



Inserts

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Inserts

General turning

Aluminium
wheel turning

Automatic lathes

Ceramic tools

Parting and
grooving

Threading

Drills

Cartridges

Brazed tools

Tooling

CANELA Easy grade

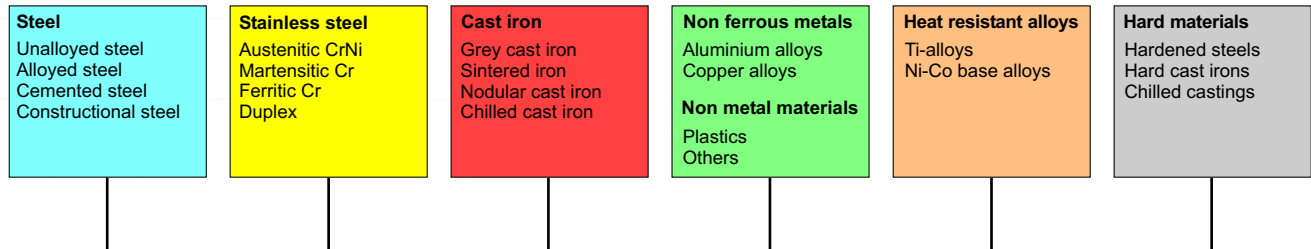
Three easy steps to choose a grade.

1st - Select group material (Steel, Stainless steel, Cast iron, Non ferrous materials, heat resistant alloys or hard materials).

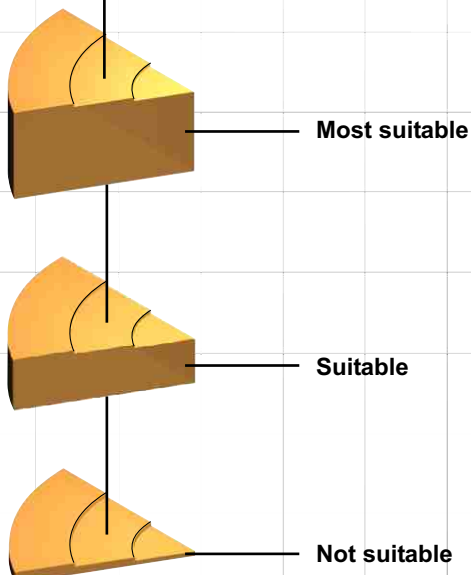
2nd - Select suitability. Suitability of each grade is indicated by the height of each material segment.

3rd - Select machining application. Each segment is divided into three sections, each section indicates the machining application type: roughing, medium, finishing. The main application area of each insert is indicated by a black star and the extended applications are indicated by a white star.

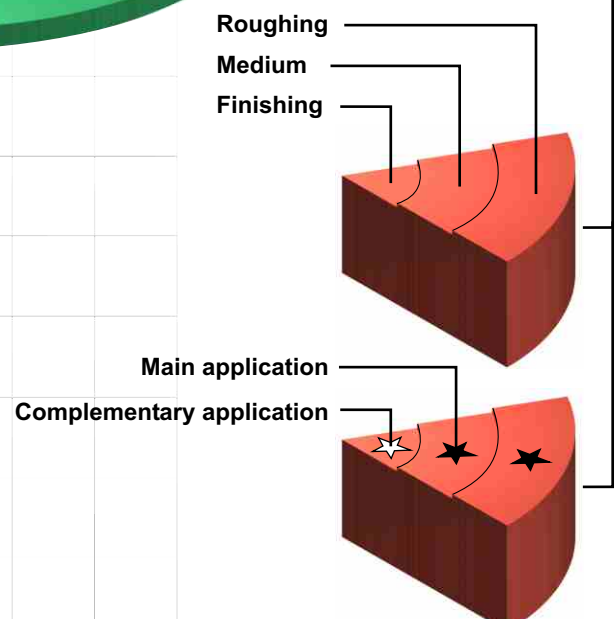
1st step



2nd step



3rd step



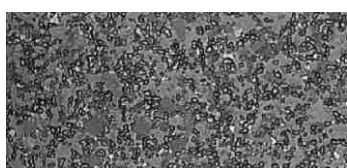
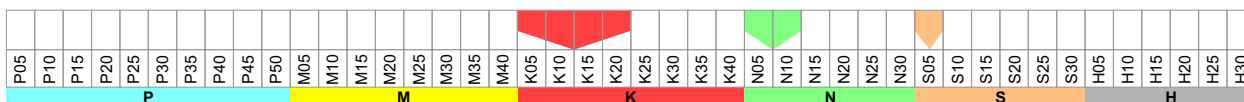


KM 15

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.



K10



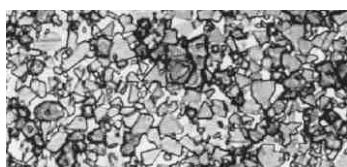
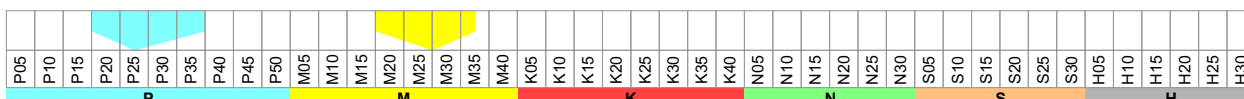
PM 25

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.



P25 - M20

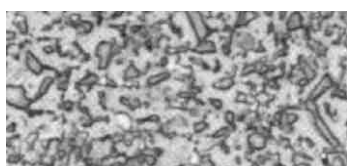
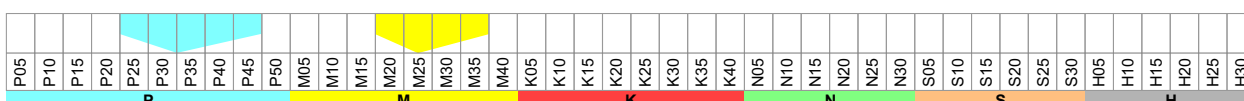


PM 40

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.



P40 - M30

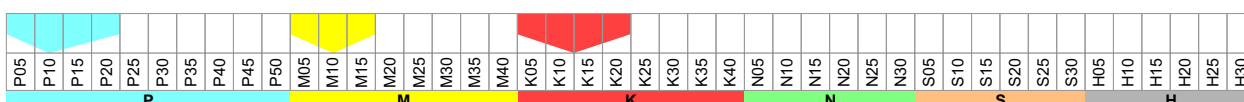


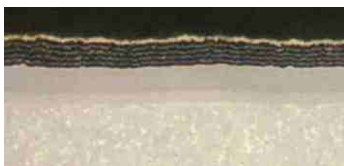
NC 25

NC 25 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.



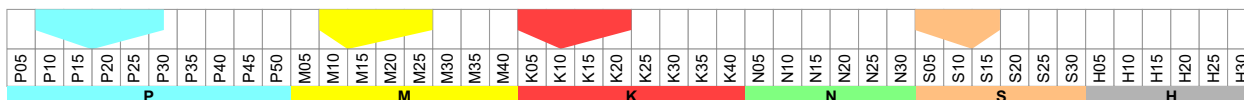
P15 - M10 - K10





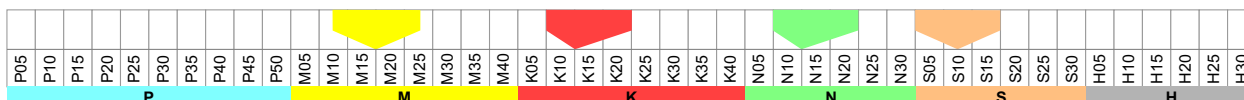
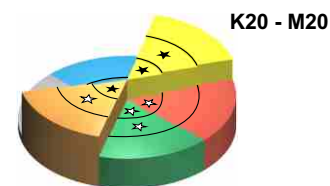
TIN 16

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.



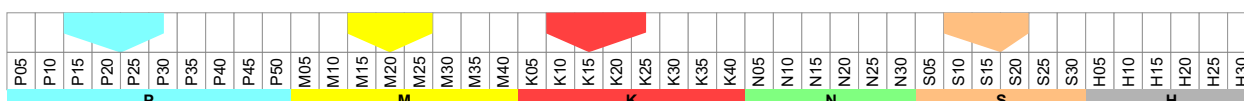
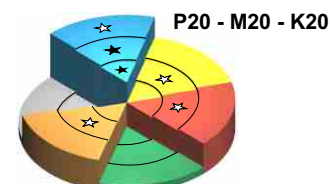
TIN 17

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



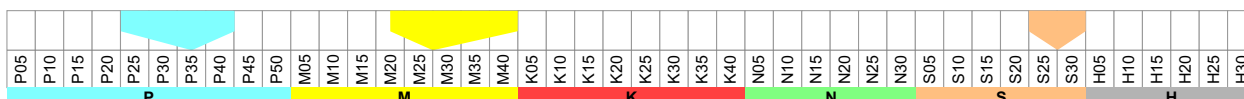
TIN 22

General purpose wear resistant grade. It has enriched substrate which has exceptionally good deformation as well as fracture resistance. The multi-layer coating includes aluminium oxide to add additional heat and wear resistance. It is used to machine steel and stainless steel at lower speeds than TIN16.



TIN 32

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 than TIN16. 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.





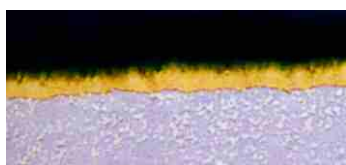
TIN 35

New coated grade developed to machine stainless steel and heat-resistance alloys. This grade is only used in combination with the CS chipbreaker. First choice for stainless steel applications.



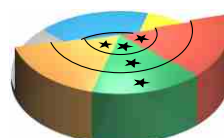
M25

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



ZR 10

Micrograin grade with a extremely hard single zirconium layer for machining aluminium, copper alloys and plastics.

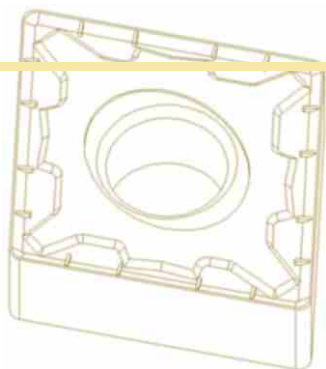


K10

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

Grade chart

	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
P05										
P10										
P15										
P20										
P25										
P30										
P35										
P40										
P45										
P50										
M05										
M10										
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N30										
S05										
S10										
S15										
S20										
S25										
S30										
H05										
H10										
H15										
H20										
H25										
H30										



Basic geometries

CF - Canela Finishing

CM - Canela Medium

CR - Canela Roughing

CS - Canela Stainless steel

Complementary geometries

CFC - Canela Finishing Cermet

CFM - Canela Finishing Medium

CMC - Canela Medium Cermet

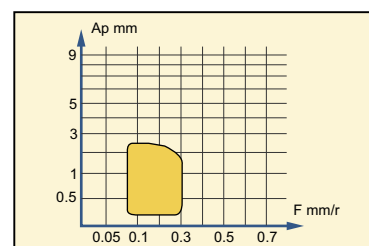
CMF - Canela Medium Finishing

CMR - Canela Medium Roughing

-CF Geometry

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

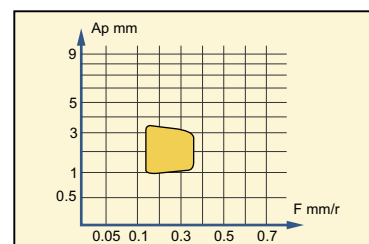
Main application area: Cutting depth (A_p): 0,2 - 2,5 mm
Feed (f): 0,08 - 0,3 mm


-CM Geometry

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

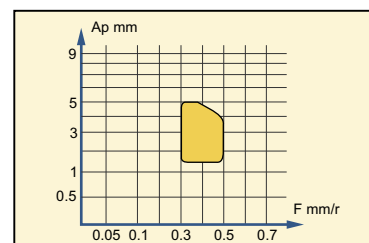
Recommended for general purpose use on all types of steel.

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


-CR Geometry

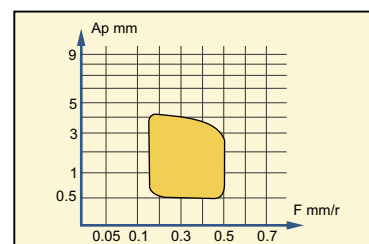
The strongest chipbreaker for double-sided inserts. The CR chipbreaker is suitable for high feed rates and depths of cut that normally require single-sided inserts. The chipbreaker has a wide negative T land, which gives high edge strength.

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


-CS Geometry

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

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

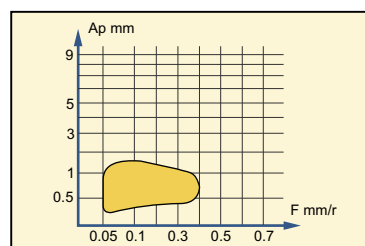




-CFC Geometry

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

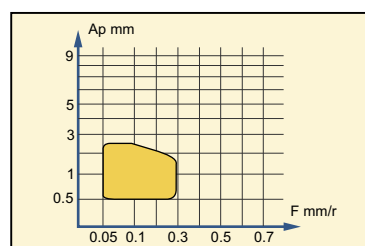
Main application area: Cutting depth (A_p): 0,2 - 1,5 mm
Feed (f): 0,05 - 0,4 mm



-CFM Geometry

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

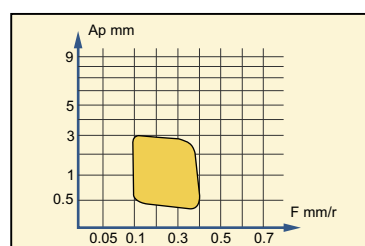
Main application area: Cutting depth (A_p): 0,5 - 2,5 mm
Feed (f): 0,05 - 0,25 mm



-CMC Geometry

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

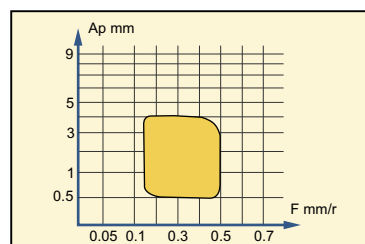
Main application area: Cutting depth (A_p): 0,3 - 3,0 mm
Feed (f): 0,1 - 0,4 mm



-CMF Geometry

CMF chipbreaker provide excellent chip control with low cutting forces and very free cutting action over a broad range of light duty applications.
Recommended for light duty use on carbon, alloy, and stainless steels.

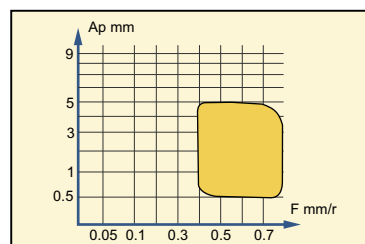
Main application area: Cutting depth (A_p): 0,5 - 4,0 mm
Feed (f): 0,15 - 0,5 mm



-CMR Geometry

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

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



Inserts

General turning

Aluminium
wheel turning

Automatic lathes

Ceramic tools

Parting and
grooving

Threading

Drills

Cartridges

Braze tools

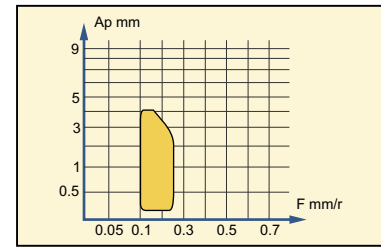
Tooling



..NGP Geometry

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

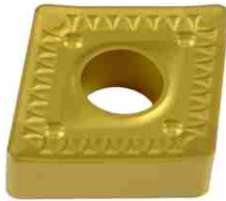
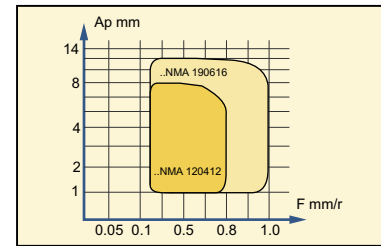
Main application area: Cutting depth (A_p): 0,1 - 4 mm
Feed (f): 0,1 - 0,25 mm



..NMA Geometry

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

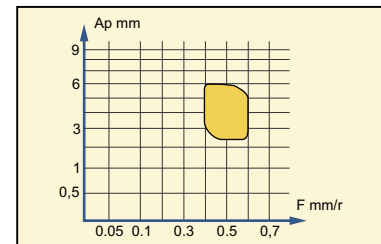
Main application area: Cutting depth (A_p): 1 - 12 mm
Feed (f): 0,2 - 1 mm



..NMM Geometry

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

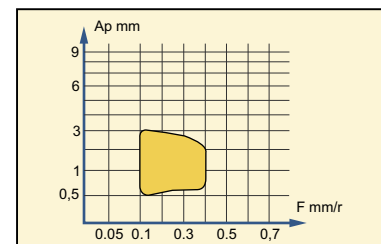
Main application area: Cutting depth (A_p): 2,5 - 6 mm
Feed (f): 0,4 - 0,6 mm



..NMX Geometry

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

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

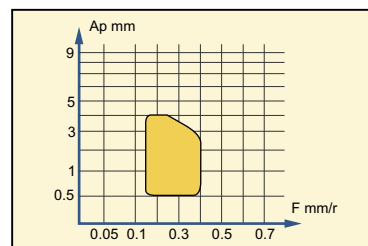




-03 Geometry

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

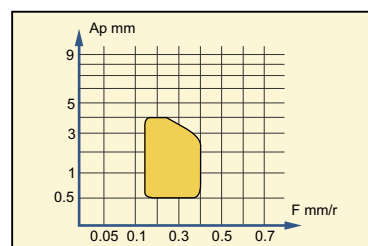
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm



-33 Geometry

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

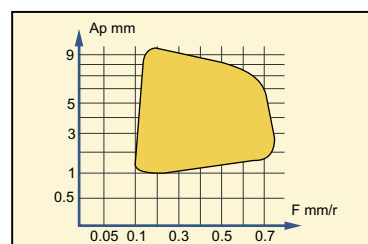
Main application area: Cutting depth (A_p): 0,5 - 4 mm
Feed (f): 0,15 - 0,4 mm



-AL Geometry

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

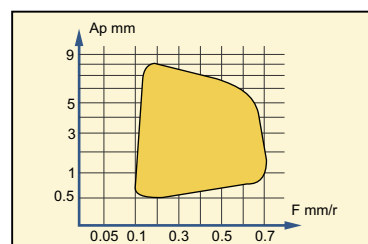
Main application area: Cutting depth (A_p): 1 - 10 mm
Feed (f): 0,1 - 0,75 mm



-AP Geometry

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

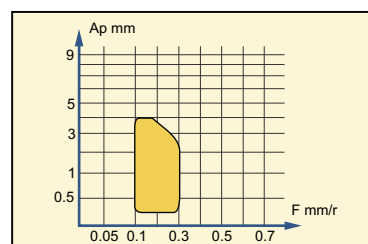
Main application area: Cutting depth (A_p): 0,5 - 8 mm
Feed (f): 0,1 - 0,7 mm



..MW Geometry

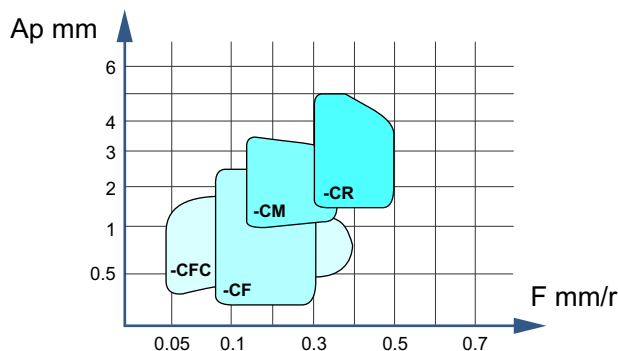
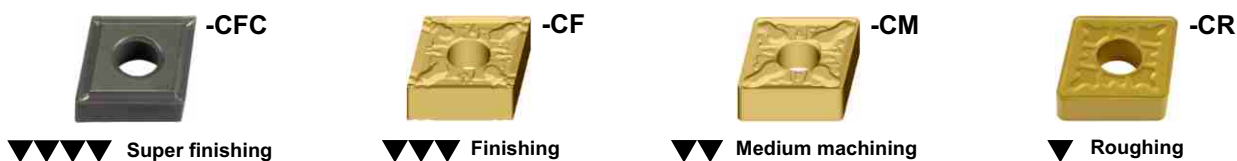
Double sided insert for short chipping materials. Strong cutting edge.

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



Basic geometries (steel)

1 - Select geometry



2 - Select grade

Cutting condition

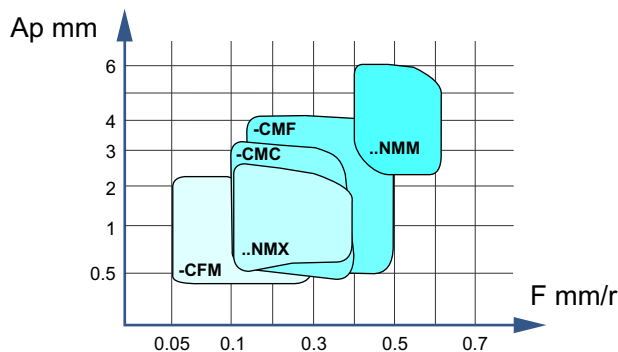
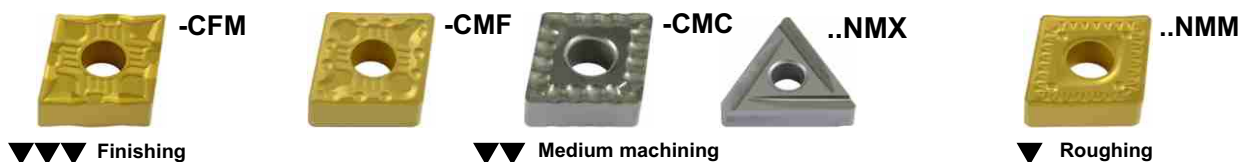
	▼▼▼▼ Super finishing	▼▼▼ Finishing	▼▼ Medium machining	▼ Roughing
⊗ Interrupted cut	-	TIN32	TIN32	PM25 - TIN32
⊖ Inconsistent cut	NC25	TIN16	TIN16 - TIN22	TIN22 - TIN32
⊙ Consistent cut	NC25	TIN16	TIN16	TIN22 - TIN32

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (steel)

1 - Select geometry



2 - Select grade

Cutting condition

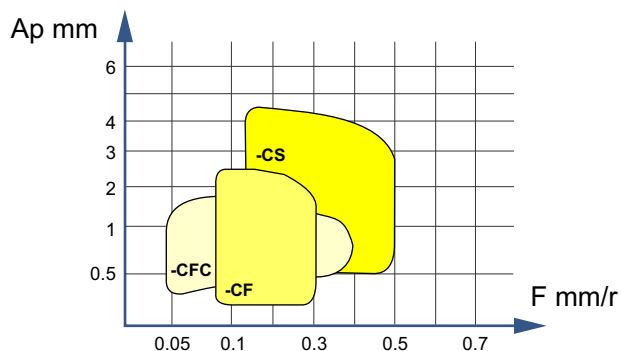
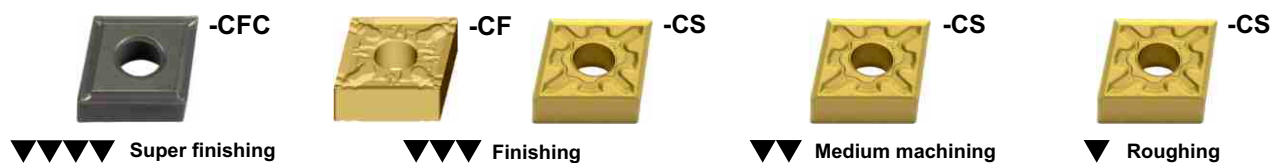
	▼▼▼ Finishing	▼▼ Medium machining	▼ Roughing
⊗ Interrupted cut	TIN32	TIN32	TIN32
⊖ Inconsistent cut	TIN16 - TIN32	NC25 - TIN22 - TIN32	TIN32
⊙ Consistent cut	TIN16	NC25 - TIN16 - TIN32	TIN32

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Stainless steel)

1 - Select geometry



2 - Select grade

Cutting condition

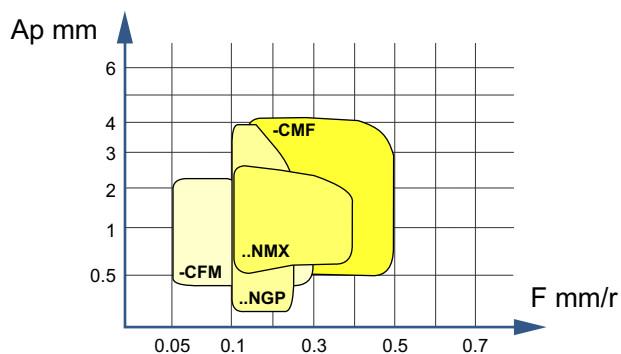
	▼▼▼▼ Super finishing	▼▼▼ Finishing	▼▼ Medium machining	▼ Roughing
⊗ Interrupted cut	-	TIN32 - TIN35	TIN32 - TIN35	TIN35
⊖ Inconsistent cut	NC25	TIN16 - TIN32 - TIN35	TIN32 - TIN35	TIN35
⊙ Consistent cut	NC25	TIN16 - TIN32 - TIN35	TIN32 - TIN35	TIN35

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (Stainless steel)

1 - Select geometry



2 - Select grade

Cutting condition

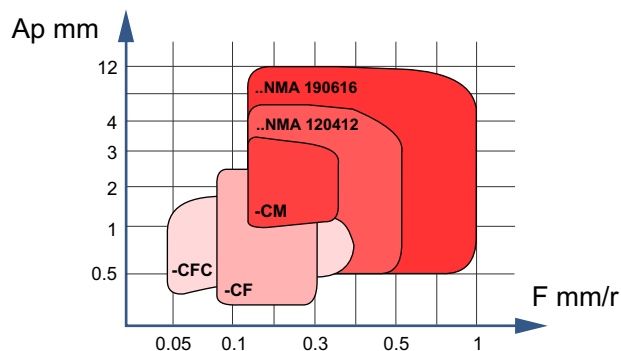
	▼▼▼ Finishing	▼▼ Medium machining
⊗ Interrupted cut	TIN32	TIN32
⊖ Inconsistent cut	TIN17 - TIN32	NC25 - TIN17 - TIN32
⊙ Consistent cut	TIN17 - TIN32	NC25 - TIN17 - TIN32

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Cast iron)

1 - Select geometry



2 - Select grade

Cutting condition

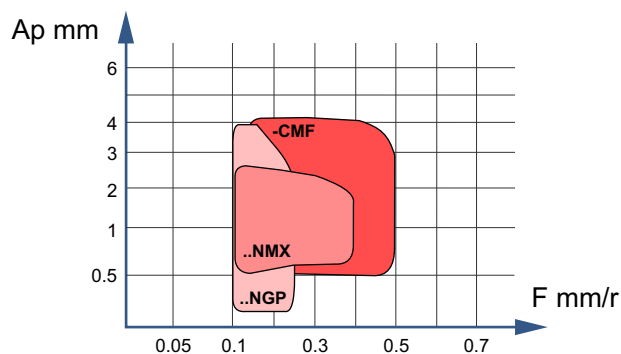
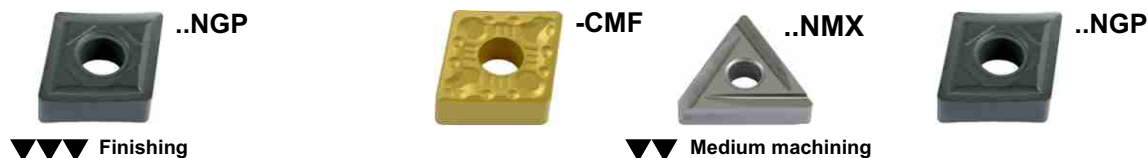
	▼▼▼▼ Super finishing	▼▼▼ Finishing	▼▼ Medium machining	▼ Roughing
⊗ Interrupted cut	-	TIN16	TIN16 - TIN17	TIN16 - TIN17
⊖ Inconsistent cut	NC25	TIN16	TIN16 - TIN17	TIN16 - TIN17
⊙ Consistent cut	NC25	TIN16	TIN16 - TIN17	TIN16 - TIN17

3 - Select cutting speed

Proceed to page B.77 for cutting data

Complementary geometries (Cast iron)

1 - Select geometry



2 - Select grade

Cutting condition

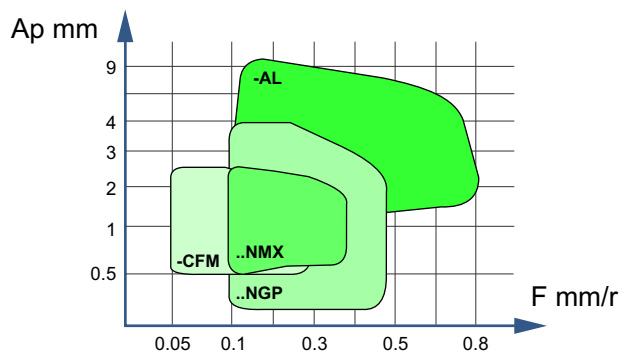
	▼▼▼ Finishing	▼▼ Medium machining
⊗ Interrupted cut	TIN16 - TIN17	NC25 - TIN16 - TIN17
⊖ Inconsistent cut	NC25 - TIN16 - TIN17	NC25 - TIN16 - TIN17
⊙ Consistent cut	NC25 - TIN16 - TIN17	NC25 - TIN16 - TIN17

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Non ferrous materials)

1 - Select geometry



2 - Select grade

Cutting condition

- ⊗ Interrupted cut
- ⊖ Inconsistent cut
- ⊙ Consistent cut

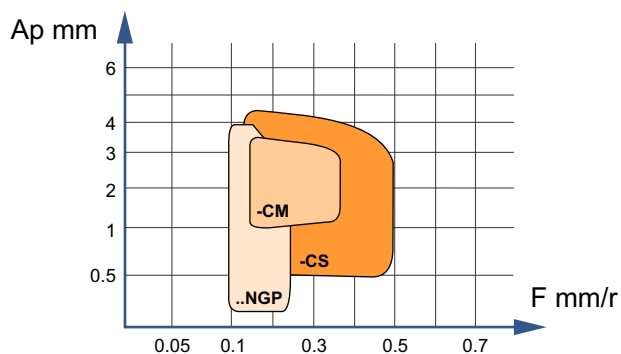
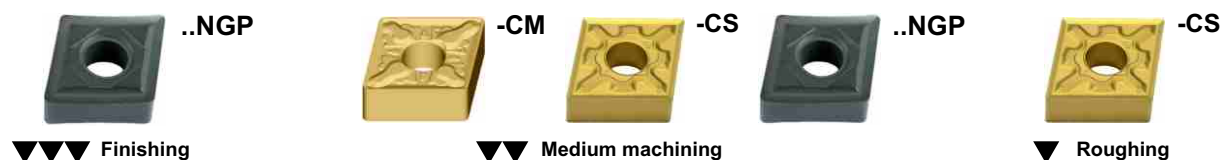
	Finishing	Medium machining	Roughing
⊗ Interrupted cut	KM15 - TIN16 - TIN17 - ZR10	NC25 - TIN17 - ZR10	NC25 - TIN17 - ZR10
⊖ Inconsistent cut	KM15 - TIN16 - TIN17 - ZR10	NC25 - TIN17 - ZR10	NC25 - TIN17 - ZR10
⊙ Consistent cut	KM15 - TIN16 - TIN17 - ZR10	NC25 - TIN17 - ZR10	NC25 - TIN17 - ZR10

3 - Select cutting speed

Proceed to page B.77 for cutting data

Basic geometries (Heat resistant alloys)

1 - Select geometry



2 - Select grade

Cutting condition

- ⊗ Interrupted cut
- ⊖ Inconsistent cut
- ⊙ Consistent cut

	Finishing	Medium machining	Roughing
⊗ Interrupted cut	TIN17	TIN17 - TIN32 - TIN35	TIN35
⊖ Inconsistent cut	TIN17	TIN17 - TIN32 - TIN35	TIN35
⊙ Consistent cut	TIN17	TIN17 - TIN32 - TIN35	TIN35

3 - Select cutting speed

Proceed to page B.77 for cutting data

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

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

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

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

C

N

M

G

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

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

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

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

12

4

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

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

04

3

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

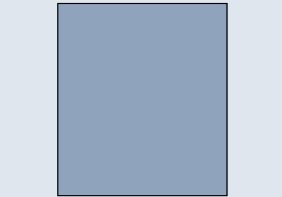
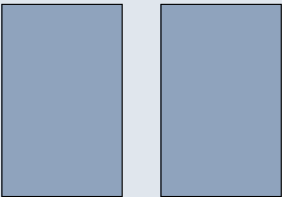
Corner radius			
00	0,0	12	1,2
M0	0,0	16	1,6
02	0,2	20	2,0
04	0,4	24	2,4
08	0,8	32	3,2
Inserts with corner radius			
Inserts with secondary cutting edge			
A	45°	F	85°
D	60°	P	90°
E	75°		
Angle of main cutting edge to secondary cutting angle			
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°	Z	Special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

08

2

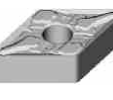
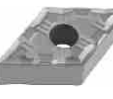
max. 0,004	0
1/64	1
1/32	2
3/64	3
1/16	4
5/64	5
3/32	6
7/64	7
1/8	8
-	X
Corner radius (inch)	

Cutting edge	Cutting direction
F Sharp	R
E Honed	L
T Chamfered	N
S Chamfered and honed	
K Double-chamfered	
P Double-chamfered and honed	

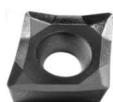


For special forms of the chip groove in the 10° position manufacturer specific chip grooves and designations can be indicated.

- Inserts
- General turning
- Aluminium wheel turning
- Automatic lathes
- Ceramic tools
- Parting and grooving
- Threading
- Drills
- Cartridges
- Brazed tools
- Tooling

CCGT-AL  80° Rhombic Positive Page A.18 7°	CCGT-AP  80° Rhombic Positive Page A.18 7°	CCMT-03  80° Rhombic Positive Page A.18 7°	CCMW  80° Rhombic Positive Page A.18 7°	CNGP  80° Rhombic Negative Page A.18 0°	CNMA  80° Rhombic Negative Page A.19 0°	CNMG-CF  80° Rhombic Negative Page A.19 0°
CNMG-CFC  80° Rhombic Negative Page A.19 0°	CNMG-CFM  80° Rhombic Negative Page A.19 0°	CNMG-CM  80° Rhombic Negative Page A.19 0°	CNMG-CMC  80° Rhombic Negative Page A.20 0°	CNMG-CMF  80° Rhombic Negative Page A.20 0°	CNMG-CMR  80° Rhombic Negative Page A.20 0°	CNMG-CR  80° Rhombic Negative Page A.20 0°
CNMG-CS  80° Rhombic Negative Page A.20 0°	CNMM  80° Rhombic Negative Page A.21 0°					
DCGT-AL  55° Rhombic Positive Page A.21 7°	DCGT-AP  55° Rhombic Positive Page A.21 7°	DCMT-03  55° Rhombic Positive Page A.21 7°	DCMW  55° Rhombic Positive Page A.21 7°	DNGP  55° Rhombic Negative Page A.22 0°	DNMA  55° Rhombic Negative Page A.22 0°	DNMG-CF  55° Rhombic Negative Page A.22 0°
DNMG-CFC  55° Rhombic Negative Page A.22 0°	DNMG-CFM  55° Rhombic Negative Page A.22 0°	DNMG-CM  55° Rhombic Negative Page A.23 0°	DNMG-CMC  55° Rhombic Negative Page A.23 0°	DNMG-CMF  55° Rhombic Negative Page A.23 0°	DNMG-CMR  55° Rhombic Negative Page A.23 0°	DNMG-CS  55° Rhombic Negative Page A.23 0°
DNMX  55° Rhombic Negative Page A.24 0°						
ECMT  75° Rhombic Positive Page A.24 7°	EPMT  75° Rhombic Positive Page A.24 11°	EPMW  75° Rhombic Positive Page A.24 11°	EPMX  75° Rhombic Positive Page A.24 11°			GXGP-AL  Double-ended Page A.25
KNUX  KNUX Negative Page A.24 0°			RCGT-AL  Round Positive Page A.25 7°	RCGT-AP  Round Positive Page A.25 7°	RCMT  Round Positive Page A.25 7°	RNMG  Round Negative Page A.26 0°

SCGT-AL  Square Positive Page A.26  7°	SCMT-03  Square Positive Page A.26  7°	SCMT-39  Square Positive Page A.26  7°	SCMW  Square Positive Page A.26  7°	SNMA  Square Negative Page A.27  0°	SNMG-CFM  Square Negative Page A.27  0°	SNMG-CMR  Square Negative Page A.27  0°
SNMG-CR  Square Negative Page A.27  0°	SNMM  Square Negative Page A.27  0°	SPMR-33  Square Positive Page A.28  11°	SPMT  Square Positive Page A.28  11°	SPUN  Square Positive Page A.28  11°		
TCGT-AL  Triangular Positive Page A.28  7°	TCMT-03  Triangular Positive Page A.28  7°	TCMW  Triangular Positive Page A.29  7°	TNMA  Triangular Negative Page A.29  0°	TNMG-CF  Triangular Negative Page A.29  0°	TNMG-CFC  Triangular Negative Page A.29  0°	TNMG-CFM  Triangular Negative Page A.29  0°
TNMG-CM  Triangular Negative Page A.30  0°	TNMG-CMC  Triangular Negative Page A.30  0°	TNMG-CMF  Triangular Negative Page A.30  0°	TNMG-CMR  Triangular Negative Page A.30  0°	TNMG-CS  Triangular Negative Page A.30  0°	TNMX  Triangular Positive Page A.31  11°	TPMN  Triangular Positive Page A.31  11°
TPMR-33  Triangular Positive Page A.31  11°	TPUN  Triangular Positive Page A.31  11°	TPUX  Triangular Negative Page A.32  11°				
VBMT  35° Rhombic Positive Page A.32  5°	VC GT-AL  35° Rhombic Positive Page A.32  7°	VC GT-AL  35° Rhombic Positive Page A.32  7°	VC GT-AP  35° Rhombic Positive Page A.32  7°	VC GT-AP  35° Rhombic Positive Page A.33  7°	VCMT-03  35° Rhombic Positive Page A.33  7°	VNGP  35° Rhombic Negative Page A.33  0°
VNMG  35° Rhombic Negative Page A.33  0°	VNMG-CMC  35° Rhombic Negative Page A.33  0°	WCMX  80° Trigon Positive Page A.34  7°	WNMA  80° Trigon Negative Page A.34  0°	WNMG-CF  80° Trigon Negative Page A.34  0°	WNMG-CFM  80° Trigon Negative Page A.34  0°	WNMG-CM  80° Trigon Negative Page A.35  0°
WNMG-CMC  80° Trigon Negative Page A.35  0°	WNMG-CMF  80° Trigon Negative Page A.35  0°	WNMG-CMR  80° Trigon Negative Page A.35  0°	WNMG-CS  80° Trigon Negative Page A.35  0°			

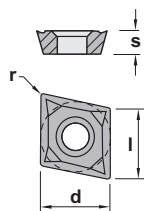


Positive 7° clearance - 80° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

CCGT-AL



	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
CCGT 060202-AL	6,45	2,38	6,35	0,2	●									○
CCGT 060204-AL	6,45	2,38	6,35	0,4	●									○
CCGT 09T302-AL	9,65	3,97	9,52	0,2	●									○
CCGT 09T304-AL	9,65	3,97	9,52	0,4	●									○
CCGT 09T308-AL	9,65	3,97	9,52	0,8	●									○
CCGT 120402-AL	12,90	4,76	12,70	0,2	●									○
CCGT 120404-AL	12,90	4,76	12,70	0,4	●									○
CCGT 120408-AL	12,90	4,76	12,70	0,8	●									○

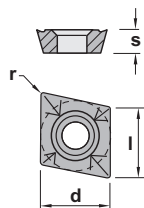


Positive 7° clearance - 80° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

CCGT-AP



	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
CCGT 060202-AP	6,45	2,38	6,35	0,2	●									○
CCGT 060204-AP	6,45	2,38	6,35	0,4	●									○
CCGT 09T302-AP	9,65	3,97	9,52	0,2	●									○
CCGT 09T304-AP	9,65	3,97	9,52	0,4	●									○
CCGT 09T308-AP	9,65	3,97	9,52	0,8	●									○
CCGT 120402-AP	12,90	4,76	12,70	0,2	●									○
CCGT 120404-AP	12,90	4,76	12,70	0,4	●									○
CCGT 120408-AP	12,90	4,76	12,70	0,8	●									○

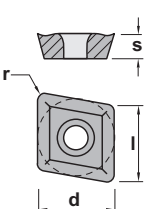


Positive 7° clearance - 80° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

CCMT-03



	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
CCMT 060202-03	6,45	2,38	6,35	0,2		●			●					
CCMT 060204-03	6,45	2,38	6,35	0,4	●	●		●	●			●	●	
CCMT 080304-03	8,05	3,18	7,94	0,4	●	●		●	●					
CCMT 080308-03	8,05	3,18	7,94	0,8		●		●	●					
CCMT 09T304-03	9,65	3,97	9,52	0,4	●	●		●	●			●	●	
CCMT 09T308-03	9,65	3,97	9,52	0,8	●	●		●	●				●	
CCMT 120408-03	12,90	4,76	12,70	0,8		●		●	●			●		

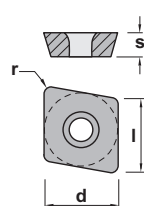


Positive 7° clearance - 80° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

CCMW



	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
CCMW 060202	6,45	2,38	6,35	0,2		●								
CCMW 060204	6,45	2,38	6,35	0,4		●								
CCMW 080304	8,05	3,18	7,94	0,4		●								
CCMW 09T304	9,65	3,97	9,52	0,4		●								
CCMW 09T308	9,65	3,97	9,52	0,8		●								
CCMW 120408	12,90	4,76	12,70	0,8		●								

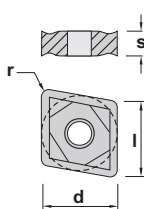


Negative 80° rhombic insert.

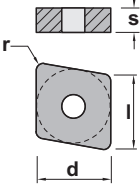
Normally available for immediate delivery ●

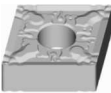
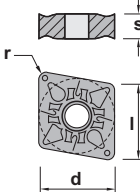
Only available in a limited quantity ○

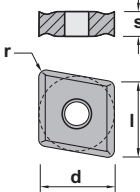
CNGP

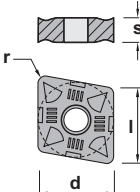


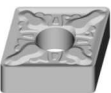
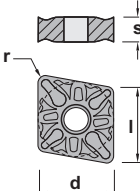
	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
CNGP 120404	12,90	4,76	12,70	0,4						●				
CNGP 120408	12,90	4,76	12,70	0,8						●				

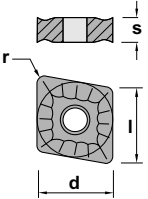
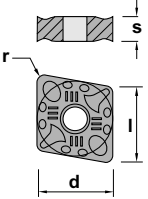
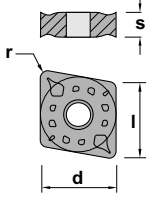
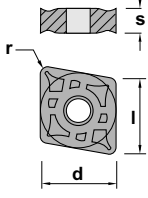
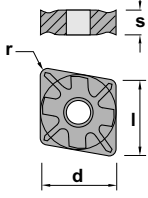
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMA	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMA 120408	12,90	4,76	12,70	0,8						
	CNMA 120412	12,90	4,76	12,70	1,2						

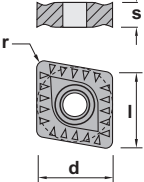
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMG-CF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMG 120404-CF	12,90	4,76	12,70	0,4						

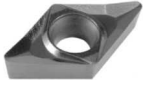
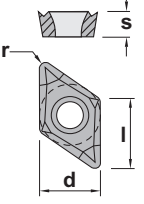
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMG-CFC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMG 120404-CFC	12,90	4,76	12,70	0,4						

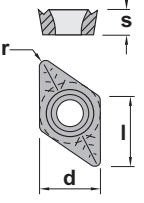
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMG-CFM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMG 120404-CFM	12,90	4,76	12,70	0,4						

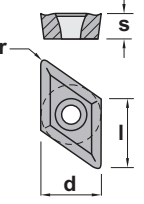
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMG-CM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMG 120408-CM	12,90	4,76	12,70	0,8						

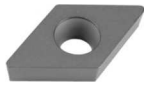
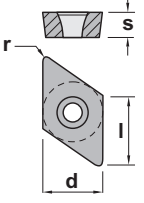
	Negative 80° rhombic insert					Normally available for immediate delivery ● Only available in a limited quantity ○									
	CNMG-CMC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	CNMG 120408-CMC	12,90	4,76	12,70	0,8				●						
	Negative 80° rhombic insert					Normally available for immediate delivery ● Only available in a limited quantity ○									
	CNMG-CMF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	CNMG 120408-CMF	12,90	4,76	12,70	0,8					●			●		
	Negative 80° rhombic insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	CNMG-CMR	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	CNMG 090304-CMR	9,65	3,18	9,52	0,4					●					
	CNMG 090308-CMR	9,65	3,18	9,52	0,8							●			
	CNMG 120408-CMR	12,90	4,76	12,70	0,8		●			●		●	●		
	CNMG 120412-CMR	12,90	4,76	12,70	1,2							●			
	Negative 80° rhombic insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	CNMG-CR	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	CNMG 120408-CR	12,90	4,76	12,70	0,8								●		
	CNMG 120412-CR	12,90	4,76	12,70	1,2								●		
	CNMG 160608-CR	16,10	6,35	15,88	0,8								○		
	CNMG 160612-CR	16,10	6,35	15,88	1,2								○		
	CNMG 190612-CR	19,30	6,35	19,05	1,2								○		
	CNMG 190616-CR	19,30	6,35	19,05	1,6								○		
	Negative 80° rhombic insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	CNMG-CS	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	CNMG 090304-CS	9,65	3,18	9,52	0,4									●	
	CNMG 090308-CS	9,65	3,18	9,52	0,8									●	
	CNMG 120404-CS	12,90	4,76	12,70	0,4									●	
	CNMG 120408-CS	12,90	4,76	12,70	0,8									●	

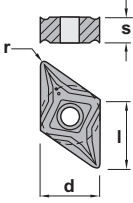
	Negative 80° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	CNMM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	CNMM 120408	12,90	4,76	12,70	0,8						
	CNMM 160612	16,10	6,35	15,88	1,2						
	CNMM 190612	19,30	6,35	19,05	1,2						

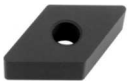
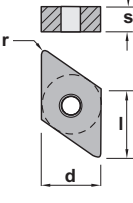
	Positive 7° clearance - 55° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	DCGT-AL	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	DCGT 070202-AL	7,75	2,38	6,35	0,2	●					
	DCGT 070204-AL	7,75	2,38	6,35	0,4	●					
	DCGT 11T302-AL	11,60	3,97	9,52	0,2	●					
	DCGT 11T304-AL	11,60	3,97	9,52	0,4	●					
	DCGT 11T308-AL	11,60	3,97	9,52	0,8	●					

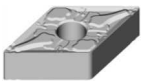
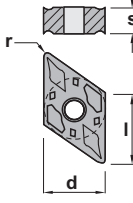
	Positive 7° clearance - 55° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	DCGT-AP	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	DCGT 070202-AP	7,75	2,38	6,35	0,2	●					
	DCGT 070204-AP	7,75	2,38	6,35	0,4	●					
	DCGT 11T302-AP	11,60	3,97	9,52	0,2	●					
	DCGT 11T304-AP	11,60	3,97	9,52	0,4	●					
	DCGT 11T308-AP	11,60	3,97	9,52	0,8	●					

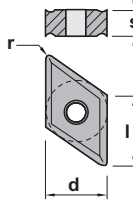
	Positive 7° clearance - 55° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	DCMT-03	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	DCMT 070204-03	7,75	2,38	6,35	0,4	○	●		●	●	
	DCMT 11T304-03	11,60	3,97	9,52	0,4	○	●		●	●	
	DCMT 11T308-03	11,60	3,97	9,52	0,8				●	●	
	DCMT 150408-03	15,50	4,76	12,70	0,8		○				

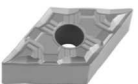
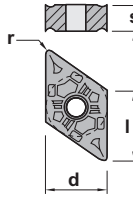
	Positive 7° clearance - 55° rhombic insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	DCMW	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	DCMW 11T304	11,60	3,97	9,52	0,4	●					
	DCMW 11T308	11,60	3,97	9,52	0,8	●					
	DCMW 150408	15,50	4,76	12,70	0,8	●					

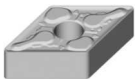
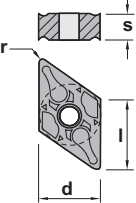
	Negative 55° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	DNGP	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	DNGP 150404	15,50	4,76	12,70	0,4						●				
	DNGP 150408	15,50	4,76	12,70	0,8						●				

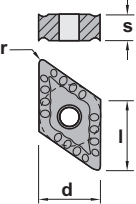
	Negative 55° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	DNMA	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	DNMA 150608	15,50	6,35	12,70	0,8						○				
	DNMA 150612	15,50	6,35	12,70	1,2						○				

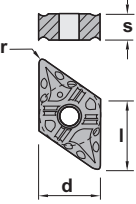
	Negative 55° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	DNMG-CF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	DNMG 150604-CF	15,50	6,35	12,70	0,4					●			●		

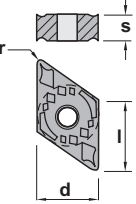
	Negative 55° rhombic insert					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	DNMG-CFC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	DNMG 150404-CFC	15,50	4,76	12,70	0,4				●						

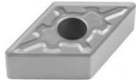
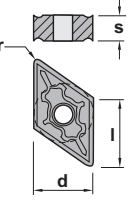
	Negative 55° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	DNMG-CFM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	DNMG 150404-CFM	15,50	4,76	12,70	0,4					●					
	DNMG 150604-CFM	15,50	6,35	12,70	0,4					●					

	Negative 55° rhombic insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	DNMG-CM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16
	DNMG 150608-CM	15,50	6,35	12,70	0,8					●

	Negative 55° rhombic insert									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	DNMG-CMC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16
	DNMG 150408-CMC	15,50	4,76	12,70	0,8				●	

	Negative 55° rhombic insert									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	DNMG-CMF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16
	DNMG 150608-CMF	15,50	6,35	12,70	0,8					●

	Negative 55° rhombic insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	DNMG-CMR	l	s	d	r	KM15	PM25	PM40	NC25	TIN16
	DNMG 110404-CMR	11,60	4,76	9,52	0,4					●
	DNMG 110408-CMR	11,60	4,76	9,52	0,8					
	DNMG 150408-CMR	15,50	4,76	12,70	0,8					
	DNMG 150608-CMR	15,50	6,35	12,70	0,8					
	DNMG 150612-CMR	15,50	6,35	12,70	1,2					
	DNMG 190608-CMR	19,40	6,35	15,88	0,8					
	DNMG 190612-CMR	19,40	6,35	15,88	1,2					

	Negative 55° rhombic insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	DNMG-CS	l	s	d	r	KM15	PM25	PM40	NC25	TIN16
	DNMG 110404-CS	11,60	4,76	9,52	0,4					
	DNMG 110408-CS	11,60	4,76	9,52	0,8					
	DNMG 150604-CS	15,50	6,35	12,70	0,4					
	DNMG 150608-CS	15,50	6,35	12,70	0,8					



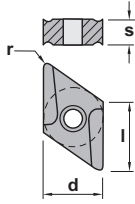
Negative 55° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

DNMX

	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
DNMX 150604R-22	6,57	2,38	6,35	0,4					●					
DNMX 150608R-22	8,20	3,18	7,93	0,4					●					



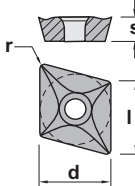
Positive 7° clearance - 75° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

ECMT

	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
ECMT 060204	6,57	2,38	6,35	0,4					●					
ECMT 080304	8,20	3,18	7,93	0,4					●					
ECMT 120404	12,40	4,00	12,00	0,4		○			●					
ECMT 120408	12,40	4,00	12,00	0,8	○	○			●					
ECMT 120412	12,40	4,00	12,00	1,2		○								



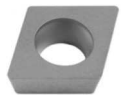
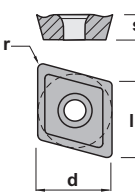
Positive 11° clearance - 75° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

EPMT

	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
EPMT 080302-30	8,28	3,00	8,00	0,2		○								
EPMT 080304-30	8,28	3,00	8,00	0,4		●			●					
EPMT 080308-30	8,28	3,00	8,00	0,8					●					



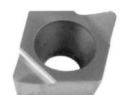
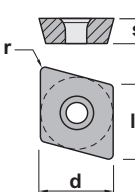
Positive 11° clearance - 75° rhombic insert.

Normally available for immediate delivery ●

Only available in a limited quantity ○

EPMW

	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
EPMW 040204	4,92	2,38	4,76	0,4		●			●					
EPMW 080304	8,28	3,00	8,00	0,4		○								
EPMW 080308	8,28	3,00	8,00	0,8		○								



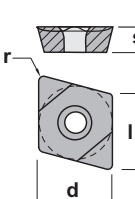
Positive 11° clearance - 75° rhombic insert.

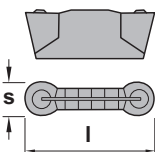
Normally available for immediate delivery ●

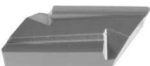
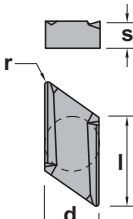
Only available in a limited quantity ○

EPMX

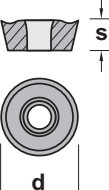
	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
EPMX 040204	4,92	2,38	4,76	0,4		●								

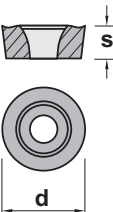


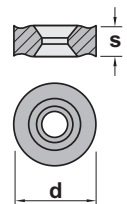
	Double ended insert													Normally available for immediate delivery ●	
														Only available in a limited quantity ○	
	GXGP-AL	l	s	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10		
	GXGP-253.0-AL	31,00	6,00	●									○		
	GXGP-254.0-AL	31,00	8,00	●										○	

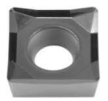
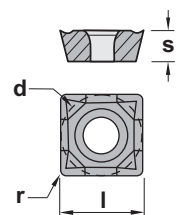
	Negative KNUX insert					Normally available for immediate delivery ● Only available in a limited quantity ○									
	KNUX	l	s	d	r	KM15	PM25	PM40	NC25	TiN16	TiN17	TiN22	TiN32	TiN35	ZR10
	KNUX 160405L-21	16,00	4,76	9,52	0,5		●			●			●		
	KNUX 160405L-32	16,00	4,76	9,52	0,5		●			●			●		
	KNUX 160405R-21	16,00	4,76	9,52	0,5		●			●			●		
	KNUX 160405R-32	16,00	4,76	9,52	0,5		●			●			●		
	KNUX 160410L-21	16,00	4,76	9,52	1,0		●						●		
	KNUX 160410L-32	16,00	4,76	9,52	1,0		●						●		
	KNUX 160410R-21	16,00	4,76	9,52	1,0		●			○			●		
	KNUX 160410R-32	16,00	4,76	9,52	1,0								●		

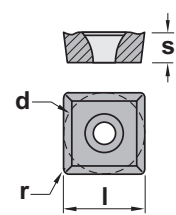
	Positive 7° clearance - Round insert.															Normally available for immediate delivery ●									
																Only available in a limited quantity ○									
RCGT-AL																									
		l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10										
		-	3,18	8,00	-	●									○										
		-	3,18	10,00	-	●									○										

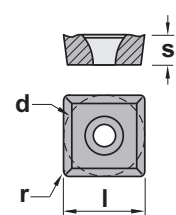
	Positive 7° clearance - Round insert.															Normally available for immediate delivery ☒										Only available in a limited quantity ☐									
																RCGT-AP																			
																RCGT 0803M0-AP																l	s	d	r
																-	3,18	8,00	-	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		

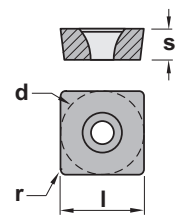
	Positive 7° clearance - Round insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	RCMT	l	s	d	r	KM15	PM25	PM40	NC25	TiN16	TiN17	TiN22	TiN32	TiN35	ZR10
	RCMT 0602M0	-	2,38	6,00	-					●					
	RCMT 0803M0	-	3,18	8,00	-					●					
	RCMT 1003M0	-	3,18	10,00	-		●			●					
	RCMT 10T3M0	-	3,97	10,00	-		●			●					
	RCMT 1204M0	-	4,76	12,00	-	○	●			●					
	RCMT 1606M0-30	-	6,35	16,00	-		○								
	RCMT 2006M0-30	-	6,35	20,00	-		○								

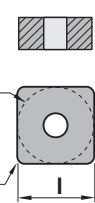
	Negative round insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	RNMG	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	RNMG 090300	-	3,18	9,52	-							○			
	RNMG 120400	-	4,76	12,70	-		○					○			
	RNMG 150600	-	6,35	15,88	-								○		
	RNMG 190600	-	6,35	19,05	-								○		
	RNMG 250900	-	9,52	25,40	-								○		

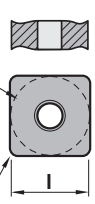
	Positive 7° clearance - Square insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	SCGT-AL	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SCGT 09T304-AL	9,52	3,97	9,52	0,4	●									○
	SCGT 09T308-AL	9,52	3,97	9,52	0,8	●									○
	SCGT 120408-AL	12,70	4,76	12,70	0,8	●									○

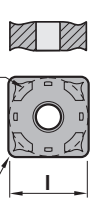
	Positive 7° clearance - Square insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	SCMT-03	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SCMT 09T304-03	9,52	3,97	9,52	0,4	○				○					
	SCMT 09T308-03	9,52	3,97	9,52	0,8	○	●			●					
	SCMT 120408-03	12,70	4,76	12,70	0,8		●			●					

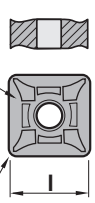
	Positive 7° clearance - Square insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	SCMT-39	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SCMT 09T304-39	9,52	3,97	9,52	0,4		●								
	SCMT 09T308-39	9,52	3,97	9,52	0,8	○	●								
	SCMT 120404-39	12,70	4,76	12,70	0,4		●								
	SCMT 120408-39	12,70	4,76	12,70	0,8	○	●								
	SCMT 120412-39	12,70	4,76	12,70	1,2		●								
	SCMT 120612-39	12,70	6,35	12,70	1,2		●								

	Positive 7° clearance - Square insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
	SCMW	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SCMW 09T308	9,52	3,97	9,52	0,8		○								
	SCMW 120408	12,70	4,76	12,70	0,8	○	○								

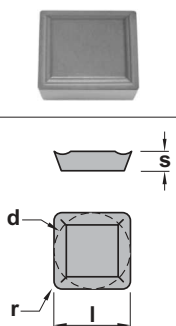
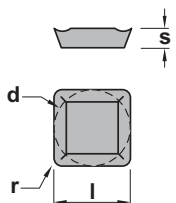
	Negative square insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	SNMA										
	SNMA 120404	12,70	4,76	12,70	0,4						
	SNMA 120408	12,70	4,76	12,70	0,8						
	SNMA 120416	12,70	4,76	12,70	1,6						
	SNMA 190612	19,05	6,35	19,05	1,2						
	SNMA 190616	19,05	6,35	19,05	1,6						

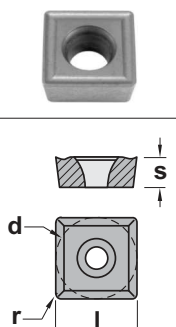
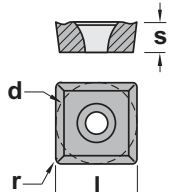
	Negative square insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	SNMG-CFM										
	SNMG 120404-CFM	12,70	4,76	12,70	0,4						

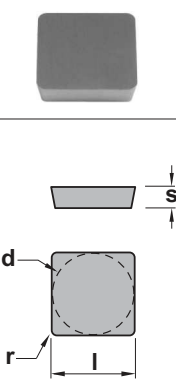
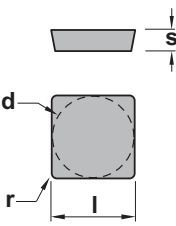
	Negative square insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	SNMG-CMR										
	SNMG 120408-CMR	12,70	4,76	12,70	0,8						

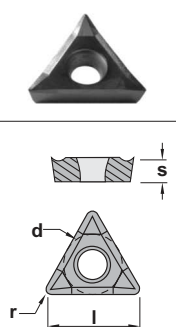
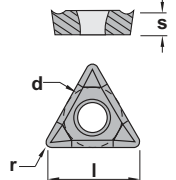
	Negative square insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	SNMG-CR										
	SNMG 120412-CR	12,70	4,76	12,70	1,2						
	SNMG 150612-CR	15,88	6,35	15,88	1,2						
	SNMG 190616-CR	19,05	6,35	19,05	1,6						

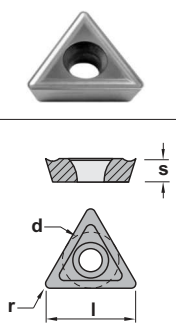
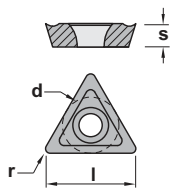
	Negative square insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	SNMM										
	SNMM 190612	19,05	6,35	19,05	1,2						
	SNMM 190616	19,05	6,35	19,05	1,6						
	SNMM 250724	25,40	7,94	25,40	2,4						

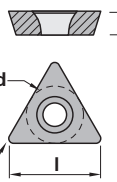
	Positive 11° clearance - Square insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	SPMR-33	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SPMR 090308-33	9,52	3,18	9,52	0,8							●			
	SPMR 120304-33	12,70	3,18	12,70	0,4					●					
	SPMR 120308-33	12,70	3,18	12,70	0,8		●					●			

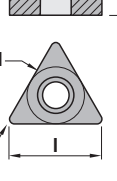
	Positive 11° clearance - Square insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	SPMT	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	TL40
	SPMT 060304	6,35	3,18	6,35	0,4										●
	SPMT 070308	7,94	3,18	7,94	0,8										●
	SPMT 090308	9,52	3,18	9,52	0,8										●
	SPMT 120408	12,70	4,76	12,70	0,8										●

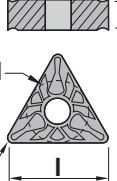
	Positive 11° clearance - Square insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	SPUN	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	SPUN 090304E	9,52	3,18	9,52	0,4		○								
	SPUN 090308E	9,52	3,18	9,52	0,8		●								
	SPUN 090308F	9,52	3,18	9,52	0,8	○									
	SPUN 120304E	12,70	3,18	12,70	0,4		●								
	SPUN 120308E	12,70	3,18	12,70	0,8		●								
	SPUN 120308F	12,70	3,18	12,70	0,8	●									
	SPUN 120312E	12,70	3,18	12,70	1,2		●								
	SPUN 120408E	12,70	4,76	12,70	0,8		○								
	SPUN 150408E	15,88	4,76	15,88	0,8		○								
	SPUN 150412E	15,88	4,76	15,88	1,2		○								
	SPUN 190412E	19,05	4,76	19,05	1,2		○								

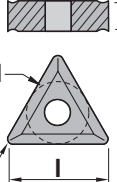
	Positive 7° clearance - Triangular insert for aluminium and soft materials. Extra positive cutting angle. Suitable for finishing aluminium.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	TCGT-AL	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	TCGT 110202-AL	11,00	2,38	6,35	0,2	●									○
	TCGT 110204-AL	11,00	2,38	6,35	0,4	●									○
	TCGT 16T302-AL	16,50	3,97	9,52	0,2	●									○
	TCGT 16T304-AL	16,50	3,97	9,52	0,4	●									○
	TCGT 16T308-AL	16,50	3,97	9,52	0,8	●									○

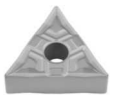
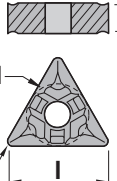
	Positive 7° clearance - Triangular insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	TCMT-03	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	TCMT 090204-03	9,62	2,38	5,55	0,4	○				●					
	TCMT 110204-03	11,00	2,38	6,35	0,4	●	●			●					
	TCMT 16T304-03	16,50	3,97	9,52	0,4		●			●			●	●	
	TCMT 16T308-03	16,50	3,97	9,52	0,8	●	●			●			●	●	
	TCMT 220408-03	22,00	4,76	12,70	0,8		○								
	TCMT 220412-03	22,00	4,76	12,70	1,2		○								

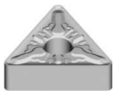
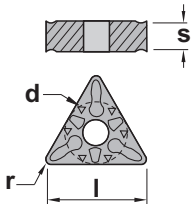
	Positive 7° clearance - Triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TCMW	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TCMW 110204	11,00	2,38	6,35	0,4	○	●				
	TCMW 16T304	16,50	3,97	9,52	0,4	●					
	TCMW 16T308	16,50	3,97	9,52	0,8	●	●				

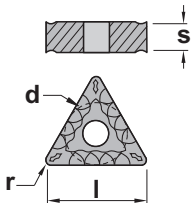
	Negative triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TNMA	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TNMA 160404	16,50	4,76	9,52	0,4						○
	TNMA 160408	16,50	4,76	9,52	0,8						○
	TNMA 160412	16,50	4,76	9,52	1,2						○
	TNMA 220408	22,00	4,76	12,70	0,8						○
	TNMA 220412	22,00	4,76	12,70	1,2						○
	TNMA 220416	22,00	4,76	12,70	1,6						○

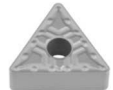
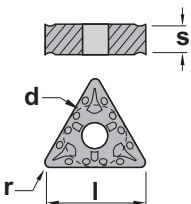
	Negative triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TNMG-CF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TNMG 160404-CF	16,50	4,76	9,52	0,4					●	

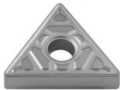
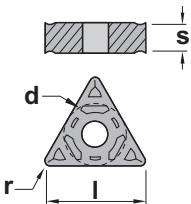
	Negative triangular insert										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TNMG-CFC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TNMG 160404-CFC	16,50	4,76	9,52	0,4				●		

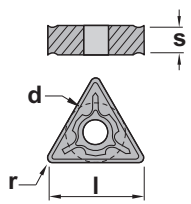
	Negative triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TNMG-CFM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TNMG 160404-CFM	16,50	4,76	9,52	0,4					●	
	TNMG 220404-CFM	22,00	4,76	12,70	0,4					●	

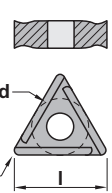
	Negative triangular insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	TNMG-CM	l	s	d	r	KM15	PM25	PM40	NC25	TN16
	TNMG 160408-CM	16,50	4,76	9,52	0,8					●
						TN17				
						TN22				
						TN32			●	
						TN35				
						ZR10				

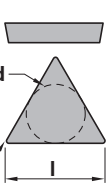
	Negative triangular insert									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	TNMG-CMC	l	s	d	r	KM15	PM25	PM40	NC25	TN16
	TNMG 160408-CMC	16,50	4,76	9,52	0,8				●	
						TN17				
						TN22				
						TN32				
						TN35				
						ZR10				

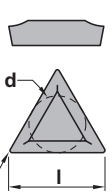
	Negative triangular insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	TNMG-CMF	l	s	d	r	KM15	PM25	PM40	NC25	TN16
	TNMG 160408-CMF	16,50	4,76	9,52	0,8					●
						TN17				
						TN22				
						TN32			●	
						TN35				
						ZR10				

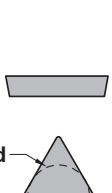
	Negative triangular insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	TNMG-CMR	l	s	d	r	KM15	PM25	PM40	NC25	TN16
	TNMG 160408-CMR	16,50	4,76	9,52	0,8		●			
	TNMG 160412-CMR	16,50	4,76	9,52	1,2					
	TNMG 220408-CMR	22,00	4,76	12,70	0,8					
	TNMG 220412-CMR	22,00	4,76	12,70	1,2					
						TN17				
						TN22				●
						TN32				●
						TN35				
						ZR10				

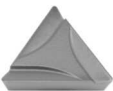
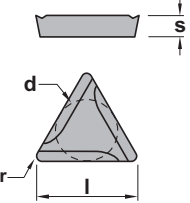
	Negative triangular insert.									
	Normally available for immediate delivery ● Only available in a limited quantity ○									
	TNMG-CS	l	s	d	r	KM15	PM25	PM40	NC25	TN16
	TNMG 160404-CS	16,50	4,76	9,52	0,4					
	TNMG 160408-CS	16,50	4,76	9,52	0,8					
						TN17				
						TN22				
						TN32				
						TN35			●	
						ZR10				

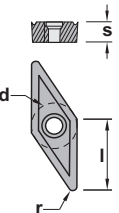
	Negative triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TNMX	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TNMX 160404 R	16,50	4,76	9,52	0,4				●		
	TNMX 160408 R	16,50	4,76	9,52	0,8				●		
	TNMX 160404 L	16,50	4,76	9,52	0,4				●		
	TNMX 160408 L	16,50	4,76	9,52	0,8				●		

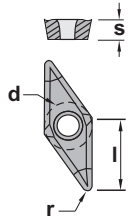
	Positive 11° clearance - Triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TPMN	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TPMN 160308	16,50	3,18	9,52	0,8				●		

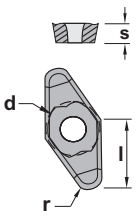
	Positive 11° clearance - Triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TPMR-33	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TPMR 090204-33	9,62	2,38	5,55	0,4					●	
	TPMR 110304-33	11,00	3,18	6,35	0,4		●			●	
	TPMR 110308-33	11,00	3,18	6,35	0,8		●				●
	TPMR 160304-33	16,50	3,18	9,52	0,4		●			●	
	TPMR 160308-33	16,50	3,18	9,52	0,8		●			●	

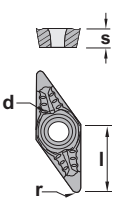
	Positive 11° clearance - Triangular insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	TPUN	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	TPUN 110204E	11,00	2,38	6,35	0,4		●				
	TPUN 110204F	11,00	2,38	6,35	0,4	○	●				
	TPUN 110208E	11,00	2,38	6,35	0,8		●				
	TPUN 110304E	11,00	3,18	6,35	0,4		●				
	TPUN 110308E	11,00	3,18	6,35	0,8		●				
	TPUN 110308F	11,00	3,18	6,35	0,8	○	●				
	TPUN 160304E	16,50	3,18	9,52	0,4		●			○	
	TPUN 160304F	16,50	3,18	9,52	0,4	●	●				
	TPUN 160308T	16,50	3,18	9,52	0,8		●				
	TPUN 160308E	16,50	3,18	9,52	0,8		●			○	
	TPUN 160308F	16,50	3,18	9,52	0,8	●	●				
	TPUN 160312E	16,50	3,18	9,52	1,2		●				
	TPUN 160312F	16,50	3,18	9,52	1,2	○	●				
	TPUN 220408E	22,00	4,76	12,70	0,8		●				
	TPUN 220408F	22,00	4,76	12,70	0,8	●	●				
	TPUN 220412E	22,00	4,76	12,70	1,2		●				

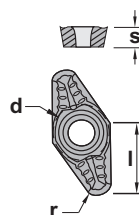
	Positive 11° clearance - Triangular insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
						KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	TPUX	l	s	d	r										
	TPUX 110304L	11,00	3,18	6,35	0,4	○	●								
	TPUX 110304R	11,00	3,18	6,35	0,4	○	●								
	TPUX 160304L	16,50	3,18	9,52	0,4	○	●								
	TPUX 160304R	16,50	3,18	9,52	0,4	○	●								
	TPUX 160308L	16,50	3,18	9,52	0,8	○	●								
	TPUX 160308R	16,50	3,18	9,52	0,8	○	●								
	TPUX 220408L	22,00	4,76	12,70	0,8		○								
	TPUX 220408R	22,00	4,76	12,70	0,8	○	○								

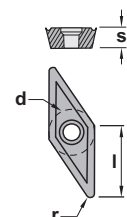
	Positive 5° clearance - 35° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
						KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VBMT	l	s	d	r										
	VBMT 160404	16,50	4,76	9,52	0,4					●					
	VBMT 160408	16,50	4,76	9,52	0,8					●					

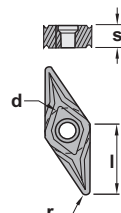
	Positive 7° clearance - 35° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
						KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VCGT	l	s	d	r										
	VCGT 160404-AL	16,50	4,76	9,52	0,4	●									○
	VCGT 160408-AL	16,50	4,76	9,52	0,8	●									○
	VCGT 160412-AL	16,50	4,76	9,52	1,2	●									○

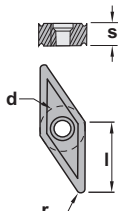
	Positive 7° clearance - 35° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
						KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VCGT	l	s	d	r										
	VCGT 220530-AL	22,10	5,56	12,70	3,0	●									○

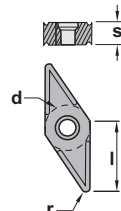
	Positive 7° clearance - 35° rhombic insert.					Normally available for immediate delivery ●									
						Only available in a limited quantity ○									
						KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VCGT	l	s	d	r										
	VCGT 160404-AP	16,50	4,76	9,52	0,4	●									○
	VCGT 160408-AP	16,50	4,76	9,52	0,8	●									○
	VCGT 160412-AP	16,50	4,76	9,52	1,2	●									○

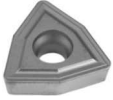
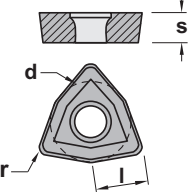
	Positive 7° clearance - 35° rhombic insert.				Normally available for immediate delivery ● Only available in a limited quantity ○										
	VC GT-AP	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VC GT 220530-AP	22,10	5,56	12,70	3,0	●									○

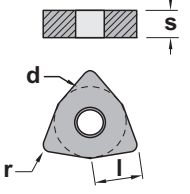
	Positive 7° clearance - 35° rhombic insert.				Normally available for immediate delivery ● Only available in a limited quantity ○										
	VC MT-03	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VC MT 110304-03	11,00	3,18	6,35	0,4					●					
	VC MT 130304-03	13,00	3,18	8,00	0,4					●					
	VC MT 160404-03	16,50	4,76	9,52	0,4					●				●	
	VC MT 160408-03	16,50	4,76	9,52	0,8							●		●	

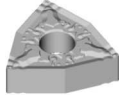
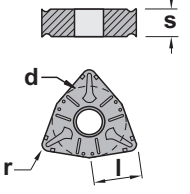
	Negative 35° rhombic insert.				Normally available for immediate delivery ● Only available in a limited quantity ○										
	VN GP	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VN GP 160404	16,50	4,76	9,52	0,4						●				
	VN GP 160408	16,50	4,76	9,52	0,8						●				

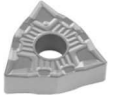
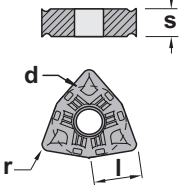
	Negative 35° rhombic insert.				Normally available for immediate delivery ● Only available in a limited quantity ○										
	VN MG	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VN MG 160408	16,50	4,76	9,52	0,8					●					
	VN MG 220408	22,00	4,76	12,70	0,8							●			

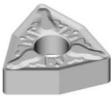
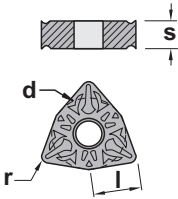
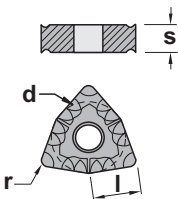
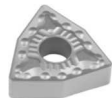
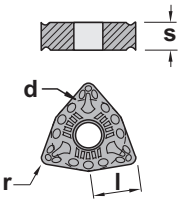
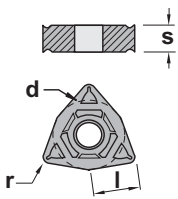
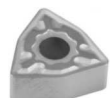
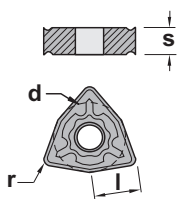
	Negative 35° rhombic insert.				Normally available for immediate delivery ● Only available in a limited quantity ○										
	VN MG-CMC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	VN MG 160404-CMC	16,50	4,76	9,52	0,4				●						

	Positive 7° clearance - 80° Trigon insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	WCMX	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	WCMX 030208	3,46	2,38	5,56	0,8						
	WCMX 040208	3,99	2,38	6,35	0,8						
	WCMX 050308	5,07	3,18	7,94	0,8						
	WCMX 06T308	6,14	3,97	9,52	0,8						
	WCMX 080412	8,14	4,76	12,70	1,2						

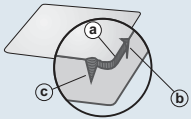
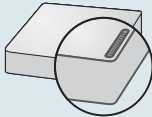
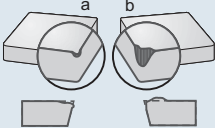
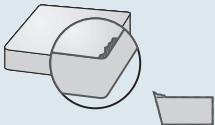
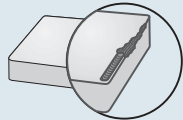
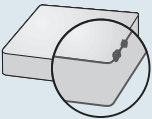
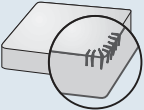
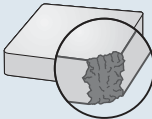
	Negative 80° trigon insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	WNMA	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	WNMA 080408	8,14	4,76	12,70	0,8						
	WNMA 080412	8,14	4,76	12,70	1,2						

	Negative 80° trigon insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	WNMG-CF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	WNMG 080404-CF	8,14	4,76	12,70	0,4						

	Negative 80° trigon insert.										
	Normally available for immediate delivery ● Only available in a limited quantity ○										
	WNMG-CFM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17
	WNMG 080404-CFM	8,14	4,76	12,70	0,4						

	Negative 80° trigon insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	WNMG-CM	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	WNMG 080408-CM	8,14	4,76	12,70	0,8					●			●		
	Negative 80° trigon insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	WNMG-CMC	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	WNMG 080408-CMC	8,14	4,76	12,70	0,8				●						
	Negative 80° trigon insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	WNMG-CMF	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	WNMG 080408-CMF	8,14	4,76	12,70	0,8					●			●		
	Negative 80° trigon insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	WNMG-CMR	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	WNMG 060404-CMR	6,45	4,76	9,52	0,4					●					
	WNMG 060408-CMR	6,45	4,76	9,52	0,8								●		
	WNMG 080408-CMR	8,14	4,76	12,70	0,8								●	●	
	WNMG 080412-CMR	8,14	4,76	12,70	1,2								●		
	Negative 80° trigon insert.					Normally available for immediate delivery ● Only available in a limited quantity ○									
	WNMG-CS	l	s	d	r	KM15	PM25	PM40	NC25	TIN16	TIN17	TIN22	TIN32	TIN35	ZR10
	WNMG 060404-CS	6,45	4,76	9,52	0,4									●	
	WNMG 060408-CS	6,45	4,76	9,52	0,8									●	
	WNMG 080404-CS	8,14	4,76	12,70	0,4									●	
	WNMG 080408-CS	8,14	4,76	12,70	0,8									●	
	WNMG 080412-CS	8,14	4,76	12,70	1,2									●	

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 (b,c).	☆ 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 Al₂O₃ 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 Al₂O₃ 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. - relative 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.



Inserts

General turning

Aluminium
wheel turning

Automatic lathes

Ceramic tools

Parting and
grooving

Threading

Drills

Cartridges

Brazed tools

Tooling