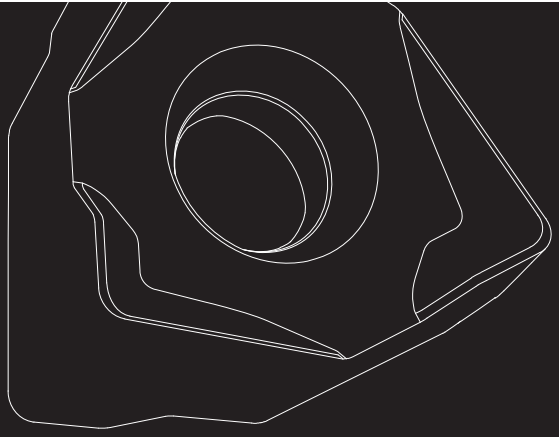

2019

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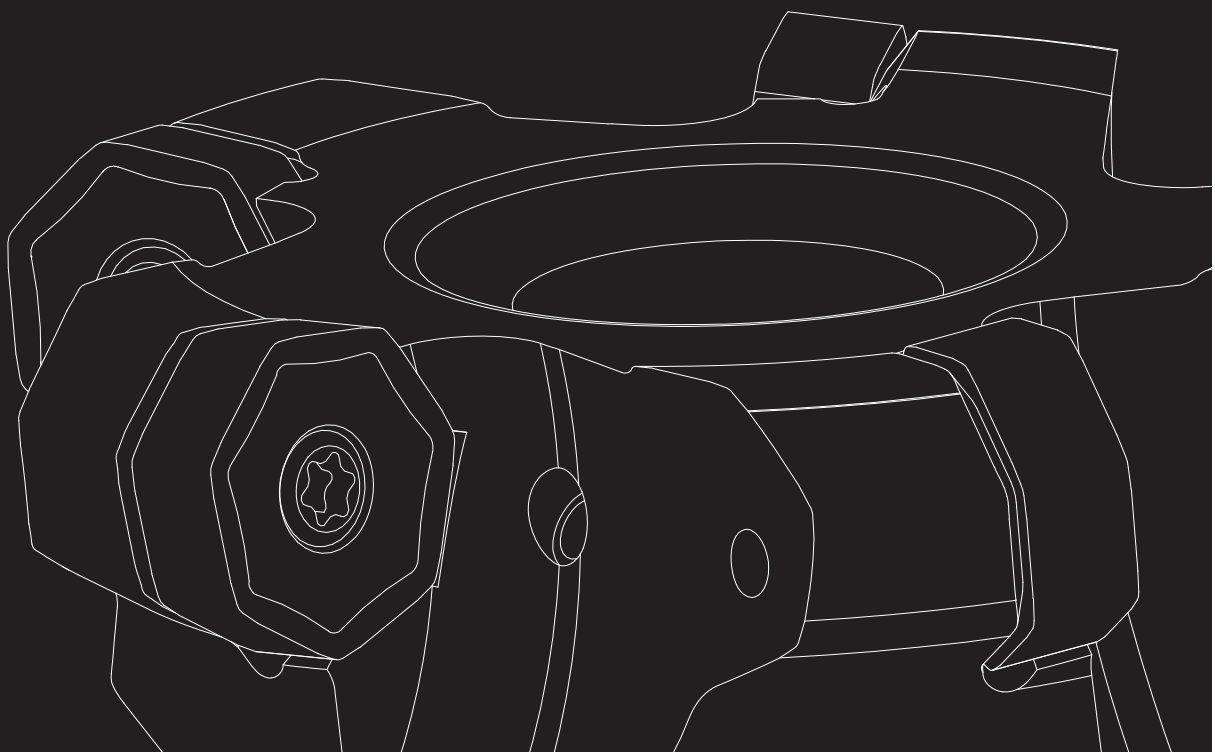
CUTTING TOOL CATALOGUE



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THE EXPERT OF DIFFICULT MACHINING

Company Profile

Ganzhou Achteck Tool Technology Co., Ltd. is a wholly-owned subsidiary of Chongyi Zhangyuan Tungsten Co., Ltd. (Listed Company with stock code 002378). The registered capital of Achteck is 1.65 billion Yuan with existing staff of 600 people. And the main products include: the Coated Cemented Carbide Inserts, Cemented Carbide Rods etc. Achteck has world-class R&D, production and testing equipments and the coated cemented carbide inserts production technology. The inserts with series of Turning, Grooving, Milling, Drilling are widely applied for automotive, energy, Die&mold, general machinery, aerospace and other fields.

Achteck Tool sticks to the faith of technology-guided and owns a strong research team and keeps self-innovation along with research and development. Seeing 'Benefit from Resources, Reliance on Technologies, Devotion to Humanity and Top with Trust' as operation philosophy and 'Safety, Harmony, Efficiency and Innovation' as target, Achteck aims to become a top-class cemented carbide manufacturer in China and well-known around the world.

Turning Inserts

2019 NEW

AC350P

New grade for turning on steels.
Mainly applied for heavy turning and very excellent for interrupted machining, the excellent toughness ensures the machining reliability.

AP301M

New grade for turning on stainless steels. Applied for heat resistant super alloys.
Submicron carbide substrate with multi nano layered PVD coating. Hardness, toughness and oxidation resistance enhanced for higher cutting speed machining.Reduce built up edge and better surface finish on the workpiece.

AP100S

New grade for heat resistant super alloys. Applied for stainless steels in continuous turning.
Submicron carbide substrate combined with high hardness and multi nano layered PVD coating enhanced hardness and oxidation resistance at higher cutting speed machining. The best choice for difficult machining.

AW100K

New grade for aluminum alloys and non ferrous materials.
High hardness uncoated carbide grade. Excellent wear resistance can be applied for longer toolife. Very good performance for alumium alloys.

Grooving

2019 NEW

Features and Application

- Holders can be corvered for external, internal and facing.
- Inserts provide high accuracy position on the pocket when insert edge is changed.
- Holder has excellent wear resistance.

- Three type of geometries in parting and grooving inserts series: CS, CM, CH are applied for different machining.
- Two types of geometries in inserts series with the function of grooving and turning: TM, TS.
- The special design on the face and flank with double relief angle of insert provides more space to achieve a smaller machining diameter range in the facing and internal machining.

AFM45-XN07/09 Series

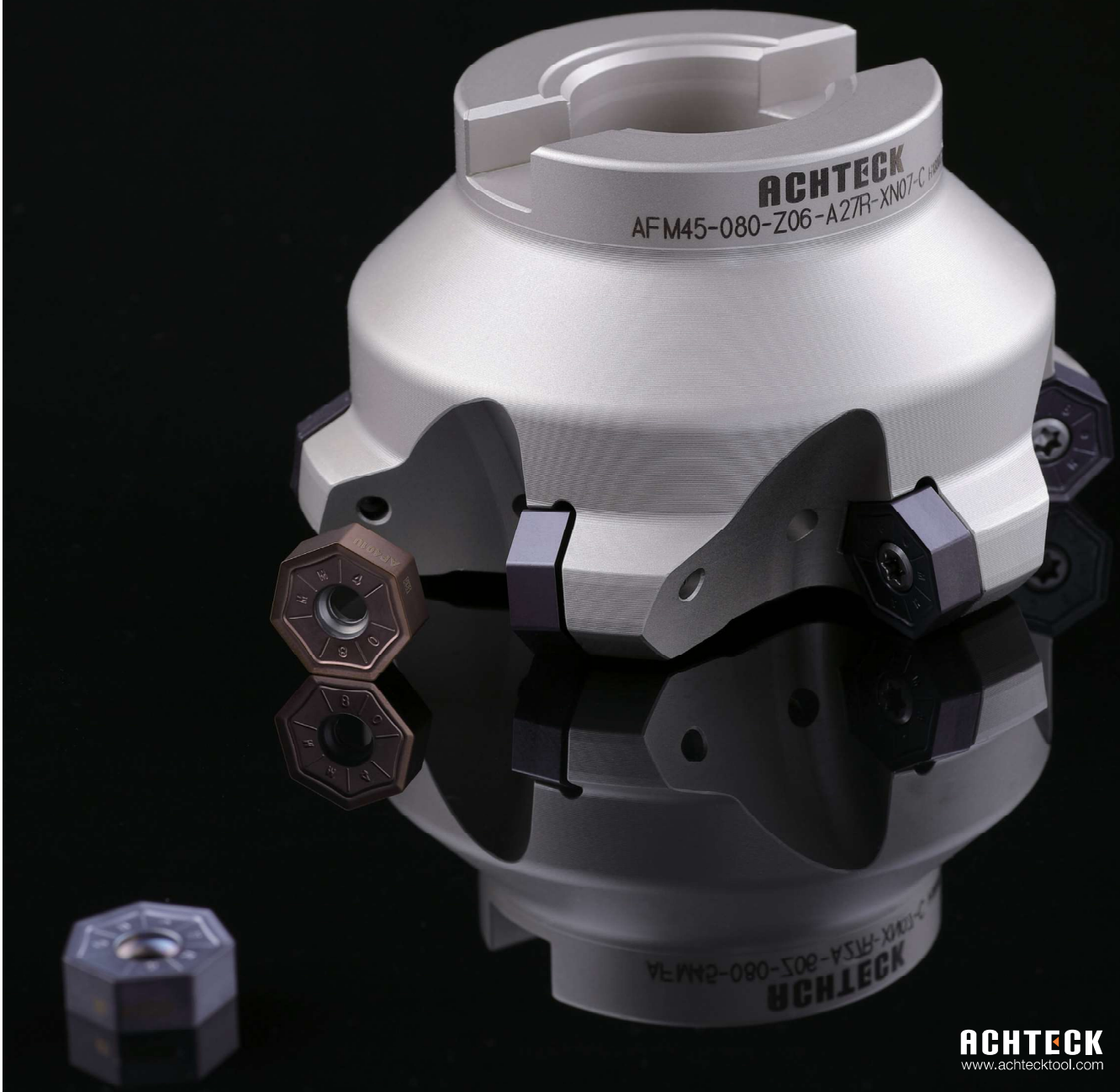
Face milling

Features and Application

- 45° face milling cutter with negative heptagonal inserts, 14 cutting edges, provides high economical efficiency.
- Cutter body's with screw and wedge clamping for different applications.

- Different insert design, some with only corner radius and some with wiper for good surface roughness quality.
- Positive rake angle to reduce cutting force.
- Mainly application in cast iron, steel parts, stainless steel materials etc.

2019 NEW



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ASM90-LN13

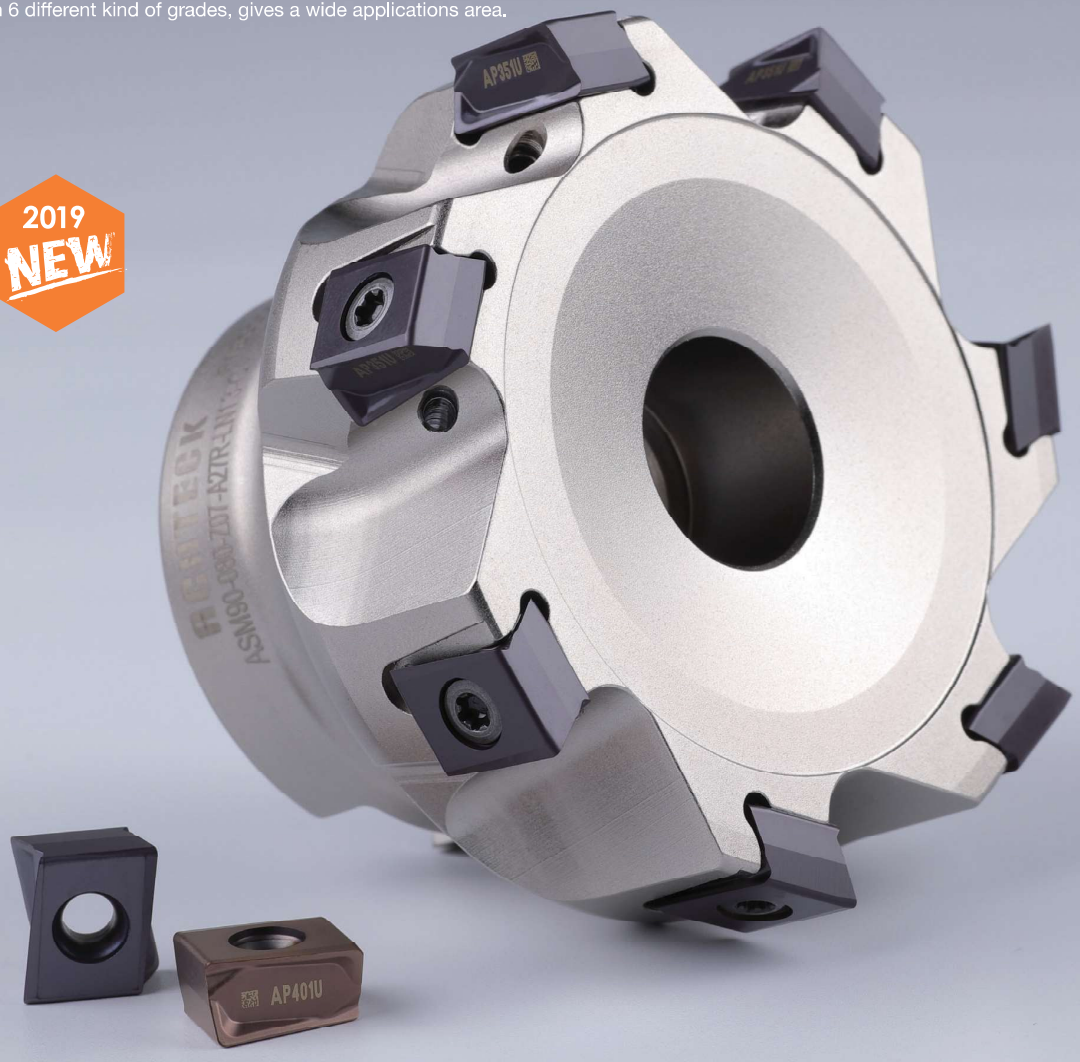
Square Shoulder Milling Cutter

Features and Application

- True 90°shoulder milling cutter, cutter dia.:ϕ40-ϕ160mm.
- High precision axial and radial runout.
- Tangential mounted inserts, with high body strength and working efficiency.
- Different pitch design, coarse pitch and close pitch.
- Cutter interface: arbor style, cylindrical style, side-locked style and modular style.
- Shining Nickel-plated cutter gives good corrosion and wear resistance.

- Economical negative inserts with 4 cutting edges, strong edges with positive rake angle for smooth and efficient machining.
- MR2 geometry with a short wiper design, to get better surface roughness.
- Many choices of corner radius, R0.8/1.2/1.6/2.0/2.4/3.1.
- Inserts in 6 different kind of grades, gives a wide applications area.

2019 NEW



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2019 NEW

Features and Application

- 90°shoulder milling cutter, cutter dia:ϕ40-ϕ160mm.
- High precision axial and radial.
- Different pitch design, coarse pitch, close pitch and extra close pitch for different machining.
- Cutter interface: arbor style, cylindrical style, side-locked style and modular style.
- Shining Nickel-plated cutter gives good corrosion and wear resistance.

- Trigonal negative inserts with 6 cutting edges for economical machining.
- Geomeries with positive rake angle for smooth and efficient machining.
- Many choices of corner radius, R0.8/1.2/1.6/4.0.
- Geometries, MM3, MM4, MR2, for light, medium,and heavy cutting machining.
- Inserts in 6 different kind of grades, gives a wide applications area.

ASM90-WN08

Square Shoulder Milling Cutter

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Turbocharger housing application case

Non-standard double-face milling cutter applied for machining the back of the flange.

ASM90-LN13, shoulder milling cutter with tangential mounted inserts with 4 cutting edges, applied for machining component features on turbine casing.

AFM40-ON05-C-45, with 45°approach angle, wiper inserts with 16 cutting edges, For finishing of the flange face of turbine casing.

AFM45-XN07 face milling cutter with heptagonal shaped inserts with 14 cutting edges for roughing flange face, having a high performance-cost ratio.

New PVD grade of AP100S and AP301M for external and rough facing and finish turning operation.

ATD turn-groove series of flat edge and full round shape tools applied for external, facing and profiling.

Non-standard combined boring holder.

16ER 1.00ISO AP351U is for threading operation .

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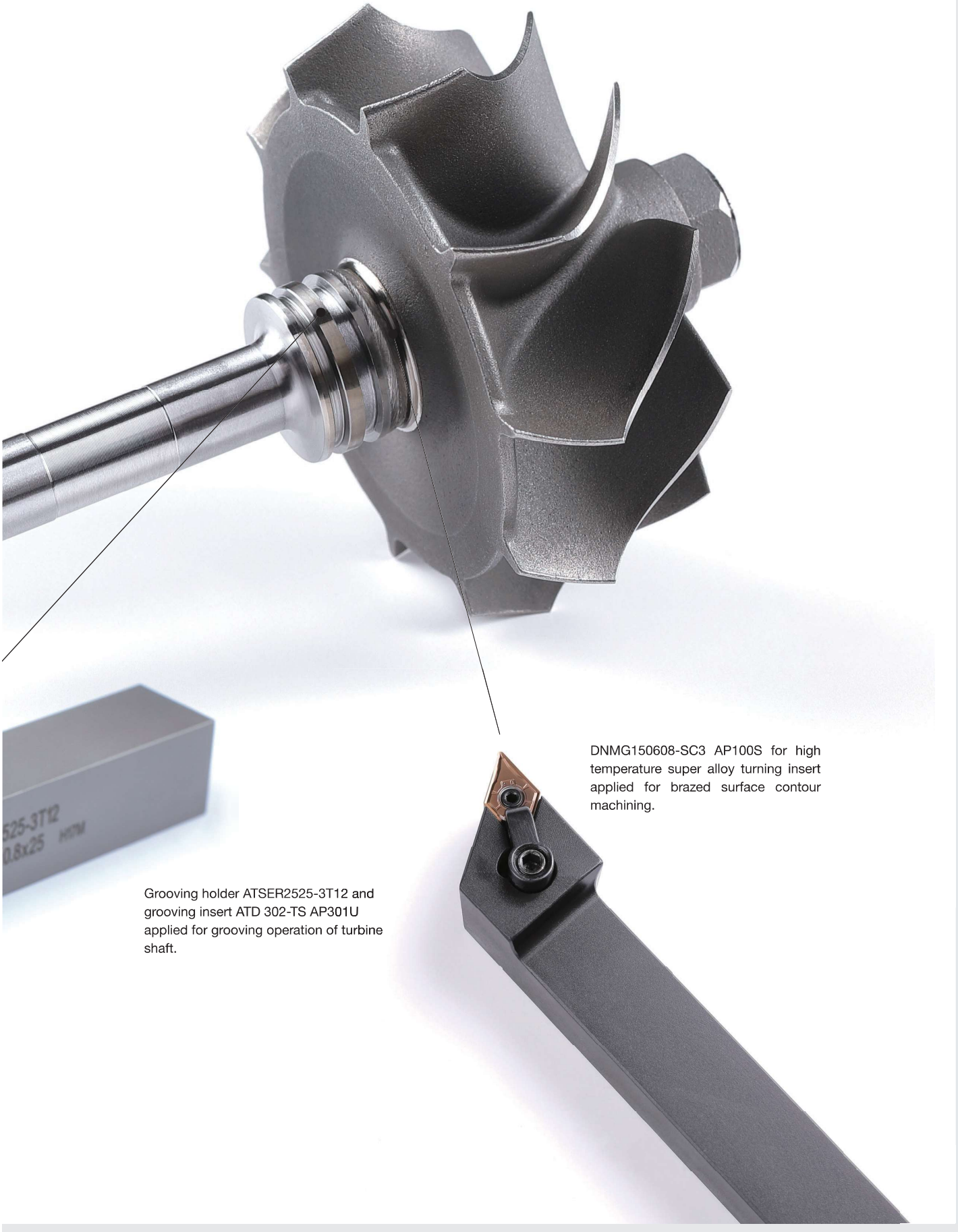
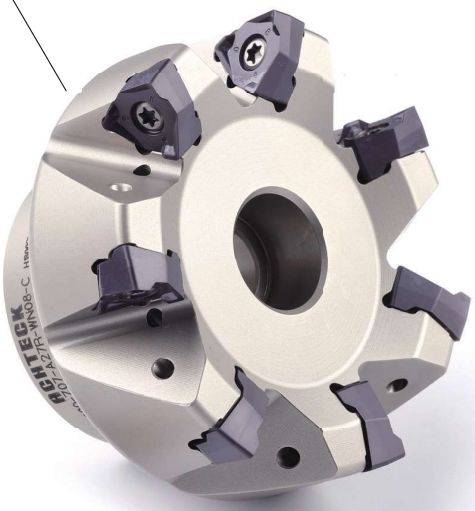
Turbine shaft machining cases



DNMG150608-SC3 AP100S for high temperature super alloy turning insert applied for brazed surface contour machining.

Grooving holder ATSER2525-3T12 and grooving insert ATD 302-TS AP301U applied for grooving operation of turbine shaft.

APM00-RP06-12 milling tools for roughing of blade shape.



ASM90-WN08 shoulder milling cutter with negative inserts, 6 cutting edges. 90° concept for roughing to finishing in a big variety of applications.

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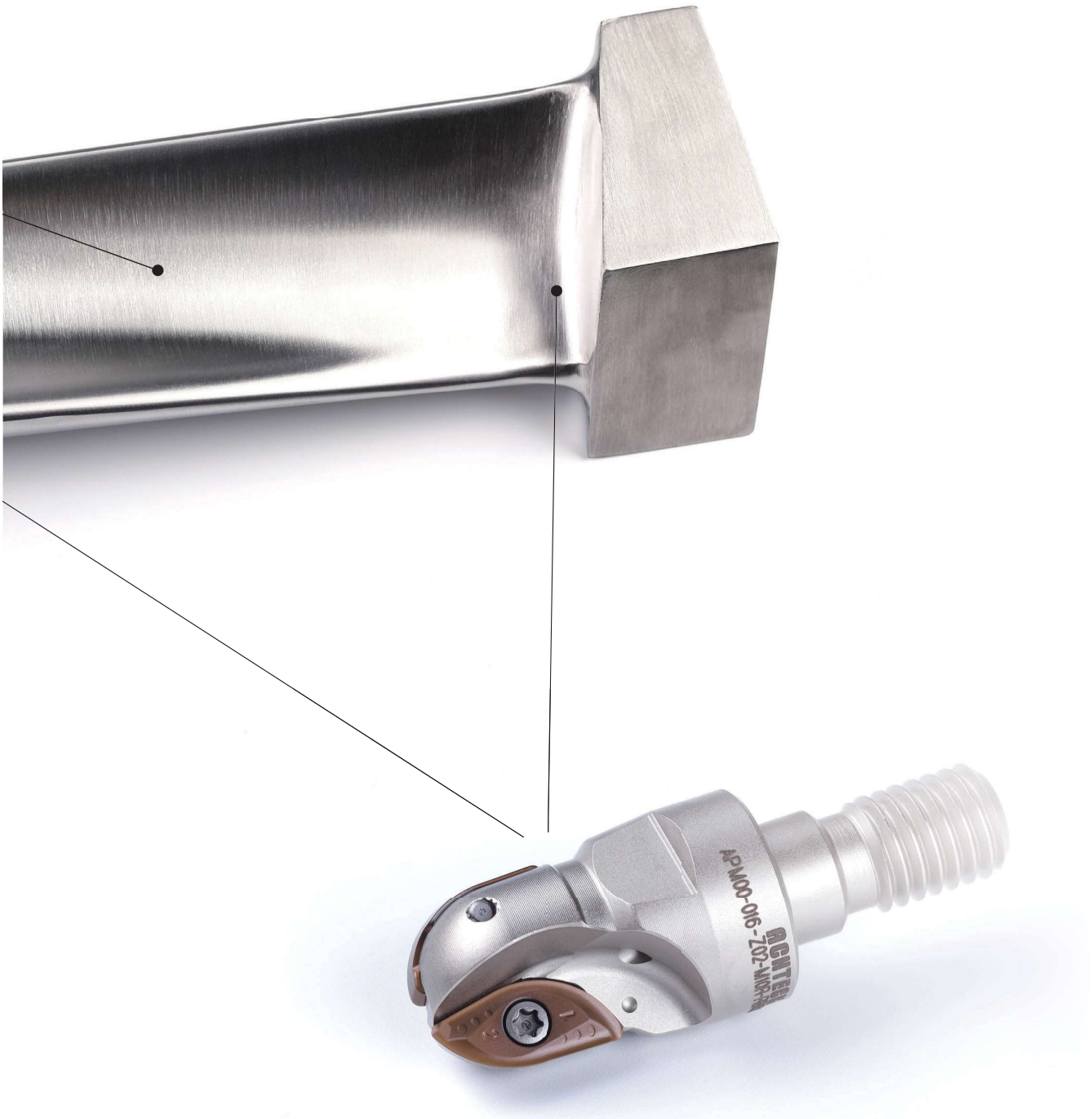
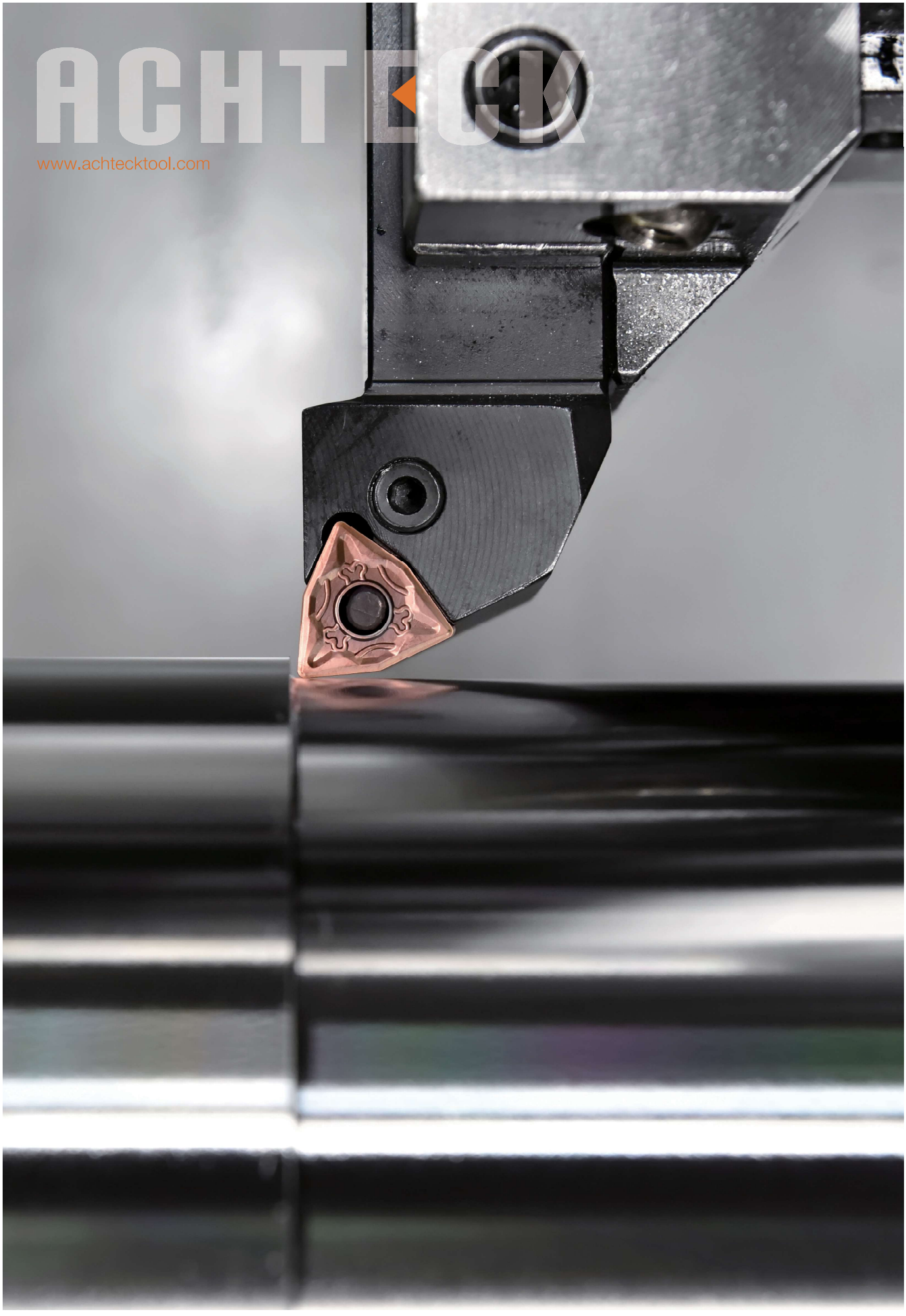
Steam Turbine and Aerospace Blade Solutions



APM00-RBM08-20 Roughing transition area of airfoil with root and shroud.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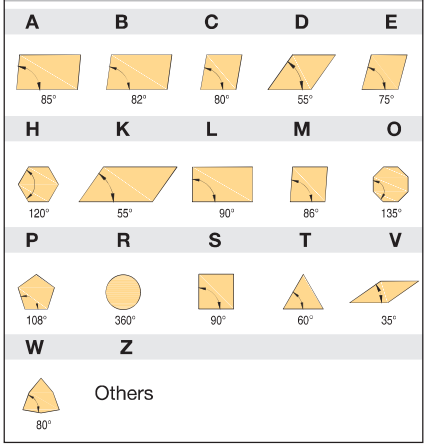
Turning

CUTTING TOOL CATALOGUE

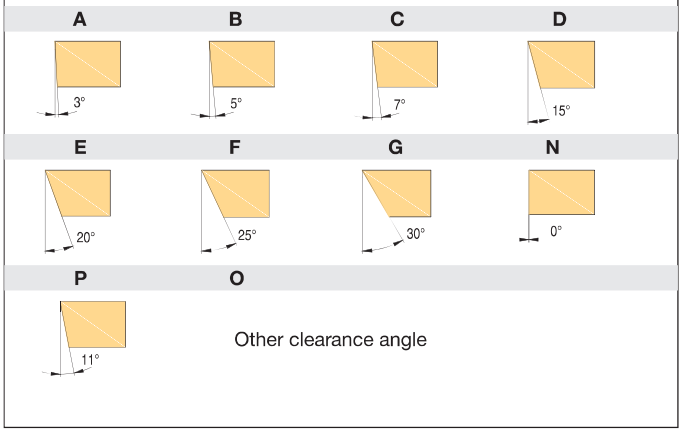
ISO Turning Insert Designation System

C	N	M	G
1	2	3	4

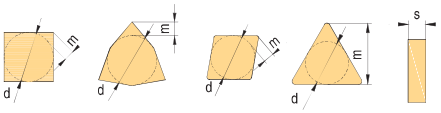
1- Shape/Code



2- Clearance Angle



3- Tolerance



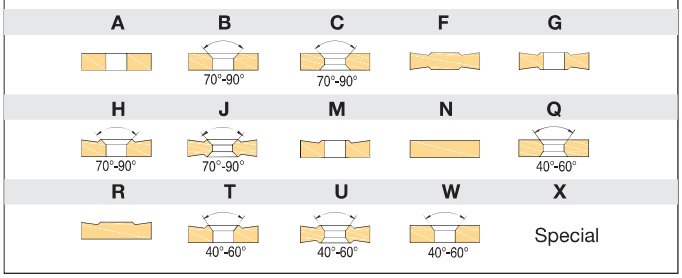
Class	Unit	In.Circle Dimension d	Nose height m	Thickness s
A	mm	± 0,025	± 0,005	± 0,025
C	mm	± 0,025	± 0,013	± 0,025
E	mm	± 0,025	± 0,025	± 0,025
F	mm	± 0,013	± 0,005	± 0,025
G	mm	± 0,025	± 0,025	± 0,130
H	mm	± 0,013	± 0,013	± 0,025
J	mm	*	± 0,005	± 0,025
K	mm	*	± 0,013	± 0,025
L	mm	*	± 0,025	± 0,025
M	mm	*	*	± 0,127
U	mm	*	*	± 0,127
N	mm	*	*	± 0,025

* For details refer to right and below tables

M&N shape	D shape		V shape	
IC	d	m	d	m
5.56	± 0,05	± 0,11		
6.35	± 0,05	± 0,11	± 0,05	± 0,16
7.94	± 0,05	± 0,11	± 0,05	± 0,16
9.525	± 0,05	± 0,11	± 0,05	± 0,16
12.7	± 0,08	± 0,15	± 0,08	± 0,2
15.875	± 0,10	± 0,18	± 0,10	± 0,27
19.05	± 0,10	± 0,18	± 0,10	± 0,27

Shape : C, E, H, M, O, P, S, T, R, W				
IC	d		m	
	J,K,L,M,N	U	M, N	U
4.76	± 0,05	± 0,08	± 0,08	± 0,13
5.56	± 0,05	± 0,08	± 0,08	± 0,13
6	± 0,05	± 0,08	± 0,08	± 0,13
6.35	± 0,05	± 0,08	± 0,08	± 0,13
7.94	± 0,05	± 0,08	± 0,08	± 0,13
8	± 0,05	± 0,08	± 0,08	± 0,13
9.525	± 0,05	± 0,08	± 0,08	± 0,13
10	± 0,05	± 0,08	± 0,08	± 0,13
12	± 0,08	± 0,13	± 0,13	± 0,2
12.7	± 0,08	± 0,13	± 0,13	± 0,2
15.875	± 0,1	± 0,18	± 0,15	± 0,27
16	± 0,1	± 0,18	± 0,15	± 0,27
19.05	± 0,1	± 0,18	± 0,15	± 0,27
20	± 0,1	± 0,18	± 0,15	± 0,27
25	± 0,13	± 0,25	± 0,18	± 0,38
25.4	± 0,13	± 0,25	± 0,18	± 0,38
31.75	± 0,15	± 0,25	± 0,2	± 0,38
32	± 0,15	± 0,25	± 0,2	± 0,38

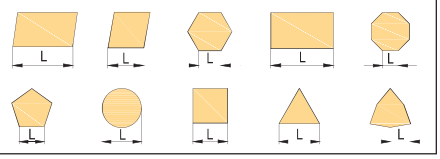
4- Clamping Type



12				04		08	E	-	KC4
5				6		7	8	-	9

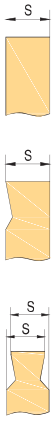
5- Cutting Edge Length

In.Circle Dimension (mm)	Insert shape							
	C	D	R	S	T	V	W	K
3.97					06		02	
5.0			05					
5.56			09					
6.0		06						
6.35	06	07			11	11	04	
8.0			08					
9.525	09	11	09	09	16	16	06	16
10.0			10					
12.0			12					
12.7	12	15	12	12	22	22	08	
15.875	16		15	15	27			
16.0			16					
19.05	19		19	19	33			
20.0			20					
25.0			25					
25.4	25		25	25				
31.75			31					
32			32					



6- Thickness

Round down plus zero or T



A, B, C, N, O, W,

H, M, R, T,

F, G, J, U,

Example:

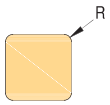
01 = 1.59
T1 = 1.98
02 = 2.38
03 = 3.18
T3 = 3.97
04 = 4.76
05 = 5.56
06 = 6.35
07 = 7.94
09 = 9.525
11 = 11.11
12 = 12.70
14 = 14.29
15 = 15.88

7- Tool Nose

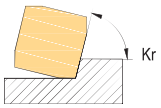
Corner radius

Example:

MO = round insert (metric)
OO = Sharp
01 = 0.1
02 = 0.2
04 = 0.4
08 = 0.8
12 = 1.2
16 = 1.6
20 = 2.0
24 = 2.4
28 = 2.8
32 = 3.2
40 = 4.0
48 = 4.8
56 = 5.6
64 = 6.4
X = Others



Wiper nose



Approaching angle (Kr)
A = 45
D = 60
E = 75
F = 85
G = 87
P = 90
Z = Others

Wiper clearance angle (an)
A = 3
B = 5
C = 7
D = 15
E = 20
F = 25
G = 30
N = 0
P = 11
Z = Others

8- Edge Preparation

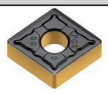
Code	Edge Shape	Illustration
F		Sharp cutting edge
E		Honed cutting edge
T		Negative Land
S		Negative Land + Honed cutting edge

9- Chip Breaker Illustration

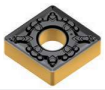
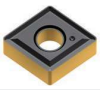
Refer to page : 22-33

Overview of Turning Insert Geometries

Negative Inserts

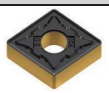
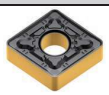
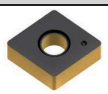
Application	Finishing		Semi-finishing	
Chip breaker	PB1	MB2	PB3	PC3
Inserts				
C 	P41	P41	P41	P41
D 	P45	P45	P45	P45
R 				
S 	P48	P48		P48
T 	P51	P51	P51	P51
V 	P54	P54	P54	P54
W 	P56	P56	P56	P56

Negative Inserts

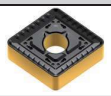
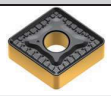
Application	Medium machining				
Chip breaker	PD3	PL5	SC3	MC3	PC4
Inserts					
C 	P41		P42	P42	P41
D 	P45		P46	P46	P46
R 					
S 	P48		P49	P48	P48
T 	P51	P52	P52	P52	P51
V 	P54		P54	P54	P54
W 	P56		P57	P56	P56

Overview of Turning Insert Geometries

Negative Inserts

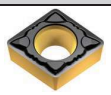
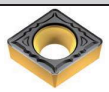
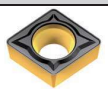
Application	Roughing			
Chip breaker	MC4	KC4	PD5	KD5
Inserts				
C 	P42	P43	P42	P43
D 	P46	P47	P46	P47
R 				
S 	P49	P49	P49	P50
T 	P52	P52	P52	P53
V 		P55		
W 	P57	P57	P57	P57

Negative Inserts

Application	Heavy&Roughing				
Chip breaker	PD8	PC9	PD9		
Inserts					
C 	P43	P44	P44		
D 					
R 					
S 	P50	P50	P50		
T 	P53				
V 					
W 					

Overview of Turning Insert Geometries

Positive Inserts

Application	Finishing	Semi-finishing		Medium machining
Chip breaker	PB1	PC2	NC2	KC2
Inserts				
C 	P58	P58	P58	P58
D 	P59	P59	P59	P59
R 			P63	
S 	P60	P60	P60	P60
T 	P61	P61	P61	P61
V 	P62	P62	P62	P62
W 				

Positive Inserts

Application	Roughing				
Chip breaker	KD5				
Inserts					
C 	P58				
D 	P59				
R 					
S 	P60				
T 	P61				
V 					
W 					

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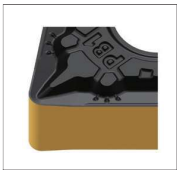
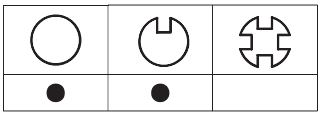
Turning inserts

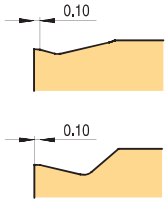
Negative Turning Insert Geometry Introduction

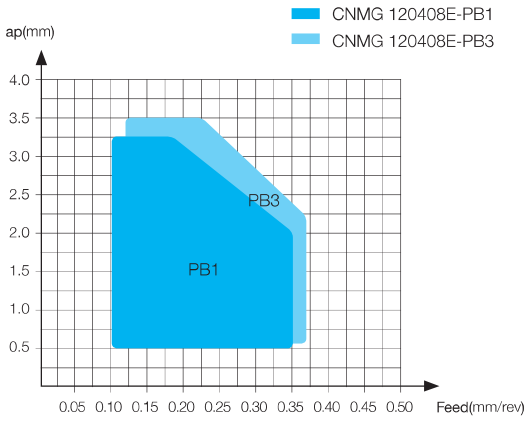
PB1 Geometry for Finishing

The first choice for steels finishing. Good chip control.



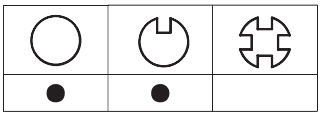


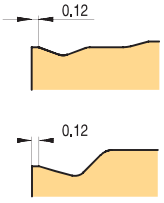


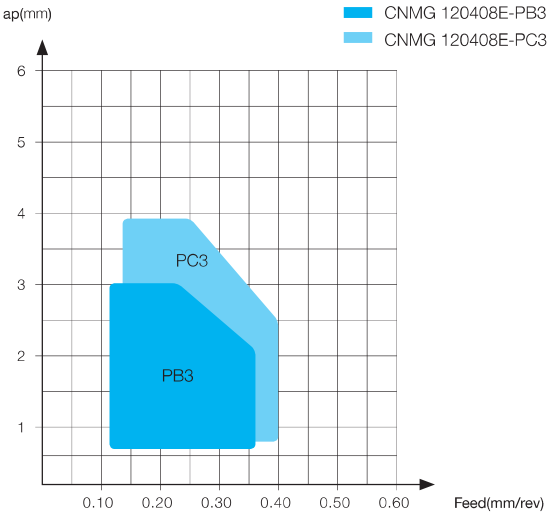


PB3 Geometry for Semi-Finishing

First choice for steels semi-finishing to semi medium. Excellent chip controlling for automotive components.



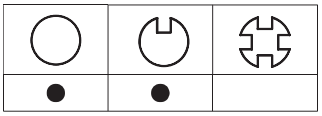


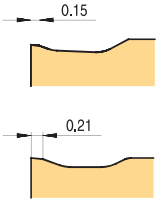


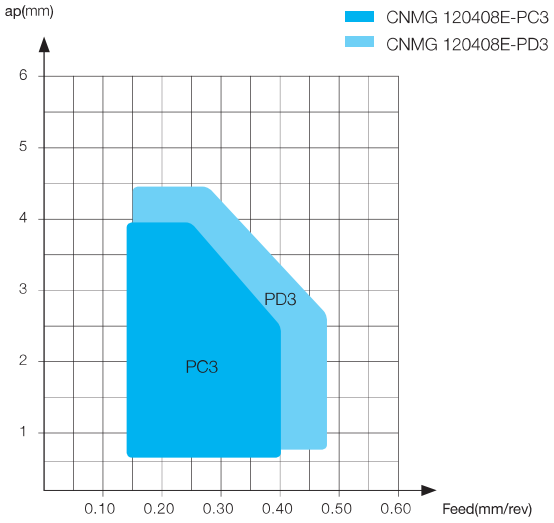
◯ Continuous turning
◔ Interrupted turning
⚙ Strong interrupted turning

PC3 Geometry for Semi-Medium to Medium Machining

PC3 Geometry for Semi-Medium to Medium Machining. Suitable performance on steels. It's smooth cutting and longer tool life due to positive rake angle.

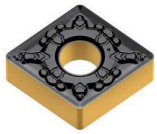


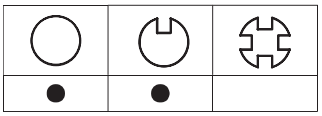


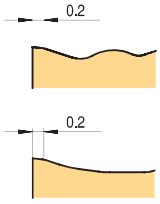


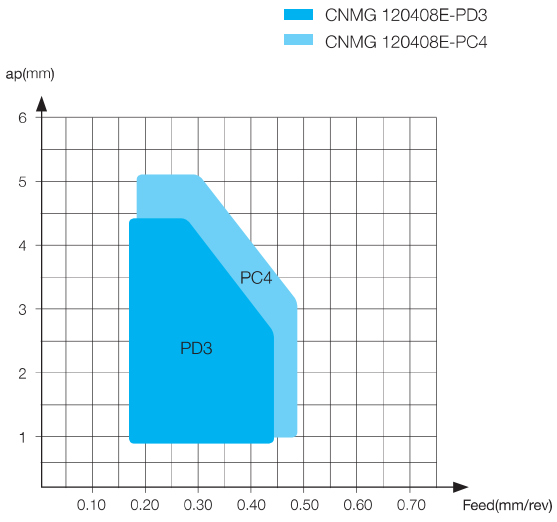
PD3 Geometry for Medium Machining

First choice for steels medium machining. Extensive mchining feed and depth of cut; Designed positive rake angle provides lower cutting force and smooth cutting. Very stable tool life.





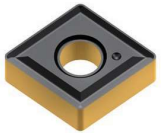


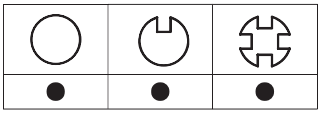


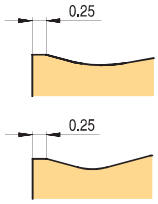
Continuous turning
Interrupted turning
Strong interrupted turning

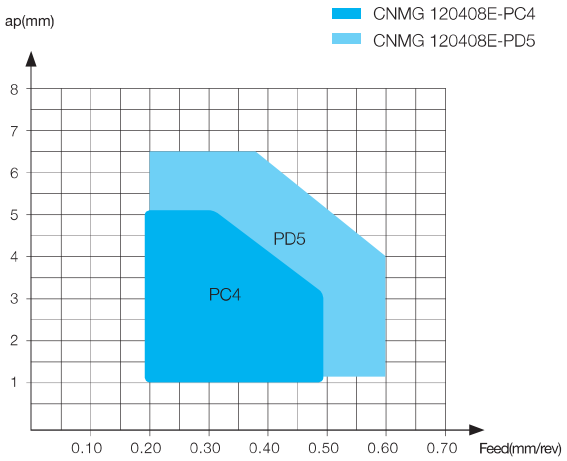
PC4 Geometry for Medium Maching

Medium turning for carbon steel and alloy steel. Falt T-land guarantee the strength of the cutting edge. The common style geometry has high universal application.



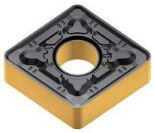


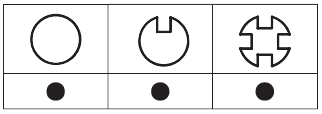


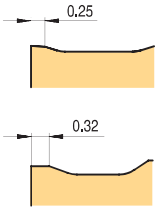


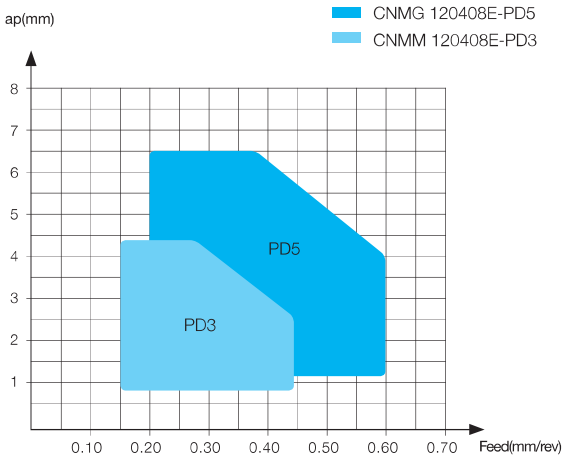
PD5 Geometry for Roughing

First choice for steel roughing. Lower cutting force due to positive rake angle design.





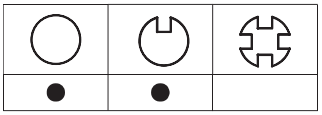


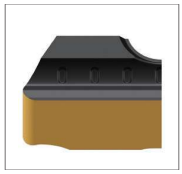


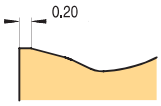
Continuous turning
Interrupted turning
Strong interrupted turning

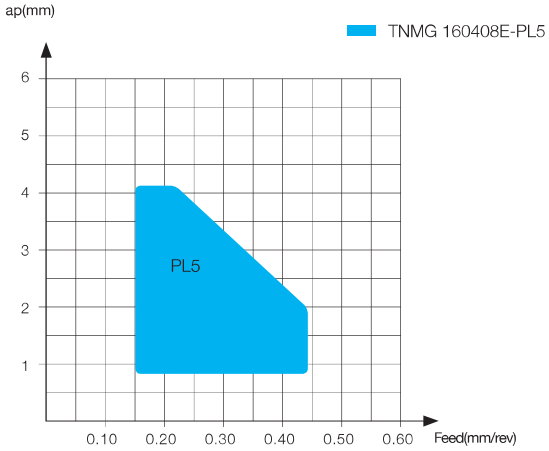
PL5 Geometry for Medium Maching

Open type chip breaker leads to smooth cutting with low cutting force, which is suitable for slender bar workpiece .



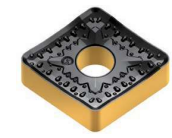


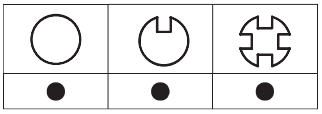


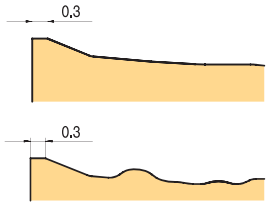


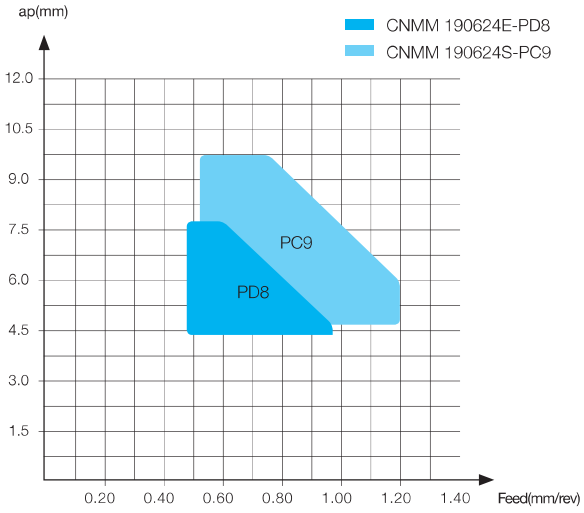
PD8 Geometry for Heavry Roughing

Single sided insert. Suitable for steel roughing, also for stainless steel and cast iron roughing. Low cutting force is suitable for low capacity machine and flexible chip breaker gets perfect chip control.





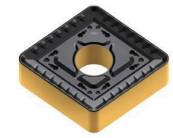


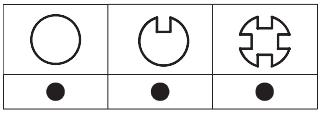


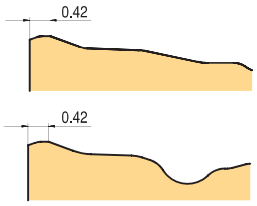
◯ Continuous turning
Interrupted turning
Strong interrupted turning

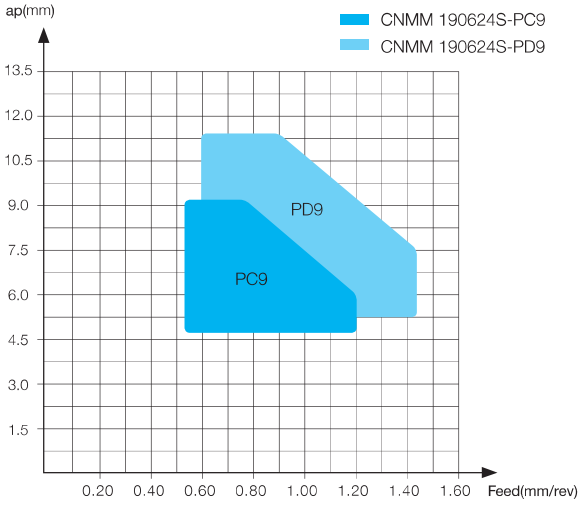
PC9 Geometry for Heavry Roughing

Single sided insert. Suitable for steel heavy machining. Strong cutting edge.



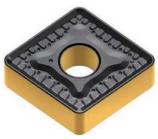


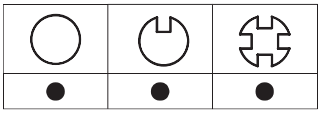


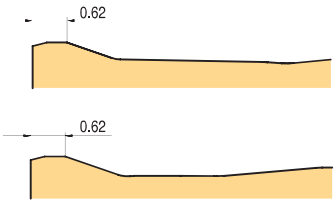


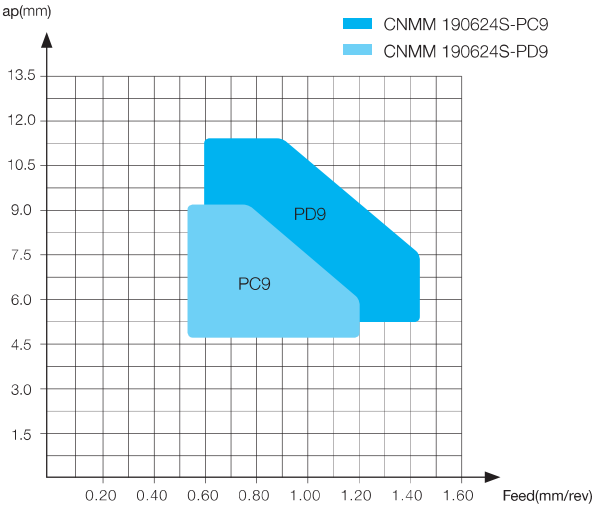
PD9 Geometry for Heavry Roughing

Suitable for steel heavy load roughing. High strength edge is suitable for big depth of cut and high feed cutting with stability.





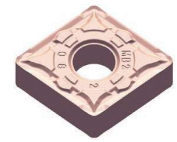


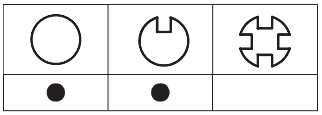


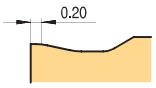
Continuous turning
Interrupted turning
Strong interrupted turning

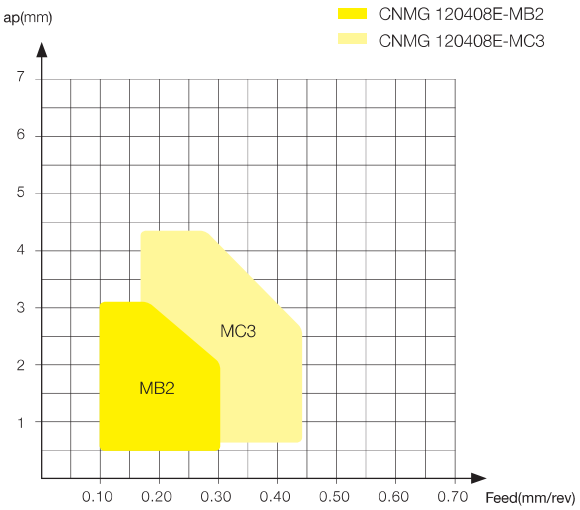
MB2 Geometry for Finishing

Suitable for stainless steel finishing with low feed and small depth of cut. High positive rake angle. To make sure much better surface quality and longer tool life.



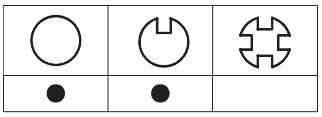


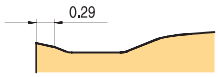


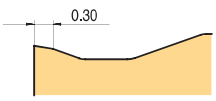


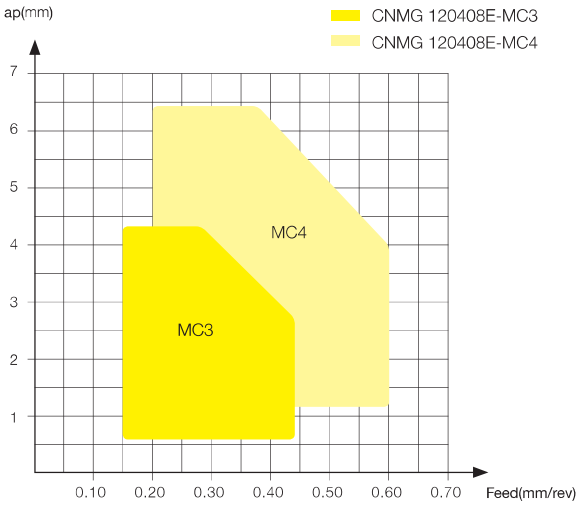
MC3 Geometry for Medium Maching

For medium machinning on stainless steels. Sharp cutting edge with low cutting force.





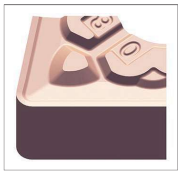


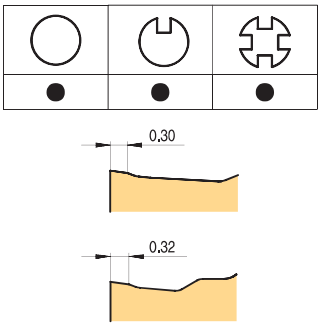


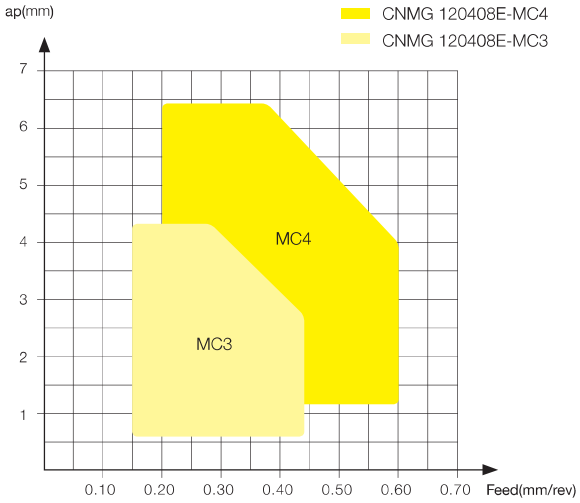
◯ Continuous turning
Interrupted turning
Strong interrupted turning

MC4 Geometry for Roughing

Suitable for stainless steel roughing. Positive rake angle

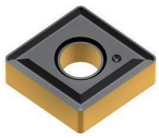


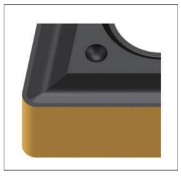


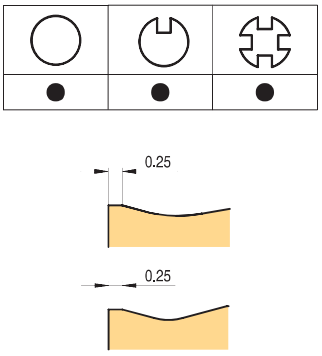


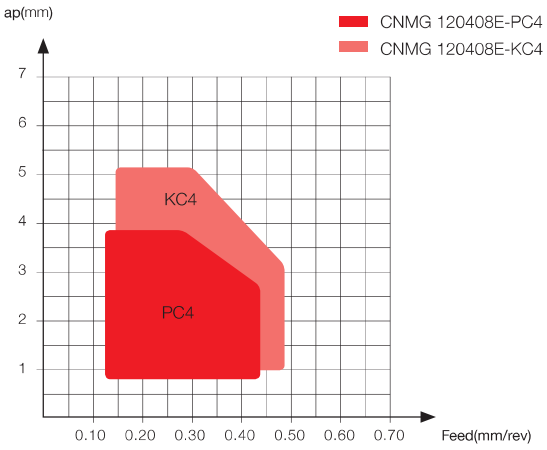
PC4 Geometry for Medium Machining

Medium turning for cast iron. Falt T-land guarantee the strenth of the cutting edge. The common style geometry has high universal application.





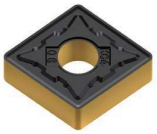


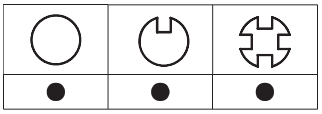


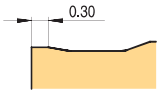
◯ Continuous turning
Interrupted turning
Strong interrupted turning

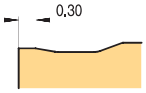
KC4 Geometry for Roughing

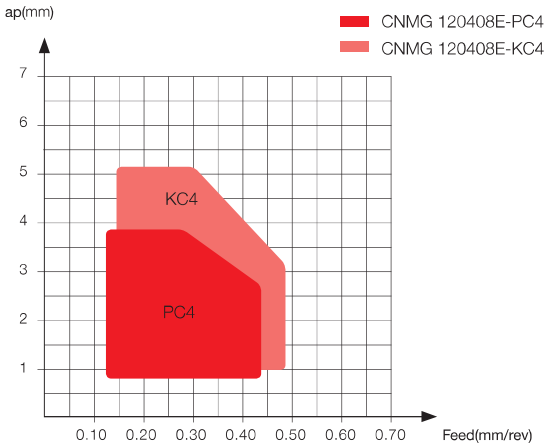
Strong cutting edge is suitable for cast iron roughing. First choice for cast iron.





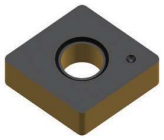


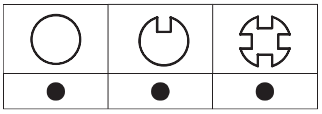


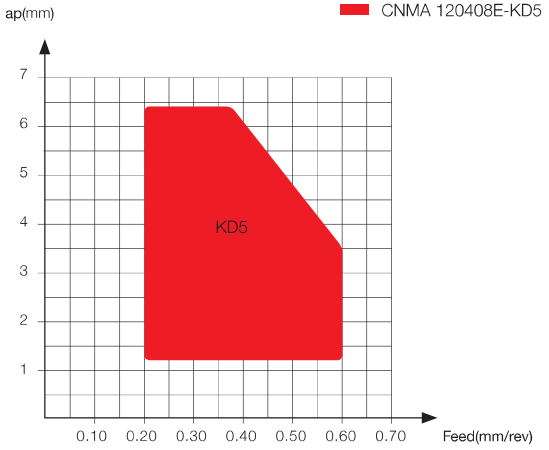


KD5 Geometry for Roughing

Flat type. First choice for cast iron roughing. Good for interrupted cut and unstable machining.



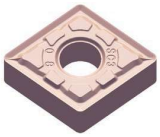


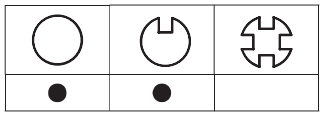


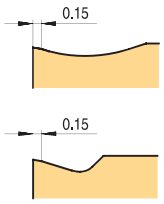
Continuous turning
Interrupted turning
Strong interrupted turning

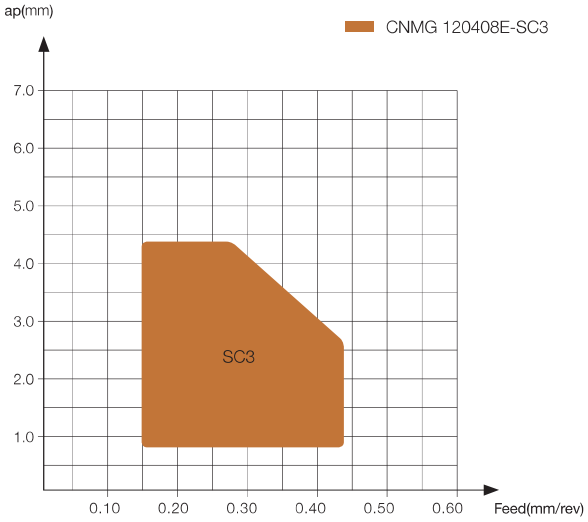
SC3 Geometry for Medium Machining.

Suitable for high-temerature super alloys and Titanium medium machining, High positive rake angle applies for lower cutting force and less built up edge. First choice for super alloys.







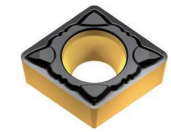


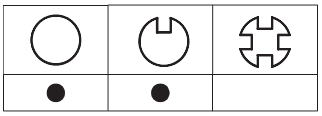
◯ Continuous turning
◔ Interrupted turning
⚙ Strong interrupted turning

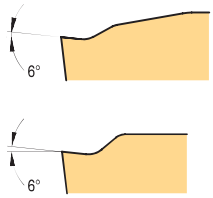
Positive Turning Insert Geometry Introduction

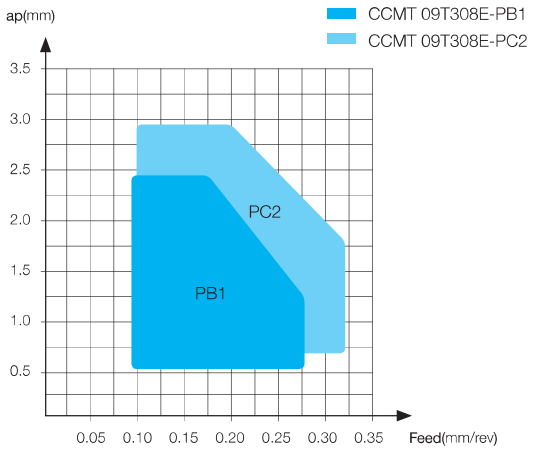
PB1 Geometry for Finishing

Positive rake angle design to get low cutting force. Good chip control.



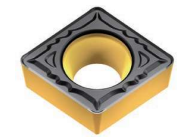


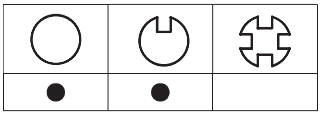


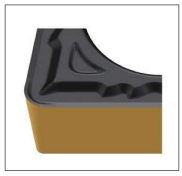


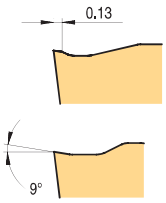
PC2 Geometry for Finishing and Semi-finishing

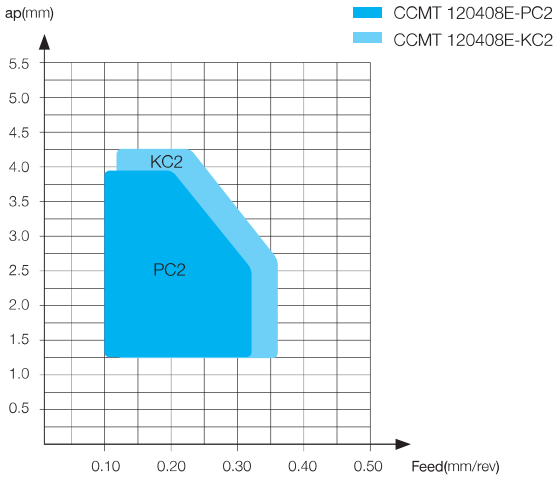
For finishing to semi-finishing on steels and stainless steels. Cutting edge indination design to ensure low cutting force. Excellent chip control due to the professional design of chip breaker.







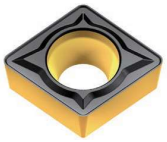


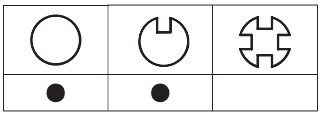


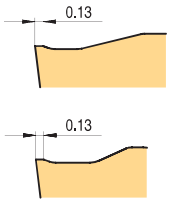
◯ Continuous turning
◔ Interrupted turning
⯐ Strong interrupted turning

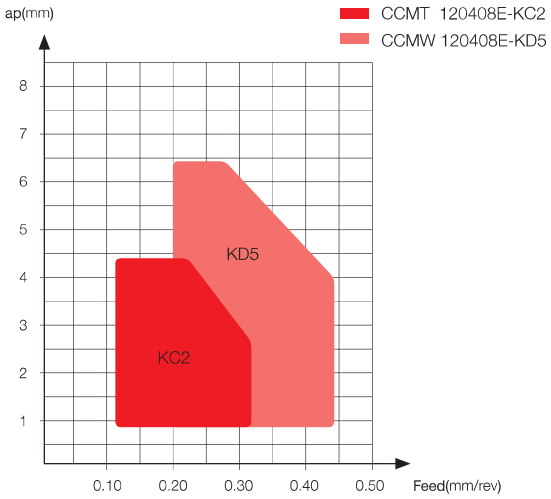
KC2 Geometry for Medium Machining

For medium and semi-roughing on cast iron , steels and stainless steels.



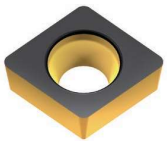


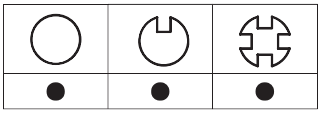


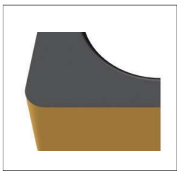


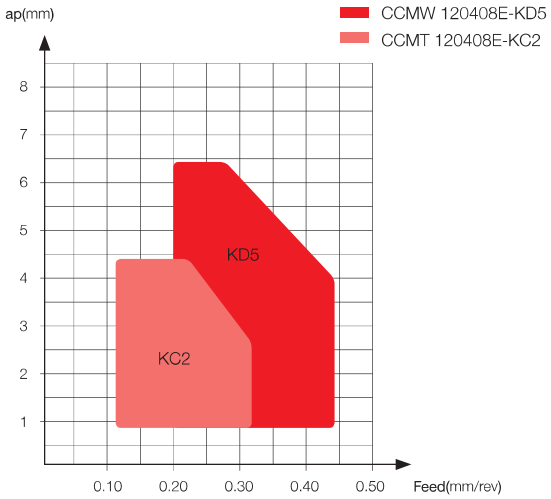
KD5 Geometry for Roughing

Flat type ,for roughing on cast iron. Strong cutting edge with good chipping resistance.





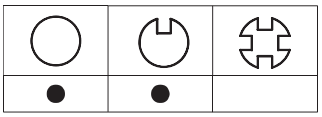


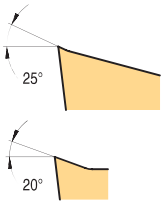


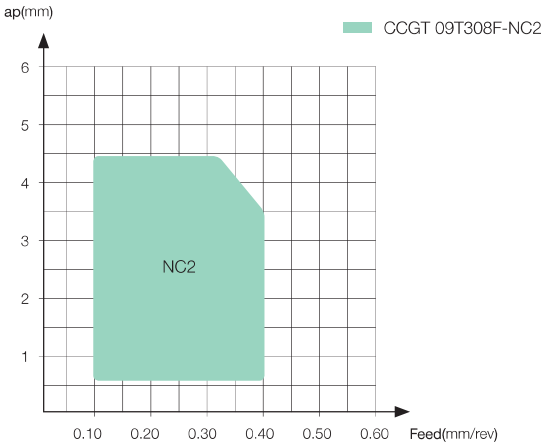
Continuous turning
Interrupted turning
Strong interrupted turning

NC2 Geometry for Finishing and Semi-Finishing

For finishing and semi-finishing on non-ferrous materials. High positive rake angle design leads to smooth chip evacuation, lower cutting force and extended tool life. Insert surface polishing treatment effectively controls chips, prevents built-up edge and improves adhesion resistance.







Continuous turning
Interrupted turning
Strong interrupted turning

Materials Index

Grade Application Guide

Turning grade application for ISO material group											
Material Group	Materials	ISO	CVD coated					PVD coated		Uncoated	ISO
			AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K	
P	Non-alloy steels / Alloyed steels	P01									P01
		P05									P05
		P10	AC150P								P10
		P15									P15
		P20		AC250P							P20
		P25									P25
		P30			AC350P						P30
		P35									P35
		P40									P40
		P45									P45
		P50									P50
M	Stainless steels	M01									M01
		M05							AP100S		M05
		M10									M10
		M15						AP301M			M15
		M20									M20
		M25									M25
		M30									M30
		M35									M35
		M40									M40
		M45									M45
K	Cast iron	K01									K01
		K05									K05
		K10				ACK15A	AC150K				K10
		K15									K15
		K20									K20
		K25									K25
		K30									K30
		K35									K35
		K40									K40
		K45									K45
		K50									K50
S	High temperature alloys	S01									S01
		S05							AP100S		S05
		S10									S10
		S15						AP301M			S15
		S20									S20
		S25									S25
		S30									S30
		S35									S35
		S40									S40
N	Aluminum/ Aluminum alloys	N01									N01
		N05								AW100K	N05
		N10									N10
		N15									N15
		N20									N20
		N25									N25
		N30									N30
H	Hardened steels/ Chilled cast iron	H01									H01
		H05									H05
		H10									H10
		H15									H15
		H20									H20
		H25									H25
		H30									H30

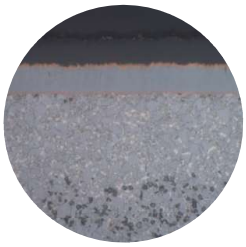
Grade Application Guide

Materials				Turning grade application							
				CVD coated					PVD coated		Uncoated
ISO	Material classification	Tensile strength (N/mm^2)	Hardness (HB)	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
P	Non-alloyed steel	<600	<180	●	●	●	-	-	-	-	-
		<950	<280	●	●	●	-	-	-	-	-
	Alloyed steel	700-950	200-280	●	●	●	-	-	-	-	-
		950-1200	280-355	●	●	●	-	-	-	-	-
		1200-1400	355-415	●	●	●	-	-	-	-	-
M	Duplex stainless steel	778	230	-	-	-	-	-	●	◐	-
	Austenitic stainless steel	675	200	-	-	-	-	-	●	◐	-
	Precipitation-hardening stainless steel	1013	300	-	-	-	-	-	●	◐	-
K	Grey cast iron	700	220	-	-	-	●	●	-	-	-
	Nodular cast iron	880	260	-	-	-	◐	◐	-	-	-
	Malleable cast iron	800	250	-	-	-	◐	◐	-	-	-
S	Fe-based alloy	943	280	-	-	-	-	-	◐	●	-
	Co-based alloy	1076	320	-	-	-	-	-	◐	●	-
	Ni-based alloy	1177	350	-	-	-	-	-	◐	●	-
	Ti-alloy	1262	370	-	-	-	-	-	◐	●	-
N	Aluminum	260	75	-	-	-	-		-	-	●
	Aluminum alloy	447	130	-	-	-	-		-	-	●
H	Hardened steel	-	50-60HRC	-	-	-	-		-	-	-
	Chilled cast iron	-	55HRC	-	-	-	-		-	-	-

● Best choice
◐ 2nd choice
- Inapplicable

Turning Grade Description

AC150P



Coating: CVD coating

New developed ultra-fine crystal CVD coating. High hardness substrate and toughness with thick Al_2O_3 layer has excellent wear-resistance to extend tool life under high speed continuous cutting and slight interrupted cutting.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P			AC150P								
M											
K											
S											
N											
H											

Remark: ☐ Best choice

AC250P

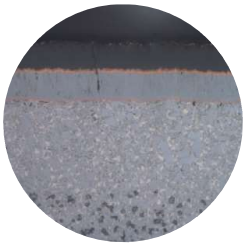
Coating: CVD coating

Medium hardness and medium toughness substrate with CVD coating. Thick Al_2O_3 layer provides excellent wear-resistance and chipping resistance for general machining. First choice for steels.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P					AC250P						
M											
K											
S											
N											
H											

Remark: ☐ Best choice

AC350P



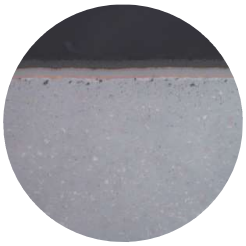
Coating: CVD coating

For roughing on steels, very tough substrate and excellent performance in interrupted cutting.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P							AC350P				
M											
K											
S											
N											
H											

Remark: ☐ Best choice

ACK15A



Coating: CVD coating

Very good performance on cast iron. For continuous cutting and interrupted cutting.

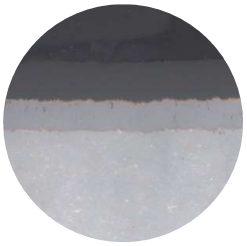
Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P											
M											
K			ACK15A								
S											
N											
H											

Remark: ☐ Best choice

AC150K

Coating: CVD coating

Very good performance in high speed cutting on cast iron.



Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P											
M											
K			AC150K								
S											
N											
H											

Remark: ☐ Best choice

AP301M

Coating: PVD coating

For stainless steels. Toughness and good wear resistance substrate with PVD coating, Provides stable machining and better tool life.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P											
M				AP301M							
K											
S				AP301M							
N											
H											

Remark: ☐ Best choice

⋯ 2nd choice

AP100S

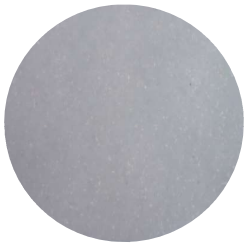
Coating: PVD coating

For turning on high temperature super alloys. Ultra-fine grain substrate with very good wear resistance, coated nano-structure PVD coating to get strong binding forces and anti oxidant, improved tool life.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P											
M		AP100S									
K											
S		AP100S									
N											
H											

Remark: Best choice
2nd choice

AW100K



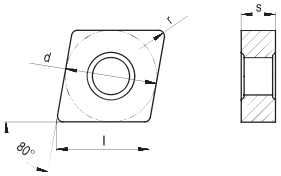
Coating: Uncoated

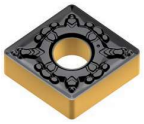
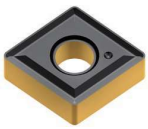
For turning on nonferrous alloys. Fine grain size substrate, uncoated, carbide grade.

Application range											
ISO Classification	01	05	10	15	20	25	30	35	40	45	50
P											
M											
K											
S											
N		AW100K									
H											

Remark: Best choice

Negative 80° (C) Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**CNMG 120404E-PB1**	0.05-0.15	0.26-3.2	12.7	12.9	4.76	0.4	●	●					
	120408E-PB1	0.10-0.30	0.52-3.2	12.7	12.9	4.76	0.8	●	●					
	120412E-PB1	0.15-0.45	0.78-3.2	12.7	12.9	4.76	1.2	○	○					
	**CNMG 120404E-MB2**	0.05-0.15	0.26-3.2	12.7	12.9	4.76	0.4						●	●
	120408E-MB2	0.10-0.30	0.52-3.2	12.7	12.9	4.76	0.8						●	●
	**CNMG 120404E-PB3**	0.06-0.18	0.30-3.5	12.7	12.9	4.76	0.4	●	●					
	120408E-PB3	0.12-0.36	0.60-3.5	12.7	12.9	4.76	0.8	●	●					
	120412E-PB3	0.18-0.54	0.90-3.5	12.7	12.9	4.76	1.2	●	●					
	**CNMG 120404E-PC3**	0.07-0.20	0.34-3.9	12.7	12.9	4.76	0.4	●	●					
	120408E-PC3	0.14-0.40	0.68-3.9	12.7	12.9	4.76	0.8	●	●					
	120412E-PC3	0.20-0.60	1.02-3.9	12.7	12.9	4.76	1.2	●	●					
	190608E-PC3	0.14-0.40	0.68-5.8	19.05	19.3	6.35	0.8	○	○					
	190612E-PC3	0.20-0.60	1.02-5.8	19.05	19.3	6.35	1.2	○	○					
	**CNMG 120404E-PD3**	0.08-0.22	0.40-4.3	12.7	12.9	4.76	0.4	●	●	○				
	120408E-PD3	0.15-0.44	0.80-4.3	12.7	12.9	4.76	0.8	●	●	●				
	120412E-PD3	0.23-0.66	1.20-4.3	12.7	12.9	4.76	1.2	●	●	●				
	160608E-PD3	0.15-0.44	0.80-5.3	15.875	16.1	6.35	0.8	●	●	○				
	190608E-PD3	0.15-0.44	0.80-6.4	19.05	19.3	6.35	0.8	●	●	○				
	**CNMG 120404E-PC4**	0.08-0.22	0.40-4.3	12.7	12.9	4.76	0.4	●	●		●	○		
	120408E-PC4	0.15-0.44	0.80-4.3	12.7	12.9	4.76	0.8	●	●		●	●		
	120412E-PC4	0.23-0.66	1.20-4.3	12.7	12.9	4.76	1.2	●	●		●	○		
	160608E-PC4	0.15-0.44	0.80-5.3	15.875	16.1	6.35	0.8	○	○		○	○		
	160612E-PC4	0.23-0.66	1.20-5.3	15.875	16.1	6.35	1.2	○	●		○	○		
	160616E-PC4	0.30-0.88	1.60-5.3	15.875	16.1	6.35	1.6	○	○		●	○		
	190608E-PC4	0.15-0.44	0.80-6.4	19.05	19.3	6.35	0.8	○	○		○	○		
	190612E-PC4	0.23-0.66	1.20-6.4	19.05	19.3	6.35	1.2	●	●		○	○		
	190616E-PC4	0.30-0.88	1.60-6.4	19.05	19.3	6.35	1.6	○	○		○	○		

Marked: ● Stock available
○ Produced by order

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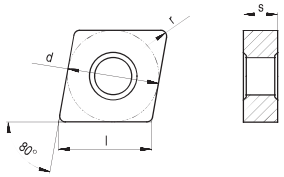
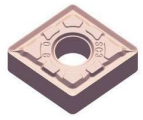
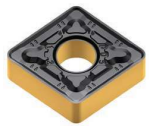
Negative 80° （C） Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	CNMG 120404E-MC3	0.08-0.22	0.32-4.3	12.7	12.9	4.76	0.4						●	
	120408E-MC3	0.15-0.44	0.64-4.3	12.7	12.9	4.76	0.8						●	
	120412E-MC3	0.23-0.66	0.96-4.3	12.7	12.9	4.76	1.2						●	
	120416E-MC3	0.30-0.88	1.28-4.3	12.7	12.9	4.76	1.6						○	
	160608E-MC3	0.15-0.44	0.64-5.3	15.875	16.1	6.35	0.8						○	
	160612E-MC3	0.23-0.66	0.96-5.3	15.875	16.1	6.35	1.2						○	
	190608E-MC3	0.15-0.44	0.64-6.4	19.05	19.3	6.35	0.8						○	
	190612E-MC3	0.23-0.66	0.96-6.4	19.05	19.3	6.35	1.2						○	
	CNMG 120404E-SC3	0.08-0.22	0.40-4.3	12.7	12.9	4.76	0.4							●
	120408E-SC3	0.15-0.44	0.80-4.3	12.7	12.9	4.76	0.8							●
	120412E-SC3	0.23-0.66	1.20-4.3	12.7	12.9	4.76	1.2							●
	160612E-SC3	0.23-0.66	1.20-5.3	15.875	16.1	6.35	1.2							●
	160616E-SC3	0.30-0.88	1.60-5.3	15.875	16.1	6.35	1.6							●
	190612E-SC3	0.23-0.66	1.20-6.4	19.05	19.3	6.35	1.2							●
	190616E-SC3	0.30-0.88	1.60-6.4	19.05	19.3	6.35	1.6							●
	CNMG 120408E-PD5	0.20-0.60	1.20-6.4	12.7	12.9	4.76	0.8	●	●	●				
	120412E-PD5	0.30-0.90	1.80-6.4	12.7	12.9	4.76	1.2	●	●	●				
	160612E-PD5	0.30-0.90	1.80-8.1	15.875	16.1	6.35	1.2	●	●	○				
	160616E-PD5	0.40-1.20	2.40-8.1	15.875	16.1	6.35	1.6	●	●	●				
	190612E-PD5	0.30-0.90	1.80-9.7	19.05	19.3	6.35	1.2	●	●	○				
	190616E-PD5	0.40-1.20	2.40-9.7	19.05	19.3	6.35	1.6	●	●	●				
	CNMG 120408E-MC4	0.20-0.60	1.20-6.4	12.7	12.9	4.76	0.8						●	●
	120412E-MC4	0.30-0.90	1.80-6.4	12.7	12.9	4.76	1.2						●	●
	160612E-MC4	0.30-0.90	1.80-8.1	15.875	16.1	6.35	1.2						○	○
	160616E-MC4	0.40-1.20	2.40-8.1	15.875	16.1	6.35	1.6						○	○
	190612E-MC4	0.30-0.90	1.80-9.7	19.05	19.3	6.35	1.2						○	○
	190616E-MC4	0.40-1.20	2.40-9.7	19.05	19.3	6.35	1.6						○	○

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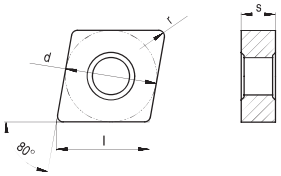
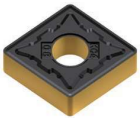
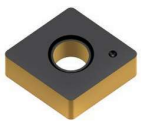
Marked: ● Stock available
○ Produced by order

Negative 80° （C） Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**CNMG 090308E-KC4**	0.18-0.48	0.96-3.9	9.525	9.67	3.18	0.8				●	○		
	120404E-KC4	0.09-0.24	0.48-5.2	12.7	12.9	4.76	0.4				●	●		
	120408E-KC4	0.18-0.48	0.96-5.2	12.7	12.9	4.76	0.8				●	●		
	120412E-KC4	0.26-0.72	1.44-5.2	12.7	12.9	4.76	1.2				●	●		
	120416E-KC4	0.35-0.96	1.92-5.2	12.7	12.9	4.76	1.6				●	○		
	160608E-KC4	0.18-0.48	0.96-6.4	15.875	16.1	6.35	0.8				●	○		
	160612E-KC4	0.26-0.72	1.44-6.4	15.875	16.1	6.35	1.2				●	●		
	160616E-KC4	0.35-0.96	1.92-6.4	15.875	16.1	6.35	1.6				●	●		
	190608E-KC4	0.18-0.48	0.96-7.7	19.05	19.3	6.35	0.8				●	○		
	190612E-KC4	0.26-0.72	1.44-7.7	19.05	19.3	6.35	1.2				●	●		
	190616E-KC4	0.35-0.96	1.92-7.7	19.05	19.3	6.35	1.6				●	○		
	190624E-KC4	0.53-1.44	2.88-7.7	19.05	19.3	6.35	2.4				●	○		
	**CNMA 120404E-KD5**	0.10-0.30	0.60-6.4	12.7	12.9	4.76	0.4				●	○		
	120408E-KD5	0.20-0.60	1.20-6.4	12.7	12.9	4.76	0.8				●	●		
	120412E-KD5	0.30-0.90	1.80-6.4	12.7	12.9	4.76	1.2				●	●		
	120416E-KD5	0.40-1.20	2.40-6.4	12.7	12.9	4.76	1.6				●	●		
	160608E-KD5	0.20-0.60	1.20-8.1	15.875	16.1	6.35	0.8				●	○		
	160612E-KD5	0.30-0.90	1.80-8.1	15.875	16.1	6.35	1.2				●	●		
	160616E-KD5	0.40-1.20	2.40-8.1	15.875	16.1	6.35	1.6				●	●		
	190608E-KD5	0.20-0.60	1.20-9.7	19.05	19.3	6.35	0.8				●	○		
	190612E-KD5	0.30-0.90	1.80-9.7	19.05	19.3	6.35	1.2				●	○		
	190616E-KD5	0.40-1.20	2.40-9.7	19.05	19.3	6.35	1.6				●	○		
	**CNMM 120408E-PD8**	0.16-0.32	1.44-5.2	12.7	12.9	4.76	0.8	○	●	●				
	120412E-PD8	0.24-0.48	2.16-5.2	12.7	12.9	4.76	1.2	○	●	●				
	160612E-PD8	0.24-0.48	2.16-6.4	15.875	16.1	6.35	1.2	●	●	○				
	160616E-PD8	0.32-0.64	2.88-6.4	15.875	16.1	6.35	1.6	○	●	○				
	160624E-PD8	0.48-0.96	4.32-6.4	15.875	16.1	6.35	2.4	○	●	○				
	190612E-PD8	0.24-0.48	2.16-7.7	19.05	19.3	6.35	1.2	●	●	○				
	190616E-PD8	0.32-0.64	2.88-7.7	19.05	19.3	6.35	1.6	●	●	●				
	190624E-PD8	0.48-0.96	4.32-7.7	19.05	19.3	6.35	2.4	●	●	●				
	250724E-PD8	0.48-0.96	4.32-10.3	25.4	25.8	7.94	2.4	●	●	○				
	250924E-PD8	0.48-0.96	4.32-10.3	25.4	25.8	9.525	2.4	●	●	●				

Marked: ● Stock available
○ Produced by order

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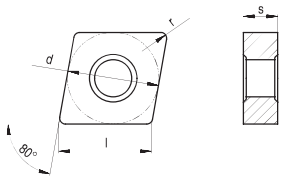
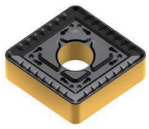
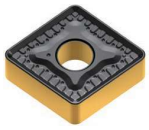
Negative 80° （C） Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**CNMM 190612S-PC9**	0.26-0.60	2.40-9.7	19.05	19.3	6.35	1.2	●	●	○				
	190616S-PC9	0.35-0.80	3.20-9.7	19.05	19.3	6.35	1.6	●	●	○				
	190624S-PC9	0.53-1.20	4.80-9.7	19.05	19.3	6.35	2.4	●	●	●				
	250724S-PC9	0.53-1.20	4.80-12.9	25.4	25.8	7.94	2.4	●	●	●				
	250924S-PC9	0.53-1.20	4.80-12.9	25.4	25.8	9.525	2.4	●	●	○				
	**CNMM 190612S-PD9**	0.30-0.72	2.64-11.6	19.05	19.3	6.35	1.2	○	●	○				
	190616S-PD9	0.40-0.96	3.52-11.6	19.05	19.3	6.35	1.6	●	●	○				
	190624S-PD9	0.60-1.44	5.28-11.6	19.05	19.3	6.35	2.4	●	●	●				
	250724S-PD9	0.60-1.44	5.28-15.5	25.4	25.8	7.94	2.4	○	●	○				
	250924S-PD9	0.60-1.44	5.28-15.5	25.4	25.8	9.525	2.4	●	●	●				

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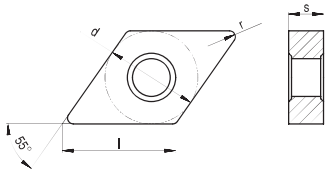
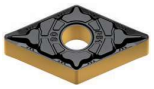
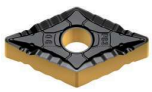
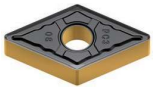
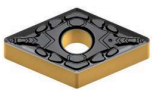
Marked: ● Stock available
○ Produced by order

Negative 55° (D) Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	DNMG 110404E-PB1	0.05-0.15	0.26-2.3	9.525	11.62	4.76	0.4	○	●					
	150404E-PB1	0.05-0.15	0.26-3.1	12.7	15.5	4.76	0.4	●	●					
	150408E-PB1	0.10-0.30	0.52-3.1	12.7	15.5	4.76	0.8	●	●					
	150412E-PB1	0.15-0.45	0.78-3.1	12.7	15.5	4.76	1.2	○	○					
	150604E-PB1	0.05-0.15	0.26-3.1	12.7	15.5	6.35	0.4	●	●					
	150608E-PB1	0.10-0.30	0.52-3.1	12.7	15.5	6.35	0.8	●	●					
	150612E-PB1	0.15-0.45	0.78-3.1	12.7	15.5	4.76	1.2	○	○					
	DNMG 150404E-MB2	0.05-0.15	0.26-2.9	12.7	15.5	4.76	0.4						●	●
	150408E-MB2	0.10-0.30	0.52-2.9	12.7	15.5	4.76	0.8						●	●
	150604E-MB2	0.05-0.15	0.26-2.9	12.7	15.5	6.35	0.4						●	●
	150608E-MB2	0.10-0.30	0.52-2.9	12.7	15.5	6.35	0.8						●	●
	DNMG 150404E-PB3	0.06-0.18	0.30-3.1	12.7	15.5	4.76	0.4	●	●					
	150408E-PB3	0.12-0.36	0.60-3.1	12.7	15.5	4.76	0.8	●	●					
	150412E-PB3	0.18-0.54	0.90-3.1	12.7	15.5	4.76	1.2	●	●					
	150604E-PB3	0.06-0.18	0.30-3.1	12.7	15.5	6.35	0.4	●	●					
	150608E-PB3	0.12-0.36	0.60-3.1	12.7	15.5	6.35	0.8	●	●					
	150612E-PB3	0.18-0.54	0.90-3.1	12.7	15.5	6.35	1.2	●	●					
	DNMG 110408E-PC3	0.14-0.40	0.68-2.6	9.525	11.62	4.76	0.8	○	○					
	110412E-PC3	0.20-0.60	1.02-2.6	9.525	11.62	4.76	1.2	○	○					
	150404E-PC3	0.07-0.20	0.34-3.5	12.7	15.5	4.76	0.4	●	●					
	150408E-PC3	0.14-0.40	0.68-3.5	12.7	15.5	4.76	0.8	●	●					
	150412E-PC3	0.20-0.60	1.02-3.5	12.7	15.5	4.76	1.2	●	●					
	150604E-PC3	0.07-0.20	0.34-3.5	12.7	15.5	6.35	0.4	●	●					
	150608E-PC3	0.14-0.40	0.68-3.5	12.7	15.5	6.35	0.8	●	●					
	150612E-PC3	0.20-0.60	1.02-3.5	12.7	15.5	6.35	1.2	●	●					
	DNMG 110404E-PD3	0.08-0.22	0.40-2.9	9.525	11.62	4.76	0.4	●	●					
	110408E-PD3	0.15-0.44	0.80-2.9	9.525	11.62	4.76	0.8	●	●					
	110412E-PD3	0.23-0.66	1.20-2.9	9.525	11.62	4.76	1.2	○	○					
	150404E-PD3	0.08-0.22	0.40-3.9	12.7	15.5	4.76	0.4	●	●					
	150408E-PD3	0.15-0.44	0.80-3.9	12.7	15.5	4.76	0.8	●	●	○				
	150412E-PD3	0.23-0.66	1.20-3.9	12.7	15.5	4.76	1.2	●	●	○				
	150604E-PD3	0.08-0.22	0.40-3.9	12.7	15.5	6.35	0.4	●	●					
	150608E-PD3	0.15-0.44	0.80-3.9	12.7	15.5	6.35	0.8	●	●	●				
	150612E-PD3	0.23-0.66	1.20-3.9	12.7	15.5	6.35	1.2	●	●	●				

Marked: ● Stock available
○ Produced by order

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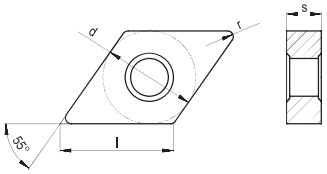
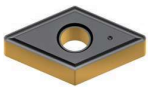
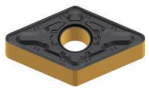
Negative 55° （D） Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	DNMG 150404E-PC4	0.08-0.22	0.40-3.9	12.7	15.5	4.76	0.4	●	●		●	●		
	150408E-PC4	0.15-0.44	0.80-3.9	12.7	15.5	4.76	0.8	●	●		●	○		
	150412E-PC4	0.23-0.66	1.20-3.9	12.7	15.5	4.76	1.2	●	○		●	●		
	150604E-PC4	0.08-0.22	0.40-3.9	12.7	15.5	6.35	0.4	●	○		○	○		
	150608E-PC4	0.15-0.44	0.80-3.9	12.7	15.5	6.35	0.8	●	●		●	●		
	150612E-PC4	0.23-0.66	1.20-3.9	12.7	15.5	6.35	1.2	●	●		●	○		
	DNMG 150404E-MC3	0.08-0.22	0.32-3.9	12.7	15.5	4.76	0.4						●	
	150408E-MC3	0.15-0.44	0.64-3.9	12.7	15.5	4.76	0.8						●	
	150412E-MC3	0.23-0.66	0.96-3.9	12.7	15.5	4.76	1.2						●	
	150604E-MC3	0.08-0.22	0.32-3.9	12.7	15.5	4.76	0.4						●	
	150608E-MC3	0.15-0.44	0.64-3.9	12.7	15.5	6.35	0.8						●	
	150612E-MC3	0.23-0.66	0.96-3.9	12.7	15.5	6.35	1.2						●	
	DNMG 150404E-SC3	0.08-0.22	0.40-3.9	12.7	15.5	4.76	0.4							●
	150408E-SC3	0.15-0.44	0.80-3.9	12.7	15.5	4.76	0.8							●
	150412E-SC3	0.23-0.66	1.20-3.9	12.7	15.5	4.76	1.2							●
	150604E-SC3	0.08-0.22	0.40-3.9	12.7	15.5	6.35	0.4							●
	150608E-SC3	0.15-0.44	0.80-3.9	12.7	15.5	6.35	0.8							●
	150612E-SC3	0.23-0.66	1.20-3.9	12.7	15.5	6.35	1.2							●
	DNMG 150408E-PD5	0.20-0.60	1.20-5.4	12.7	15.5	4.76	0.8	●	●	●				
	150412E-PD5	0.30-0.90	1.80-5.4	12.7	15.5	4.76	1.2	●	●	●				
	150416E-PD5	0.40-1.20	2.40-5.4	12.7	15.5	4.76	1.6	●	●	●				
	150608E-PD5	0.20-0.60	1.20-5.4	12.7	15.5	6.35	0.8	○	○	●				
	150612E-PD5	0.30-0.90	1.80-5.4	12.7	15.5	6.35	1.2	●	●	○				
	150616E-PD5	0.40-1.20	2.40-5.4	12.7	15.5	6.35	1.6	○	●	○				
	DNMG 150408E-MC4	0.20-0.60	1.20-5.4	12.7	15.5	4.76	0.8						●	○
	150412E-MC4	0.30-0.90	1.80-5.4	12.7	15.5	4.76	1.2						●	○
	150608E-MC4	0.20-0.60	1.20-5.4	12.7	15.5	6.35	0.8						●	●
	150612E-MC4	0.30-0.90	1.80-5.4	12.7	15.5	6.35	1.2						●	●

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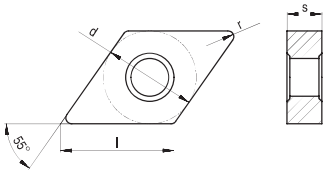
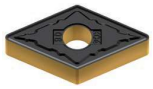
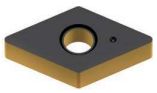
Marked: ● Stock available
○ Produced by order

Negative 55° (D) Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**DNMG 110404E-KC4**	0.09-0.24	0.48-3.5	9.525	11.62	4.76	0.4				●	○		
	110408E-KC4	0.18-0.48	0.96-3.5	9.525	11.62	4.76	0.8				●	○		
	150404E-KC4	0.09-0.24	0.48-4.6	12.7	15.5	4.76	0.4				●	○		
	150408E-KC4	0.18-0.48	0.96-4.6	12.7	15.5	4.76	0.8				●	○		
	150412E-KC4	0.26-0.72	1.44-4.6	12.7	15.5	4.76	1.2				●	○		
	150604E-KC4	0.09-0.24	0.48-4.6	12.7	15.5	6.35	0.4				●	○		
	150608E-KC4	0.18-0.48	0.96-4.6	12.7	15.5	6.35	0.8				●	●		
	150612E-KC4	0.26-0.72	1.44-4.6	12.7	15.5	6.35	1.2				●	○		
	**DNMA 150404E-KD5**	0.10-0.30	0.60-5.4	12.7	15.5	4.76	0.4				●	○		
	150408E-KD5	0.20-0.60	1.20-5.4	12.7	15.5	4.76	0.8				●	○		
	150412E-KD5	0.30-0.90	1.80-5.4	12.7	15.5	4.76	1.2				●	○		
	150604E-KD5	0.10-0.30	0.60-5.4	12.7	15.5	6.35	0.4				●	○		
	150608E-KD5	0.20-0.60	1.20-5.4	12.7	15.5	6.35	0.8				●	○		
	150612E-KD5	0.30-0.90	1.80-5.4	12.7	15.5	6.35	1.2				●	○		

Marked: ● Stock available
○ Produced by order

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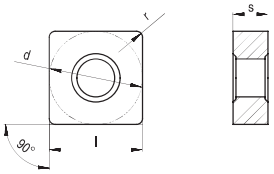
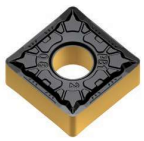
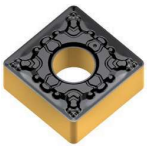
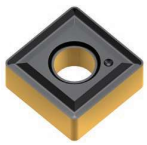
Negative 90° （S） Square Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	SNMG 120404E-PB1	0.05-0.15	0.26-3.2	12.7	12.7	4.76	0.4	●	●					
	120408E-PB1	0.10-0.30	0.52-3.2	12.7	12.7	4.76	0.8	●	●					
	120412E-PB1	0.15-0.45	0.78-3.2	12.7	12.7	4.76	1.2	○	○					
	SNMG 120404E-MB2	0.05-0.15	0.26-3.2	12.7	12.7	4.76	0.4						●	●
	120408E-MB2	0.10-0.30	0.52-3.2	12.7	12.7	4.76	0.8						●	●
	SNMG 120404E-PC3	0.07-0.20	0.34-3.8	12.7	12.7	4.76	0.4	●	●					
	120408E-PC3	0.14-0.40	0.68-3.8	12.7	12.7	4.76	0.8	●	●					
	120412E-PC3	0.20-0.60	1.02-3.8	12.7	12.7	4.76	1.2	●	●					
	SNMG 120404E-PD3	0.08-0.22	0.40-4.2	12.7	12.7	4.76	0.4	●	●	○				
	120408E-PD3	0.15-0.44	0.80-4.2	12.7	12.7	4.76	0.8	●	●	●				
	120412E-PD3	0.23-0.66	1.20-4.2	12.7	12.7	4.76	1.2	●	●	●				
	190608E-PD3	0.15-0.44	0.80-6.3	19.05	19.05	6.35	0.8	●	●	○				
	SNMG 120404E-PC4	0.08-0.22	0.40-4.2	12.7	12.7	4.76	0.4	●	●		○	○		
	120408E-PC4	0.15-0.44	0.80-4.2	12.7	12.7	4.76	0.8	●	●		●	○		
	120412E-PC4	0.23-0.66	1.20-4.2	12.7	12.7	4.76	1.2	●	●		●	●		
	SNMG 120404E-MC3	0.08-0.22	0.32-4.2	12.7	12.7	4.76	0.4						●	
	120408E-MC3	0.15-0.44	0.64-4.2	12.7	12.7	4.76	0.8						●	
	120412E-MC3	0.23-0.66	0.96-4.2	12.7	12.7	4.76	1.2						●	
	150612E-MC3	0.23-0.66	0.96-5.2	15.875	15.875	6.35	1.2						○	
	150616E-MC3	0.30-0.88	1.28-5.2	15.875	15.875	6.35	1.6						○	
	190612E-MC3	0.23-0.66	0.96-6.3	19.05	19.05	6.35	1.2						○	
	190616E-MC3	0.30-0.88	1.28-6.3	19.05	19.05	6.35	1.6						○	

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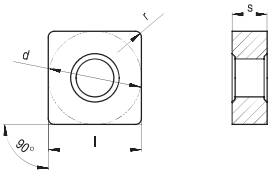
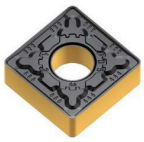
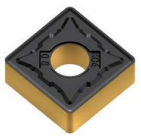
Marked: ● Stock available
○ Produced by order

Negative 90° （S） Square Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	SNMG 120412E-SC3	0.23-0.66	1.20-4.2	12.7	12.7	4.76	1.2							●
	150612E-SC3	0.23-0.66	1.20-5.2	15.875	15.875	6.35	1.2							●
	150616E-SC3	0.30-0.88	1.60-5.2	15.875	15.875	6.35	1.6							●
	190612E-SC3	0.23-0.66	1.20-6.3	19.05	19.05	6.35	1.2							●
	SNMG 150608E-PD5	0.20-0.60	1.20-7.9	15.875	15.875	6.35	0.8	○	●	●				
	150612E-PD5	0.30-0.90	1.80-7.9	15.875	15.875	6.35	1.2	○	●	●				
	150616E-PD5	0.40-1.20	2.40-7.9	15.875	15.875	6.35	1.6	○	●	○				
	190612E-PD5	0.30-0.90	1.80-9.5	19.05	19.05	6.35	1.2	●	●	○				
	190616E-PD5	0.40-1.20	2.40-9.5	19.05	19.05	6.35	1.6	●	●	○				
	SNMG 120408E-MC4	0.20-0.60	1.20-6.4	12.7	12.7	4.76	0.8						●	●
	120412E-MC4	0.30-0.90	1.80-6.4	12.7	12.7	4.76	1.2						●	●
	150612E-MC4	0.30-0.90	1.80-7.9	15.875	15.875	6.35	1.2						○	○
	150616E-MC4	0.40-1.20	2.40-7.9	15.875	15.875	6.35	1.6						○	○
	190612E-MC4	0.30-0.90	1.80-9.5	19.05	19.05	6.35	1.2						○	○
	190616E-MC4	0.40-1.20	2.40-9.5	19.05	19.05	6.35	1.6						○	○
	SNMG 090304E-KC4	0.09-0.24	0.48-3.8	9.525	9.525	3.18	0.4				●	○		
	090308E-KC4	0.18-0.48	0.96-3.8	9.525	9.525	3.18	0.8				●	○		
	120404E-KC4	0.09-0.24	0.48-5.1	12.7	12.7	4.76	0.4				●	○		
	120408E-KC4	0.18-0.48	0.96-5.1	12.7	12.7	4.76	0.8				●	●		
	120412E-KC4	0.26-0.72	1.44-5.1	12.7	12.7	4.76	1.2				●	●		
	150608E-KC4	0.18-0.48	0.96-6.4	15.875	15.875	6.35	0.8				●	○		
	150612E-KC4	0.26-0.72	1.44-6.4	15.875	15.875	6.35	1.2				●	○		
	150616E-KC4	0.35-0.96	1.92-6.4	15.875	15.875	6.35	1.6				●	○		
	190608E-KC4	0.18-0.48	0.96-7.6	19.05	19.05	6.35	0.8				●	○		
	190612E-KC4	0.26-0.72	1.44-7.6	19.05	19.05	6.35	1.2				●	○		
	190616E-KC4	0.35-0.96	1.92-7.6	19.05	19.05	6.35	1.6				●	○		
	190624E-KC4	0.53-1.44	2.88-7.6	19.05	19.05	6.35	2.4				●	○		

Marked: ● Stock available
○ Produced by order

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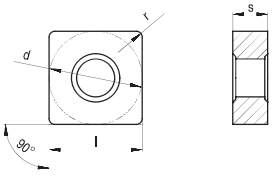
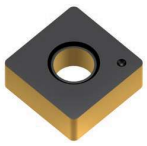
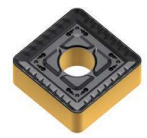
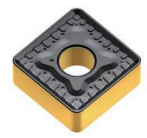
Negative 90° （S） Square Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	SNMA 120408E-KD5	0.20-0.60	1.20-6.4	12.7	12.7	4.76	0.8				●	○		
	120412E-KD5	0.30-0.90	1.80-6.4	12.7	12.7	4.76	1.2				●	●		
	120416E-KD5	0.40-1.20	2.40-6.4	12.7	12.7	4.76	1.6				●	●		
	150612E-KD5	0.30-0.90	1.80-7.9	15.875	15.875	6.35	1.2				●	○		
	150616E-KD5	0.40-1.20	2.40-7.9	15.875	15.875	6.35	1.6				●	●		
	190612E-KD5	0.30-0.90	1.80-9.5	19.05	19.05	6.35	1.2				●	○		
	190616E-KD5	0.40-1.20	2.40-9.5	19.05	19.05	6.35	1.6				●	○		
	SNMM 120408E-PD8	0.16-0.32	1.44-5.1	12.7	12.7	4.76	0.8	○	●	●				
	120412E-PD8	0.24-0.48	2.16-5.1	12.7	12.7	4.76	1.2	○	○	○				
	150612E-PD8	0.24-0.48	2.16-6.4	15.875	15.875	6.35	1.2	○	○	○				
	150616E-PD8	0.32-0.64	2.88-6.4	15.875	15.875	6.35	1.6	○	○	○				
	190612E-PD8	0.24-0.48	2.16-7.6	19.05	19.05	6.35	1.2	●	●	○				
	190616E-PD8	0.32-0.64	2.88-7.6	19.05	19.05	6.35	1.6	○	○	●				
	190624E-PD8	0.48-0.96	4.32-7.6	19.05	19.05	6.35	2.4	●	●	●				
	250724E-PD8	0.48-0.96	4.32-10.2	25.4	25.4	7.94	2.4	○	○	○				
	250924E-PD8	0.48-0.96	4.32-10.2	25.4	25.4	9.525	2.4	●	●	○				
	SNMM 190612S-PC9	0.26-0.60	2.40-9.5	19.05	19.05	6.35	1.2	●	●	○				
	190616S-PC9	0.35-0.80	3.20-9.5	19.05	19.05	6.35	1.6	○	●	○				
	190624S-PC9	0.53-1.20	4.80-9.5	19.05	19.05	6.35	2.4	●	●	●				
	250724S-PC9	0.53-1.20	4.80-12.7	25.4	25.4	7.94	2.4	●	●	○				
	250924S-PC9	0.53-1.20	4.80-12.7	25.4	25.4	9.525	2.4	●	●	○				
	SNMM 190612S-PD9	0.30-0.72	2.64-11.4	19.05	19.05	6.35	1.2	○	●	○				
	190616S-PD9	0.40-0.96	3.52-11.4	19.05	19.05	6.35	1.6	○	●	○				
	190624S-PD9	0.60-1.44	5.28-11.4	19.05	19.05	6.35	2.4	●	●	●				
	250724S-PD9	0.60-1.44	5.28-15.2	25.4	25.4	7.94	2.4	○	●	○				
	250924S-PD9	0.60-1.44	5.28-15.2	25.4	25.4	9.525	2.4	●	●	●				

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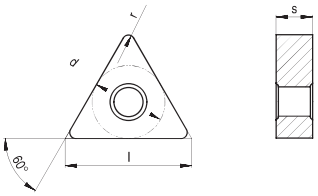
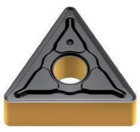
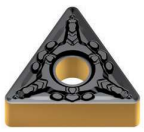
Marked: ● Stock available
○ Produced by order

Negative 60° （T） Triangle Inserts

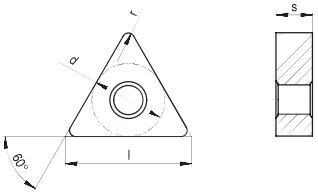


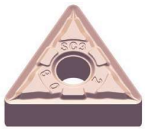
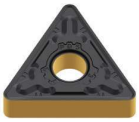
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**TNMG 160404E-PB1**	0.05-0.15	0.26-3.1	9.525	16.5	4.76	0.4	●	●					
	160408E-PB1	0.10-0.30	0.52-3.1	9.525	16.5	4.76	0.8	●	●					
	160412E-PB1	0.15-0.45	0.78-3.1	9.525	16.5	4.76	1.2	●	●					
	**TNMG 160404E-MB2**	0.05-0.15	0.26-3.1	9.525	16.5	4.76	0.4						●	●
	160408E-MB2	0.10-0.30	0.52-3.1	9.525	16.5	4.76	0.8						●	●
	**TNMG 160404E-PB3**	0.06-0.18	0.30-3.3	9.525	16.5	4.76	0.4	●	●					
	160408E-PB3	0.12-0.36	0.60-3.3	9.525	16.5	4.76	0.8	●	●					
	160412E-PB3	0.18-0.54	0.90-3.3	9.525	16.5	4.76	1.2	●	●					
	**TNMG 160404E-PC3**	0.07-0.20	0.34-3.7	9.525	16.5	4.76	0.4	●	●					
	160408E-PC3	0.14-0.40	0.68-3.7	9.525	16.5	4.76	0.8	●	●					
	160412E-PC3	0.20-0.60	1.02-3.7	9.525	16.5	4.76	1.2	●	●					
	**TNMG 160404E-PD3**	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4	●	●	○				
	160408E-PD3	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8	●	●	●				
	160412E-PD3	0.23-0.66	1.20-4.1	9.525	16.5	4.76	1.2	●	●	○				
	**TNMG 160404E-PC4**	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4	●	●		●	●		
	160408E-PC4	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8	●	●		●	●		
	160412E-PC4	0.23-0.66	1.20-4.1	9.525	16.5	4.76	1.2	●	●		●	●		
	220412E-PC4	0.23-0.66	1.20-4.9	12.7	22.0	4.76	1.2	○	○		○	○		

Marked: ● Stock available
○ Produced by order

P80 P66

Negative 60° （T） Triangle Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	TNMG 160404R-PL5	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4	●	●					
	160408R-PL5	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8	●	●					
	160404L-PL5	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4	●	●					
	160408L-PL5	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8	●	●					
	TNMG 160404E-MC3	0.08-0.22	0.32-4.1	9.525	16.5	4.76	0.4						●	
	160408E-MC3	0.15-0.44	0.64-4.1	9.525	16.5	4.76	0.8						●	
	160412E-MC3	0.23-0.66	0.96-4.1	9.525	16.5	4.76	1.2						●	
	220408E-MC3	0.15-0.44	0.64-4.9	15.875	22.0	4.76	0.8						○	
	220412E-MC3	0.23-0.66	0.96-4.9	15.875	22.0	4.76	1.2						○	
	TNMG 160404E-SC3	0.08-0.22	0.40-4.1	9.525	16.5	4.76	0.4							○
	160408E-SC3	0.15-0.44	0.80-4.1	9.525	16.5	4.76	0.8							●
	160412E-SC3	0.23-0.66	1.20-4.1	9.525	16.5	4.76	1.2							●
	TNMG 160408E-PD5	0.20-0.60	1.20-5.8	9.525	16.5	4.76	0.8	●	●	●				
	160412E-PD5	0.30-0.90	1.80-5.8	9.525	16.5	4.76	1.2	●	●	●				
	220408E-PD5	0.20-0.60	1.20-7.7	12.7	22.0	4.76	0.8	●	●	●				
	220412E-PD5	0.30-0.90	1.80-7.7	12.7	22.0	4.76	1.2	●	●	●				
	220416E-PD5	0.40-1.20	2.40-7.7	12.7	22.0	4.76	1.6	●	●	●				
	TNMG 160408E-MC4	0.20-0.60	1.20-5.8	9.525	16.5	4.76	0.8						●	●
	160412E-MC4	0.30-0.90	1.80-5.8	9.525	16.5	4.76	1.2						●	●
	220408E-MC4	0.20-0.60	1.20-6.6	12.7	22.0	4.76	0.8						○	○
	220412E-MC4	0.30-0.90	1.80-6.6	12.7	22.0	4.76	1.2						○	○
	TNMG 110304E-KC4	0.09-0.24	0.48-3.3	6.35	11.0	3.18	0.4				○	○		
	160404E-KC4	0.09-0.24	0.48-4.9	9.525	16.5	4.76	0.4				●	●		
	160408E-KC4	0.18-0.48	0.96-4.9	9.525	16.5	4.76	0.8				●	●		
	160412E-KC4	0.26-0.72	1.44-4.9	9.525	16.5	4.76	1.2				●	●		
	160416E-KC4	0.35-0.96	1.92-4.9	9.525	16.5	4.76	1.6				●	●		
	220412E-KC4	0.26-0.72	1.44-6.0	12.7	22.0	4.76	1.2				●	●		
	220416E-KC4	0.35-0.96	1.92-6.0	12.7	22.0	4.76	1.6				●	○		

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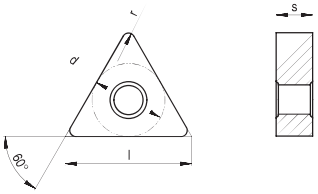
Marked: ● Stock available
○ Produced by order

Negative 60° （T） Triangle Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**TNMA 160404E-KD5**	0.10-0.30	0.60-5.8	9.525	16.5	4.76	0.4				●	○		
	160408E-KD5	0.20-0.60	1.20-5.8	9.525	16.5	4.76	0.8				●	○		
	160412E-KD5	0.30-0.90	1.80-5.8	9.525	16.5	4.76	1.2				●	○		
	160416E-KD5	0.40-1.20	2.40-5.8	9.525	16.5	4.76	1.6				●	○		
	220408E-KD5	0.20-0.60	1.20-7.7	12.7	22.0	4.76	0.8				●	○		
	220412E-KD5	0.30-0.90	1.80-7.7	12.7	22.0	4.76	1.2				●	●		
	220416E-KD5	0.40-1.20	2.40-7.7	12.7	22.0	4.76	1.6				●	●		
	**TNMM 160408E-PD8**	0.16-0.32	1.44-4.9	9.525	16.5	4.76	0.8	○	○	○				
	160412E-PD8	0.24-0.48	2.16-4.9	9.525	16.5	4.76	1.2	○	○	○				
	220408E-PD8	0.16-0.32	1.44-6.0	12.7	22.0	4.76	0.8	○	○	○				
	220412E-PD8	0.24-0.48	2.16-6.0	12.7	22.0	4.76	1.2	○	○	○				
	220416E-PD8	0.32-0.64	2.88-6.0	12.7	22.0	4.76	1.6	○	○	○				

Marked: ● Stock available
○ Produced by order

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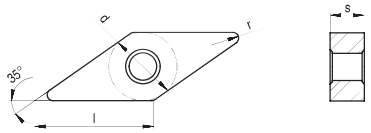
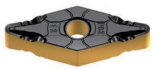
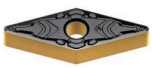
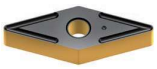
Negative 35° (V) Rhombic Inserts

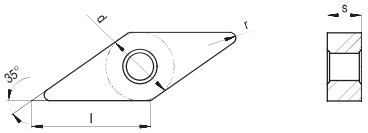


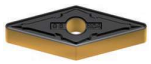
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	VNMG 160404E-PB1	0.05-0.15	0.26-2.1	9.525	16.5	4.76	0.4	●	●					
	160408E-PB1	0.10-0.30	0.52-2.1	9.525	16.5	4.76	0.8	●	●					
	160412E-PB1	0.15-0.45	0.78-2.1	9.525	16.5	4.76	1.2	○	○					
	VNMG 160404E-MB2	0.05-0.15	0.26-2.1	9.525	16.5	4.76	0.4						●	●
	160408E-MB2	0.10-0.30	0.52-2.1	9.525	16.5	4.76	0.8						●	●
	VNMG 160404E-PB3	0.06-0.18	0.30-3.1	9.525	16.5	4.76	0.4	●	●					
	160408E-PB3	0.12-0.36	0.60-3.1	9.525	16.5	4.76	0.8	●	●					
	160412E-PB3	0.18-0.54	0.90-3.1	9.525	16.5	4.76	1.2	●	●					
	VNMG 160404E-PC3	0.07-0.20	0.34-3.3	9.525	16.5	4.76	0.4	●	●					
	160408E-PC3	0.14-0.40	0.68-3.3	9.525	16.5	4.76	0.8	●	●					
	160412E-PC3	0.20-0.60	1.02-3.3	9.525	16.5	4.76	1.2	●	●					
	VNMG 160404E-PD3	0.08-0.22	0.40-3.3	9.525	16.5	4.76	0.4	●	●					
	160408E-PD3	0.15-0.44	0.80-3.3	9.525	16.5	4.76	0.8	●	●					
	160412E-PD3	0.23-0.66	1.20-3.3	9.525	16.5	4.76	1.2	●	●					
	VNMG 160404E-PC4	0.08-0.22	0.40-3.3	9.525	16.5	4.76	0.4	●	●		●	●		
	160408E-PC4	0.15-0.44	0.80-3.3	9.525	16.5	4.76	0.8	●	●		●	●		
	160412E-PC4	0.23-0.66	1.20-3.3	9.525	16.5	4.76	1.2	●	●		●	●		
	VNMG 160404E-MC3	0.08-0.22	0.32-3.3	9.525	16.5	4.76	0.4						●	
	160408E-MC3	0.15-0.44	0.64-3.3	9.525	16.5	4.76	0.8						●	
	VNMG 160404E-SC3	0.08-0.22	0.40-3.3	9.525	16.5	4.76	0.4							●
	160408E-SC3	0.15-0.44	0.80-3.3	9.525	16.5	4.76	0.8							●
	160412E-SC3	0.23-0.66	1.20-3.3	9.525	16.5	4.76	1.2							●

P80 P66

Marked: ● Stock available
○ Produced by order

Negative 35° (V) Rhombic Inserts

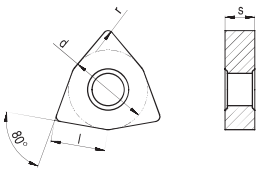


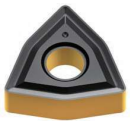
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	**VNMG 160404E-KC4**	0.09-0.24	0.48-3.3	9.525	16.5	4.76	0.4				●	○		
	160408E-KC4	0.18-0.48	0.96-3.3	9.525	16.5	4.76	0.8				●	○		
	160412E-KC4	0.26-0.72	1.44-3.3	9.525	16.5	4.76	1.2				●	○		

Marked: ● Stock available
○ Produced by order

P80 P66

Negative 80° （W） Trigon Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	WNMG 080404E-PB1	0.05-0.15	0.26-2.2	12.7	8.7	4.76	0.4	●	●					
	080408E-PB1	0.10-0.30	0.52-2.2	12.7	8.7	4.76	0.8	●	●					
	080412E-PB1	0.15-0.45	0.78-2.2	12.7	8.7	4.76	1.2	●	●					
	WNMG 080404E-MB2	0.05-0.15	0.26-2.2	12.7	8.7	4.76	0.4						●	●
	080408E-MB2	0.10-0.30	0.52-2.2	12.7	8.7	4.76	0.8						●	●
	WNMG 080404E-PB3	0.06-0.18	0.30-2.3	12.7	8.7	4.76	0.4	●	●					
	080408E-PB3	0.12-0.36	0.60-2.3	12.7	8.7	4.76	0.8	●	●					
	080412E-PB3	0.18-0.54	0.90-2.3	12.7	8.7	4.76	1.2	●	●					
	WNMG 080404E-PC3	0.07-0.20	0.34-2.6	12.7	8.7	4.76	0.4	●	●					
	080408E-PC3	0.14-0.40	0.68-2.6	12.7	8.7	4.76	0.8	●	●					
	080412E-PC3	0.20-0.60	1.02-2.6	12.7	8.7	4.76	1.2	●	●					
	WNMG 060408E-PD3	0.15-0.44	0.80-2.1	9.525	6.52	4.76	0.8	●	●	○				
	080404E-PD3	0.08-0.22	0.40-2.9	12.7	8.7	4.76	0.4	●	●	○				
	080408E-PD3	0.15-0.44	0.80-2.9	12.7	8.7	4.76	0.8	●	●	●				
	080412E-PD3	0.23-0.66	1.20-2.9	12.7	8.7	4.76	1.2	●	●	●				
	WNMG 080404E-PC4	0.08-0.22	0.40-2.9	12.7	8.7	4.76	0.4	●	●		●	●		
	080408E-PC4	0.15-0.44	0.80-2.9	12.7	8.7	4.76	0.8	●	●		●	●		
	080412E-PC4	0.23-0.66	1.20-2.9	12.7	8.7	4.76	1.2	●	●		●	●		
	WNMG 060408E-MC3	0.15-0.44	0.64-2.1	9.525	6.52	4.76	0.8						●	
	060412E-MC3	0.23-0.66	0.96-2.1	9.525	6.52	4.76	1.2						●	
	080404E-MC3	0.08-0.22	0.32-2.9	12.7	8.7	4.76	0.4						●	
	080408E-MC3	0.15-0.44	0.64-2.9	12.7	8.7	4.76	0.8						●	
	080412E-MC3	0.23-0.66	0.96-2.9	12.7	8.7	4.76	1.2						●	

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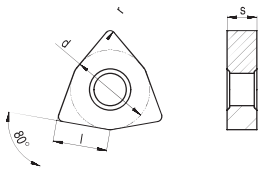
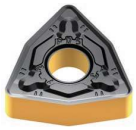
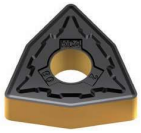
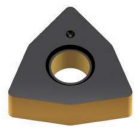
Marked: ● Stock available
○ Produced by order

Negative 80° (W) Trigon Inserts

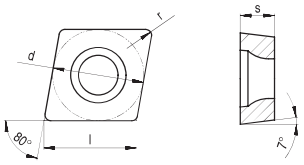


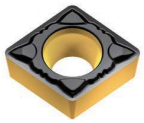
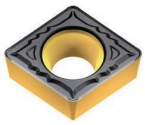
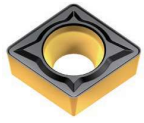
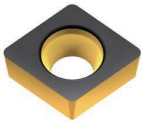
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades						
								CVD coated					PVD coated	
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S
	WNMG 080404E-SC3	0.08-0.22	0.40-2.9	12.7	8.7	4.76	0.4							●
	080408E-SC3	0.15-0.44	0.80-2.9	12.7	8.7	4.76	0.8							●
	080412E-SC3	0.23-0.66	1.20-2.9	12.7	8.7	4.76	1.2							●
	WNMG 080408E-PD5	0.20-0.60	1.20-4.3	12.7	8.7	4.76	0.8	●	●	●				
	080412E-PD5	0.30-0.90	1.80-4.3	12.7	8.7	4.76	1.2	●	●	●				
	WNMG 060408E-MC4	0.20-0.60	1.20-3.3	9.525	6.52	4.76	0.8						○	○
	060412E-MC4	0.30-0.90	1.80-3.3	9.525	6.52	4.76	1.2						○	○
	080408E-MC4	0.20-0.60	1.20-4.3	12.7	8.7	4.76	0.8						●	●
	080412E-MC4	0.30-0.90	1.80-4.3	12.7	8.7	4.76	1.2						●	●
	WNMG 060404E-KC4	0.09-0.24	0.48-2.6	9.525	6.52	4.76	0.4				●	○		
	060408E-KC4	0.18-0.48	0.96-2.6	9.525	6.52	4.76	0.8				●	○		
	080404E-KC4	0.09-0.24	0.48-3.5	12.7	8.7	4.76	0.4				●	○		
	080408E-KC4	0.18-0.48	0.96-3.5	12.7	8.7	4.76	0.8				●	●		
	080412E-KC4	0.26-0.72	1.44-3.5	12.7	8.7	4.76	1.2				●	●		
	080416E-KC4	0.35-0.96	1.92-3.5	12.7	8.7	4.76	1.2				●	○		
	WNMA 080404E-KD5	0.10-0.30	0.60-4.3	12.7	8.7	4.76	0.4				●	○		
	080408E-KD5	0.20-0.60	1.20-4.3	12.7	8.7	4.76	0.8				●	●		
	080412E-KD5	0.30-0.90	1.80-4.3	12.7	8.7	4.76	1.2				●	●		
	080416E-KD5	0.40-1.20	2.40-4.3	12.7	8.7	4.76	1.6				●	○		

Marked: ● Stock available
○ Produced by order

P80 P66

Positive 80° （C） Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	CCMT 060202E-PB1	0.02-0.07	0.15-1.6	6.35	6.45	2.38	0.2	●	●				●		
	060204E-PB1	0.04-0.14	0.30-1.6	6.35	6.45	2.38	0.4	●	●				●		
	060208E-PB1	0.09-0.28	0.60-1.6	6.35	6.45	2.38	0.8	●	●				●		
	09T302E-PB1	0.02-0.07	0.15-2.4	9.525	9.67	3.97	0.2	●	●				●		
	09T304E-PB1	0.04-0.14	0.30-2.4	9.525	9.67	3.97	0.4	●	●				●		
	09T308E-PB1	0.09-0.28	0.60-2.4	9.525	9.67	3.97	0.8	●	●				●		
	CCMT 060204E-PC2	0.05-0.16	0.35-1.9	6.35	6.45	2.38	0.4	●	●				●	●	
	060208E-PC2	0.10-0.32	0.70-1.9	6.35	6.45	2.38	0.8	●	●				●	●	
	09T304E-PC2	0.05-0.16	0.35-2.9	9.525	9.67	3.97	0.4	●	●				●	●	
	09T308E-PC2	0.10-0.32	0.70-2.9	9.525	9.67	3.97	0.8	●	●				●	●	
	120404E-PC2	0.05-0.16	0.35-3.9	12.7	12.9	4.76	0.4	●	●				●	●	
	120408E-PC2	0.10-0.32	0.70-3.9	12.7	12.9	4.76	0.8	●	●				●	●	
	120412E-PC2	0.16-0.48	1.05-3.9	12.7	12.89	4.76	1.2	●	●				●	●	
	CCGT 060204F-NC2	0.05-0.20	0.32-2.9	6.35	6.45	2.38	0.4								●
	09T302F-NC2	0.02-0.10	0.16-4.4	9.525	9.67	3.97	0.2								●
	09T304F-NC2	0.05-0.20	0.32-4.4	9.525	9.67	3.97	0.4								●
	09T308F-NC2	0.10-0.40	0.64-4.4	9.525	9.67	3.97	0.8								●
	120404F-NC2	0.05-0.20	0.32-5.8	12.7	12.9	4.76	0.4								●
	120408F-NC2	0.10-0.40	0.64-5.8	12.7	12.9	4.76	0.8								●
	CCMT 060204E-KC2	0.06-0.18	0.40-2.1	6.35	6.45	2.38	0.4	●	●		●	●			
	060208E-KC2	0.12-0.36	0.80-2.1	6.35	6.45	2.38	0.8	●	●		●	○			
	09T304E-KC2	0.06-0.18	0.40-3.2	9.525	9.67	3.97	0.4	●	●		●	○			
	09T308E-KC2	0.12-0.36	0.80-3.2	9.525	9.67	3.97	0.8	●	●		●	●			
	120404E-KC2	0.06-0.18	0.40-4.3	12.7	12.9	4.76	0.4	●	●		●	●			
	120408E-KC2	0.12-0.36	0.80-4.3	12.7	12.9	4.76	0.8	●	●		●	●			
	120412E-KC2	0.18-0.54	1.20-4.3	12.7	12.9	4.76	1.2	●	●		●	●			
	CCMW 060204E-KD5	0.10-0.22	0.40-3.2	6.35	6.45	2.38	0.4				●	○			
	09T304E-KD5	0.10-0.22	0.40-4.8	9.525	9.67	3.97	0.4				●	○			
	09T308E-KD5	0.20-0.44	0.80-4.8	9.525	9.67	3.97	0.8				●	○			
	120404E-KD5	0.10-0.22	0.40-6.4	12.7	12.9	4.76	0.4				●	○			
	120408E-KD5	0.20-0.44	0.80-6.4	12.7	12.9	4.76	0.8				●	○			

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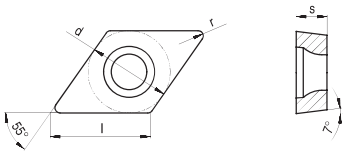
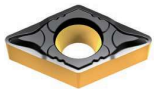
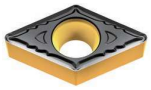
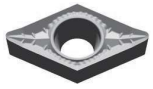
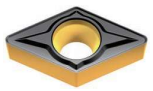
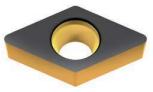
Marked: ● Stock available
○ Produced by order

Positive 55° (D) Rhombic Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	DCMT 070202E-PB1	0.02-0.07	0.15-1.5	6.35	7.75	2.38	0.2	●	●				●		
	070204E-PB1	0.04-0.14	0.30-1.5	6.35	7.75	2.38	0.4	●	●				●		
	11T302E-PB1	0.02-0.07	0.15-2.3	9.525	11.62	3.97	0.2	●	●				●		
	11T304E-PB1	0.04-0.14	0.30-2.3	9.525	11.62	3.97	0.4	●	●				●		
	11T308E-PB1	0.09-0.28	0.60-2.3	9.525	11.62	3.97	0.8	●	●				●		
	DCMT 070204E-PC2	0.05-0.16	0.35-2.1	6.35	7.75	2.38	0.4	●	●				●	●	
	070208E-PC2	0.10-0.32	0.70-2.1	6.35	7.75	2.38	0.8	●	●				●	●	
	11T304E-PC2	0.05-0.16	0.35-3.1	9.525	11.62	3.97	0.4	●	●				●	●	
	11T308E-PC2	0.10-0.32	0.70-3.1	9.525	11.62	3.97	0.8	●	●				●	●	
	11T312E-PC2	0.16-0.48	1.05-3.1	9.525	11.62	3.97	1.2	●	●				○	○	
	DCGT 070202F-NC2	0.02-0.10	0.16-3.5	6.35	7.75	2.38	0.2								●
	070204F-NC2	0.05-0.20	0.32-3.5	6.35	7.75	2.38	0.4								●
	11T302F-NC2	0.02-0.10	0.16-5.2	9.525	11.62	3.97	0.2								●
	11T304F-NC2	0.05-0.20	0.32-5.2	9.525	11.62	3.97	0.4								●
	11T308F-NC2	0.10-0.40	0.64-5.2	9.525	11.62	3.97	0.8								●
	DCMT 070204E-KC2	0.06-0.18	0.40-2.3	6.35	7.75	2.38	0.4	●	●		●	●			
	070208E-KC2	0.12-0.36	0.80-2.3	6.35	7.75	2.38	0.8	●	●		○	○			
	11T304E-KC2	0.06-0.18	0.40-3.5	9.525	11.62	3.97	0.4	●	●		●	●			
	11T308E-KC2	0.12-0.36	0.80-3.5	9.525	11.62	3.97	0.8	●	●		●	●			
	11T312E-KC2	0.18-0.54	1.20-3.5	9.525	11.62	3.97	1.2	●	●		○	○			
	DCMW 070204E-KD5	0.06-0.18	0.40-3.9	6.35	7.75	2.38	0.4				●	○			
	070208E-KD5	0.12-0.36	0.80-3.9	6.35	7.75	2.38	0.8				●	○			
	11T304E-KD5	0.06-0.18	0.40-5.8	9.525	11.62	3.97	0.4				●	○			
	11T308E-KD5	0.12-0.36	0.80-5.8	9.525	11.62	3.97	0.8				●	○			

Marked: ● Stock available
○ Produced by order

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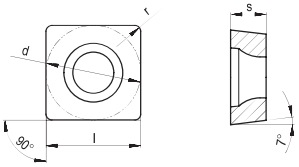
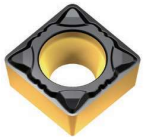
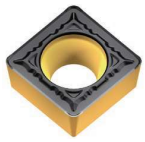
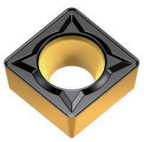
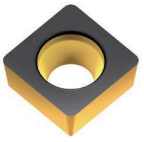
Positive 90° （S） Square Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	**SCMT 09T304E-PB1**	0.04-0.14	0.30-2.4	9.525	9.525	3.97	0.4	●	●				●		
	09T308E-PB1	0.09-0.28	0.60-2.4	9.525	9.525	3.97	0.8	●	●				●		
	120404E-PB1	0.04-0.14	0.30-3.2	12.7	12.7	4.76	0.4	○	○				○		
	**SCMT 09T304E-PC2**	0.05-0.16	0.35-2.9	9.525	9.525	3.97	0.4	●	●				●	●	
	09T308E-PC2	0.10-0.32	0.70-2.9	9.525	9.525	3.97	0.8	●	●				●	●	
	120404E-PC2	0.05-0.16	0.35-3.8	12.7	12.7	4.76	0.4	●	●				●	●	
	120408E-PC2	0.10-0.32	0.70-3.8	12.7	12.7	4.76	0.8	●	●				●	●	
	120412E-PC2	0.16-0.48	1.05-3.8	12.7	12.7	4.76	1.2	●	●				○	●	
	**SCGT 09T308F-NC2**	0.10-0.40	0.64-4.3	9.525	9.525	3.97	0.8								●
	**SCMT 09T304E-KC2**	0.06-0.18	0.40-3.1	9.525	9.525	3.97	0.4	●	●		●	○			
	09T308E-KC2	0.12-0.36	0.80-3.1	9.525	9.525	3.97	0.8	●	●		●	○			
	120404E-KC2	0.06-0.18	0.40-4.2	12.7	12.7	4.76	0.4	●	●		●	○			
	120408E-KC2	0.12-0.36	0.80-4.2	12.7	12.7	4.76	0.8	●	●		●	○			
	120412E-KC2	0.18-0.54	1.20-4.2	12.7	12.7	4.76	1.2	●	●		●	○			
	**SCMW 09T304E-KD5**	0.10-0.22	0.40-4.8	9.525	9.525	3.97	0.4				●	○			
	09T308E-KD5	0.20-0.44	0.80-4.8	9.525	9.525	3.97	0.8				●	○			
	120404E-KD5	0.10-0.22	0.40-6.4	12.7	12.7	4.76	0.4				●	○			
	120408E-KD5	0.20-0.44	0.80-6.4	12.7	12.7	4.76	0.8				●	○			

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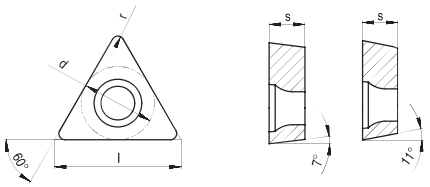
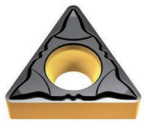
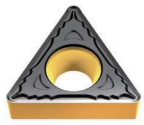
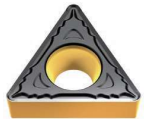
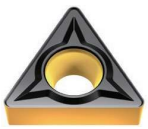
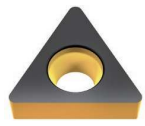
Marked: ● Stock available
○ Produced by order

Positive 60° （T）Triangle Inserts

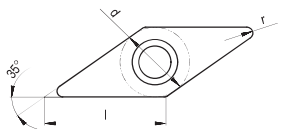


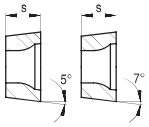
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	TCMT 090204E-PB1	0.04-0.14	0.30-1.9	5.56	9.63	2.38	0.4	○	○				●		
	110202E-PB1	0.02-0.07	0.15-2.2	6.35	11.0	2.38	0.2	○	○				●		
	110204E-PB1	0.04-0.14	0.30-2.2	6.35	11.0	2.38	0.4	●	●				●		
	110208E-PB1	0.09-0.28	0.60-2.2	6.35	11.0	2.38	0.8	●	●				●		
	16T304E-PB1	0.04-0.14	0.30-3.3	9.525	16.5	3.97	0.4	●	●				●		
	16T308E-PB1	0.09-0.28	0.60-3.3	9.525	16.5	3.97	0.8	●	●				○		
	TCMT 090204E-PC2	0.05-0.16	0.35-2.6	5.56	9.63	2.38	0.4	●	●				●	●	
	090208E-PC2	0.10-0.32	0.70-2.6	5.56	9.63	2.38	0.8	●	●				●	●	
	110204E-PC2	0.05-0.16	0.35-3.0	6.35	11.0	2.38	0.4	●	●				●	●	
	110208E-PC2	0.10-0.32	0.70-3.0	6.35	11.0	2.38	0.8	●	●				●	●	
	16T304E-PC2	0.05-0.16	0.35-4.5	9.525	16.5	3.97	0.4	●	●				●	●	
	16T308E-PC2	0.10-0.32	0.70-4.5	9.525	16.5	3.97	0.8	●	●				●	●	
	16T312E-PC2	0.16-0.48	1.05-4.5	9.525	16.5	3.97	1.2	●	●				●	●	
	TPMT 090204E-PC2	0.05-0.16	0.35-2.6	5.56	9.63	2.38	0.4	●	●				●		
	090208E-PC2	0.10-0.32	0.70-2.6	5.56	9.63	2.38	0.8	○	○				●		
	110304E-PC2	0.05-0.16	0.35-3.0	6.35	11.0	3.97	0.4	●	○				●		
	110308E-PC2	0.10-0.32	0.70-3.0	6.35	11.0	3.97	0.8	○	○				●		
	TCGT 110204F-NC2	0.05-0.20	0.32-4.9	6.35	11.0	2.38	0.4								●
	16T304F-NC2	0.05-0.20	0.32-7.4	9.525	16.5	3.97	0.4								●
	16T308F-NC2	0.10-0.40	0.64-7.4	9.525	16.5	3.97	0.8								●
	TCMT 090204E-KC2	0.06-0.18	0.40-2.9	5.56	9.63	2.38	0.4	●	●		●	●			
	090208E-KC2	0.12-0.36	0.80-2.9	5.56	9.63	2.38	0.8	●	●		●	○			
	110204E-KC2	0.06-0.18	0.40-3.3	6.35	11.0	2.38	0.4	●	●		●	●			
	110208E-KC2	0.12-0.36	0.80-3.3	6.35	11.0	2.38	0.8	●	●		●	○			
	16T304E-KC2	0.06-0.18	0.40-4.9	9.525	16.5	3.97	0.4	●	●		●	●			
	16T308E-KC2	0.12-0.36	0.80-4.9	9.525	16.5	3.97	0.8	●	●		●	○			
	16T312E-KC2	0.18-0.54	1.20-4.9	9.525	16.5	3.97	1.2	●	●		●	○			
	TCMW 110204E-KD5	0.06-0.18	0.40-5.5	6.35	11.0	2.38	0.4				●	○			
	110208E-KD5	0.12-0.36	0.80-5.5	6.35	11.0	2.38					●	○			
	16T304E-KD5	0.06-0.18	0.40-8.2	9.525	16.5	3.97	0.4				●	○			
	16T308E-KD5	0.12-0.36	0.80-8.2	9.525	16.5	3.97	0.8				●	○			

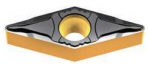
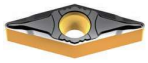
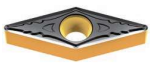
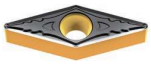
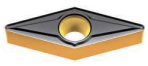
Marked: ● Stock available
○ Produced by order

P80 P66

Positive 35° （V）Rhombic Inserts



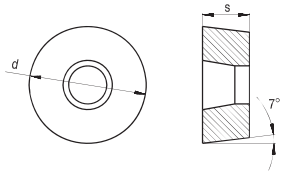


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	VBMT 110304E-PB1	0.04-0.14	0.30-1.4	6.35	11.07	3.18	0.4	○	○				●		
	110308E-PB1	0.09-0.28	0.60-1.4	6.35	11.07	3.18	0.8	○	○				●		
	160402E-PB1	0.02-0.07	0.15-2.1	9.525	16.61	4.76	0.2	○	○				○		
	160404E-PB1	0.04-0.14	0.30-2.1	9.525	16.61	4.76	0.4	○	○				●		
	160408E-PB1	0.09-0.28	0.60-2.1	9.525	16.61	4.76	0.8	●	●				○		
	VCMT 160404E-PB1	0.04-0.14	0.30-2.1	9.525	16.61	4.76	0.4	○	○				○		
	160408E-PB1	0.09-0.28	0.60-2.1	9.525	16.61	4.76	0.8	○	○				○		
	VBMT 110304E-PC2	0.05-0.16	0.35-2.1	6.35	11.07	3.18	0.4	●	●				●	●	
	110308E-PC2	0.10-0.32	0.70-2.1	6.35	11.07	3.18	0.8	○	○				●	●	
	160404E-PC2	0.05-0.16	0.35-3.1	9.525	16.61	4.76	0.4	●	●				●	●	
	160408E-PC2	0.10-0.32	0.70-3.1	9.525	16.61	4.76	0.8	●	●				●	●	
	160412E-PC2	0.16-0.48	1.05-3.1	9.525	16.61	4.76	1.2	●	●				●	●	
	VCMT 110304E-PC2	0.05-0.16	0.35-2.1	6.35	11.07	3.18	0.4	●	●				●		
	110308E-PC2	0.10-0.32	0.70-2.1	6.35	11.07	3.18	0.8	○	○				●		
	160404E-PC2	0.05-0.16	0.35-3.1	9.525	16.61	4.76	0.4	●	●				●		
	160408E-PC2	0.10-0.32	0.70-3.1	9.525	16.61	4.76	0.8	●	●				●		
	VCGT 110302F-NC2	0.02-0.10	0.16-2.8	6.35	11.07	3.18	0.2								●
	110304F-NC2	0.05-0.20	0.32-2.8	6.35	11.07	3.18	0.4								●
	160404F-NC2	0.05-0.20	0.32-4.2	9.525	16.61	4.76	0.4								●
	160408F-NC2	0.10-0.40	0.64-4.2	9.525	16.61	4.76	0.8								●
	160412F-NC2	0.14-0.60	0.96-4.2	9.525	16.61	4.76	1.2								●
	220530F-NC2	0.36-1.50	2.40-5.5	12.7	22.14	5.56	3.0								●
	VBMT 160404E-KC2	0.06-0.18	0.40-3.3	9.525	16.61	4.76	0.4	●	●		○	○			
	160408E-KC2	0.12-0.36	0.80-3.3	9.525	16.61	4.76	0.8	●	●		●	○			
	160412E-KC2	0.18-0.54	1.20-3.3	9.525	16.61	4.76	1.2	●	●		○	○			

P80 P66

Marked: ● Stock available
○ Produced by order

Positive Round Turning Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades							
								CVD coated					PVD coated		uncoated
		Feed rate (mm/rev)	ap (mm)	d	l	s	r	AC150P	AC250P	AC350P	ACK15A	AC150K	AP301M	AP100S	AW100K
	**RCMX 100300S**	0.25-0.50	1.5-4.0	10		3.18	5	●	●	○					
	120400S	0.30-0.60	2.5-5.0	12		4.76	6	●	●	●					
	160600S	0.40-0.75	3.0-7.0	16		6.35	8	●	○	○					
	200600S	0.48-0.90	3.5-9.0	20		6.35	10	●	●	○					
	250700S	0.55-1.20	4.0-12.0	25		7.94	12.5	●	○	●					
	320900S	0.65-1.50	5.0-15.0	32		9.52	16	●	○	○					
	**RCGT 0803MOF-NC2**	0.10-1.00	0.70-3.3	8		3.18	4								○
	1003MOF-NC2	0.20-1.30	0.90-4.0	10		3.18	5								○
	10T3MOF-NC2	0.20-1.30	0.90-4.0	10		3.97	5								○

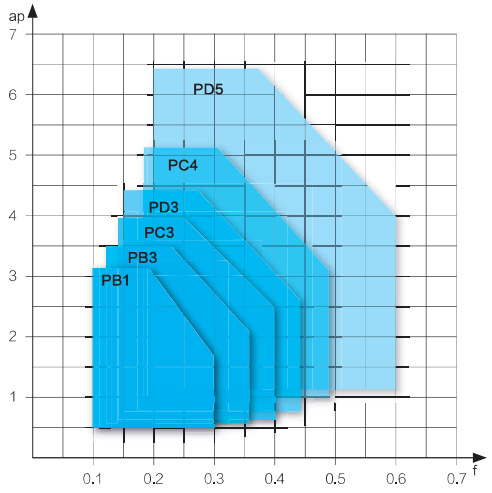
Marked: ● Stock available
○ Produced by order

P80 P66

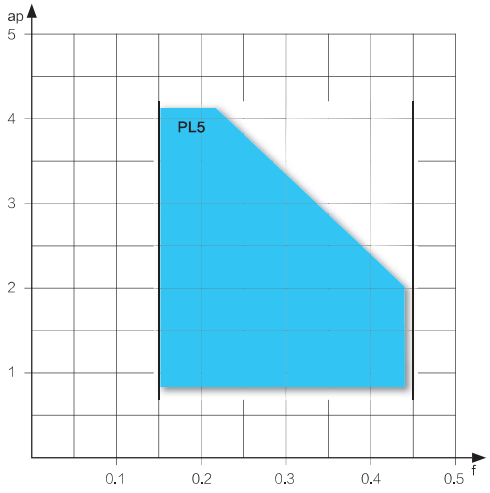
Ap-feed Rate Application Diagram

Negative Insert Geometry

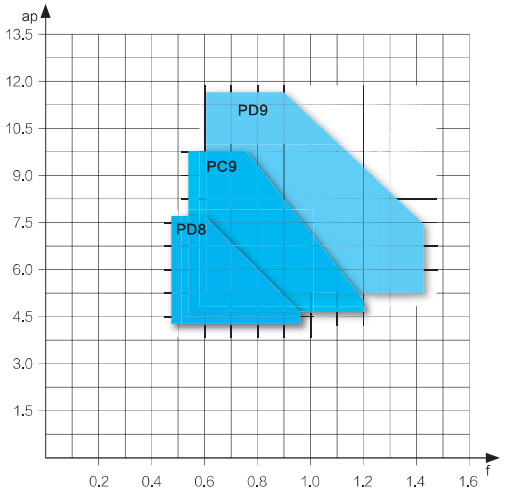
ISO P type
Double side negative insert application



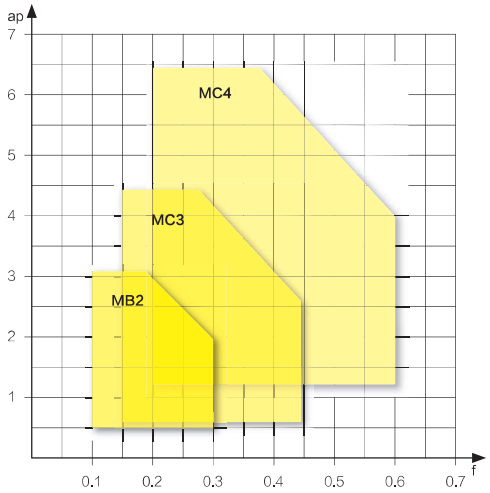
ISO P type
Other chipbreaker negative insert application



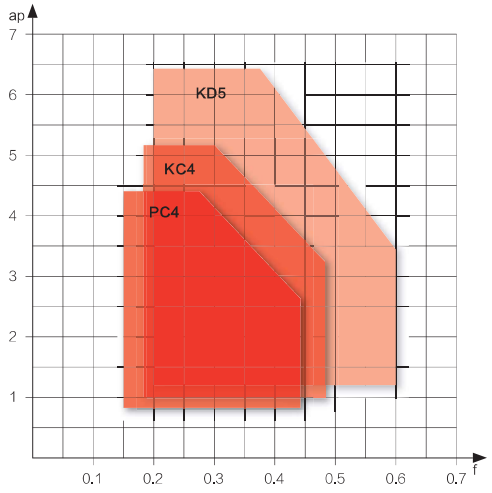
ISO P type
One side negative insert application



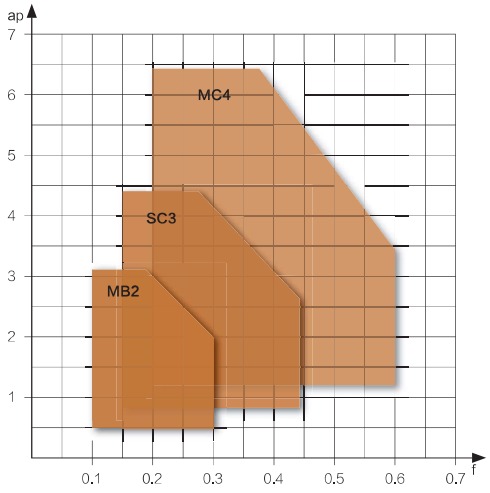
ISO M type
Negative insert application



ISO K type
Negative insert application



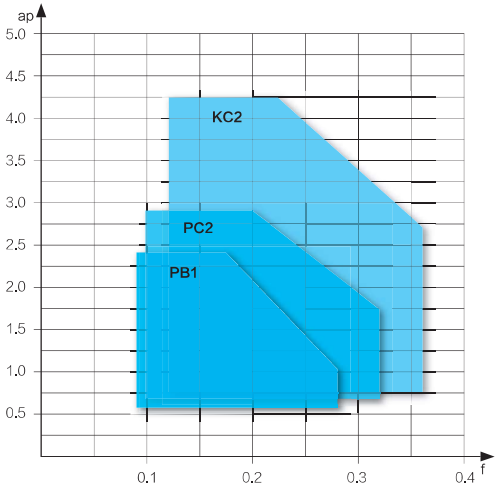
ISO S type
Negative insert application



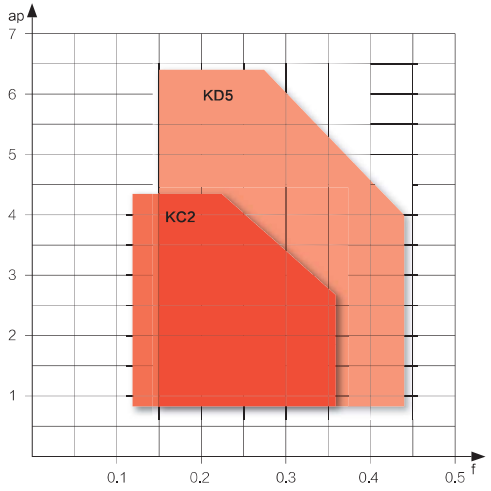
Ap-feed Rate Application Diagram

Positive Insert Geometry

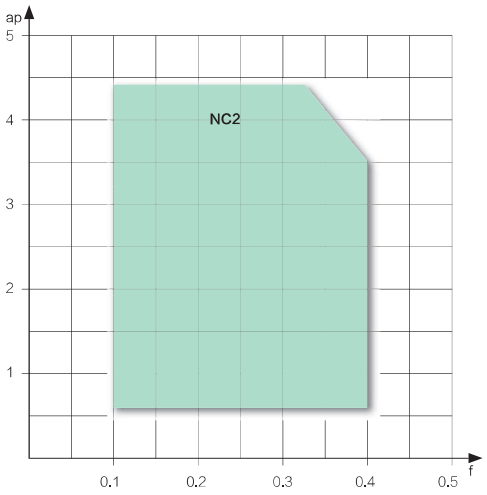
ISO P type
Positive insert application



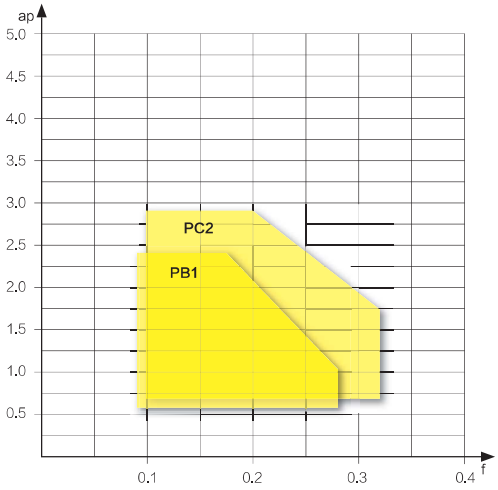
ISO K type
Positive insert application



ISO N type
Positive insert application



ISO M type
Positive insert application



Cutting Parameter Recommended Table

Materials				Turning grade application range																				
				CVD coated													PVD coated						Uncoated		
				AC150P			AC250P			AC350P			ACK15A			AC150K			AP100S			AP301M			AW100K		
				P10-25			P20-35			P30-45			-			-			-			-			-		
				-			-			-			-			-			M05-25			M15-35			-		
				-			-			-			K10-30			K10-25			-			-			-		
				-			-			-			-			-			S05-25			S15-35			-		
				-			-			-			-			-			-			-			N05-15		
				-			-			-			-			-			-			-			-		
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	Feed （mm/rev）																							
				min	med	max	min	med	max	min	med	max	min	med	max	min	med	max	min	med	max	min	med	max	min	med	max
				Cutting speed Vc （m/min）																							
P	Non-alloyed steel	<600	<180	485	378	270	380	260	160	250	182	115															
		<950	<280	335	243	150	240	162	100	160	117	75															
	Alloyed steel	700-950	200-280	230	168	120	215	155	90	148	109	70															
		950-1200	280-355	210	150	90	180	137	75	135	100	65															
		1200-1400	355-415	175	110	70	135	92	55	93	69	45															
M	Duplex stainless steel	778	230																215	170	145	180	140	110			
	Austenitic stainless steel	675	200																240	190	155	200	160	130			
	Precipitation-hardening stainless steel	1013	300																215	150	85	160	130	70			
K	Grey cast iron	700	220										400	255	145	450	300	165									
	Nodular cast iron	880	260										350	215	125	400	260	145									
	Malleable cast iron	800	250										235	165	95	275	195	115									
S	Fe-based alloy	943	280																180	110	40	150	90	40			
	Co-based alloy	1076	320																100	65	30	80	50	30			
	Ni-based alloy	1177	350																100	65	30	80	50	30			
	Ti-alloy	1262	370																200	125	50	160	90	35			
N	Aluminum	260	75																						950	600	200
	Aluminum alloy	447	130																						500	270	40
H	Hardened steel	-	50-60HRC																								
	Chilled cast iron	-	55HRC																								

*Above chart for general cutting conditions. The actual selection should be adjusted according to factors such as machine rigidity, tool body, workpiece conditions and coolant.

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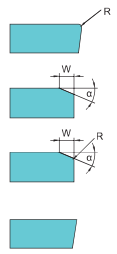
PCD/PCBN Inserts

PCBN Insert Designation System

CNGA 120408	T	010	20	SL	-	1	-	CB	PB30
1	2	3	4	5		6		7	8

1- ISO Standard designation system

2-Cutting edge shape



3-T-Land length

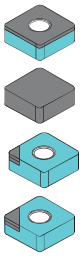
005----0.05mm
010----0.10mm
015----0.15mm
020----0.20mm

4-T-Land angle

10----10
15----15
20----20
25----25

5-CBN inserts structure

FT---Full face tipped CBN
SD---Solid CBN
SL---Small size tipped CBN
NL---Standard-tipped CBN Regrindable



6- Number of cutting edge

1-One cutting edge
2-Two cutting edge
3-Three cutting edge

7-Cutting edge form

CB----With chip breaker
WG---With wiper insert
"-" ----Without chip breaker

8-Grade

PB30---Low content CBN
PB60---Medium content CBN
PB90---High content CBN

PCBN Insert Application

Mainly application	
Grade	**Applicable cutting conditions**
PB30	For hardened steel
PB60	For cast iron, hardened steel and sintered power metal
PB90	For cast iron, hardened steel and sintered power matel

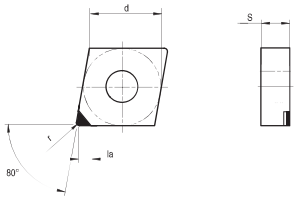
Cutting Parameter Recommended Table

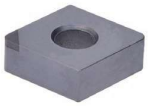
Grade	Material	Hardness	Cutting speed Vc(m/min)	Feed rate fn(mm/rev)	Ap ap(mm)	Recommended application
PB30	Hardened steel	HRC58-62	150--250	0.03--0.2	0.05-0.3	Continuous
PB60	Hardened steel	HRC55-60	50--150	0.03--0.2	0.05-0.5	Interrupted
	Cast iron	HB180-220	150--450	0.03--0.3	0.30-0.5	Continuous/Interrupted
	Sintered power metal	-	200--500	0.03--0.3	0.10-0.3	Continuous/Interrupted
PB90	Hardened steel	HRC55-60	30--120	0.03--0.2	0.05-0.5	Heavy interrupted
	Cast iron	HB180-220	300--700	0.03--0.3	0.30-0.5	Continuous/Interrupted
	Sintered power metal	-	300--800	0.03--0.3	0.10-0.3	Continuous/Interrupted

Grade Application Guide

PCBN grade application for ISO material group						
Material Group	Material	ISO	Uncoated			ISO
			PB30	PB60	PB90	
P	Non-alloyed steel/ Alloyed steel	P01				P01
		P05				P05
		P10				P10
		P15				P15
		P20				P20
		P25				P25
		P30				P30
		P35				P35
		P40				P40
		P45				P45
		P50				P50
M	Stainless steel	M01				M01
		M05				M05
		M10				M10
		M15				M15
		M20				M20
		M25				M25
		M30				M30
		M35				M35
		M40				M40
		M45				M45
K	Cast iron	K01				K01
		K05				K05
		K10				K10
		K15				K15
		K20				K20
		K25		PB60		K25
		K30				K30
		K35			PB90	K35
		K40				K40
		K45				K45
		K50				K50
S	High temperature alloys	S01				S01
		S05				S05
		S10				S10
		S15				S15
		S20				S20
		S25				S25
		S30				S30
		S35				S35
		S40				S40
N	Aluminum/ Aluminum alloy	N01				N01
		N05				N05
		N10				N10
		N15				N15
		N20				N20
		N25				N25
		N30				N30
H	Hardened steel/ Chilled cast iron	H01				H01
		H05	PB30			H05
		H10		PB60		H10
		H15				H15
		H20			PB90	H20
		H25				H25
		H30				H30

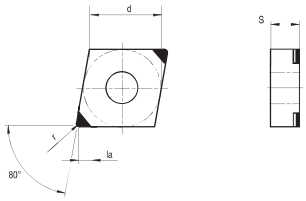
Negative 80 ° (C) PCBN Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**CNGA 120408-S00520-SL-1**	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.8	●	●	●
	CNGA 120412-S00520-SL-1	0.05-0.5	0.03-0.3	2.2	12.7	4.76	1.2	●	●	●

Marked: ● Stock available

Negative 80 ° (C)

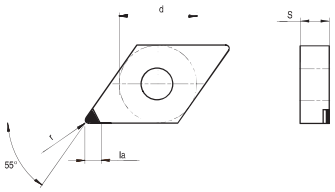


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**CNGA 120408-S00520-SL-2**	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.8	●	●	●
	CNGA 120412-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	12.7	4.76	1.2	●	●	●

Marked: ● Stock available

P80 P68

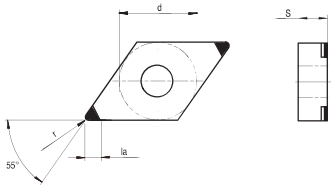
Negative 55 ° (D) PCBN Inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**DNGA 150404-S00520-SL-1-CB**	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.4	●	●	●
	DNGA 150408-S00520-SL-1	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.8	●	●	●
	DNGA 150412-S00520-SL-1	0.05-0.5	0.03-0.3	2.2	12.7	4.76	1.2	●	●	●

Marked: ● Stock available

Negative 55 ° (D)

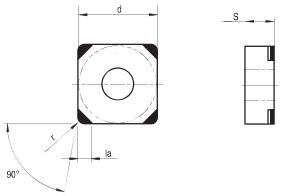


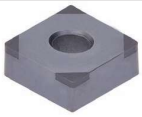
Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**DNGA 150404-S00520-SL-2-CB**	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.4	●	●	●
	DNGA 150408-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.8	●	●	●
	DNGA 150412-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	12.7	4.76	1.2	●	●	●
	DNGA 150604-S00520-SL-2-CB	0.05-0.5	0.03-0.3	2.2	12.7	6.35	0.4	●	●	●
	DNGA 150608-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	12.7	6.35	0.8	●	●	●
	DNGA 150612-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	12.7	6.35	1.2	●	●	●

Marked: ● Stock available

P80 P68

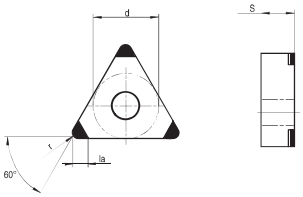
Negative 90 ° (S) PCBN Inserts

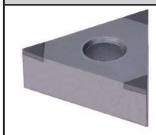


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**SNGA 120408-S00520-SL-4**	0.05-0.5	0.03-0.3	2.2	12.7	4.76	0.8	●	●	●
	SNGA 120412-S00520-SL-4	0.05-0.5	0.03-0.3	2.2	12.7	4.76	1.2	●	●	●

Negative 60 ° (T)

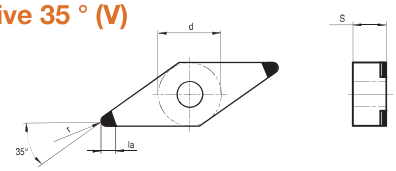
Marked: ● Stock available

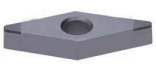


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**TNGA 160404-S00520-SL-3**	0.05-0.5	0.03-0.3	2.2	9.53	4.76	0.4	●	●	●
	TNGA 160408-S00520-SL-3	0.05-0.5	0.03-0.3	2.2	9.53	4.76	0.8	●	●	●
	TNGA 160412-S00520-SL-3	0.05-0.5	0.03-0.3	2.2	9.53	4.76	1.2	●	●	●

Negative 35 ° (V)

Marked: ● Stock available



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PB30	PB60	PB90
	**VNGA 160404-S00520-SL-2**	0.05-0.5	0.03-0.3	2.2	9.53	4.76	0.4	●	●	●
	VNGA 160408-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	9.53	4.76	0.8	●	●	●
	VNGA 160412-S00520-SL-2	0.05-0.5	0.03-0.3	2.2	9.53	4.76	1.2	●	●	●

P80 P68

Marked: ● Stock available

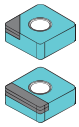
PCD Insert Designation System

CCGW 09T304	-	NL	-	10	-	CB	PD01
1		2		3		4	5

1-Standard ISO designation system

2-Tipped structure of PCD inserts

NL---Standard structure with tipped PCD in corner
LL---Full edge tipped PCD



3-Rake angle

00----0°
05----5°
10----10°

4-Type of chip breaker

CB------With chip breaker
WG-----With wiper
"-" ----- Without chip breaker

5- Grade

PD01----Small size grain-PCD
PD10----Medium size grain-PCD
PD20----Big size grain-PCD

PCD Insert Application

Mainly application	
Grade	Applicable cutting conditions
PD01	Rough and interrupted machining on aluminum alloy materials
PD10	Universal finishing on aluminum and non-ferrous metals
PD20	First choice for Aluminum

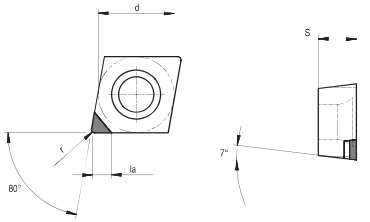
Cutting Parameter Recommended Table

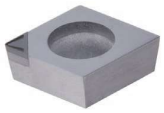
Grade	Workpiece Material	Cutting speed Vc(m/min)	Feed f(mm/rev)	ap ap(mm)	Recommended application conditions
PD01	High silicon aluminum alloy (Si>12%)	200-1500	0.03--0.2	0.05-1.5	Continuous/interrupted
PD10	Medium silicon aluminum (6% < Si <12%)	200-1500	0.03--0.3	0.05-1.5	Continuous/interrupted
PD20	Low silicon aluminum (Si<6%)	200-1500	0.03-0.2	0.05-0.5	Continuous

Grade Application Guide

PCD grade application for ISO material group						
Material Group	Material	ISO	Uncoated			ISO
			PD01	PD10	PD20	
P	Non-alloyed steel/ Alloyed steel	P01				P01
		P05				P05
		P10				P10
		P15				P15
		P20				P20
		P25				P25
		P30				P30
		P35				P35
		P40				P40
		P45				P45
		P50				P50
M	Stainless steel	M01				M01
		M05				M05
		M10				M10
		M15				M15
		M20				M20
		M25				M25
		M30				M30
		M35				M35
		M40				M40
		M45				M45
K	Cast iron	K01				K01
		K05				K05
		K10				K10
		K15				K15
		K20				K20
		K25				K25
		K30				K30
		K35				K35
		K40				K40
		K45				K45
		K50				K50
S	High temperature alloys	S01				S01
		S05				S05
		S10				S10
		S15				S15
		S20				S20
		S25				S25
		S30				S30
		S35				S35
		S40				S40
N	Aluminum/ Aluminum alloy	N01				N01
		N05		PD10		N05
		N10	PD01		PD20	N10
		N15				N15
		N20				N20
		N25				N25
		N30				N30
H	Hardened steel/ Chilled cast iron	H01				H01
		H05				H05
		H10				H10
		H15				H15
		H20				H20
		H25				H25
		H30				H30

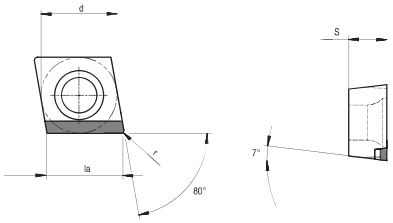
Positive 80° (C) PCD Inserts

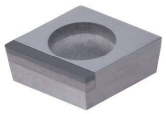


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	**CCGW 060202 NL00-CB**	0.1-0.3	0.05-1.0	2.50	6.35	2.38	0.2		●	●
	CCGW 060204 NL00-CB	0.1-0.3	0.05-1.0	2.50	6.35	2.38	0.4		●	●
	CCGW 060202 NL05-CB	0.1-0.3	0.05-1.0	2.50	6.35	2.38	0.2		●	●
	CCGW 060204 NL05-CB	0.1-0.3	0.05-1.0	2.50	6.35	2.38	0.4		●	●
	CCGW 09T302 NL00-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.2		●	●
	CCGW 09T302 NL05-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.2		●	●
	CCGW 09T302 NL10-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.4		●	●
	CCGW 09T304 NL05-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.4		●	●
	CCGW 09T304 NL10-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.4		●	●
	CCGW 09T308 NL05-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.8	●	●	●
	CCGW 09T308 NL10-CB	0.1-0.3	0.05-1.0	2.50	9.53	3.97	0.8	●	●	●

Marked: ● Stock available

Positive 80° (C)

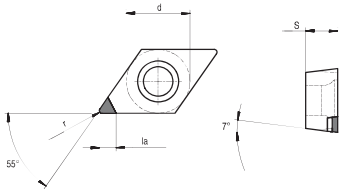


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	**CCGW 09T304 LL05**	0.1-0.3	0.05-1.0	9.25	9.53	3.97	0.4		●	●
	CCGW 09T308 LL05	0.1-0.3	0.05-1.0	9.25	9.53	3.97	0.8		●	●
	CCGW 09T304 LL10	0.1-0.3	0.05-1.0	9.25	9.53	3.97	0.4		●	●
	CCGW 09T308 LL10	0.1-0.3	0.05-1.0	9.25	9.53	3.97	0.8		●	●

Marked: ● Stock available

P80 P73

Positive 55° （D）PCD Inserts

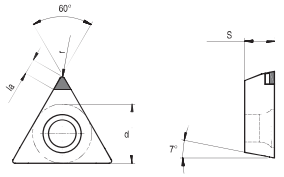


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	DCGW 070202 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	2.38	0.2		●	●
	DCGW 070204 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	2.38	0.4		●	●
	DCGW 070208 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	2.38	0.8	●	●	●
	DCGW 070208 NL10-CB	0.1-0.3	0.05-1.0	2.5	6.35	2.38	0.8	●	●	●
	DCGW 11T302 NL00-CB	0.1-0.3	0.05-1.0	2.5	9.53	3.97	0.2		●	●
	DCGW 11T302 NL05-CB	0.1-0.3	0.05-1.0	2.5	9.53	3.97	0.2		●	●
	DCGW 11T304 NL05-CB	0.1-0.3	0.05-1.0	2.5	9.53	3.97	0.4		●	●
	DCGW 11T308 NL10-CB	0.1-0.3	0.05-1.0	2.5	9.53	3.97	0.8	●	●	●

P80 P73

Marked: ● Stock available

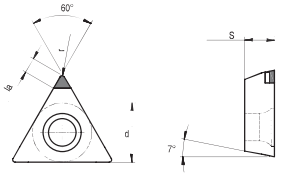
Positive 60° （T）PCD inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	TCGW 110302 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.2		●	●
	TCGW 110302 NL10-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.2		●	●
	TCGW 110304 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.4		●	●
	TCGW 110304 NL10-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.4		●	●
	TCGW 110308 NL05-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.8	●	●	●
	TCGW 110308 NL10-CB	0.1-0.3	0.05-1.0	2.5	6.35	3.18	0.8	●	●	●
	TCGW 160404 NL05-CB	0.1-0.3	0.05-1.0	2.5	9.53	4.76	0.4		●	●
	TCGW 160404 NL10-CB	0.1-0.3	0.05-1.0	2.5	9.53	4.76	0.4		●	●
	TCGW 160408 NL05-CB	0.1-0.3	0.05-1.0	2.5	9.53	4.76	0.8	●	●	●
	TCGW 160408 NL10-CB	0.1-0.3	0.05-1.0	2.5	9.53	4.76	0.8	●	●	●

Marked: ● Stock available

Positive 60° （T）

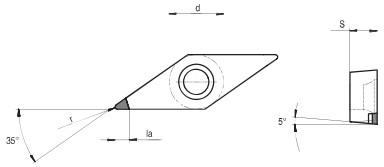


Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	TPGW 080202 NL00-CB	0.1-0.3	0.05-1.0	2.5	4.76	2.38	0.2		●	●
	TPGW 080202 NL05-CB	0.1-0.3	0.05-1.0	2.5	4.76	2.38	0.2		●	●
	TPGW 080204 NL05-CB	0.1-0.3	0.05-1.0	2.5	4.76	2.38	0.4		●	●
	TPGW 080204 NL10-CB	0.1-0.3	0.05-1.0	2.5	4.76	2.38	0.4		●	●

Marked: ● Stock available

P80 P73

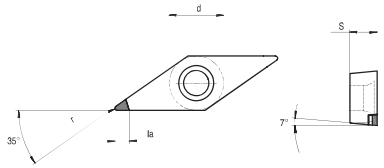
Positive 35° （V）PCD inserts



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	**VBGW 110302 NL05-CB**	0.1-0.3	0.05-1.0	3.0	6.35	3.18	0.2		●	●
	VBGW 110304 NL05-CB	0.1-0.3	0.05-1.0	3.0	6.35	3.18	0.4		●	●
	VBGW 160402 NL05-CB	0.1-0.3	0.05-1.0	3.0	9.53	4.76	0.2		●	●
	VBGW 160404 NL05-CB	0.1-0.3	0.05-1.0	3.0	9.53	4.76	0.4		●	●

Marked: ● Stock available

Positive 35° （V）



Inserts	Designation	Recommended parameters		Dimensions (mm)				Grades		
		Feed (mm/rev)	ap (mm)	la	d	s	r	Uncoated		
								PD01	PD10	PD20
	**VCGW 110302 NL05-CB**	0.1-0.3	0.05-1.0	3.0	6.35	3.18	0.2		●	●
	VCGW 110304 NL05-CB	0.1-0.3	0.05-1.0	3.0	6.35	3.18	0.4		●	●
	VCGW 160402 NL05-CB	0.1-0.3	0.05-1.0	3.0	9.53	4.76	0.2		●	●
	VCGW 160404 NL05-CB	0.1-0.3	0.05-1.0	3.0	9.53	4.76	0.4		●	●

P80 P73

Marked: ● Stock available