or chips are thrown at very high speeds and are very hot, contact with the skin or eyes could cause severe injury. Also, the grinding of these cutting tools will produce fine carbide and cobalt or nickel dust which may be harmful to the lungs. Listed below are some suggestions on how to minimize the potential for injury while using cutting tools.

For more information about the product hazards and safety precautions that must be taken to minimize the possibility of injury while using cutting tools, please call your Canela Corporation Sales Engineer.

Canela Corporation has no control over use of these cutting tools. The user must determine the suitability of these tools in its particular application.

WARNING: Very hot chip fragments may be thrown from cutting tools at very high speeds. These chips can cause severe burns, cuts or punctures to the skin, or damage to the eyes. The following are some of the safety precautions that must be followed by operators and observers while using cutting tools:

1. Make sure that the insert size and shape are adequate for use to which it is being cut.
2. Chip control is necessary to prevent a continuous chip catching in the workpiece.
3. Chips are very hot and have sharp edges and should not be removed by hand.
4. Turn off the machine whenever chips are removed or when the cutting tools are changed.
5. Do not use air hoses to blow chips away from the machine.
6. To prevent tool breakage use the correct size toolholder.
7. Make sure that the overhang on the toolholder is as short as possible. Too much overhang can result in chatter and tool breakage.
8. To prevent the workpiece from coming loose during use, be sure the workpiece is tight and secure in its holder.
9. Overloading of tungsten carbide cutting tools may cause fractures of these tools.
10. A slug may be ejected at high speeds during drilling.

To protect the operator and observer from possible flying objects which could result in severe injury, the following protective devices should be worn or used while using cutting tools:

1. Wear hard hats.
2. Wear safety glasses with side shields.
3. Wear closed shoes with steel toes.
4. Keep protective enclosure on machine in place during operation.

WARNING: Grinding or finishing carbide produces fine carbide and cobalt or nickel dust. This dust may cause injury to the lungs.
Operators and observers must take the following safety precautions to minimize the possibility of such injury:

1. Use with adequate ventilation.
2. Maintain the dust or mist level below recommended levels.
3. Avoid breathing dust or mist. If not possible, wear appropiate respirators, particularly when grinding tungsten carbide.
4. Minimize prolonged skin contact.
5. Wash hands thoroughly after handling.

WARNING: Use of cutting fluids and work materials create hazards. Be careful at all times.

1. Keep the cutting fluid clean so no particles can be carried back across the workpiece and possibly scratch it.
2. Cutting fluids may catch on fire when exposed to high temperatures generated during cutting.
3. Work materials such as aluminium, magnesium, uranium and titanium are flammable and could catch on fire.
4. Cutting fluids should be treated or replaced to reduce bacterial levels which may cause illness.

- WARNING -

Speeds, Feeds and Grade information within this catalog are for reference only. If the operator does not feel safe using our speeds, feeds and grades, then the operator should use what is comfortable to him or her. Canela Corporation is not responsible for any damage or injury that occurs using the speeds, feeds and grades information within catalog.