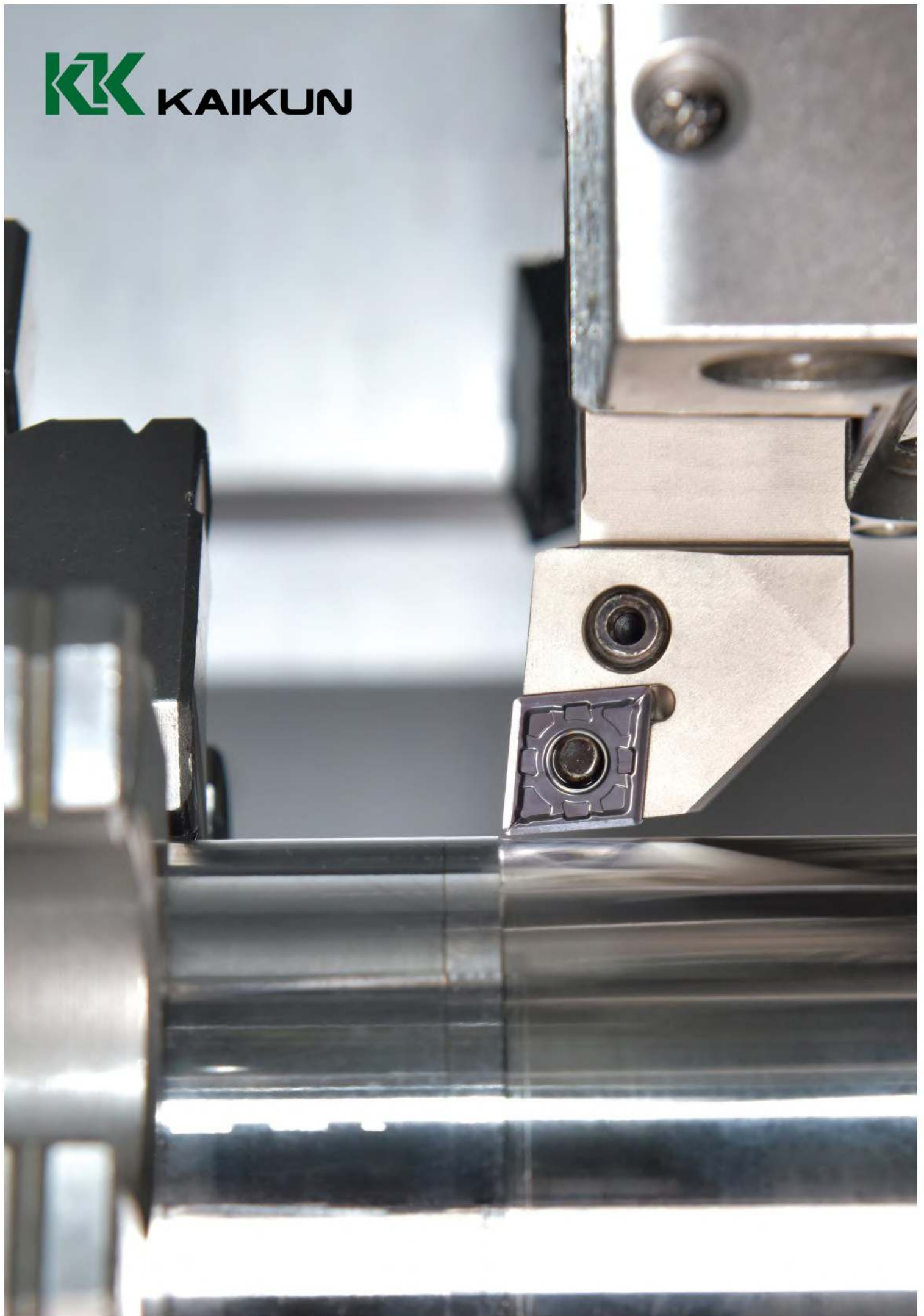




Cutting Tools Catalog 2026

Turning Tools





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ISO Turning

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ISO Turning Insert Denomination System

C
1

N
2

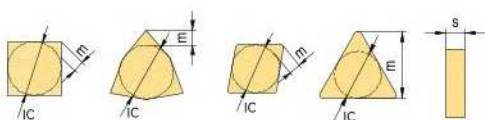
M
3

G
4

1- Shape/Code				
A	B	C	D	E
H	K	L	M	O
P	R	S	T	V
W	Z	Others		

2- Clearance Angle			
A	B	C	D
E	F	G	N
P	O	Others clearance angle	

3- Tolerance



Class	Unit	In.Circle dimension IC	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

Shape: C, E, H, M, O, P, S, T, R, W				
IC	IC		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
6.00	± 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
8.00	± 0,05	± 0,08	± 0,08	± 0,13
9.525	± 0,05	± 0,08	± 0,08	± 0,13
10.00	± 0,05	± 0,08	± 0,08	± 0,13
12.00	± 0,08	± 0,13	± 0,13	± 0,20
12.70	± 0,08	± 0,13	± 0,13	± 0,20
15.875	± 0,10	± 0,18	± 0,15	± 0,27
16.00	± 0,10	± 0,18	± 0,15	± 0,27
19.05	± 0,10	± 0,18	± 0,15	± 0,27
20.00	± 0,10	± 0,18	± 0,15	± 0,27
25.00	± 0,13	± 0,25	± 0,18	± 0,38
25.40	± 0,13	± 0,25	± 0,18	± 0,38
31.75	± 0,15	± 0,25	± 0,20	± 0,38
32.00	± 0,15	± 0,25	± 0,20	± 0,38

M&N class	D shape		V shape	
IC	ic	m	ic	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
12.70	± 0,08	± 0,15	± 0,08	± 0,20
15.875	± 0,10	± 0,18	± 0,10	± 0,27
19.05	± 0,10	± 0,18	± 0,10	± 0,27

4- Type of Insert				
A	B	C	F	G
H	J	M	N	Q
R	T	U	W	Z
				Special

12

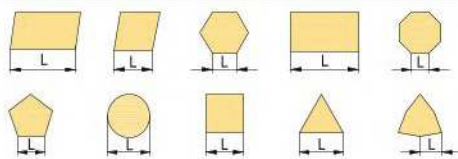
5

04

6

5- Cutting Edge Length

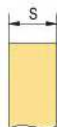
In Circle Dimension (mm)	Insert shape							
	C	D	R	S	T	V	W	K
3.97					06		02	
5.00			05					
5.56					09			
6.00		06						
6.35	06	07			11	11	04	
8.00			08					
9.525	09	11	09	09	16	16	06	16
10.00			10					
12.00			12					
12.70	12	15	12	12	22	22	08	
15.875	16		15	15	27			
16.00			16					
19.05	19		19	19	33			
20.00			20					
25.00			25					
25.40	25		25	25				
31.75			31					
32.00			32					



6- Thickness

Round down plus zero or T

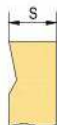
A, B,
C, N,
O, W



Example:

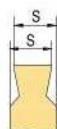
01 = 1.59
T1 = 1.98
02 = 2.38

H, M,
R, T



03 = 3.18
T3 = 3.97
04 = 4.76
05 = 5.56
06 = 6.35
07 = 7.94

F, G,
J, U



09 = 9.525
11 = 11.11
12 = 12.70
14 = 14.29
15 = 15.88

08

7

E

8

-

-

KC4

9

7- Nose Radius

Corner radius

Example:

M0 = Round insert (metric)

00 = Sharp

20 = 2.00

003 = 0.03

24 = 2.40

005 = 0.05

28 = 2.80

01 = 0.10

32 = 3.20

02 = 0.20

40 = 4.00

04 = 0.40

48 = 4.80

08 = 0.80

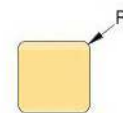
56 = 5.60

12 = 1.20

64 = 6.40

16 = 1.60

X = Others



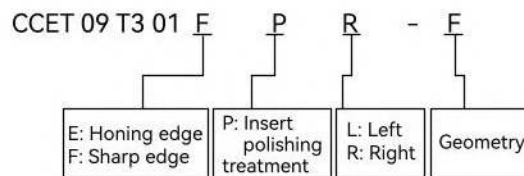
8- Edge Preparation

Code	Edge shape	Description
F		Sharp cutting edge
E		Honed cutting edge
T		T-land
S		T-land+Honed cutting edge

9- Chip Breaker Description

Refer to page: P28-43

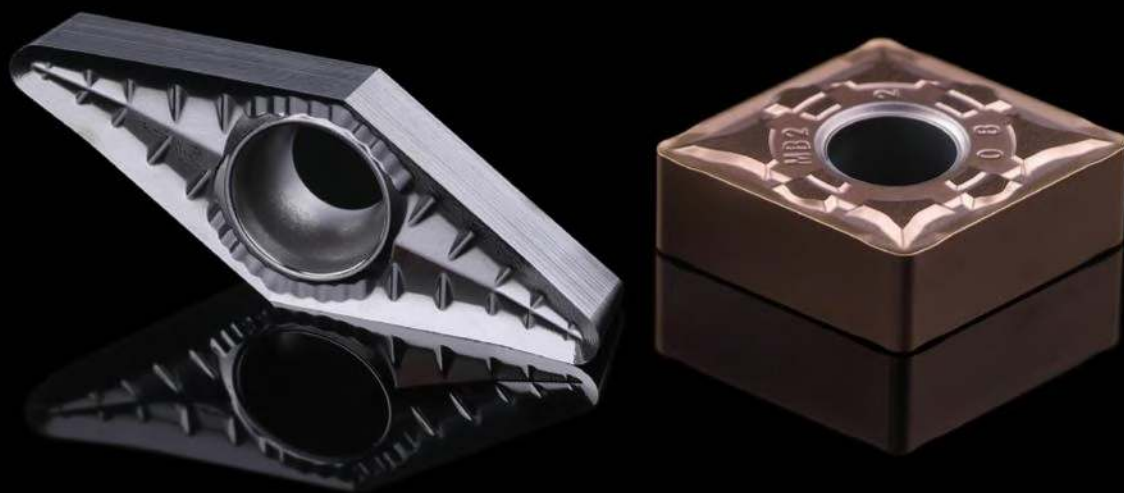
Ground Positive Insert Example





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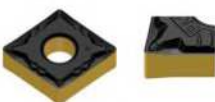
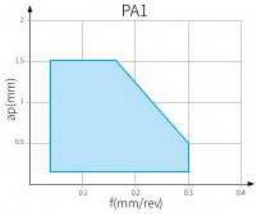
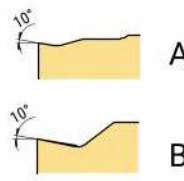
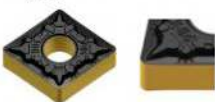
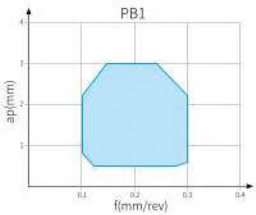
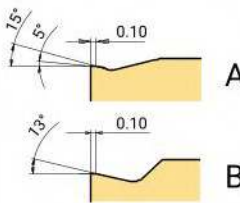
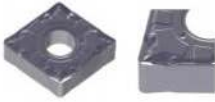
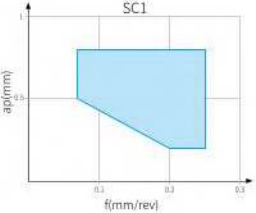
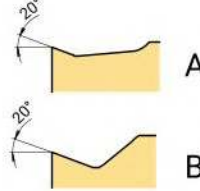
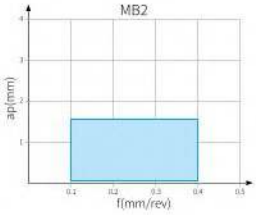
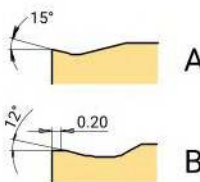
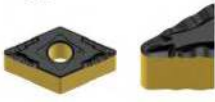
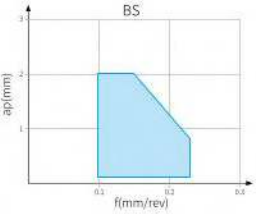
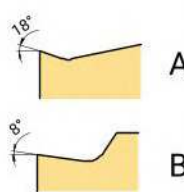
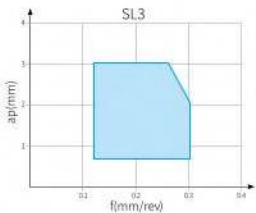
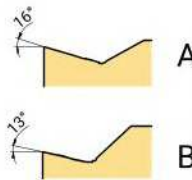
Turning Insert

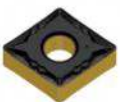
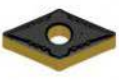
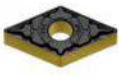
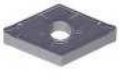
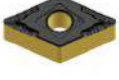
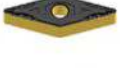
Turning And Grooving Grade Application Guide

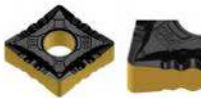
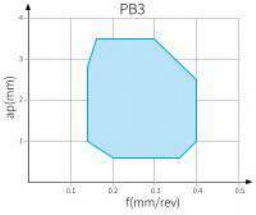
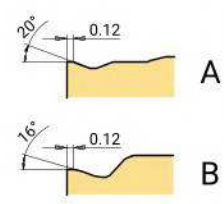
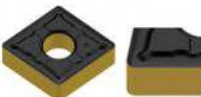
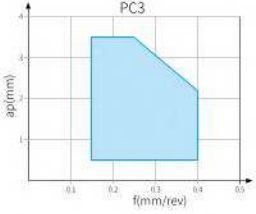
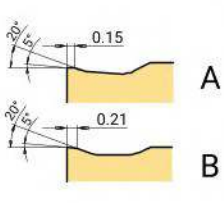
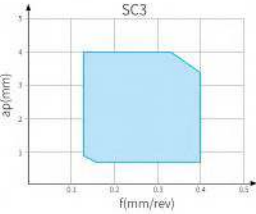
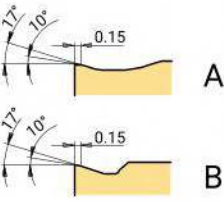
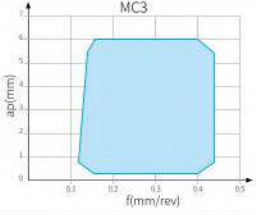
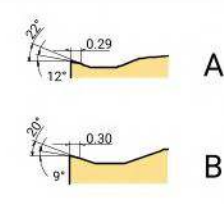
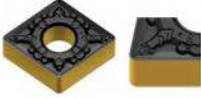
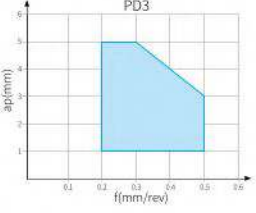
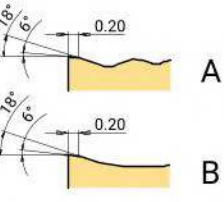
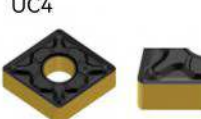
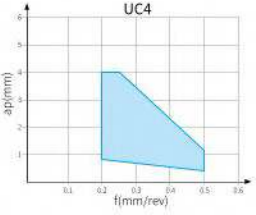
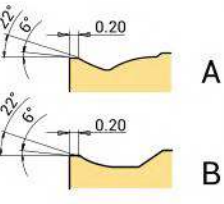
Material Group	ISO	Turning										Grooving/Parting off			ISO		
		Coated						Cermet	Uncoated	PCBN	PCD	Coated		Uncoated			
		CVD			PVD							CVD	PVD				
P	Non-alloy steels/ Alloyed steels	P01	AC052P														P01
	P10		AC152P					AT202	AT210A					AC230P		AP301U	P10
	P20			AC252P													P20
	P30				AC350P	AC200M										AP330M	P30
	P40							AP200U									P40
	P50																P50
M	Stainless steels	M01		AC100M													M01
	M10															AP130S	M10
	M20			AC200M											AP301U		M20
	M30						AP010S	AP200U	AP301M							AP330M	M30
	M40																M40
	M50																M50
K	Cast iron	K01		AC100K													K01
	K10			AC102K					AT202	AT210A				PB90			K10
	K20				AC202K												K20
	K30																K30
	K40																K40
	K50																K50
N	Aluminum/ Aluminum alloys	N01															N01
	N10																N10
	N20								AW100K				PD20				N20
	N30																N30
S	Heat resistant alloys	S01															S01
	S10			AC100M													S10
	S20				AC200M											AP130S	S20
	S30							AP010S	AP100S								S30
	S40								AP301M								S40
H	Hardened steels/ Chilled cast iron	H01															H01
	H10										PB30						H10
	H20											PB60					H20
	H30																H30

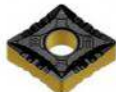
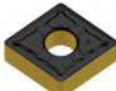
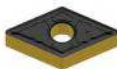
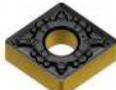
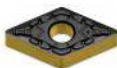
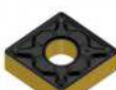
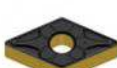
Overview Of Turning Insert Geometries

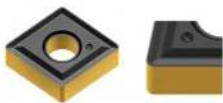
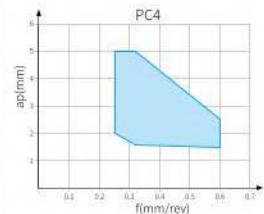
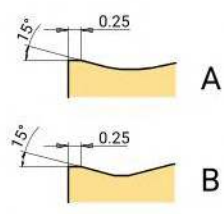
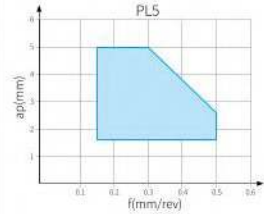
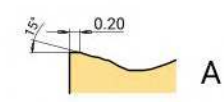
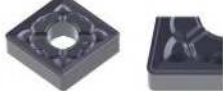
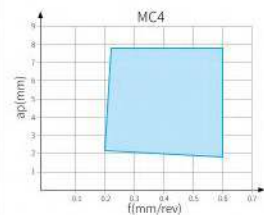
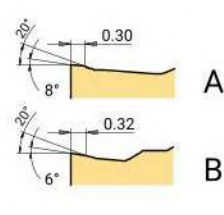
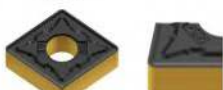
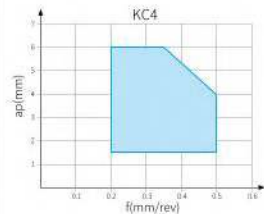
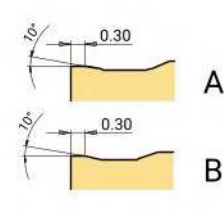
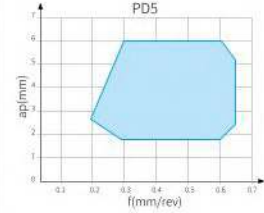
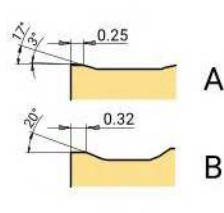
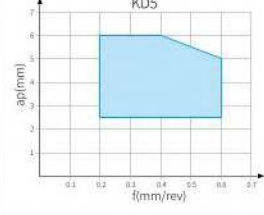
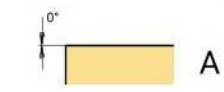
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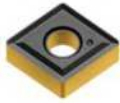
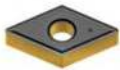
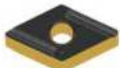
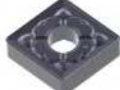
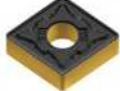
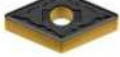
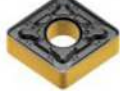
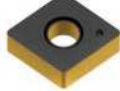
Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Finishing	PA1 	Steel finishing machining chip breaker Chip breaker structure design to break chips at varied depths of cut, featuring good sharpness and smooth edge inclination design, which can effectively improve the chip flow and reduce cutting force.		
	PB1 	1st choice for steel finish to semi-finishing turning Light cutting chip breaker, low cutting force, suitable for slender shaft, thin walled and poorly clamped parts. Overall good cutting performance.		
	SC1 	1st choice for heat resistant alloy finish turning Excellent performance at low depth of cut.		
	MB2 	1st choice for stainless steel finish turning High positive rake angle reduced cutting force and built-up edge, can obtain much better surface quality. Very good chip breaking at low feed and cutting depth.		
Profiling	BS 	Recommended for profile turning Suitable for profiling with changing depth of cut. Smooth chip evacuation		
Light cutting	SL3 	Recommended for heat resistant alloy light turning. Suitable for heat resistant alloy, Ti-alloy. Sharp and wavy cutting edge can get good surface finish and good chip breaking results.		

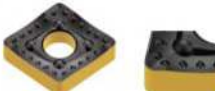
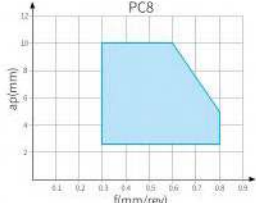
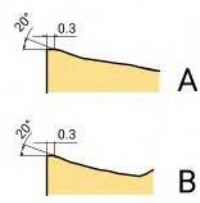
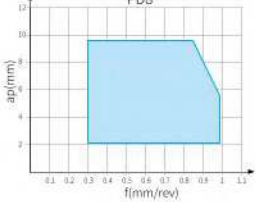
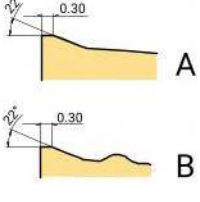
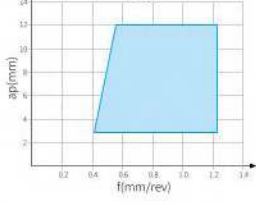
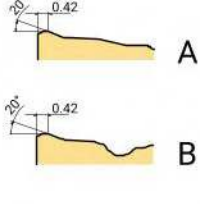
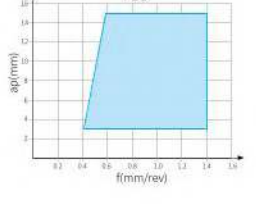
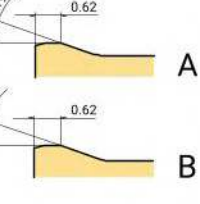
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CNMG-MB2  P35	DNMG-MB2  P39	SNMG-MB2  P43	TNMG-MB2  P47	VNMG-MB2  P51	WNMG-MB2  P53	
	DNMG-BS  P39			VNMG-BS  P51		
CNMG-SL3  P35	DNMG-SL3  P39	SNMG-SL3  P43	TNMG-SL3  P47	VNMG-SL3  P51	WNMG-SL3  P54	

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Semi-finishing	PB3 	1st choice for steel semi finish turning The positive rake angle combined with small land guaranteed edge strength and sharpness, reduced the cutting force. The wavy side edge design has a good chip breaking result in small leading angle turning on the shoulder, and in profile turning at different cutting depths.		
	PC3 	Alternative chipbreaker for steel semi-finish turning Unique geometry design offers wider chip breaking range. Double rake angle makes the cutting smoothly. Enhanced insert tip reduced crater wear.		
	SC3 	1st choice for heat resistant alloy medium turning Used in heat resistant alloy and titanium alloy medium turning. Large rake angle + small land width design, easy cutting, is also suitable for soft steel turning.		
	MC3 	1st choice for stainless steel medium turning Sharp cutting edge, low cutting force, wide chip breaking range and good chip removal ability.		
Medium	PD3 	1st choice for steel medium turning It has a strong chip control ability at low feed and cutting depth, and reduces crater wear. The chip breaking is also very good at high feed and cutting depth due to the geometry design. Double rake angle design makes sharp cutting edge and reduces cutting force.		
	UC4 	1st choice for carbon steel & alloyed steel (medium-cutting conditions) Alternative chip breaker for cast iron finishing & light-duty machining Wide applicability across P, M, K-class workpiece materials for general-purpose medium-duty machining. Positive land angle geometry for reduced cutting forces and enhanced process stability. Features an optimized edge preparation technique to balance cutting-edge sharpness and strength.		

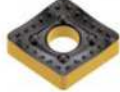
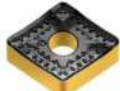
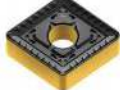
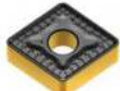
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CNMG-UC4  P36	DNMG-UC4  P41	SNMG-UC4  P44	TNMG-UC4  P48	VNMG-UC4  P52	WNMG-UC4  P55	

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Medium	PC4 	1st choice for cast iron medium turning Alternative chipbreaker for carbon steel and alloy steel medium turning Flat T-land guarantee the strength of cutting edge. This multi-purpose geometry can be used in universal applications.		
	PL5 	1st choice for steel slender bar turning Open chip breaker leads to smooth cutting with low cutting force, which is suitable for slender shaft turning.		
Roughing	MC4 	Alternative chipbreaker for stainless steel and heat resistant alloy rough turning Large chip breaker design, smooth chip evacuation, good chip breaking, with high metal removal rate.		
	KC4 	1st choice for cast iron turning It has strong cutting edge, reliable and stable performance.		
	PD5 	Alternative chipbreaker for steel rough turning A strong cutting edge. Double rake angle design effectively reduces the cutting force, can still have good chip breaking at small cutting depth.		
	KD5 	1st choice for cast iron rough turning High cutting edge strength, suitable for interrupt cutting and unstable cutting.		

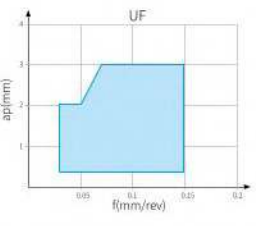
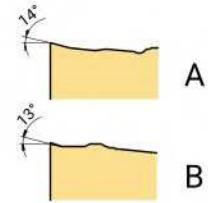
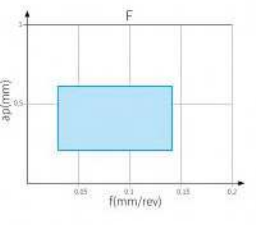
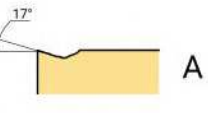
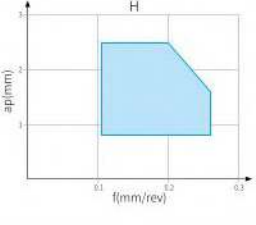
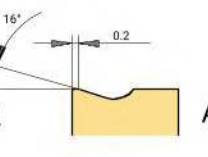
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CNMG-KC4  P37	DNMG-KC4  P42	SNMG-KC4  P45	TNMG-KC4  P49	VNMG-KC4  P52	WNMG-KC4  P55	
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CNMA-KD5  P38	DNMA-KD5  P42	SNMA-KD5  P45	TNMA-KD5  P49		WNMA-KD5  P55	

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Heavy roughing	PC8 	Light cutting geometry for heavy turning Positive rake angle and curved cutting edge design, low cutting force.		
	PD8 	Heavy turning geometry for soft steel and stainless steel The geometry design ensures low cutting force. Suitable for low power machine tools. Applied in steel, stainless steel and cast iron heavy turning.		
	PC9 	1st choice for steel heavy rough turning Wavy geometry is good for chip breaking. The geometry has a big space for chips, which is suitable for high metal removal rate.		
	PD9 	Alternative chipbreaker for steel heavy rough turning High edge strength is suitable for large cutting depth and high feed turning. High machining reliability.		

Turning ISO Turning Insert

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CNMM-PC8  P38						
CNMM-PD8  P38		SNMM-PD8  P46	TNMM-PD8  P50			
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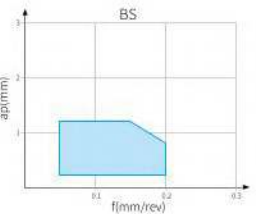
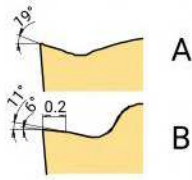
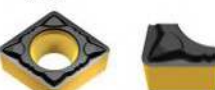
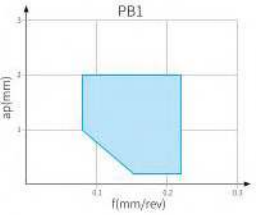
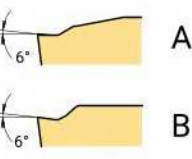
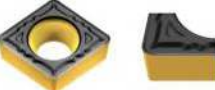
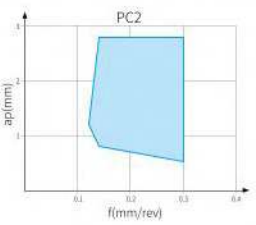
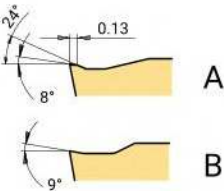
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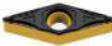
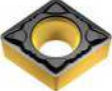
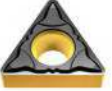
Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Finishing	UF 	Suitable for precision turning Low cutting forces, good chip breaking, suitable for finish turning.		
	F 	Finish turning Low cutting force, good chip control. The sharp edge produces a good surface finish.		
Semi-finingishing-Rough machining	H 	Light turning Excellent chip control at low to medium feed rates. Strong edge strength.		

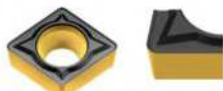
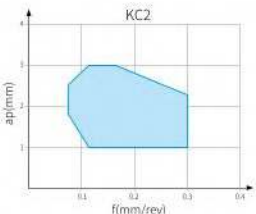
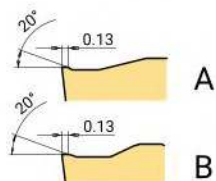
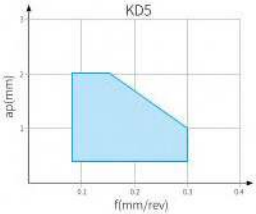
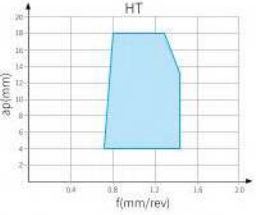
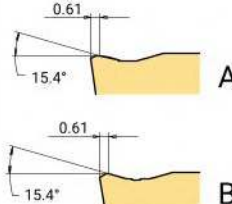
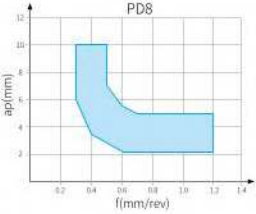
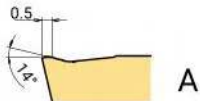
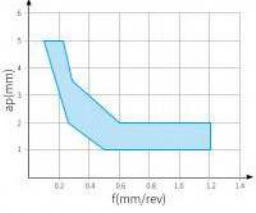
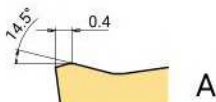
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Overview Of Turning Insert Geometries

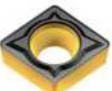
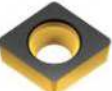
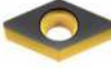
Positive Pressed Insert

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Profiling	BS 	Finish turning Profile turning or turning with changing depth of cut, smooth chip evacuation.		
Finishing	PB1 	1st choice for steel finish turning Positive rake angle reduces cutting force and built-up edge, and obtains better surface finish and longer tool life. Also can be used in stainless steel turning.		
Semi-finishing	PC2 	1st choice for steel and stainless steel semi-finish turning Sharp geometry design ensures low cutting force, less built-up edge and excellent chip control.		

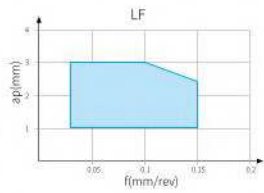
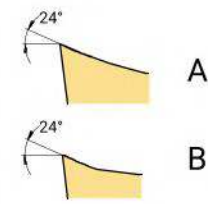
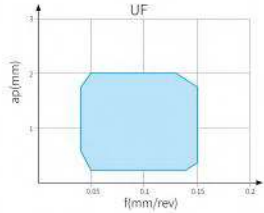
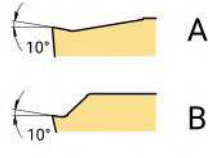
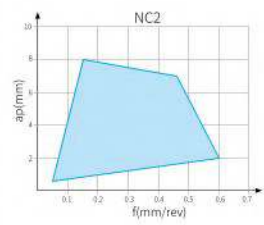
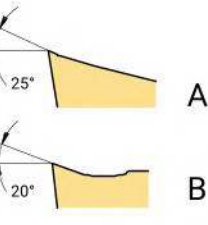
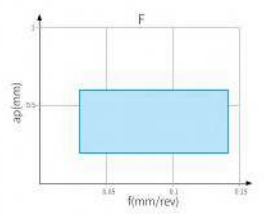
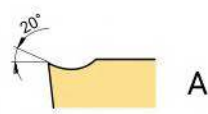
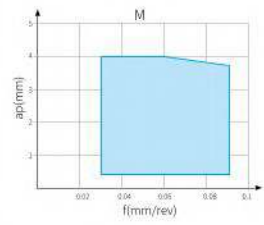
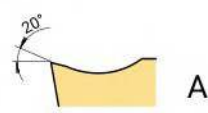
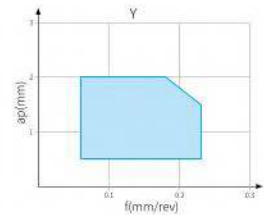
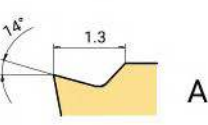
80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
				VBMT-BS  P71		
CCMT-PB1 CPMT-PB1  P58, 61	DCMT-PB1  P63	SCMT-PB1  P65	TCMT-PB1 TPMT-PB1  P67, 69	VBMT-PB1 VCMT-PB1  P71, 74		
CCMT-PC2 CPMT-PC2  P58, 61	DCMT-PC2  P63	SCMT-PC2  P69	TCMT-PC2 TPMT-PC2  P67, 69	VBMT-PC2 VCMT-PC2  P71, 74		

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Medium	KC2 	General purpose geometry for steel, stainless steel and cast iron turning Suitable for medium and rough turning. Simple and durable chip breaker design, very good versatility and wide application range.		
Roughing	KD5 	Geometry for cast iron rough turning Suitable for unstable machining due to its strong cutting edge. Reduced chipping.		
	HT 	Geometry for steel turning with large cutting depth Open chip breaker is suitable for large cutting depth with smooth chip evacuation. Good cost efficiency.		
Semi-finishing	PD8 	Geometry for carbon steel and alloy steel semi-finishing turning A wide chipbreaker avoid chip jam at large cutting depth. Chip control can be also good at small cutting depth.		
Medium	No code 	Alternative chipbreaker for cast iron and alloy steel medium turning Negative land and large rake angle design ensure cutting edge strength and sharpness.		

Turning ISO Turning Insert

80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
CCMT-KC2  P59	DCMT-KC2  P63	SCMT-KC2  P65	TCMT-KC2  P68	VBMT-KC2  P72		
CCMW-KD5  P59	DCMW-KD5  P63	SCMW-KD5  P65	TCMW-KD5  P68			
		SCMT-HT  P65				
						RCMX-PD8  P77
						RCMX  P77

正型磨制 Inserts

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Finishing	LF  	Finish turning Sharp cutting edge, low cutting force, suitable for Swiss-type automatic lathe with 2 direction machining.		
	UF  	1st choice for heat resistant alloy turning Peripheral ground finish turning inserts. High repeatability on insert positioning. Sharp cutting edge can achieve good machining tolerance.		
Semi-finishing	NC2  	Choice for aluminium alloy turning Very positive rake angle is designed for non-ferrous metal finish and semi-finish turning. It reduces the cutting force and make smooth chip evacuation. The polished rake surface, with reduced friction and built-up edge.		
Finishing	F  	Choice for finish turning Excellent chip control at low feed rate. Very low cutting force.		
Low feed	M  	Suitable for medium turning in automatic lathes Excellent chip control at low to medium feed rate. Reliable machining. large rake angle avoid work hardening.		
Semi-finishing	Y  	Choice for semi-finish to rough turning in automatic lathe The strong edge can be used in rough turning. Good chip control for low to medium feed rate		

80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
CCGT-LF  P57	DCGT-LF  P62		TCGT-LF  P66	VBGT-LF VCGT-LF VPGT-LF  P71、74、75		
CCGT-UF  P57	DCGT-UF  P62		TCGT-UF  P66、67	VBGT-UF VCGT-UF VPGT-UF  P71、74、75		
CCGT-NC2  P57	DCGT-NC2  P62	SCGT-NC2  P65	TCGT-NC2  P67	VCGT-NC2 VPGT-NC2  P75		RCGT-NC2  P77
CCET-F  P59	DCET-F  P63、64		TBET-F TCET-F TPEH-F  P66、68、70	VBET-F VCET-F VPET-F  P72、74、75	WBET-F  P76	
CCET-M  P60	DCET-M  P64		TCET-M  P68	VBET-M VPET-M  P73、75		
				VBET-Y  P74		

Turning Grade Description

Basic Grades for Turning



Steel, cast steel, ferrite/martensite stainless steel and malleable cast iron

Basic grade

AC052P P05(P01-P15)

CVD coated grade, has good crater resistance and chipping resistance, which is recommended for high productivity medium and rough turning in stable condition, can keep edge reliability in dry or wet machining with high temperature.

AC152P P15(P05-P25)

CVD coated grade, can be used in finish to rough turning on steel and cast steel, and is recommended in continuous and light interrupted cutting where it can keep high metal removal rate.

AC252P P25(P15-P35)

CVD coated grade, 1st choice for steel turning, used in finish to rough turning on steel and cast steel. It's recommended for continuous and interrupted machining.

AC350P P35(P30-P45)

CVD coated grade, can be used in rough turning on steel and cast steel under poor conditions. Reliable cutting edge made this grade good for interrupted machining with high metal removal rate.

AT210A P15(P10-P20)

Coated cermet grade, the combination of ultra-fine crystalline hard phase and composite bonding phase to realize the balance of wear resistance and chipping resistance; suitable for continuous medium to fine turning processing of steel materials, and offer high-quality machining surface.

AT202 P15(P10-P20)

Uncoated cermet grade. It has excellent built-up edge resistance and chipping resistance which can be used in finish turning with good surface quality or low cutting force requests.

Supplemental grade

AP200U P25(P15-P35)

PVD coated grade, recommended for finish turning on low carbon steel with low cutting speed or low feed.



Austenitic stainless steel, cast steel, manganese steel, alloyed cast iron, malleable cast iron and free cutting iron

Basic grade

AC100M M15(M05-M20)

CVD coated grade. It's recommended for finish machining and light rough machining. It's suitable for machining at medium to high cutting speed due to its heat resistance feature of wear resistant coating.

AC200M M25(M15-M30)

CVD coated grade, optimised for semi-finish to rough turning, can be used in interrupted machining in which it can keep edge reliability due to good thermal shock stability and mechanical shock resistance.

AP301M M25(M15-M35)

PVD coated grade. Mainly used in machining steel and stainless steel small parts. It has excellent built-up edge resistance, good machining stability, can obtain good surface quality, and achieve longer tool life.

Supplemental grade

AP010S (M01-M15)

PVD coated grade, recommended for finish turning due to its high hardness and resistance to plastic deformation.

AP200U M25(M15-M35)

PVD coated grade, used in complementary stainless steel applications at low to medium cutting speeds and also in interrupted turning due to excellent thermal stability, outstanding performance in machining when sharp edge and edge toughness or good surface quality are requested.



Cast iron, chilled cast iron and short chip malleable cast iron

Basic grade

AC100K K05(K01-K15)

CVD coated grade, has thick and smooth wear resistant coating and very hard substrate, recommended for grey cast iron high speed turning.

AC102K K10(K05-K20)

CVD coated grade, has thick and smooth wear resistant coating and hard substrate, recommended for nodular cast iron high speed turning.

AC202K K15(K10-K30)

1st choice for cast iron turning. It can deal with interrupted cutting due to its high wear-resistant CVD coating, used in finish to rough turning on cast iron at low to medium cutting speed.

Supplemental grade

PB90 K10(K01-K20)

CBN grade. Suitable for grey cast iron and chilled cast iron interrupted finish turning due to its good edge strength and wear resistance.

AT210A K15(K10-K20)

Coated cermet grade. The combination of ultra-fine crystalline hard phase and composite bonding phase to provide a balance of abrasion resistance and chipping resistance; suitable for continuous and medium turning of cast iron materials; offer high-quality machining surfaces.

AT202 K15(K10-K20)

Uncoated cermet grade. It has excellent built-up edge resistance and good plastic deformation resistance. It can be used in nodular cast iron finish turning when surface quality, small tolerance or low cutting force are requested.



Non-ferrous metals

Basic grade

AW100K N15(N05-N25)

Uncoated grade. It has both excellent wear resistance and sharp edge. Used in Al alloy rough to finish machining.

PD20 N10 (N01-N20)

PCD grade, used in non-ferrous material and non-metal material machining which can have longer tool life, completely clean cutting and good surface quality.



Heat resistant alloys

Basic grade

AP010S S05(S01-S15)

With extremely high hardness, structural and chemical stability, it can not only meet the needs of high cutting speed finishing stable working conditions, but also suitable for high toughness of medium or semi-finishing and other general working conditions.

AP100S S10(S05-S20)

1st choice for heat resistant alloy. PVD coated grade has high hardness and plastic deformation resistance, can keep high performance and good wear resistance.

AP301M S25(S15-S35)

PVD coated grade. Used in low cutting speed or light interrupted cutting. Suitable for semi-roughing or continuous machining for a short time due to its good notch wear resistance and anti-heat shock capability.

Supplemental grade

AC100M S15(S05-S20)

CVD coated grade, suitable for heat resistant alloy continuous high speed machining.

AC200M S25(S15-S35)

CVD coated grade, suitable for heat resistant alloy general machining.



Hardened materials

Basic grade

PB30 H10(H05-H15)

CBN grade with low CBN content, is used in hardened steel continuous machining at high speed and light interrupted machining.

PB60 H15(H10-H25)

1st choice of CBN grade medium CBN content for hardened steel interrupted machining and continuous machining at medium speed.

Cutting Data Recommendation-Negative Insert

Materials												
ISO	Workpiece Materials				Brinell Hardness (HB)	Tensile strength (N/mm ²)						
							AT202			AT210A		
							f (mm/rev)			f (mm/rev)		
							0.10	0.30	0.50	0.10	0.30	0.50
P	Unalloyed steel	C ≤ 0.25%		Annealed	125	428	200	100	70	310	200	160
		0.25 < C ≤ 0.55%		Annealed	190	639	200	100	70	310	200	160
		0.25 < C ≤ 0.55%		Heat-treated	210	708	200	80	50	310	180	140
		C > 0.55%		Annealed	190	639	200	80	50	310	180	140
		C > 0.55%		Heat-treated	300	1013	200	80	50	310	180	140
		Free cutting steel(short chip)		Annealed	220	745	200	80	50	310	180	140
	Low-alloyed steel	Annealed			175	591	180	80	50	290	180	140
		Heat-treated			300	1013	180	80	50	290	180	140
		Heat-treated			380	1282	180	80	50	290	180	140
		Heat-treated			430	1477	180	80	50	290	180	140
	High-alloyed steel and high-alloyed tool steel	Annealed			200	675	160	80	50	270	180	140
		Hardened and tempered			300	1013	160	80	50	270	180	140
		Hardened and tempered			400	1361	150	80	50	270	180	140
	Stainless steel	Ferritic/Martensite, Annealed			200	675						
		Martensite, Heat-treated			330	1114						
M	Stainless steel	Austenitic, hardened			200	675						
		Austenitic, precipitation hardened stainless steel(PH stainless steel)			300	1013						
		Austenitic, ferritic, duplex			230	778						
K	Malleable cast iron	Ferritic			200	400						
		Pearlitic			260	700						
	Grey cast iron	Low tensile strength			180	200						
		High tensile strength/Austenitic			245	350						
	Nodular cast iron	Ferritic			155	400						
		Pearlitic			265	700						
N	GGV(CGI)				230	400						
	Wrought aluminum alloy	Non-aging alloy			30	-						
		Aged alloy			100	340						
	Cast aluminum alloy	≤ 12% Si, non-aging alloy			75	260						
		≤ 12% Si, aged alloy			90	310						
		> 12% Si, non-aging alloy			130	450						
	Magnesium alloy				70	250						
	Copper and copper alloy (bronze/brass)	Unalloyed, electrolytic copper			100	340						
		Brass, bronze, red brass			90	310						
		Cu alloy, short chip			110	380						
		High tensile, Ampco alloy			300	1010						
S	Heat-resistant alloy	Fe-based	Annealed		200	680						
					280	940						
		Ni or Co based	Annealed		250	840						
			Aged		350	1180						
			Cast		320	1080						
	Titanium alloy	Pure Titanium			200	680						
		α and β alloy, aged			375	1260						
		β alloy			410	1400						
	Tungsten alloy				300	1010						
H	Molybdenum alloy				300	1010						
	Hardened steel	Hardened and tempered			50HRC							
		Hardened and tempered			55HRC							
		Hardened and tempered			60HRC							
	Chilled cast iron				55HRC							

* The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant (f should be adjust according to insert radius)

Cutting Data Recommendation-Negative Insert

Materials												
ISO	Workpiece Materials				Brinell Hardness (HB)	Tensile strength (N/mm ²)	AP200U			AP301M		
							f (mm/rev)			f (mm/rev)		
							0.10	0.30	0.50	0.10	0.30	0.50
P	Unalloyed steel	C ≤ 0.25%		Annealed	125	428	220	210				
		0.25 < C ≤ 0.55%		Annealed	190	639	170	150				
		0.25 < C ≤ 0.55%		Heat-treated	210	708	140	120				
		C > 0.55%		Annealed	190	639	130	120				
		C > 0.55%		Heat-treated	300	1013						
		Free cutting steel(short chip)		Annealed	220	745	190	170				
	Low-alloyed steel	Annealed			175	591	130	110				
		Heat-treated			300	1013						
		Heat-treated			380	1282						
		Heat-treated			430	1477						
	High-alloyed steel and high-alloyed tool steel	Annealed			200	675	120	80				
		Hardened and tempered			300	1013						
		Hardened and tempered			400	1361						
		Stainless steel	Ferritic/Martensite, Annealed			200	675	145	130	90		
	Martensite, Heat-treated			330	1114	105	80	70				
M	Stainless steel	Austenitic,hardened			200	675	180	120	80	180	120	80
		Austenitic,precipitation hardened stainless steel(PH stainless steel)			300	1013	110	90		110	90	
		Austenitic, ferritic, duplex			230	778	120	100	70	120	100	70
K	Malleable cast iron	Ferritic			200	400						
		Pearlitic			260	700						
	Grey cast iron	Low tensile strength			180	200						
		High tensile strength/Austenitic			245	350						
	Nodular cast iron	Ferritic			155	400						
		Pearlitic			265	700						
	GGV(CGI)				230	400						
N	Wrought aluminum alloy	Non-aging alloy			30	-						
		Aged alloy			100	340						
	Cast aluminum alloy	≤ 12% Si, non-aging alloy			75	260						
		≤ 12% Si, aged alloy			90	310						
		> 12% Si, non-aging alloy			130	450						
	Magnesium alloy				70	250						
	Copper and copper alloy (bronze/brass)	Unalloyed, electrolytic copper			100	340						
		Brass, bronze, red brass			90	310						
		Cu alloy, short chip			110	380						
High tensile, Ampco alloy			300	1010								
S	Heat-resistant alloy	Fe-based	Annealed	200	680				40	25		
			Aged	280	940				30	20		
		Ni or Co based	Annealed	250	840				30	25		
			Aged	350	1180				30	20		
			Cast	320	1080				30	20		
	Titanium alloy	Pure Titanium			200	680						
		α and β alloy, aged			375	1260						
		β alloy			410	1400						
	Tungsten alloy				300	1010						
	Molybdenum alloy				300	1010						
H	Hardened steel	Hardened and tempered			50HRC							
		Hardened and tempered			55HRC							
		Hardened and tempered			60HRC							
	Chilled cast iron				55HRC							

* The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant (f should be adjust according to insert radius)

Turning ISO Turning Insert

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Cutting Data Recommendation-Positive Insert

Materials												
ISO	Workpiece Materials			Brinell Hardness (HB)	Tensile strength (N/mm ²)	AT202			AT210A			
						f (mm/rev)			f (mm/rev)			
						0.10	0.30	0.50	0.10	0.30	0.50	
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	428	200	100	70	310	200	160	
		0.25 < C ≤ 0.55%	Annealed	190	639	200	100	70	310	200	160	
		0.25 < C ≤ 0.55%	Heat-treated	210	708	200	80	50	310	180	140	
		C > 0.55%	Annealed	190	639	200	80	50	310	180	140	
		C > 0.55%	Heat-treated	300	1013	200	80	50	310	180	140	
		Free cutting steel(short chip)	Annealed	220	745	200	80	50	310	180	140	
	Low-alloyed steel	Annealed		175	591	180	80	50	290	180	140	
		Heat-treated		300	1013	180	80	50	290	180	140	
		Heat-treated		380	1282	180	80	50	290	180	140	
		Heat-treated		430	1477	180	80	50	290	180	140	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	160	80	50	270	180	140	
		Hardened and tempered		300	1013	160	80	50	270	180	140	
		Hardened and tempered		400	1361	150	80	50	270	180	140	
	Stainless steel	Ferritic/Martensite, Annealed		200	675							
		Martensite, Heat-treated		330	1114							
M	Stainless steel	Austenitic,hardened		200	675							
		Austenitic,precipitation hardened stainless steel(PH stainless steel)		300	1013							
		Austenitic, ferritic, duplex		230	778							
K	Malleable cast iron	Ferritic		200	400							
		Pearlitic		260	700							
	Grey cast iron	Low tensile strength		180	200							
		High tensile strength/Austenitic		245	350							
	Nodular cast iron	Ferritic		155	400							
		Pearlitic		265	700							
	GGV(CGI)			230	400							
N	Wrought aluminum alloy	Non-aging alloy		30	-							
		Aged alloy		100	340							
	Cast aluminum alloy	≤ 12% Si, non-aging alloy		75	260							
		≤ 12% Si, aged alloy		90	310							
		> 12% Si, non-aging alloy		130	450							
	Magnesium alloy		70	250								
	Copper and copper alloy (bronze/brass)	Unalloyed, electrolytic copper		100	340							
		Brass, bronze, red brass		90	310							
Cu alloy, short chip		110	380									
High tensile, Ampco alloy		300	1010									
S	Heat-resistant alloy	Fe-based	Annealed	200	680							
			Aged	280	940							
		Ni or Co based	Annealed	250	840							
			Aged	350	1180							
			Cast	320	1080							
	Titanium alloy	Pure Titanium		200	680							
		α and β alloy, aged		375	1260							
		β alloy		410	1400							
	Tungsten alloy		300	1010								
Molybdenum alloy		300	1010									
H	Hardened steel	Hardened and tempered		50HRC								
		Hardened and tempered		55HRC								
		Hardened and tempered		60HRC								
	Chilled cast iron		Hardened and tempered		55HRC							

* The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant (f should be adjust according to insert radius)

Turning

ISO Turning Insert

Achteck turning grade																		
Initial value of cutting speed Vc(m/min)																		
	AC052P			AC152P			AC252P			AC350P			AC100M			AC200M		
	f (mm/rev)			f (mm/rev)			f (mm/rev)			f (mm/rev)			f (mm/rev)			f (mm/rev)		
	0.10	0.40	0.60	0.10	0.40	0.60	0.10	0.40	0.60	0.10	0.40	0.60	0.10	0.30	0.50	0.10	0.30	0.50
	600	430	310	465	400	330	360	310	260	230	150	120						
	540	385	275	360	330	260	290	250	190	180	115	100						
	380	260	180	270	240	220	200	180	160	130	115	85						
	520	365	255	330	300	290	250	220	210	150	100	85						
	360	225	160	210	180	170	160	130	120	115	65	55						
	580	400	280	440	400	380	320	290	275	210	135	105						
	590	390	265	330	310	300	260	240	220	190	155	130						
	510	330	230	180	170	160	135	120	100	125	80	65						
	320	210	155	120	100	90	100	85	65	90	65	45						
	265	165	120	80	70		65	55										
	425	275	195	320	290	280	270	240	220	170	140	75						
	280	180	140	200	170	150	170	140	120	100	80	60						
	200	120	105	80	70		65	66										
							190	170	150	120	100	90	200	170	140	180	150	120
							90	80	60	70	60	50	160	140	130	130	110	100
													230	180	140	190	150	110
													170	150		140	110	
													180	160	130	150	120	100
													80	60	40	70	50	30
													70	50	30	60	40	20
													70	50	35	60	40	25
													70	50	30	60	40	20
													70	50	30	60	40	20

Cutting Data Recommendation-Positive Insert

Materials												
ISO	Workpiece Materials			Brinell Hardness (HB)	Tensile strength (N/mm ²)	AP200U			AP301M			
						f (mm/rev)			f (mm/rev)			
						0.10	0.30	0.50	0.10	0.30	0.50	
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	428	210	200					
		0.25 < C ≤ 0.55%	Annealed	190	639	160	140					
		0.25 < C ≤ 0.55%	Heat-treated	210	708	140	120					
		C > 0.55%	Annealed	190	639	130	120					
		C > 0.55%	Heat-treated	300	1013							
		Free cutting steel(short chip)	Annealed	220	745	190	170					
	Low-alloyed steel	Annealed			175	591	130	110				
		Heat-treated			300	1013						
		Heat-treated			380	1282						
		Heat-treated			430	1477						
	High-alloyed steel and high-alloyed tool steel	Annealed			200	675	120	80				
		Hardened and tempered			300	1013						
		Hardened and tempered			400	1361						
	Stainless steel	Ferritic/Martensite, Annealed			200	675	135	120	90			
		Martensite, Heat-treated			330	1114	105	80	70			
M	Stainless steel	Austenitic,hardened			200	675	170	110	80	170	110	80
		Austenitic,precipitation hardened stainless steel(PH stainless steel)			300	1013	110	80		110	80	
		Austenitic, ferritic, duplex			230	778	110	90	70	110	90	70
K	Malleable cast iron	Ferritic			200	400						
		Pearlitic			260	700						
	Grey cast iron	Low tensile strength			180	200						
		High tensile strength/Austenitic			245	350						
	Nodular cast iron	Ferritic			155	400						
		Pearlitic			265	700						
	GGV(CGI)			230	400							
N	Wrought aluminum alloy	Non-aging alloy			30	-						
		Aged alloy			100	340						
	Cast aluminum alloy	≤ 12% Si, non-aging alloy			75	260						
		≤ 12% Si, aged alloy			90	310						
		> 12% Si, non-aging alloy			130	450						
	Magnesium alloy			70	250							
	Copper and copper alloy (bronze/brass)	Unalloyed, electrolytic copper			100	340						
		Brass, bronze, red brass			90	310						
Cu alloy, short chip			110	380								
High tensile, Ampco alloy			300	1010								
S	Heat-resistant alloy	Fe-based	Annealed	200	680				40	25		
			Aged	280	940				30	20		
		Ni or Co based	Annealed	250	840				30	25		
			Aged	350	1180				30	20		
			Cast	320	1080				30	20		
	Titanium alloy	Pure Titanium			200	680						
		α and β alloy, aged			375	1260				65	45	35
		β alloy			410	1400				35	35	30
	Tungsten alloy			300	1010							
Molybdenum alloy			300	1010								
H	Hardened steel	Hardened and tempered			50HRC							
		Hardened and tempered			55HRC							
		Hardened and tempered			60HRC							
	Chilled cast iron			Hardened and tempered			55HRC					

* The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant (f should be adjust according to insert radius)

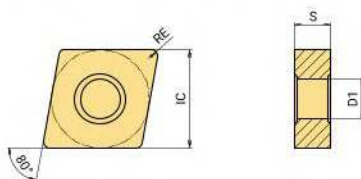
Turning

ISO Turning Insert

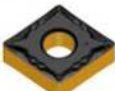
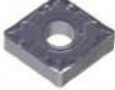
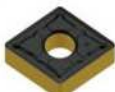
Achteck turning grade															
Initial value of cutting speed Vc(m/min)															
	AC102K			AC202K			AW100K			AP010S			AP100S		
	f (mm/rev)			f (mm/rev)			f (mm/rev)			f (mm/rev)			f (mm/rev)		
	0.10	0.30	0.50	0.10	0.30	0.50	0.10	0.20	0.40	0.10	0.30	0.50	0.10	0.30	0.50
										240	190	150	220	200	130
										150	85		160	140	
										170	145	100	170	150	110
	260	190	160	250	180	150									
	230	160	120	235	150	115									
	470	250	190	470	240	180									
	230	170	130	220	160	120									
	250	190	140	240	180	140									
	190	150	130	180	140	120									
							750	600	300						
							800	450	300						
							500	300	200						
							600	400	270						
							400	300	200						
							280	200	130						
										100	65		100	70	
										80	55		80	60	
										80	55		80	60	
										70	45		70	50	
										60	30		60	40	

Negative 80° (C)

(mm)



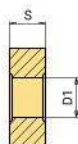
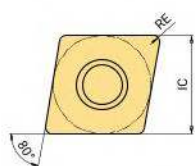
Product code	IC	S	D1
CN_1204_	12.70	4.76	5.16
CN_1606_	15.875	6.35	6.35
CN_1906_	19.05	6.35	7.94

					Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts		Product code	RE (mm)	Recommended parameters		P						M			K			N	S			
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S	
Finishing		CNGG 120401FP-UF	0.10	0.02-0.12	0.50-2.50									○	●					●	○	
		120402FP-UF	0.20	0.02-0.12	0.50-2.50									○	●					●	○	
		120404FP-UF	0.40	0.02-0.12	0.50-2.50									○	●					●	○	
		CNMG 120402E-PA1	0.20	0.04-0.25	0.20-1.50	●	●	●	●													
		120404E-PA1	0.40	0.04-0.28	0.20-1.50	●	●	●	●													
		120408E-PA1	0.80	0.05-0.35	0.20-1.50	●	●	●	●													
		120412E-PA1	1.20	0.05-0.42	0.20-1.50	●	●		●													
		CNMG 120404E-PB1	0.40	0.05-0.15	0.26-3.20	●	●	●	●	○												
		120408E-PB1	0.80	0.10-0.30	0.52-3.20	●	●	○	●	○												
		120412E-PB1	1.20	0.15-0.45	0.78-3.20	○	○	●	●	●												
		CNMG 120404E-SC1	0.40	0.07-0.18	0.20-0.80									●						●		
		120408E-SC1	0.80	0.10-0.25	0.20-0.80									●						●		
		CNMG 120404E-MB2	0.40	0.05-0.15	0.26-3.20							●	●	●	●							
		120408E-MB2	0.80	0.10-0.30	0.52-3.20							●	●	●	●							
Semi-finishing		CNMG 120404E-SL3	0.40	0.12-0.25	0.60-3.00								●						●	●		
		120408E-SL3	0.80	0.15-0.30	0.80-3.00									●					●	●		
		CNMG 120404E-F2K	0.40	0.12-0.24	0.50-2.50	●																
		120408E-F2K	0.80	0.15-0.30	0.50-2.50	●																
		CNMG 120404E-PB3	0.40	0.06-0.18	0.30-3.50	●	●	●	●	○												
		120408E-PB3	0.80	0.12-0.36	0.60-3.50	●	●	●	●	○												
		120412E-PB3	1.20	0.18-0.54	0.90-3.50	●	●	○	●	○												
		CNMG 120404E-PC3	0.40	0.07-0.20	0.34-3.90	●	●		○													
		120408E-PC3	0.80	0.14-0.40	0.68-3.90	●	●	●	●													
		120412E-PC3	1.20	0.20-0.60	1.02-3.90	●	●		○	○												
		CNMG 120404E-SC3	0.40	0.08-0.22	0.40-4.30							●	●	●						●	●	
		120408E-SC3	0.80	0.15-0.44	0.80-4.30							●	●	●	●					●	●	
		120412E-SC3	1.20	0.23-0.66	1.20-4.30							●	●	●						●	●	
		160612E-SC3	1.20	0.23-0.66	1.20-5.30							●	●	●						●	●	

● : Standard stock ○ : Made-to-Order

Negative 80° (C)

(mm)



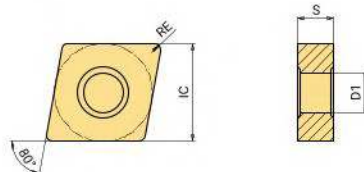
Product code	IC	S	D1
CN_1204_	12.70	4.76	5.16
CN_1606_	15.875	6.35	6.35
CN_1906_	19.05	6.35	7.94

			Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S	
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Semi-finishing		CNMG 160616E-SC3	1.60	0.30-0.88	1.60-5.30						●	●	●						●	●
		190612E-SC3	1.20	0.23-0.66	1.20-6.40						●	●	●						●	●
		190616E-SC3	1.60	0.30-0.88	1.60-6.40						●	●	●						●	●
		CNMG 120404E-MC3	0.40	0.08-0.22	0.32-4.30						●	●	●	●						
		120408E-MC3	0.80	0.15-0.44	0.64-4.30						●	●	●	●						●
		120412E-MC3	1.20	0.23-0.66	0.96-4.30						●	●	●	●						
		120416E-MC3	1.60	0.30-0.88	1.28-4.30						●	●	●	●						
		160608E-MC3	0.80	0.15-0.44	0.64-5.30						●	●	●	●						
		160612E-MC3	1.20	0.23-0.66	0.96-5.30						●	●	●	●						
		190608E-MC3	0.80	0.15-0.44	0.64-6.40						●	●	●	●						
		190612E-MC3	1.20	0.23-0.66	0.96-6.40						●	●	●	●						
Medium		CNMG 120404E-PD3	0.40	0.08-0.22	0.40-4.30	●	●		●	●										
		120408E-PD3	0.80	0.15-0.44	0.80-4.30	●	●	●	●	●										
		120412E-PD3	1.20	0.23-0.66	1.20-4.30	●	●	●	●	○	●									
		160608E-PD3	0.80	0.15-0.44	0.80-5.30			○	○	●										
		160612E-PD3	1.20	0.23-0.66	1.20-5.30			●	●	○	●									
		190608E-PD3	0.80	0.15-0.44	0.80-6.40			●	○	○										
		190612E-PD3	1.20	0.23-0.66	1.20-6.40			○	●	●										
		190616E-PD3	1.60	0.30-0.66	1.60-6.40			●	○	●										
		CNMG 120404E-UC4	0.40	0.08-0.24	0.40-5.00			●	●	●			●							
		120408E-UC4	0.80	0.15-0.48	0.80-5.00			●	●	●			●							
		120412E-UC4	1.20	0.23-0.72	1.20-5.00			●	●	●			●							
		160608E-UC4	0.80	0.15-0.48	0.80-5.50			●	●	●										
		160612E-UC4	1.20	0.23-0.72	1.20-5.50			●	●	●										
		CNMG 120404E-PC4	0.40	0.08-0.22	0.40-4.30				●	○						●	●			
		120408E-PC4	0.80	0.15-0.44	0.80-4.30			○	○	●						●	●			
		120412E-PC4	1.20	0.23-0.66	1.20-4.30			○	●	○						●	●			
		160612E-PC4	1.20	0.23-0.66	1.20-5.30			○	●							●	●			
		160616E-PC4	1.60	0.30-0.88	1.60-5.30			○	○							●	●			
		190612E-PC4	1.20	0.23-0.66	1.20-6.40			○	○							●	●			

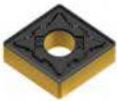
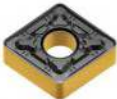
● : Standard stock ○ : Made-to-Order

Negative 80° (C)

(mm)



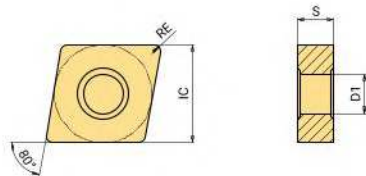
Product code	IC	S	D1
CN_0903_	9.525	3.18	3.81
CN_1204_	12.70	4.76	5.16
CN_1606_	15.875	6.35	6.35
CN_1906_	19.05	6.35	7.94

			Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions																	
Inserts	Product code	RE (mm)	Recommended parameters		P					M			K		N	S						
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S		
Roughing		CNMG 120408E-MC4	0.80	0.20-0.60	1.20-6.40							●	●	●	●							●
		120412E-MC4	1.20	0.30-0.90	1.80-6.40							●	●	●	●							●
		160612E-MC4	1.20	0.30-0.90	1.80-8.10							●	●	●	●							●
		160616E-MC4	1.60	0.40-1.20	2.40-8.10							●	●	●								
		190612E-MC4	1.20	0.30-0.90	1.80-9.70							●	●	●	●							
		190616E-MC4	1.60	0.40-1.20	2.40-9.70							●	●	●	●							
		CNMG 090308E-KC4	0.80	0.18-0.48	0.96-3.90											●	●					
		120404E-KC4	0.40	0.09-0.24	0.48-5.20												●	●				
		120408E-KC4	0.80	0.18-0.48	0.96-5.20											●	●	●				
		120412E-KC4	1.20	0.26-0.72	1.44-5.20											●	●	●				
		120416E-KC4	1.60	0.35-0.96	1.92-5.20												●	●				
		160608E-KC4	0.80	0.18-0.48	0.96-6.40												●	●				
		160612E-KC4	1.20	0.26-0.72	1.44-6.40												●	●				
		160616E-KC4	1.60	0.35-0.96	1.92-6.40												●	●	●			
		190608E-KC4	0.80	0.18-0.48	0.96-7.70													●	●			
		190612E-KC4	1.20	0.26-0.72	1.44-7.70													●	●			
		190616E-KC4	1.60	0.35-0.96	1.92-7.70													●	●			
		190624E-KC4	2.40	0.53-1.44	2.88-7.70													●	●			
		CNMG 120408E-PD5	0.80	0.20-0.60	1.20-6.40			●	●	●	●											
		120412E-PD5	1.20	0.30-0.90	1.80-6.40			○	●	●	●											
		160608E-PD5	0.80	0.20-0.60	1.20-8.10			●	○													
		160612E-PD5	1.20	0.30-0.90	1.80-8.10			●	●	●	●											
		160616E-PD5	1.60	0.40-1.20	2.40-8.10			○	○	○	●											
		160624E-PD5	2.40	0.60-1.80	3.60-8.10			○	●	○												
		190612E-PD5	1.20	0.30-0.90	1.80-9.70			●	●	●	●											
		190616E-PD5	1.60	0.40-1.20	2.40-9.70			○	●	●												

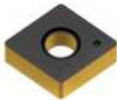
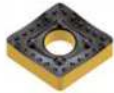
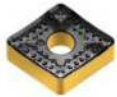
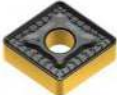
● : Standard stock ○ : Made-to-Order

Negative 80° (C)

(mm)



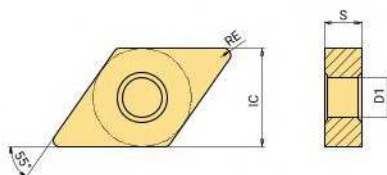
Product code	IC	S	D1
CN_1204_	12.70	4.76	5.16
CN_1606_	15.875	6.35	6.35
CN_1906_	19.05	6.35	7.94
CN_2507_	25.40	7.94	9.12
CN_2509_	25.40	9.52	9.12

			Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P					M			K		N	S				
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Roughing		CNMA 120404E-KD5	0.40	0.10-0.30	0.60-6.40										●	●				
		120408E-KD5	0.80	0.20-0.60	1.20-6.40										●	●	●			
		120412E-KD5	1.20	0.30-0.90	1.80-6.40										●	●	●			
		120416E-KD5	1.60	0.40-1.20	2.40-6.40										●	●	●			
		160608E-KD5	0.80	0.20-0.60	1.20-8.10										●	●	●			
		160612E-KD5	1.20	0.30-0.90	1.80-8.10										●	●	●			
		160616E-KD5	1.60	0.40-1.20	2.40-8.10										●	●	●			
		160620E-KD5	2.00	0.50-1.50	3.00-8.10										●	●	●			
		190608E-KD5	0.80	0.20-0.60	1.20-9.70										●	●	●			
		190612E-KD5	1.20	0.30-0.90	1.80-9.70										●	●	●			
		190616E-KD5	1.60	0.40-1.20	2.40-9.70										●	●	●			
Heavy roughing		CNMM 190616E-PC8	1.60	0.32-0.64	2.88-7.70				○	○										
		190624E-PC8	2.40	0.48-0.96	4.32-7.70				○	○										
		CNMM 120408E-PD8	0.80	0.16-0.32	1.44-5.20				○	○										
		120412E-PD8	1.20	0.24-0.48	2.16-5.20				○	○	●									
		160612E-PD8	1.20	0.24-0.48	2.16-6.40				○	●	●									
		160616E-PD8	1.60	0.32-0.64	2.88-6.40				○	●										
		160624E-PD8	2.40	0.48-0.96	4.32-6.40				○	○										
		190612E-PD8	1.20	0.24-0.48	2.16-7.70			○	○	●										
		190616E-PD8	1.60	0.32-0.64	2.88-7.70			○	○	●										
		190624E-PD8	2.40	0.48-0.96	4.32-7.70			○	○	○	●									
		250724E-PD8	2.40	0.48-0.96	4.32-10.30				○	○										
		250924E-PD8	2.40	0.48-0.96	4.32-10.30				○	○										
		CNMM 190612S-PC9	1.20	0.26-0.60	2.40-9.70				○	●										
		190616S-PC9	1.60	0.35-0.80	3.20-9.70			●	●	●										
		190624S-PC9	2.40	0.53-1.20	4.80-9.70				●	○										
		250724S-PC9	2.40	0.53-1.20	4.80-12.90				○	○										
		250924S-PC9	2.40	0.53-1.20	4.80-12.90				●	●										
		CNMM 190612S-PD9	1.20	0.30-0.72	2.64-11.60				○	○	●									
		190616S-PD9	1.60	0.40-0.96	3.52-11.60				○	○										
		190624S-PD9	2.40	0.60-1.44	5.28-11.60				●	○										
		250724S-PD9	2.40	0.60-1.44	5.28-15.50				○	○										
		250924S-PD9	2.40	0.60-1.44	5.28-15.50				○	○	●									

● : Standard stock ○ : Made-to-Order

Negative 55° (D)

(mm)



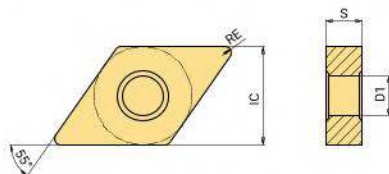
Product code	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16
DN_1506_	12.70	6.35	5.16

			Machining conditions		● Good Conditions ✱ General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P				M				K				N		S	
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Finishing		DNGG 150401FP-UF	0.10	0.02-0.12	0.50-2.50								○	●						
		150402FP-UF	0.20	0.02-0.12	0.50-2.50								○	●						
		150404FP-UF	0.40	0.02-0.12	0.50-2.50								○	●						
		DNMG 150402E-PA1	0.20	0.04-0.25	0.20-1.50	●	●	○												
		150404E-PA1	0.40	0.04-0.28	0.20-1.50	●	●	●	●											
		150408E-PA1	0.80	0.05-0.35	0.20-1.50	●	●	●	●											
		150412E-PA1	1.20	0.05-0.42	0.20-1.50	●	●	○	○											
		150602E-PA1	0.20	0.04-0.25	0.20-1.50	●	●	○												
		150604E-PA1	0.40	0.04-0.28	0.20-1.50	●	●	○	○											
		150608E-PA1	0.80	0.05-0.35	0.20-1.50	●	●	●	●											
		150612E-PA1	1.20	0.05-0.42	0.20-1.50	●	●													
		DNMG 110404E-PB1	0.40	0.05-0.15	0.26-2.30	●	●	○	●	○										
		150404E-PB1	0.40	0.05-0.15	0.26-3.10	●	●	○	●	○										
		150408E-PB1	0.80	0.10-0.30	0.52-3.10	●	●	○	●	●										
		150604E-PB1	0.40	0.05-0.15	0.26-3.10	●	●		●	●										
		150608E-PB1	0.80	0.10-0.30	0.52-3.10	●	●	○	●	○										
		150612E-PB1	0.80	0.10-0.30	0.52-3.10				●	○										
		DNMG 150404E-SC1	0.40	0.07-0.18	0.20-0.80									●					●	
		150408E-SC1	0.80	0.10-0.25	0.20-0.80									●					●	
		150604E-SC1	0.40	0.07-0.18	0.20-0.80									●					●	
		150608E-SC1	0.80	0.10-0.25	0.20-0.80									●					●	
		DNMG 150404E-MB2	0.40	0.05-0.15	0.26-2.90						●	●							●	
		150408E-MB2	0.80	0.10-0.30	0.52-2.90						●	●							●	
		150604E-MB2	0.40	0.05-0.15	0.26-2.90						●	●							●	
		150608E-MB2	0.80	0.10-0.30	0.52-2.90						●	●							●	
Semi-finishing		DNMG 110408E-SL3	0.80	0.12-0.30	0.80-2.50									●					●	●
		150404E-SL3	0.40	0.12-0.25	0.60-2.50									●					●	●
		150408E-SL3	0.80	0.12-0.30	0.80-2.50									●					●	●
		150604E-SL3	0.40	0.12-0.25	0.60-2.50									●					●	●
		150608E-SL3	0.80	0.12-0.30	0.80-2.50									●					●	●
		DNMG 110408E-BS	0.80	0.10-0.25	0.70-2.00			●	○											

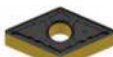
● : Standard stock ○ : Made-to-Order

Negative 55° (D)

(mm)



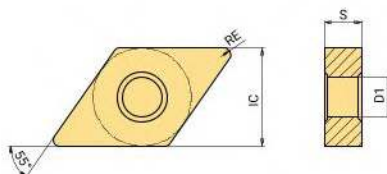
Product code	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16
DN_1506_	12.70	6.35	5.16

					Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
			Recommended parameters		P					M				K			N	S				
Inserts	Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S		
Semi-finishing		DNMG 150404R-M1T	0.40	0.10-0.35	0.70-4.50	●	●															
		150404L-M1T	0.40	0.10-0.35	0.70-4.50	●	●															
		DNMG 150404E-PB3	0.40	0.06-0.18	0.30-3.10	●	●	●	●	○												
		150408E-PB3	0.80	0.12-0.36	0.60-3.10	●	●	●	●	○												
		150412E-PB3	1.20	0.18-0.54	0.90-3.10	●	●	○	●	○												
		150604E-PB3	0.40	0.06-0.18	0.30-3.10	●	●		●	●												
		150608E-PB3	0.80	0.12-0.36	0.60-3.10	●	●	●	●	○												
		150612E-PB3	1.20	0.18-0.54	0.90-3.10	●	●	○	●	●												
		DNMG 110408E-PC3	0.80	0.14-0.40	0.68-2.60				○													
		110412E-PC3	1.20	0.20-0.60	1.02-2.60				●													
		150404E-PC3	0.40	0.07-0.20	0.34-3.50	●	●		○													
		150408E-PC3	0.80	0.14-0.40	0.68-3.50	●	●	○	○													
		150412E-PC3	1.20	0.20-0.60	1.02-3.50	●	●		○													
		150604E-PC3	0.40	0.07-0.20	0.34-3.50	●	●		○													
		150608E-PC3	0.80	0.14-0.40	0.68-3.50	●	●		●	○												
		150612E-PC3	1.20	0.20-0.60	1.02-3.50	●	●		●													
		DNMG 150404E-SC3	0.40	0.08-0.22	0.40-3.90							●			●					●	●	
		150408E-SC3	0.80	0.15-0.44	0.80-3.90							●			●					●	●	
		150412E-SC3	1.20	0.23-0.66	1.20-3.90							●			●					●	●	
		150604E-SC3	0.40	0.08-0.22	0.40-3.90							●			●					●	●	
		150608E-SC3	0.80	0.15-0.44	0.80-3.90							●			●					●	●	
		150612E-SC3	1.20	0.23-0.66	1.20-3.90							●			●					●	●	
		DNMG 110404E-MC3	0.40	0.08-0.22	0.32-2.90							●		●	●							
		110408E-MC3	0.80	0.15-0.44	0.64-2.90							●		●	●							
		150404E-MC3	0.40	0.08-0.22	0.32-3.90							●	●	●	●							
		150408E-MC3	0.80	0.15-0.44	0.64-3.90							●		●	●							
		150412E-MC3	1.20	0.23-0.66	0.96-3.90							●		●	●							
		150604E-MC3	0.40	0.08-0.22	0.32-3.90							●		●	●							
		150608E-MC3	0.80	0.15-0.44	0.64-3.90							●		●	●							
150612E-MC3		1.20	0.23-0.66	0.96-3.90							●		●	●								

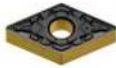
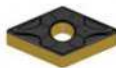
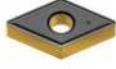
● : Standard stock ○ : Made-to-Order

Negative 55° (D)

(mm)



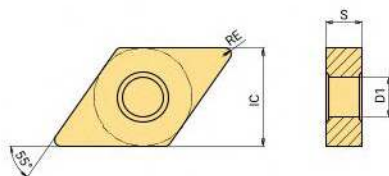
Product code	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16
DN_1506_	12.70	6.35	5.16

					Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S			
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S		
Medium		DNMG 110404E-PD3	0.40	0.08-0.22	0.40-2.90	●	●		●	○												
		110408E-PD3	0.80	0.15-0.44	0.80-2.90	●	●	●	●	●												
		110412E-PD3	1.20	1.20-2.90	0.23-0.66				○													
		150404E-PD3	0.40	0.08-0.22	0.40-3.90	●	●		●	○												
		150408E-PD3	0.80	0.15-0.44	0.80-3.90	●	●	○	●	○	●											
		150412E-PD3	1.20	0.23-0.66	1.20-3.90			○	●	●	●											
		150604E-PD3	0.40	0.08-0.22	0.40-3.90				●	●	●											
		150608E-PD3	0.80	0.15-0.44	0.80-3.90				●	●	●	●										
		150612E-PD3	1.20	0.23-0.66	1.20-3.90				●	●	●	●										
		DNMG 150408E-UC4	0.80	0.15-0.48	0.80-4.50				●	●	●											
		150608E-UC4	0.80	0.15-0.48	0.80-4.50				●	●	●											
		150612E-UC4	1.20	0.23-0.72	1.20-4.50				●	●	●											
		DNMG 150404E-PC4	0.40	0.08-0.22	0.40-3.90	●	●		○	○							●	●				
		150408E-PC4	0.80	0.15-0.44	0.80-3.90	●	●	○	○	○							●	●				
		150412E-PC4	1.20	0.23-0.66	1.20-3.90			○	○	○							●	●				
		150604E-PC4	0.40	0.08-0.22	0.40-3.90	●	●		○	○							●	●				
		150608E-PC4	0.80	0.15-0.44	0.80-3.90	●	●	●	●	●							●	●				
		150612E-PC4	1.20	0.23-0.66	1.20-3.90			●	●	○							●	●				
		DNMG 150608R-PL5	0.80	0.15-0.44	0.80-3.90				●	●												

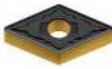
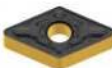
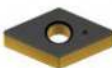
● : Standard stock ○ : Made-to-Order

Negative 55° (D)

(mm)



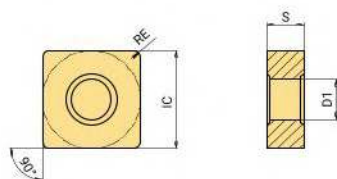
Product code	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16
DN_1506_	12.70	6.35	5.16

					Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions																
							P						M				K		N	S			
							AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S	
Inserts	Product code	RE (mm)	f (mm/rev)	ap (mm)																			
Roughing		DNMG 150408E-MC4	0.80	0.20-0.60	1.20-5.40							●		●	●								
		150412E-MC4	1.20	0.30-0.90	1.80-5.40							●			●								
		150608E-MC4	0.80	0.20-0.60	1.20-5.40							●		●	●							●	
		150612E-MC4	1.20	0.30-0.90	1.80-5.40							●		●	●							●	
		DNMG 110404E-KC4	0.40	0.09-0.24	0.48-3.50													●	●				
		110408E-KC4	0.80	0.18-0.48	0.96-3.50														●	●			
		150404E-KC4	0.40	0.09-0.24	0.48-4.60														●	●			
		150408E-KC4	0.80	0.18-0.48	0.96-4.60														●	●			
		150412E-KC4	1.20	0.26-0.72	1.44-4.60														●	●			
		150604E-KC4	0.40	0.09-0.24	0.48-4.60														●	●			
		150608E-KC4	0.80	0.18-0.48	0.96-4.60														●	●			
		150612E-KC4	1.20	0.26-0.72	1.44-4.60														●	●			
		DNMG 150408E-PD5	0.80	0.20-0.60	1.20-5.40			○	○	○													
		150412E-PD5	1.20	0.30-0.90	1.80-5.40			●	○	○													
		150416E-PD5	1.60	0.40-1.20	2.40-5.40			○	○	●													
		150608E-PD5	0.80	0.20-0.60	1.20-5.40			○	○	●	●												
		150612E-PD5	1.20	0.30-0.90	1.80-5.40			○	●	●	●												
		150616E-PD5	1.60	0.40-1.20	2.40-5.40			●	●	○													
		DNMA 150404E-KD5	0.40	0.10-0.30	0.60-5.40														●	●			
		150408E-KD5	0.80	0.20-0.60	1.20-5.40														●	●	●		
		150412E-KD5	1.20	0.30-0.90	1.80-5.40														●	●	●		
		150604E-KD5	0.40	0.10-0.30	0.60-5.40															●	●		
		150608E-KD5	0.80	0.20-0.60	1.20-5.40														●	●	●		
		150612E-KD5	1.20	0.30-0.90	1.80-5.40														●	●	●		

● : Standard stock ○ : Made-to-Order

Negative 90° (S)

(mm)



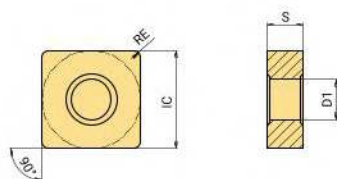
Product code	IC	S	D1
SN_1204_	12.70	4.76	5.16
SN_1506_	15.875	6.35	6.35
SN_1906_	19.05	6.35	7.94

					Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
					Recommended parameters		P					M			K			N	S			
Inserts			Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Finishing		SNMG 120404E-PB1	0.40	0.05-0.15	0.26-3.20	●	●	●	○	○												
		120408E-PB1	0.80	0.10-0.30	0.52-3.20	●	●	○	●	○												
		120412E-PB1	1.20	0.15-0.45	0.78-3.20			●	●	○												
		SNMG 120404E-MB2	0.40	0.05-0.15	0.26-3.20								●	●		●						●
		120408E-MB2	0.80	0.10-0.30	0.52-3.20								●	●		●						●
		120412E-MB2	1.20	0.15-0.45	0.78-3.20								●	●		●						●
Semi-finishing		SNMG 120404E-SL3	0.40	0.12-0.25	0.60-3.00											●					●	●
		120408E-SL3	0.80	0.15-0.30	0.80-3.00												●					●
		120412E-SL3	1.20	0.18-0.35	1.00-3.00												●					●
		SNMG 120404E-PC3	0.40	0.07-0.20	0.34-3.80	●	●		○													
		120408E-PC3	0.80	0.14-0.40	0.68-3.80	●	●		●													
		120412E-PC3	1.20	0.20-0.60	1.02-3.80	●	●		○													
		SNMG 120408E-SC3	0.80	0.15-0.44	0.80-4.20								●	●		●						●
		120412E-SC3	1.20	0.23-0.66	1.20-4.20								●	●		●						●
		150612E-SC3	1.20	0.23-0.66	1.20-5.20								●	●		●						●
		150616E-SC3	1.60	0.30-0.88	1.60-5.20								●	●		●						●
		190612E-SC3	1.20	0.23-0.66	1.20-6.30								●	●		●						●
		SNMG 120404E-MC3	0.40	0.08-0.22	0.32-4.20								●	●		●						
		120408E-MC3	0.80	0.15-0.44	0.64-4.20								●	●		●						
		120412E-MC3	1.20	0.23-0.66	0.96-4.20								●	●		●						
		150612E-MC3	1.20	0.23-0.66	0.96-5.20								●	●		●						
		150616E-MC3	1.60	0.30-0.88	1.28-5.20								●	●		●						
		190612E-MC3	1.20	0.23-0.66	0.96-6.30								●	●		●						
		190616E-MC3	1.60	0.30-0.88	1.28-6.30								●	●		●						

● : Standard stock ○ : Made-to-Order

Negative 90° (S)

(mm)



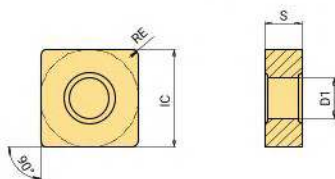
Product code	IC	S	D1
SN_1204_	12.70	4.76	5.16
SN_1506_	15.875	6.35	6.35
SN_1906_	19.05	6.35	7.94

			Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P					M				K			N		S	
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Medium		SNMG 120404E-PD3	0.40	0.08-0.22	0.40-4.20	●	●	●	○											
		120408E-PD3	0.80	0.15-0.44	0.80-4.20	●	●	○	●	○										
		120412E-PD3	1.20	0.23-0.66	1.20-4.20	●	●	○	○	○										
		190608E-PD3	0.80	0.15-0.44	0.80-6.30			○	○	○	●									
		SNMG 120404E-M3T	0.40	0.20-0.40	1.00-4.00	●	●													
		120408E-M3T	0.80	0.20-0.40	1.00-4.00	●	●													
		SNMG 120408E-UC4	0.80	0.15-0.48	0.80-4.50			●	●	●										
		120412E-UC4	1.20	0.23-0.72	1.20-4.50			●	●	●										
		150612E-UC4	1.20	0.23-0.72	1.20-5.50			○	●	●										
		SNMG 120404E-PC4	0.40	0.08-0.22	0.40-4.20	●	●		○							●	●			
		120408E-PC4	0.80	0.15-0.44	0.80-4.20	●	●	○	○	○					●	●	●			
		120412E-PC4	1.20	0.23-0.66	1.20-4.20	●	●	○	○	●					●	●	●			
Roughing		SNMG 120408E-MC4	0.80	0.20-0.60	1.20-6.40						●	●		●						●
		120412E-MC4	1.20	0.30-0.90	1.80-6.40						●	●		●						●
		150612E-MC4	1.20	0.30-0.90	1.80-7.90						●	●		●						
		150616E-MC4	1.60	0.40-1.20	2.40-7.90						●	●		●						
		190612E-MC4	1.20	0.30-0.90	1.80-9.50						●	●		●						
		190616E-MC4	1.60	0.40-1.20	2.40-9.50						●	●		●						●

● : Standard stock ○ : Made-to-Order

Negative 90° (S)

(mm)



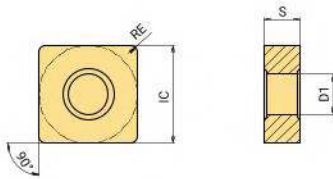
Product code	IC	S	D1
SN_0903_	9.525	3.18	3.81
SN_1204_	12.70	4.76	5.16
SN_1506_	15.875	6.35	6.35
SN_1906_	19.05	6.35	7.94

			Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P					M				K			N	S		
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Roughing		SNMG 090304E-KC4	0.40	0.09-0.24	0.48-3.80											●	●			
		090308E-KC4	0.80	0.18-0.48	0.96-3.80											●	●			
		120404E-KC4	0.40	0.09-0.24	0.48-5.10											●	●			
		120408E-KC4	0.80	0.18-0.48	0.96-5.10											●	●			
		120412E-KC4	1.20	0.26-0.72	1.44-5.10											●	●			
		150608E-KC4	0.80	0.18-0.48	0.96-6.40											●	●			
		150612E-KC4	1.20	0.26-0.72	1.44-6.40											●	●			
		150616E-KC4	1.60	0.35-0.96	1.92-6.40											●	●			
		190608E-KC4	0.80	0.18-0.48	0.96-7.60											●	●			
		190612E-KC4	1.20	0.26-0.72	1.44-7.60											●	●			
		190616E-KC4	1.60	0.35-0.96	1.92-7.60											●	●			
		190624E-KC4	2.40	0.53-1.44	2.88-7.60											○	○			
		SNMG 150412E-PD5	1.20	1.80-6.40	0.30-0.90			○	○	●										
		150608E-PD5	0.80	0.20-0.60	1.20-7.90			●	●	○										
		150612E-PD5	1.20	0.30-0.90	1.80-7.90			○	○	●	●									
		150616E-PD5	1.60	0.40-1.20	2.40-7.90			○	○	○										
		190612E-PD5	1.20	0.30-0.90	1.80-9.50			○	●	●	●									
		190616E-PD5	1.60	0.40-1.20	2.40-9.50			●	●	○	●									
		SNMA 120408E-KD5	0.80	0.20-0.60	1.20-6.40											●	●	●		
		120412E-KD5	1.20	0.30-0.90	1.80-6.40											●	●	●		
		120416E-KD5	1.60	0.40-1.20	2.40-6.40											●	●	●		
		150612E-KD5	1.20	0.30-0.90	1.80-7.90												●	●		
		150616E-KD5	1.60	0.40-1.20	2.40-7.90												●	●		
		190612E-KD5	1.20	0.30-0.90	1.80-9.50												●	●		
		190616E-KD5	1.60	0.40-1.20	2.40-9.50												●	●		

● : Standard stock ○ : Made-to-Order

Negative 90° (S)

(mm)



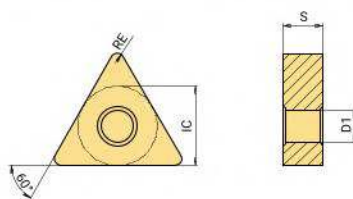
Product code	IC	S	D1
SN_1204_	12.70	4.76	5.16
SN_1506_	15.875	6.35	6.35
SN_1906_	19.05	6.35	7.94
SN_2507_	25.40	7.94	9.12
SN_2509_	25.40	7.94	9.12
SN_3109_	31.75	9.52	9.45

					Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
					Recommended parameters		P						M				K			N	S	
Inserts			Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Heavy roughing		SNMM 120408E-PD8	0.80	0.16-0.32	1.44-5.10			○	○	○												
		120412E-PD8	1.20	0.24-0.48	2.16-5.10			○	○	○												
		150612E-PD8	1.20	0.24-0.48	2.16-6.40			○	○	○	●											
		150616E-PD8	1.60	0.32-0.64	2.88-6.40			○	○	○												
		190612E-PD8	1.20	0.24-0.48	2.16-7.60			○	○	●	●											
		190616E-PD8	1.60	0.32-0.64	2.88-7.60			●	●	●	●											
		190624E-PD8	2.40	0.48-0.96	4.32-7.60			○	●	○												
		250724E-PD8	2.40	0.48-0.96	4.32-10.20			○	○	○												
		250924E-PD8	2.40	0.48-0.96	4.32-10.20			○	●	●												
		SNMM 190612S-PC9	1.20	0.26-0.60	2.40-9.50			○	○	●												
		190616S-PC9	1.60	0.35-0.80	3.20-9.50			○	●	○												
		190624S-PC9	2.40	0.53-1.20	4.80-9.50			○	●	●												
		250724S-PC9	2.40	0.53-1.20	4.80-12.70			○	○	○												
		250924S-PC9	2.40	0.53-1.20	4.80-12.70			○	●	●												
		SNMH 310924S-PC9	2.40	0.53-1.20	4.80-15.90				○													
		SNMM 190612S-PD9	1.20	0.30-0.72	2.64-11.40			○	○	○												
		190616S-PD9	1.60	0.40-0.96	3.52-11.40			○	○	○												
		190624S-PD9	2.40	0.60-1.44	5.28-11.40			○	○	○												
		250724S-PD9	2.40	0.60-1.44	5.28-15.20			○	●	○	●											
		250924S-PD9	2.40	0.60-1.44	5.28-15.20			○	●	●												
		SNMX 310924S-PD9	2.40	0.60-1.44	5.28-19.10				○		●											

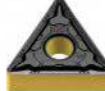
● : Standard stock ○ : Made-to-Order

Negative 60° (T)

(mm)



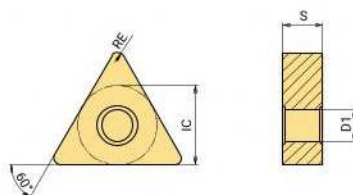
Product code	IC	S	D1
TN_1604_	9.525	4.76	3.81

			Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
Inserts		Product code	RE (mm)	Recommended parameters		P					M			K		N	S			
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S
Finishing		TNMG 160401FP-UF	0.10	0.03-0.11	0.30-2.50									●						
		160402FP-UF	0.20	0.03-0.11	0.30-2.50									●						
		160404FP-UF	0.40	0.03-0.11	0.30-2.50									●						
		TNMG 160404-F1T	0.40	0.05-0.15	0.50-2.50	●	●													
		160408-F1T	0.80	0.05-0.15	0.50-2.50	●	●													
		TNMG 160404-F1Y	0.40	0.08-0.20	0.30-1.50	●	●													
		TNMG 160408-F1Y	0.80	0.08-0.20	0.30-1.50	●	●													
		TNMG 160402E-PA1	0.20	0.04-0.25	0.20-1.50	●	●	○	○											
		160404E-PA1	0.40	0.04-0.28	0.20-1.50	●	●	●	●											
		160408E-PA1	0.80	0.05-0.35	0.20-1.50	●	●	●	○											
		160412E-PA1	1.20	0.05-0.42	0.20-1.50	●	●		○											
		TNMG 160404E-PB1	0.40	0.05-0.15	0.26-3.10	●	●	○	●	○				●						
		160408E-PB1	0.80	0.10-0.30	0.52-3.10	●	●	○	●	○										
		160412E-PB1	1.20	0.15-0.45	0.78-3.10	●	●	○	○	○										
	TNMG 160404E-SC1	0.40	0.07-0.18	0.20-0.80									●					●		
	160408E-SC1	0.80	0.10-0.25	0.20-0.80									●					●		
	TNMG 160404E-MB2	0.40	0.05-0.15	0.26-3.10							●	●	●	●					●	
	160408E-MB2	0.80	0.10-0.30	0.52-3.10							●	●	●	●					●	
Semi-finishing		TNMG 160404E-SL3	0.40	0.12-0.25	0.60-3.00								●					●	●	
		160408E-SL3	0.80	0.15-0.30	0.80-3.00								●					●	●	
		160412E-SL3	1.20	0.18-0.30	1.00-3.00								●					●	●	
		TNMG 160404-F2K	0.40	0.08-0.20	0.50-2.00	●	●													
		160408-F2K	0.80	0.10-0.25	0.50-2.00	●	●													
		TNMG 160404R-M1T	0.40	0.10-0.30	0.10-0.30	●	●													
		160404L-M1T	0.40	0.10-0.30	0.10-0.30	●	●													

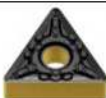
● : Standard stock ○ : Made-to-Order

Negative 60° (T)

(mm)



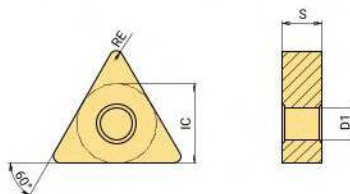
Product code	IC	S	D1
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

					Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions													
Inserts		Product code	RE (mm)	Recommended parameters		P					M			K			N	S		
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S
Semi-finishing		TNMG 160404E-PB3	0.40	0.06-0.18	0.30-3.30	●	●		●	●										
		160408E-PB3	0.80	0.12-0.36	0.60-3.30	●	●	○	○	○										
		160412E-PB3	1.20	0.18-0.54	0.90-3.30	●	●	○	○	○										
		TNMG 160404E-PC3	0.40	0.07-0.20	0.34-3.70	●	●		●	○										
		160408E-PC3	0.80	0.14-0.40	0.68-3.70	●	●		○	○										
		160412E-PC3	1.20	0.20-0.60	1.02-3.70	●	●		●											
		TNMG 160404E-SC3	0.40	0.08-0.22	0.40-4.10							●	●	●					●	●
		160408E-SC3	0.80	0.15-0.44	0.80-4.10							●	●	●					●	●
		160412E-SC3	1.20	0.23-0.66	1.20-4.10							●	●	●					●	●
		TNMG 160404E-MC3	0.40	0.08-0.22	0.32-4.10							●	●	●	●					
		160408E-MC3	0.80	0.15-0.44	0.64-4.10							●	●	●	●					
		160412E-MC3	1.20	0.23-0.66	0.96-4.10							●	●	●	●					
220408E-MC3		0.80	0.15-0.44	0.64-4.90							●	●	●	●					●	
220412E-MC3		1.20	0.23-0.66	0.96-4.90							●	●	●	●						
Medium		TNMG 160404E-PD3	0.40	0.08-0.22	0.40-4.10	●	●	○	●	●										
		160408E-PD3	0.80	0.15-0.44	0.80-4.10	●	●	●	●	○	●									
		160412E-PD3	1.20	0.23-0.66	1.20-4.10	●	●	●	●	●	●									
		TNMG 160404-M3T	0.40	0.20-0.40	1.00-4.00	●	●													
		160408-M3T	0.80	0.20-0.40	1.00-4.00	●	●													
		TNMG 160408E-UC4	0.80	0.15-0.48	0.80-4.50			●	●	●	●									
		160412E-UC4	1.20	0.23-0.72	1.20-4.50			●	●	●										
		TNMG 160404E-PC4	0.40	0.08-0.22	0.40-4.10	●	●		○											
		160408E-PC4	0.80	0.15-0.44	0.80-4.10	●	●	○	●											
		160412E-PC4	1.20	0.23-0.66	1.20-4.10			●	●											
		220412E-PC4	1.20	0.23-0.66	1.20-4.90				○	●										
		TNMG 160404R-M2T	0.40	0.10-0.30	0.70-3.50	●	●													
		160404L-M2T	0.40	0.10-0.30	0.70-3.50	●	●													

● : Standard stock ○ : Made-to-Order

Negative 60° (T)

(mm)



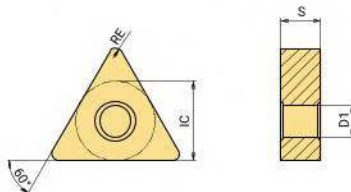
Product code	IC	S	D1
TN_1103_	6.35	3.18	2.26
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

				Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions																	
						● ● ● ● ✱ ✱ ● ● ● ● ● ● ✱ ● ● ●																	
						P						M			K			N	S				
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S		
Medium		TNMG 160404R-PL5	0.40	0.08-0.22	0.40-4.10	●	●		●	●													
		160404L-PL5	0.80	0.15-0.44	0.80-4.10	●	●	○	○	●													
		160408R-PL5	0.40	0.08-0.22	0.40-4.10	●	●	○	●	○													
		160408L-PL5	0.80	0.15-0.44	0.80-4.10	●	●	●	○	●													
Roughing		TNMG 160408E-MC4	0.80	0.20-0.60	1.20-5.80							●	●	●	●							●	
		160412E-MC4	1.20	0.30-0.90	1.80-5.80							●	●	●	●							●	
		220408E-MC4	0.80	0.20-0.60	1.20-6.60							●	●	●									
		220412E-MC4	1.20	0.30-0.90	1.80-6.60							●	●	●									
		TNMG 110304E-KC4	0.40	0.09-0.24	0.48-3.30													●	●				
		160404E-KC4	0.40	0.09-0.24	0.48-4.90														●	●			
		160408E-KC4	0.80	0.18-0.48	0.96-4.90													●	●	●			
		160412E-KC4	1.20	0.26-0.72	1.44-4.90													●	●	●			
		160416E-KC4	1.60	0.35-0.96	1.92-4.90														●	●			
		220412E-KC4	1.20	0.26-0.72	1.44-6.00														●	●			
		220416E-KC4	1.60	0.35-0.96	1.92-6.00														●	●			
		TNMG 160408E-PD5	0.80	0.20-0.60	1.20-5.80			○	○	○													
		160412E-PD5	1.20	0.30-0.90	1.80-5.80			○	○	○	●												
		220408E-PD5	0.80	0.20-0.60	1.20-7.70			○	●	○													
		220412E-PD5	1.20	0.30-0.90	1.80-7.70			○	○	●													
		220416E-PD5	1.60	0.40-1.20	2.40-7.70			○	●	●													
		TNMA 160404E-KD5	0.40	0.10-0.30	0.60-5.80														●	●			
		160408E-KD5	0.80	0.20-0.60	1.20-5.80													●	●	●			
		160412E-KD5	1.20	0.30-0.90	1.80-5.80													●	●	●			
		160416E-KD5	1.60	0.40-1.20	2.40-5.80													●	●	●			
		220408E-KD5	0.80	0.20-0.60	1.20-7.70														●	●			
		220412E-KD5	1.20	0.30-0.90	1.80-7.70														●	●			
		220416E-KD5	1.60	0.40-1.20	2.40-7.70														●	●			

● : Standard stock ○ : Made-to-Order

Negative 60° (T)

(mm)



Product code	IC	S	D1
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

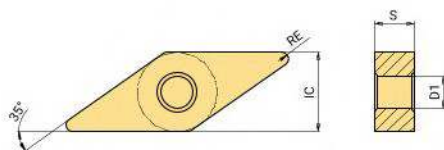
					Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
Inserts		Product code	RE (mm)	Recommended parameters		P						M				K			N	S		
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S	
Heavy roughing		TNMM 160408E-PD8	0.80	0.16-0.32	1.44-4.90			○	○	○												
		160412E-PD8	1.20	0.24-0.48	2.16-4.90			○	○	○												
		220408E-PD8	0.80	0.16-0.32	1.44-6.00			○	○	○												
		220412E-PD8	1.20	0.24-0.48	2.16-6.00			○	○	○												
		220416E-PD8	1.60	0.32-0.64	2.88-6.00			○	○	○												
Finishing		TNGG 160402FR-F	0.20	0.08-0.20	0.50-2.30									●								
		160402FL-F	0.20	0.08-0.20	0.50-2.30									●								
		160404FR-F	0.40	0.08-0.20	0.50-2.30									●								
		160404FL-F	0.40	0.08-0.20	0.50-2.30									●								
Semi-finishing--Roughing		TNGG 160404R-H	0.40	0.22-0.38	1.20-3.80									●								
		160404L-H	0.40	0.22-0.38	1.20-3.80									●								
		160408R-H	0.80	0.22-0.38	1.20-3.80									●								
		160408L-H	0.80	0.22-0.38	1.20-3.80									●								

● : Standard stock ○ : Made-to-Order

Negative 35° (V)

(mm)

Product code	IC	S	D1
VN_1604_	9.525	4.76	3.81

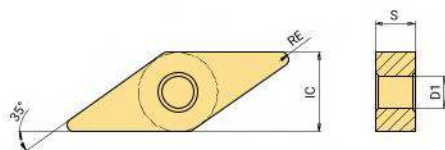


			Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K		N	S		
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Finishing		VNMG 160401FP-UF	0.10	0.02-0.10	0.50-2.00									●						
		160402FP-UF	0.20	0.02-0.10	0.50-2.00									●						
		160404FP-UF	0.40	0.02-0.10	0.50-2.00									●						
		VNMG 160402E-PA1	0.20	0.04-0.25	0.20-1.50	●	●	●	○											
		160404E-PA1	0.40	0.04-0.28	0.20-1.50	●	●	●	●											
		160408E-PA1	0.80	0.05-0.35	0.20-1.50	●	●	●	●											
		160412E-PA1	1.20	0.05-0.42	0.20-1.50	●	●													
		VNMG 160404E-PB1	0.40	0.05-0.15	0.26-2.10	●	●	●	●	○										
		160408E-PB1	0.80	0.10-0.30	0.52-2.10	●	●	●	●	●										
		VNMG 160404E-SC1	0.40	0.10-0.25	0.20-0.80								●						●	
		160408E-SC1	0.80	0.15-0.30	0.20-0.80								●						●	
		VNMG 160404E-MB2	0.40	0.05-0.15	0.26-2.10						●	●	●	●						●
160408E-MB2		0.80	0.10-0.30	0.52-2.10						●	●	●	●						●	
Semi-finishing		VNMG 160404E-SL3	0.40	0.10-0.20	0.60-2.50								●					●	●	
		160408E-SL3	0.80	0.12-0.25	0.80-2.50								●					●	●	
		VNMG 160404E-BS	0.40	0.07-0.16	0.30-2.00	●	●	●	●	○										
		160408E-BS	0.80	0.08-0.20	0.30-2.00	●	●	●	●	●										
		160412E-BS	1.20	0.09-0.22	0.30-2.00	●	○	○	●											
		VNMG 160404F-F2K	0.40	0.08-0.20	0.50-2.00	●	●													
		160408F-F2K	0.80	0.10-0.25	0.50-2.00	●	●													
		VNMG 160404E-PB3	0.40	0.06-0.18	0.30-3.10	●	●	●	●	○										
		160408E-PB3	0.80	0.12-0.36	0.60-3.10	●	●	●	●	●										
		160412E-PB3	1.20	0.18-0.54	0.90-3.10	●	●	○	●	○										
		VNMG 160404E-PC3	0.40	0.07-0.20	0.34-3.30	●	●		●											
		160408E-PC3	0.80	0.14-0.40	0.68-3.30	●	●		●	○										
		160412E-PC3	1.20	0.20-0.60	1.02-3.30	●	●		○											
		VNMG 160404E-SC3	0.40	0.08-0.22	0.40-3.30						●	●	●						●	●
		160408E-SC3	0.80	0.15-0.44	0.80-3.30						●	●	●						●	●
		160412E-SC3	1.20	0.23-0.66	1.20-3.30						●	●	●						●	●
		VNMG 160404E-MC3	0.40	0.08-0.22	0.32-3.30						●	●	●	●						
		160408E-MC3	0.80	0.15-0.44	0.64-3.30						●	●	●	●						

● : Standard stock ○ : Made-to-Order

Negative 35° (V)

(mm)

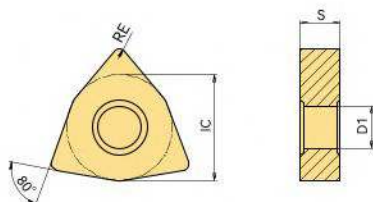


Product code	IC	S	D1
VN_12T3_	7.15	3.97	3.81
VN_1604_	9.525	4.76	3.81

			Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P					M			K			N	S			
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S
Medium		VNMG 12T304E-PD3	0.40	0.08-0.22	0.40-2.50				●	○										
		12T308E-PD3	0.80	0.15-0.44	0.80-2.50				●	○										
		160404E-PD3	0.40	0.08-0.22	0.40-3.30	●	●		●	○										
		160408E-PD3	0.80	0.15-0.44	0.80-3.30	●	●	○	●	○	●									
		160412E-PD3	1.20	0.23-0.66	1.20-3.30	●	●	●	●	○										
		VNMG 160404-M3T	0.40	0.20-0.40	1.00-4.00	●	●													
		160408-M3T	0.80	0.20-0.40	1.00-4.00	●	●													
		VNMG 160408E-UC4	0.80	0.15-0.48	0.80-4.50			●	●	●	●		●	○		○	○			
		160412E-UC4	1.20	0.23-0.72	1.20-4.50			●	●	●										
		VNMG 160404E-PC4	0.40	0.08-0.22	0.40-3.30	●	●		○							●	●			
160408E-PC4		0.80	0.15-0.44	0.80-3.30	●	●	○	○							●	●				
160412E-PC4		1.20	0.23-0.66	1.20-3.30	●	●	○	○							●	●				
Roughing		VNMG 160404E-KC4	0.40	0.09-0.24	0.48-3.30										●	●				
		160408E-KC4	0.80	0.18-0.48	0.96-3.30											●	●			
		160412E-KC4	1.20	0.26-0.72	1.44-3.30											●	●			

● : Standard stock ○ : Made-to-Order

Negative 80° (W)



(mm)

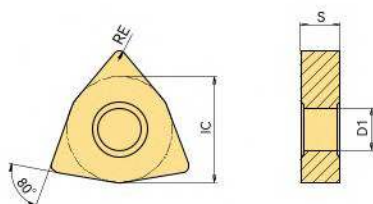
Product code	IC	S	D1
WN_0604_	9.525	4.76	3.81
WN_0804	12.70	4.76	5.16

[illegible]

● : Standard stock ○ : Made-to-Order

Negative 80° (W)

(mm)



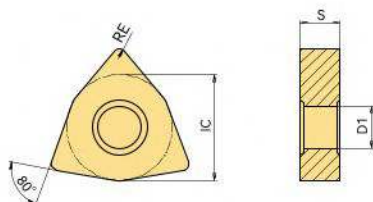
Product code	IC	S	D1
WN_0604_	9.525	4.76	3.81
WN_0804_	12.70	4.76	5.16

					Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions													
Inserts		Product code	RE (mm)	Recommended parameters		P					M			K		N	S			
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S
Semi-finishing		WNMG 060404E-SL3	0.40	0.12-0.25	0.60-2.50								●						●	●
		060408E-SL3	0.80	0.15-0.25	0.80-2.50								●						●	●
		080404E-SL3	0.40	0.12-0.25	0.60-3.00								●						●	●
		080408E-SL3	0.80	0.15-0.25	0.80-3.00								●						●	●
		080412E-SL3	1.20	0.18-0.30	1.00-3.00								●						●	●
		WNMG 080404-F2K	0.40	0.12-0.24	0.50-2.50	●	●													
		080408-F2K	0.80	0.12-0.24	0.50-2.50	●	●													
		WNMG 080404E-PB3	0.40	0.06-0.18	0.30-2.30	●	●		●	○										
		080408E-PB3	0.80	0.12-0.36	0.60-2.30	●	●		●	●										
		080412E-PB3	1.20	0.18-0.54	0.90-2.30	●	●	●	○	●										
		WNMG 080404E-PC3	0.40	0.07-0.20	0.34-2.60	●	●		○											
		080408E-PC3	0.80	0.14-0.40	0.68-2.60	●	●	●	●	○										●
		080412E-PC3	1.20	0.20-0.60	1.02-2.60	●	●	○	●											●
		WNMG 080404E-SC3	0.40	0.08-0.22	0.40-2.90						●	●	●						●	●
		080408E-SC3	0.80	0.15-0.44	0.80-2.90						●	●	●						●	●
		080412E-SC3	1.20	0.23-0.66	1.20-2.90						●	●	●						●	●
		WNMG 060408E-MC3	0.80	0.15-0.44	0.64-2.10						●	●	●							
		060412E-MC3	1.20	0.23-0.66	0.96-2.10						●	●	●							
		080404E-MC3	0.40	0.08-0.22	0.32-2.90						●	●	●							
		080408E-MC3	0.80	0.15-0.44	0.64-2.90						●	●	●	●					●	
		080412E-MC3	1.20	0.23-0.66	0.96-2.90						●	●	●							
Medium		WNMG 060408E-PD3	0.80	0.15-0.44	0.80-2.10				●	●	●									
		080404E-PD3	0.40	0.08-0.22	0.40-2.90	●	●		●	●	●									
		080408E-PD3	0.80	0.15-0.44	0.80-2.90	●	●		●	●	●									
		080412E-PD3	1.20	0.23-0.66	1.20-2.90	●	●		●	●	●									
		WNMG 080404-M3T	0.40	0.20-0.40	1.00-4.00	●	●													
		080408-M3T	0.80	0.20-0.40	1.00-4.00	●	●													

● : Standard stock ○ : Made-to-Order

Negative 80° (W)

(mm)



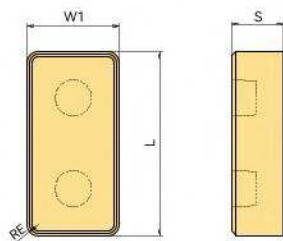
Product code	IC	S	D1
WN_0604_	9.525	4.76	3.81
WN_0804_	12.70	4.76	5.16

					● Good Conditions ● General Conditions ✱ Bad Conditions													
					Machining conditions													

● : Standard stock ○ : Made-to-Order

Negative 90° (L)

(mm)



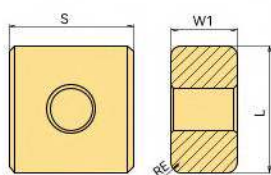
Product code	L	S	W1
LN_5014_	50.80	14.20	25.40

			Machining conditions	● Good Conditions ● General Conditions ✱ Bad Conditions															
				●	●	✱	✱	●	●	●	●	●	●	✱	●	●	●		
				P				M				K			N	S			
Inserts	Product code	RE (mm)	Recommended parameters		AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S	
			f (mm/rev)	ap (mm)															
Heavy roughing		LNMX 501432S-HE	3.20	0.70-1.60	6.00-40.00				●										

Negative 90° (L)

(mm)

Railway wheel reconditioning



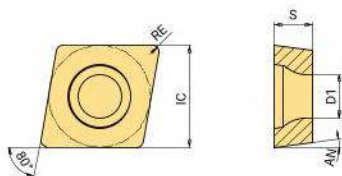
Product code	L	S	W1
LN_1919_	19.05	19.05	10
LN_3019_	30	19.05	12

			Machining conditions	● Good Conditions ◐ General Conditions ✖ Bad Conditions																
				●	◐	✖	✖	●	◐	◐	◐	●	◐	✖	●	●	●			
				P				M				K			N	S				
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP010S	AP100S	
Finishing		LNMX 191940-AS	4.00	0.70-1.20	2.00-10.00	○	○													
Medium		LNMX 191940-AM	4.00	0.70-1.20	2.00-10.00	●	●	●												
		LNMX 301940-AM	4.00	0.70-1.20	2.00-20.00	●	●	●												
Roughing		LNMX 301940-AR	4.00	0.70-1.20	2.00-20.00	●	●	●												

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (C)

(mm)



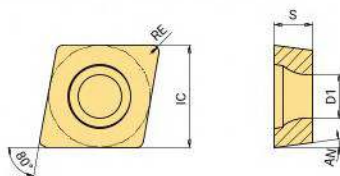
Product code	IC	S	D1	AN
CC_0602_	6.35	2.38	2.80	7°
CC_09T3_	9.525	3.97	4.40	7°
CC_1204_	12.688	4.76	5.50	7°

			Machining conditions		● Good Conditions ◐ General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M		K			N	S			
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		CCGT 060201FP-LF	<0.10	0.05-0.20	0.35-3.00								○	●						
		060202FP-LF	0.20	0.05-0.20	0.35-3.00								●	●						
		060204FP-LF	0.40	0.05-0.20	0.35-3.00								●	●						
		09T301FP-LF	<0.10	0.05-0.20	0.35-3.00								○	●						
		09T302FP-LF	0.20	0.05-0.20	0.35-3.00								○	●						
		09T304FP-LF	0.40	0.05-0.20	0.35-3.00								○	●						
		CCGT 060201FP-UF	0.10	0.02-0.15	0.10-1.40								○	●						
		060202FP-UF	0.20	0.02-0.15	0.10-1.40								●	●						
		060204FP-UF	0.40	0.03-0.20	0.10-1.40								●	●						
		09T301FP-UF	0.10	0.02-0.15	0.10-2.40								○	●						
		09T302FP-UF	0.20	0.02-0.15	0.10-2.40								○	●						
		09T304FP-UF	0.40	0.03-0.20	0.10-2.40								○	●						
		CCGT 060201F-UF	0.10	0.02-0.15	0.10-1.40		○													
		060202F-UF	0.20	0.02-0.15	0.10-1.40		○													
		060204F-UF	0.40	0.03-0.20	0.10-1.40		●													
		09T301F-UF	0.10	0.02-0.15	0.10-2.40		○													
		09T302F-UF	0.20	0.02-0.15	0.10-2.40		○													
		09T304F-UF	0.40	0.03-0.20	0.10-2.40		○													
		09T308F-UF	0.80	0.03-0.25	0.10-2.40		○													
		CCGT 060201E-UF	0.10	0.02-0.15	0.10-1.40		○						●	●					●	
		060202E-UF	0.20	0.02-0.15	0.10-1.40		●						●	●					●	
		060204E-UF	0.40	0.03-0.20	0.10-1.40		●						●	●					●	
		09T301E-UF	0.10	0.02-0.15	0.10-2.40		○						●	●					●	
		09T302E-UF	0.20	0.02-0.15	0.10-2.40		●						●	●					●	
		09T304E-UF	0.40	0.03-0.20	0.10-2.40		●						●	●					●	
		09T308E-UF	0.80	0.03-0.25	0.10-2.40		●						●	●					●	
Semi-finishing		CCGT 060204F-NC2	0.40	0.05-0.20	0.32-2.90													●		
		09T302F-NC2	0.20	0.02-0.10	0.16-4.40													●		
		09T304F-NC2	0.40	0.05-0.20	0.32-4.40													●		
		09T308F-NC2	0.80	0.10-0.40	0.64-4.40													●		
		120404F-NC2	0.40	0.05-0.20	0.32-5.80													●		
		120408F-NC2	0.80	0.10-0.40	0.64-5.80													●		

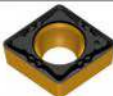
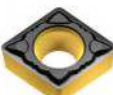
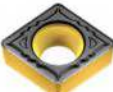
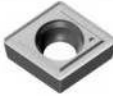
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (C)

(mm)



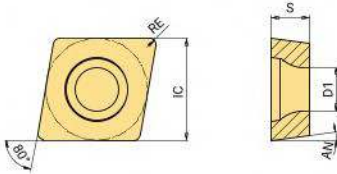
Product code	IC	S	D1	AN
CC_0602_	6.35	2.38	2.80	7°
CC_09T3_	9.525	3.97	4.40	7°
CC_1204_	12.688	4.76	5.50	7°

					Machining conditions		● Good Conditions ◐ General Conditions ✱ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S			
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Finishing		CCMT 060202-F1T	0.20	0.05-0.15	0.30-1.50	●	●															
		060204-F1T	0.40	0.05-0.15	0.30-1.50	●	●															
		09T304-F1T	0.40	0.10-0.25	0.60-1.50	●	●															
		09T308-F1T	0.80	0.10-0.25	0.60-1.50	●	●															
		CCMT 060202E-PA1	0.20	0.04-0.25	0.10-0.80	●	●	●	○													
		09T308E-PA1	0.80	0.05-0.30	0.10-0.80	●	●	●	●													
		CCMT 060202E-PB1	0.20	0.02-0.07	0.15-1.60	●	●		●	●		●	●	●								
		060204E-PB1	0.40	0.04-0.14	0.30-1.60	●	●		●	○		●	●	●								
		060208E-PB1	0.80	0.09-0.28	0.60-1.60	●	●		○	○		●	●	●								
		09T302E-PB1	0.20	0.02-0.07	0.15-2.40	●	●		●	●		●	●	●								
		09T304E-PB1	0.40	0.04-0.14	0.30-2.40	●	●		●	○		●	●	●					●			
		09T308E-PB1	0.80	0.09-0.28	0.60-2.40	●	●	●	●	○		●	●	●								
		CCMT 060202-F2K	0.20	0.06-0.15	0.50-2.00	●	●															
		060204-F2K	0.40	0.08-0.20	0.50-2.00	●	●															
		09T302-F2K	0.20	0.06-0.15	0.50-2.00	●	●															
		09T304-F2K	0.40	0.08-0.20	0.50-2.00	●	●															
		09T308-F2K	0.80	0.10-0.25	0.50-2.00	●	●															
Semi-finishing		CCMT 060204E-PC2	0.40	0.05-0.16	0.35-1.90	●	●		●	●		●	●	●					●			
		060208E-PC2	0.80	0.10-0.32	0.70-1.90	●	●		●	●		●	●	●					●			
		09T304E-PC2	0.40	0.05-0.16	0.35-2.90	●	●	●	●	●		●	●	●					●			
		09T308E-PC2	0.80	0.10-0.32	0.70-2.90	●	●	○	●	○		●	●	●					●			
		09T312E-PC2	1.20	0.16-0.48	1.05-2.90				●	○		●	●	●								
		120404E-PC2	0.40	0.05-0.16	0.35-3.90	●	●		●	●		●	●	●					●			
		120408E-PC2	0.80	0.10-0.32	0.70-3.90	●	●		●	○		●	●	●					●			
		120412E-PC2	1.20	0.16-0.48	1.05-3.90	●	●		○	○		●	●	●					●			
		CCMT 09T304E-M2T	0.40	0.10-0.25	0.70-3.50	●	●															
		09T308E-M2T	0.80	0.10-0.25	0.70-3.50	●	●															
		CCMT 060204-M2Y	0.40	0.08-0.25	0.50-2.50	●	●															

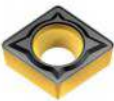
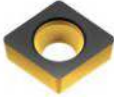
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (C)

(mm)



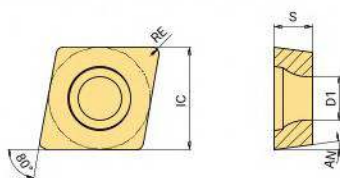
Product code	IC	S	D1	AN
CC_0301_	3.50	1.43	2.20	7°
CC_0401_	4.30	1.83	2.30	7°
CC_0602_	6.35	2.38	2.80	7°
CC_09T3_	9.525	3.97	4.40	7°
CC_1204_	12.688	4.76	5.50	7°

			Machining conditions	● Good Conditions ◐ General Conditions ✖ Bad Conditions																	
				●	●	●	◐	✖	✖	●	◐	◐	◐	●	◐	✖	●	●			
Inserts		Product code	RE (mm)	Recommended parameters		P						M			K			N	S		
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		CCMT 060204E-KC2	0.40	0.06-0.18	0.40-2.10	●	●			●	●		●	●	●			●	●		●
		060208E-KC2	0.80	0.12-0.36	0.80-2.10	●	●			●	●		●	●	●			●	●		
		09T304E-KC2	0.40	0.06-0.18	0.40-3.20	●	●	○	○	●	●		●	●	●		●	●	●		
		09T308E-KC2	0.80	0.12-0.36	0.80-3.20	●	●	○	●	○		●	●	●		●	●	●			
		120404E-KC2	0.40	0.06-0.18	0.40-4.30	●	●	●	○	○		●	●	●			●	●			
		120408E-KC2	0.80	0.12-0.36	0.80-4.30	●	●	●	●	●	●	●	●	●			●	●			
		120412E-KC2	1.20	0.18-0.54	1.20-4.30	●	●		○	○		●	●	●			●	●			
Roughing		CCMW 060204E-KD5	0.40	0.10-0.22	0.40-3.20												●	●			
		09T304E-KD5	0.40	0.10-0.22	0.40-4.80												●	●			
		09T308E-KD5	0.80	0.20-0.44	0.80-4.80												●	●			
		120404E-KD5	0.40	0.10-0.22	0.40-6.40												●	●			
		120408E-KD5	0.80	0.20-0.44	0.80-6.40												●	●			
		120412E-KD5	1.20	0.30-0.66	1.20-6.40												●	●			
Finishing		CCET 0301003FR-F	<0.03	0.01-0.05	0.10-0.30									○	●						
		0301003FL-F	<0.03	0.01-0.05	0.10-0.30									○	●						
		0301005FR-F	<0.05	0.01-0.05	0.10-0.30									○	●						
		0301005FL-F	<0.05	0.01-0.05	0.10-0.30									○	●						
		030101FR-F	<0.10	0.01-0.05	0.10-0.30		○							○	●						
		030101FL-F	<0.10	0.01-0.05	0.10-0.30		○							○	●						
		030102FR-F	<0.20	0.01-0.05	0.10-0.30		○							○	●						
		030102FL-F	<0.20	0.01-0.05	0.10-0.30		●							○	●						
		030104FR-F	<0.40	0.01-0.05	0.10-0.30		○							○	●						
		030104FL-F	<0.40	0.01-0.05	0.10-0.30		●							○	●						
		CCET 0401003FR-F	<0.03	0.01-0.06	0.10-0.40									○	●						
		0401003FL-F	<0.03	0.01-0.06	0.10-0.40									○	●						
		0401005FR-F	<0.05	0.01-0.06	0.10-0.40									○	●						
		0401005FL-F	<0.05	0.01-0.06	0.10-0.40									○	●						
		040101FR-F	<0.10	0.01-0.06	0.10-0.40		○							○	●						
		040101FL-F	<0.10	0.01-0.06	0.10-0.40		○							○	●						
		040102FR-F	<0.20	0.01-0.06	0.10-0.40		○							○	●						
		040102FL-F	<0.20	0.01-0.06	0.10-0.40		●							○	●						
		040104FR-F	<0.40	0.01-0.06	0.10-0.40		○							○	●						
		040104FL-F	<0.40	0.01-0.06	0.10-0.40		○							○	●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (C)

(mm)



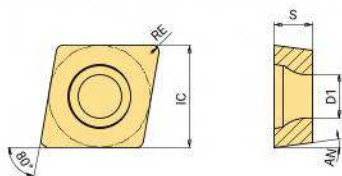
Product code	IC	S	D1	AN
CC_0602_	6.35	2.38	2.80	7°
CC_09T3_	9.525	3.97	4.40	7°

			Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
					● ● ● ● ✖ ✖ ● ● ● ● ● ● ✖ ● ●															
					Recommended parameters		P						M				K			N
Inserts	Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Low feed		CCET 0602003FR-M	<0.03	0.02-0.10	0.50-2.50									○	●					
		0602003FL-M	<0.03	0.02-0.10	0.50-2.50									○	●					
		0602005FR-M	<0.05	0.02-0.10	0.50-2.50									○	●					
		0602005FL-M	<0.05	0.02-0.10	0.50-2.50									○	●					
		060201FR-M	<0.10	0.02-0.10	0.50-2.50		○							○	●					
		060201FL-M	<0.10	0.02-0.10	0.50-2.50		○							○	●					
		060202FR-M	<0.20	0.02-0.10	0.50-2.50		○							○	●					
		060202FL-M	<0.20	0.02-0.10	0.50-2.50		●							○	●					
		060204FR-M	<0.40	0.01-0.10	0.50-2.50		○							○	●					
		060204FL-M	<0.40	0.01-0.10	0.50-2.50		○							○	●					
		CCET 09T3003FR-M	<0.03	0.02-0.10	0.50-4.00									○	●					
		09T3003FL-M	<0.03	0.02-0.10	0.50-4.00									○	●					
		09T3005FR-M	<0.05	0.02-0.10	0.50-4.00									○	●					
		09T3005FL-M	<0.05	0.02-0.10	0.50-4.00									○	●					
		09T301FR-M	<0.10	0.02-0.10	0.50-4.00		○							○	●					
		09T301FL-M	<0.10	0.02-0.10	0.50-4.00		○							○	●					
		09T302FR-M	<0.20	0.02-0.10	0.50-4.00		○							○	●					
		09T302FL-M	<0.20	0.02-0.10	0.50-4.00		○							○	●					
		09T304FR-M	<0.40	0.02-0.10	0.50-4.00		●							○	●					
		09T304FL-M	<0.40	0.02-0.10	0.50-4.00		○							○	●					

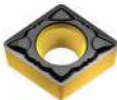
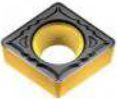
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (C)

(mm)



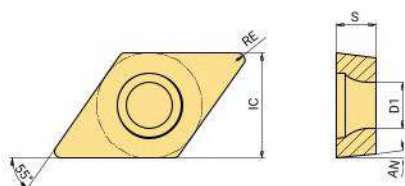
Product code	IC	S	D1	AN
CP.0802 _	7.94	3.40	2.38	11°
CP.0903 _	9.513	3.18	4.40	11°

			Machining conditions	● Good Conditions ◐ General Conditions ✖ Bad Conditions																
				● ● ● ◐ ✖ ✖ ● ◐ ◐ ◐ ● ◐ ✖ ● ●																
				P						M				K			N		S	
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S
Finishing		CPMT 080202E-PB1	0.20	0.02-0.07	0.15-2.00	●	●	○												
		080204E-PB1	0.40	0.04-0.14	0.30-2.00	●	●	○												
		090302E-PB1	0.20	0.02-0.07	0.15-2.40	●	●	○												
		090304E-PB1	0.40	0.04-0.14	0.30-2.40	●	●	○												
		090308E-PB1	0.80	0.09-0.28	0.60-2.40	●	●	○												
Semi-finishing		CPMT 090304E-PC2	0.40	0.05-0.15	0.35-2.90	●	●	○												
		090308E-PC2	0.80	0.10-0.32	0.70-2.90	●	●	○												

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 55° (D)

(mm)



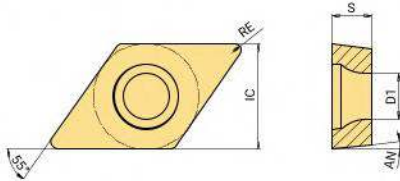
Product code	IC	S	D1	AN
DC_0702_	6.35	2.38	2.80	7°
DC_11T3_	9.525	3.97	4.40	7°

				Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions															
						P					M			K			N	S			
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		DCGT 0702005FP-LF	<0.05	0.05-0.15	0.35-3.00									○	●						
		070201FP-LF	<0.10	0.05-0.20	0.35-3.00										○	●					
		070202FP-LF	0.20	0.05-0.20	0.35-3.00										○	●					
		070204FP-LF	0.40	0.05-0.20	0.35-3.00										○	●					
		11T301FP-LF	<0.10	0.05-0.20	0.35-3.00										●	●					
		11T302FP-LF	0.20	0.05-0.20	0.35-3.00										●	●					
		11T304FP-LF	0.40	0.05-0.20	0.35-3.00										●	●					
		DCGT 0702005FP-UF	<0.05	0.02-0.15	0.10-1.40										○	●					
		070201FP-UF	0.10	0.02-0.15	0.10-1.40										○	●					
		070202FP-UF	0.20	0.02-0.15	0.10-1.40										○	●					
		070204FP-UF	0.40	0.03-0.20	0.10-1.40										○	●					
		11T301FP-UF	0.10	0.02-0.15	0.10-2.40										●	●					
		11T302FP-UF	0.20	0.02-0.15	0.10-2.40										●	●					
		11T304FP-UF	0.40	0.03-0.20	0.10-2.40										●	●					
		DCGT 070201F-UF	0.10	0.02-0.15	0.10-1.40		●														
		070202F-UF	0.20	0.02-0.15	0.10-1.40		○														
		070204F-UF	0.40	0.03-0.20	0.10-1.40		○														
		11T301F-UF	0.10	0.02-0.15	0.10-2.40		○														
		11T302F-UF	0.20	0.02-0.15	0.10-2.40		●														
		11T304F-UF	0.40	0.03-0.20	0.10-2.40		●														
		DCGT 070201E-UF	0.10	0.02-0.15	0.10-1.40		○								●	●					●
		070202E-UF	0.20	0.02-0.15	0.10-1.40		●								●	●					●
		070204E-UF	0.40	0.03-0.20	0.10-1.40		○								●	●					●
		11T301E-UF	0.10	0.02-0.15	0.10-2.40		○								●	●					●
		11T302E-UF	0.20	0.02-0.15	0.10-2.40		●								●	●					●
		11T304E-UF	0.40	0.03-0.20	0.10-2.40		●								●	●					●
Semi-finishing		DCGT 070202F-NC2	0.20	0.02-0.10	0.16-3.50															●	
		070204F-NC2	0.40	0.05-0.20	0.32-3.50															●	
		11T302F-NC2	0.20	0.02-0.10	0.16-5.20															●	
		11T304F-NC2	0.40	0.05-0.20	0.32-5.20															●	
		11T308F-NC2	0.80	0.10-0.40	0.64-5.20															●	
Finishing		DCMT 070202-F1T	0.20	0.07-0.20	0.40-1.50	●	●														
		070204-F1T	0.40	0.07-0.20	0.40-1.50	●	●														
		11T302-F1T	0.20	0.07-0.20	0.40-1.50	●	●														
		11T304-F1T	0.40	0.10-0.25	0.60-1.50	●	●														
		11T308-F1T	0.80	0.10-0.25	0.60-1.50	●	●														

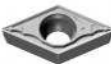
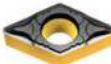
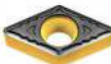
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 55° (D)

(mm)



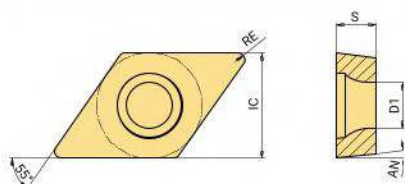
Product code	IC	S	D1	AN
DC_0702_	6.35	2.38	2.80	7°
DC_11T3_	9.525	3.97	4.40	7°

			Machining conditions		● Good Conditions ● General Conditions ✖ Bad Conditions															
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S	
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		DCMT 11T304-F1Y	0.40	0.08-0.25	0.50-2.00	●	●													
		DCMT 11T302E-PA1	0.20	0.04-0.25	0.10-1.00	●	●	●	○											
		11T304E-PA1	0.40	0.04-0.25	0.10-1.00	●	●	●	●											
		11T308E-PA1	0.80	0.05-0.30	0.10-1.00	●	●	●	●											
		DCMT 070202E-PB1	0.20	0.02-0.07	0.15-1.50	●	●		○	●		●	●	●						
		070204E-PB1	0.40	0.04-0.14	0.30-1.50	●	●		●	●		●	●	●						
		11T302E-PB1	0.20	0.02-0.07	0.15-2.30	●	●		○	○		●	●	●						
		11T304E-PB1	0.40	0.04-0.14	0.30-2.30	●	●	●	●	●		●	●	●						
		11T308E-PB1	0.80	0.09-0.28	0.60-2.30	●	●	●	○	●		●	●	●						
		DCMT 070202-F2K	0.20	0.06-0.15	0.50-2.00	●	●													
070204-F2K		0.40	0.08-0.20	0.50-2.00	●	●														
11T302-F2K		0.20	0.06-0.15	0.50-2.00	●	●														
11T304-F2K		0.40	0.08-0.20	0.50-2.00	●	●														
11T308-F2K		0.80	0.10-0.25	0.50-2.00	●	●														
Semi-finishing		DCMT 070204E-PC2	0.40	0.05-0.16	0.35-2.10	●	●		●	○		●	●	●					●	
		070208E-PC2	0.80	0.10-0.32	0.70-2.10	●	●		●	●		●	●	●					●	
		11T304E-PC2	0.40	0.05-0.16	0.35-3.10	●	●	●	●	●		●	●	●					●	
		11T308E-PC2	0.80	0.10-0.32	0.70-3.10	●	●	○	●	●		●	●	●					●	
		11T312E-PC2	1.20	0.16-0.48	1.05-3.10	●	●		●	○		●	●	●					●	
		DCMT 11T304-M2T	0.40	0.10-0.25	0.50-3.00	●	●													
		11T308-M2T	0.80	0.10-0.25	0.50-3.00	●	●													
Medium		DCMT 070204E-KC2	0.40	0.06-0.18	0.40-2.30	●	●		●	○						●	●			
		070208E-KC2	0.80	0.12-0.36	0.80-2.30	●	●		○	○						●	●			
		11T304E-KC2	0.40	0.06-0.18	0.40-3.50	●	●		●	●						●	●			
		11T308E-KC2	0.80	0.12-0.36	0.80-3.50	●	●	○	●	●					●	●	●			
		11T312E-KC2	1.20	0.18-0.54	1.20-3.50			○	●	○						●	●			
Roughing		DCMW 070204E-KD5	0.40	0.06-0.18	0.40-3.90											●	●			
		070208E-KD5	0.80	0.12-0.36	0.80-3.90											●	●			
		11T304E-KD5	0.40	0.06-0.18	0.40-5.80											●	●			
		11T308E-KD5	0.80	0.12-0.36	0.80-5.80											●	●			
Finishing		DCET 0702003FR-F	<0.03	0.02-0.18	0.10-0.40								○	●						
		0702003FL-F	<0.03	0.02-0.18	0.10-0.40								○	●						
		0702005FR-F	<0.05	0.02-0.18	0.10-0.40								○	●						
		0702005FL-F	<0.05	0.02-0.18	0.10-0.40								○	●						
		070201FR-F	<0.10	0.02-0.18	0.10-0.40	●							○	●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 55° (D)

(mm)



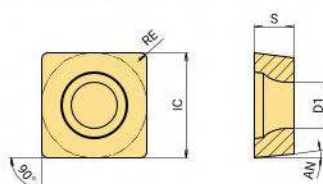
Product code	IC	S	D1	AN
DC_0702_	6.35	2.38	2.80	7°
DC_11T3_	9.525	3.97	4.40	7°

					Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions													
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S	
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		DCET 070201FL-F	<0.10	0.02-0.18	0.10-0.40		○							○	●					
		070202FR-F	<0.20	0.02-0.18	0.10-0.40		○							○	●					
		070202FL-F	<0.20	0.02-0.18	0.10-0.40		○							○	●					
		070204FR-F	<0.40	0.02-0.18	0.10-0.40		○							○	●					
		070204FL-F	<0.40	0.02-0.18	0.10-0.40		○							○	●					
		DCET 11T3003FR-F	<0.03	0.02-0.20	0.10-0.40									○	●					
		11T3003FL-F	<0.03	0.02-0.20	0.10-0.40									○	●					
		11T3005FR-F	<0.05	0.02-0.20	0.10-0.40									○	●					
		11T3005FL-F	<0.05	0.02-0.20	0.10-0.40									○	●					
		11T301FR-F	<0.10	0.02-0.20	0.10-0.40		○							○	●					
		11T301FL-F	<0.10	0.02-0.20	0.10-0.40		○							○	●					
		11T302FR-F	<0.20	0.02-0.20	0.10-0.40		●							○	●					
		11T302FL-F	<0.20	0.02-0.20	0.10-0.40		○							○	●					
		11T304FR-F	<0.40	0.02-0.20	0.10-0.40		●							○	●					
		11T304FL-F	<0.40	0.02-0.20	0.10-0.40		○							○	●					
Low feed		DCET 0702003FR-M	<0.03	0.01-0.08	0.50-2.80									○	●					
		0702003FL-M	<0.03	0.01-0.08	0.50-2.80									○	●					
		0702005FR-M	<0.05	0.01-0.08	0.50-2.80									○	●					
		0702005FL-M	<0.05	0.01-0.08	0.50-2.80									○	●					
		070201FR-M	<0.10	0.01-0.08	0.50-2.80		○							○	●					
		070201FL-M	<0.10	0.01-0.08	0.50-2.80		○							○	●					
		070202FR-M	<0.20	0.01-0.08	0.50-2.80		●							○	●					
		070202FL-M	<0.20	0.01-0.08	0.50-2.80		○							○	●					
		070204FR-M	<0.40	0.01-0.08	0.50-2.80		○							○	●					
		070204FL-M	<0.40	0.01-0.08	0.50-2.80		○							○	●					
		DCET 11T3003FR-M	<0.03	0.01-0.10	0.50-4.00									○	●					
		11T3003FL-M	<0.03	0.01-0.10	0.50-4.00									○	●					
		11T3005FR-M	<0.05	0.01-0.10	0.50-4.00									○	●					
		11T3005FL-M	<0.05	0.01-0.10	0.50-4.00									○	●					
		11T301FR-M	<0.10	0.01-0.10	0.50-4.00		○							○	●					
		11T301FL-M	<0.10	0.01-0.10	0.50-4.00		○							○	●					
		11T302FR-M	<0.20	0.01-0.10	0.50-4.00		●							○	●					
		11T302FL-M	<0.20	0.01-0.10	0.50-4.00		○							○	●					
		11T304FR-M	<0.40	0.01-0.10	0.50-4.00		●							○	●					
		11T304FL-M	<0.40	0.01-0.10	0.50-4.00		○							○	●					

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 90° (S)

(mm)



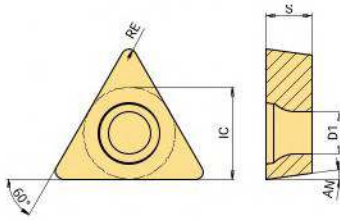
Product code	IC	S	D1	AN
SC_09T3_	9.525	3.97	4.40	7°
SC_1204_	12.70	4.76	5.50	7°
SC_3809_	38.10	9.525	9.80	7°

				Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
						P						M				K			N	S	
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-finishing		SCGT 09T308F-NC2	0.80	0.10-0.40	0.64-4.30															●	
Finishing		SCMT 09T304E-PB1	0.40	0.04-0.14	0.30-2.40	●	●		○	●		●	●	●							
		09T308E-PB1	0.80	0.09-0.28	0.60-2.40	●	●		●	○		●	●	●	●						
		120404E-PB1	0.40	0.04-0.14	0.30-3.20				○	○		●	●	●							
Semi-finishing		SCMT 09T304E-PC2	0.40	0.05-0.16	0.35-2.90	●	●		○	●		●	●	●	●						●
		09T308E-PC2	0.80	0.10-0.32	0.70-2.90	●	●		○	●		●	●	●	●						●
		120404E-PC2	0.40	0.05-0.16	0.35-3.80	●	●		●	○		●	●	●	●						●
		120408E-PC2	0.80	0.10-0.32	0.70-3.80	●	●	○	●	○		●	●	●	●						●
		120412E-PC2	1.20	0.16-0.48	1.05-3.80			○	○	●		●	●	●							●
		SCMT 09T304-M2T	0.40	0.10-0.25	0.70-3.50	●	●														
		09T308-M2T	0.80	0.10-0.25	0.70-3.50	●	●														
Medium		SCMT 09T304E-KC2	0.40	0.06-0.18	0.40-3.10	●	●		○	○							●	●			
		09T308E-KC2	0.80	0.12-0.36	0.80-3.10	●	●		●	○						●		●	●		
		120404E-KC2	0.40	0.06-0.18	0.40-4.20	●	●		●	○								●	●		
		120408E-KC2	0.80	0.12-0.36	0.80-4.20	●	●		●	○								●	●		
		120412E-KC2	1.20	0.18-0.54	1.20-4.20				●	●								●	●		
		SCMW 09T304E-KD5	0.40	0.10-0.22	0.40-4.80													●	●		
		09T308E-KD5	0.80	0.20-0.44	0.80-4.80												●	●	●		
		120404E-KD5	0.40	0.10-0.22	0.40-6.40													●	●		
		120408E-KD5	0.80	0.20-0.44	0.80-6.40													●	●		
		120412E-KD5	1.20	0.30-0.66	1.20-6.40												●	●	●		
Roughing		SCMT 380932S-HT	3.20	0.70-1.40	4.00-18.00						●										

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 60° (T)

(mm)

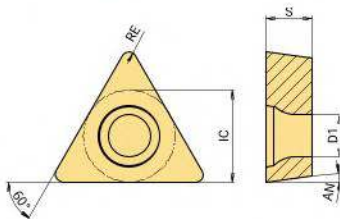


Product code	IC	S	D1	AN
TBET_0601_	3.97	1.59	2.30	5°

			RE (mm)	Recommended parameters		Machining conditions													
						● Good Conditions ◐ General Conditions ✖ Bad Conditions													
						●	●	●	◐	✖	✖	●	◐	◐	◐	●	◐	✖	●
Inserts	Product code	RE (mm)	f (mm/rev)	ap (mm)	P						M			K			N	S	
					AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S
Finishing		TBET 0601003FR-F	<0.03	0.03-0.08	0.10-0.50									○	●				
		0601003FL-F	<0.03	0.03-0.08	0.10-0.50									○	●				
		0601005FR-F	<0.05	0.03-0.08	0.10-0.50									○	●				
		0601005FL-F	<0.05	0.03-0.08	0.10-0.50									○	●				
		060101FR-F	<0.10	0.03-0.08	0.10-0.50		○							○	●				
		060101FL-F	<0.10	0.03-0.08	0.10-0.50		○							○	●				
		060102FR-F	<0.20	0.03-0.08	0.10-0.50		○							○	●				
		060102FL-F	<0.20	0.03-0.08	0.10-0.50		●							○	●				
		060104FR-F	<0.40	0.03-0.08	0.10-0.50		○							○	●				
		060104FL-F	<0.40	0.03-0.08	0.10-0.50		●							○	●				

Turning Inserts Positive 60° (T)

(mm)



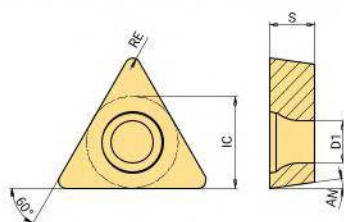
Product code	IC	S	D1	AN
TC_1102_	6.35	2.38	2.80	7°
TC_16T3_	9.525	3.97	4.40	7°

					Machining conditions															
					● Good Conditions ◐ General Conditions ✖ Bad Conditions															
					● ● ● ◐ ✖ ✖ ● ◐ ◐ ◐ ● ◐ ✖ ● ●															
Inserts		Product code	RE (mm)	Recommended parameters		P					M			K		N	S			
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S
Finishing		TCGT 110201FP-LF	<0.10	0.05-0.20	0.35-3.00									○	●					
		110202FP-LF	0.20	0.05-0.20	0.35-3.00									○	●					
		110204FP-LF	0.40	0.05-0.20	0.35-3.00									○	●					
		16T304FP-LF	0.40	0.05-0.20	0.35-3.00									○	●					
		TCGT 110201FP-UF	<0.10	0.02-0.15	0.10-2.40									○	●					
		110202FP-UF	0.20	0.02-0.15	0.20-2.40									○	●					
		110204FP-UF	0.40	0.03-0.20	0.20-2.40									○	●					
		16T304FP-UF	0.40	0.03-0.20	0.20-2.40									○	●					

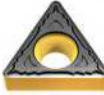
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 60° (T)

(mm)



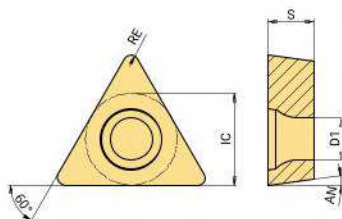
Product code	IC	S	D1	AN
TC_0902_	5.56	2.38	2.50	7°
TC_1102_	6.35	2.38	2.80	7°
TC_16T3_	9.525	3.97	4.40	7°

				Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions																
Inserts		Product code				RE (mm)		Recommended parameters		P						M				K		
				f (mm/rev)	ap (mm)					AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K
Finishing		TCGT 110201F-UF	0.10	0.02-0.15	0.10-2.40		○															
		110202F-UF	0.20	0.02-0.15	0.20-2.40		○															
		110204F-UF	0.40	0.03-0.20	0.20-2.40		○															
		16T304F-UF	0.40	0.03-0.20	0.20-2.40		○															
		TCGT 110201E-UF	0.10	0.02-0.15	0.10-2.40		○							●	●					●		
		110202E-UF	0.20	0.02-0.15	0.20-2.40		●							●	●					●		
		110204E-UF	0.40	0.03-0.20	0.20-2.40		●							●	●					●		
		16T304E-UF	0.40	0.03-0.20	0.20-2.40		○							●	●					●		
Semi-finishing		TCGT 110204F-NC2	0.40	0.05-0.20	0.32-4.90														●			
		16T304F-NC2	0.40	0.05-0.20	0.32-7.40														●			
		16T308F-NC2	0.80	0.10-0.40	0.64-7.40														●			
Finishing		TCMT 110204-F1T	0.40	0.07-0.20	0.40-1.50	●	●															
		16T304-F1T	0.40	0.10-0.25	0.60-1.50	●	●															
		TCMT 090204E-PB1	0.40	0.04-0.14	0.30-1.90	●	●		○	●		●	●	●	●							
		110202E-PB1	0.20	0.02-0.07	0.15-2.20	●	●		○	○		●	●	●								
		110204E-PB1	0.40	0.04-0.14	0.30-2.20	●	●		●	●		●	●	●								
		110208E-PB1	0.80	0.09-0.28	0.60-2.20	●	●		○	○		●	●	●								
		16T304E-PB1	0.40	0.04-0.14	0.30-3.30	●	●		●	●		●	●	●	●							
		16T308E-PB1	0.80	0.09-0.28	0.60-3.30	●	●		●	○		●	●	●								
		TCMT 110204-F2K	0.40	0.08-0.20	0.50-2.00	●	●															
		110208-F2K	0.80	0.10-0.25	0.50-2.00	●	●															
Semi-finishing		TCMT 090204E-PC2	0.40	0.05-0.16	0.35-2.60	●	●		●	●		●	●	●	●					●		
		090208E-PC2	0.80	0.10-0.32	0.70-2.60	●	●		●	○		●	●	●	●					●		
		110204E-PC2	0.40	0.05-0.16	0.35-3.00	●	●		●	●		●	●	●	●					●		
		110208E-PC2	0.80	0.10-0.32	0.70-3.00	●	●		●	○		●	●	●	●					●		
		16T304E-PC2	0.40	0.05-0.16	0.35-4.50	●	●	○	○	●		●	●	●	●					●		
		16T308E-PC2	0.80	0.10-0.32	0.70-4.50	●	●	●	●	●		●	●	●	●					●		
		16T312E-PC2	1.20	0.16-0.48	1.05-4.50	●	●		○	○		●	●	●						●		
		TCMT 110204-M2T	0.40	0.10-0.25	0.60-2.00	●	●															
		110208-M2T	0.80	0.10-0.25	0.60-2.00	●	●															
		110302-M2T	0.20	0.06-0.18	0.60-2.00	●	●															
		TCMT 16T304-M2T	0.40	0.06-0.18	0.40-2.90	●	●															
		16T308-M2T	0.80	0.12-0.36	0.80-2.90	●	●															

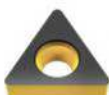
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 60° (T)

(mm)



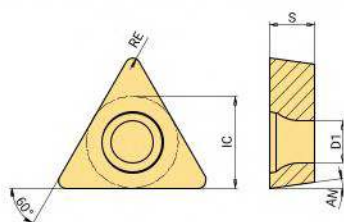
Product code	IC	S	D1	AN
TC_0802_	4.76	2.38	2.30	7°
TC-0902_	5.56	2.38	2.50	7°
TC_1102_	6.35	2.38	2.80	7°
TC_16T3_	9.525	3.97	4.40	7°

				Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
						●	●	●	●	✱	✱	●	●	●	●	●	●	✱	●	●	
Inserts		Product code	RE (mm)	Recommended parameters		P						M				K			N	S	
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		TCMT 090204E-KC2	0.40	0.06-0.18	0.40-2.90	●	●		○	●		●	●	●			●	●			
		090208E-KC2	0.80	0.12-0.36	0.80-2.90	●	●		○	○		●	●	●			●	●			
		110204E-KC2	0.40	0.06-0.18	0.40-3.30	●	●		●	○		●	●	●			●	●			
		110208E-KC2	0.80	0.12-0.36	0.80-3.30	●	●		○	○		●	●	●			●	●			
		16T304E-KC2	0.40	0.06-0.18	0.40-4.90	●	●	○	○	●		●	●	●			●	●			
		16T308E-KC2	0.80	0.12-0.36	0.80-4.90	●	●	○	●	○		●	●	●			●	●			
		16T312E-KC2	1.20	0.18-0.54	1.20-4.90	●	●		●	●		●	●	●		●	●	●			
Roughing		TCMW 110204E-KD5	0.40	0.06-0.18	0.40-5.50												●	●			
		110208E-KD5	0.80	0.12-0.36	0.80-5.50												●	●			
		16T304E-KD5	0.40	0.06-0.18	0.40-8.20												●	●			
		16T308E-KD5	0.80	0.12-0.36	0.80-8.20												●	●			
Finishing		TCET 110201FR-F	<0.10	0.03-0.13	0.10-0.80		○							○	●						
		110201FL-F	<0.10	0.03-0.13	0.10-0.80		○							○	●						
		110202FR-F	<0.20	0.03-0.13	0.10-0.80		○							○	●						
		110202FL-F	<0.20	0.03-0.13	0.10-0.80		○							○	●						
		110204FR-F	<0.40	0.03-0.13	0.10-0.80		○							○	●						
		110204FL-F	<0.40	0.03-0.13	0.10-0.80		●							○	●						
		110208FR-F	<0.80	0.03-0.13	0.10-0.80		○							○	●						
		110208FL-F	<0.80	0.03-0.13	0.10-0.80		○							○	●						
Low feed		TCET 0802003FR-M	<0.03	0.01-0.08	0.50-2.50									○	●						
		0802003FL-M	<0.03	0.01-0.08	0.50-2.50									○	●						
		080201FR-M	<0.10	0.01-0.08	0.50-2.50		○							○	●						
		080201FL-M	<0.10	0.01-0.08	0.50-2.50		○							○	●						
		080202FR-M	<0.20	0.01-0.08	0.50-2.50		○							○	●						
		080202FL-M	<0.20	0.01-0.08	0.50-2.50		●							○	●						
		TCET 1103003FR-M	<0.03	0.02-0.10	0.50-4.00									○	●						
		1103003FL-M	<0.03	0.02-0.10	0.50-4.00									○	●						
		110301FR-M	<0.10	0.02-0.10	0.50-4.00		○							○	●						
		110301FL-M	<0.10	0.02-0.10	0.50-4.00		○							○	●						
		110302FR-M	<0.20	0.02-0.10	0.50-4.00		○							○	●						
		110302FL-M	<0.20	0.02-0.10	0.50-4.00		○							○	●						
		110304FR-M	<0.40	0.02-0.10	0.50-4.00		●							○	●						
		110304FL-M	<0.40	0.02-0.10	0.50-4.00		○							○	●						

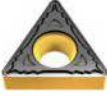
● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 60° (T)

(mm)



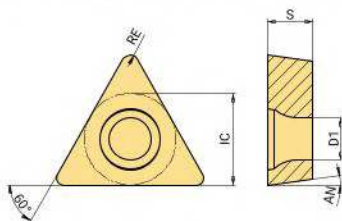
Product code	IC	S	D1	AN
TP_0902_	5.56	2.38	2.50	11°
TP_1103_	6.35	3.18	3.40	11°
TP_1603_	9.525	3.18	4.40	11°

					Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions															
Inserts		Product code	RE (mm)	Recommended parameters		P						M				K			N	S		
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Finishing		TPMT 110304-F1T	0.40	0.07-0.20	0.40-1.50	●	●															
		TPMT 110308E-PA1	0.80	0.05-0.30	0.10-1.00	●	●	●	●													
		TPMT 090202E-PB1	0.20	0.02-0.07	0.15-1.90	●	●	●														
		090204E-PB1	0.40	0.04-0.14	0.30-1.90	●	●	○						●								
		090208E-PB1	0.80	0.09-0.28	0.60-1.90	●	●	○														
		110302E-PB1	0.20	0.02-0.07	0.15-2.20	●	●	●														
		110304E-PB1	0.40	0.04-0.14	0.30-2.20	●	●	●						●								
		110308E-PB1	0.80	0.09-0.28	0.60-2.20	●	●	○														
		160304E-PB1	0.40	0.04-0.14	0.30-3.30	●	●	○														
		160308E-PB1	0.80	0.09-0.28	0.60-3.30	●	●	○														
		TPMT 110304-F2K	0.40	0.08-0.20	0.50-2.00	●	●															
	Semi-finishing		TPMT 090204E-PC2	0.40	0.05-0.16	0.35-2.60	●	●	○				●	●	●							
090208E-PC2			0.80	0.10-0.32	0.70-2.60	●	●	○				●	●	●	●							
110304E-PC2			0.40	0.05-0.16	0.35-3.00	●	●	○				●	●	●						●		
110308E-PC2			0.80	0.10-0.32	0.70-3.00	●	●	○				●	●	●	●							
160304E-PC2			0.40	0.10-0.25	0.60-2.00	●	●	○				●	●	●								
160308E-PC2			0.80	0.10-0.25	0.60-2.00	●	●	○				●	●	●								

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 60° (T)

(mm)



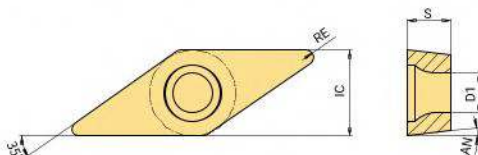
Product code	IC	S	D1	AN
TP_0802_	4.76	2.38	2.30	11°
TP_0902_	5.56	2.38	2.50	11°
TP_1103_	6.35	3.18	3.40	11°

					Machining conditions		● Good Conditions ⚙ General Conditions ✖ Bad Conditions															
							P						M				K			N		S
Inserts		Product code	RE (mm)	f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Finishing		TPEH 080201FR-F	<0.10	0.01-0.10	0.10-0.80		○							○	●							
		080201FL-F	<0.10	0.01-0.10	0.10-0.80		○								○	●						
		080202FR-F	<0.20	0.01-0.10	0.10-0.80		○								○	●						
		080202FL-F	<0.20	0.01-0.10	0.10-0.80		●								○	●						
		080204FR-F	<0.40	0.01-0.10	0.10-0.80		○								○	●						
		080204FL-F	<0.40	0.01-0.10	0.10-0.80		●								○	●						
		TPEH 090201FR-F	<0.10	0.01-0.10	0.10-0.80		○								○	●						
		090201FL-F	<0.10	0.01-0.10	0.10-0.80		○								○	●						
		090202FR-F	<0.20	0.01-0.10	0.10-0.80		○								○	●						
		090202FL-F	<0.20	0.01-0.10	0.10-0.80		●								○	●						
		090204FR-F	<0.40	0.01-0.10	0.10-0.80		○								○	●						
		090204FL-F	<0.40	0.01-0.10	0.10-0.80		○								○	●						
		TPEH 110302FR-F	<0.20	0.01-0.12	0.20-0.80		○								○	●						
		110302FL-F	<0.20	0.01-0.12	0.20-0.80		●								○	●						
		110304FR-F	<0.40	0.01-0.12	0.20-0.80		○								○	●						
		110304FL-F	<0.40	0.01-0.12	0.20-0.80		●								○	●						
		110308FR-F	<0.80	0.01-0.12	0.20-0.80		○								○	●						
		110308FL-F	<0.80	0.01-0.12	0.20-0.80		○								○	●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 35° (V)

(mm)



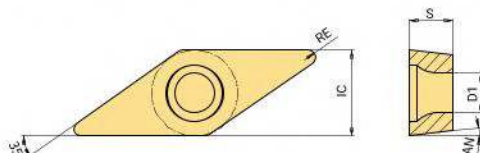
Product code	IC	S	D1	AN
VB_1103_	6.35	3.18	2.80	5°
VB_1604_	9.52	4.76	4.40	5°

				Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions														
Inserts	Product code	RE (mm)	Recommended parameters		P					M				K			N	S		
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		VBGT 1103005FP-LF	<0.05	0.05-0.20	0.35-3.00									○	●					
		110301FP-LF	<0.10	0.05-0.20	0.35-3.00									●	●					
		110302FP-LF	0.20	0.05-0.20	0.35-3.00									●	●					
		110304FP-LF	0.40	0.05-0.20	0.35-3.00									●	●					
		160401FP-LF	<0.10	0.05-0.20	0.35-3.00									○	●					
		160402FP-LF	0.20	0.05-0.20	0.35-3.00									○	●					
		VBGT 110301FP-UF	0.10	0.02-0.15	0.10-1.40									●	●					
		110302FP-UF	0.20	0.02-0.15	0.20-1.40									●	●					
		110304FP-UF	0.40	0.03-0.20	0.20-1.40									●	●					
		160401FP-UF	0.10	0.02-0.15	0.10-1.40									○	●					
		160402FP-UF	0.20	0.02-0.15	0.20-1.40									○	●					
		VBGT 110301F-UF	0.10	0.02-0.15	0.10-1.40		○													
		110302F-UF	0.20	0.02-0.15	0.20-1.40		●													
		110304F-UF	0.40	0.03-0.20	0.20-1.40		●													
		160401F-UF	0.10	0.02-0.15	0.10-1.40		○													
		160402F-UF	0.20	0.02-0.15	0.20-1.40		●													
		VBGT 110301E-UF	0.10	0.02-0.15	0.10-1.40		○							●	●					●
		110302E-UF	0.20	0.02-0.15	0.20-1.40		●							●	●					●
		110304E-UF	0.40	0.03-0.20	0.20-1.40		●							●	●					●
		160401E-UF	0.10	0.02-0.15	0.10-1.40		○							○	●					●
		160402E-UF	0.20	0.02-0.15	0.20-1.40		●							●	●					●
Profiling		VBMT 110302E-BS	0.20	0.10-0.32	0.70-2.10	●	●	●	○											
		110304E-BS	0.40	0.05-0.16	0.35-3.10	●	●	●	○											
		110308E-BS	0.80	0.10-0.32	0.70-3.10	●	●	●	○											
		160402E-BS	0.20	0.04-0.14	0.30-1.50	●	●	●	○											
		160404E-BS	0.40	0.06-0.18	0.40-3.30	●	●	●	○											
		160408E-BS	0.80	0.12-0.36	0.80-3.30	●	●	●	○	○										
		160412E-BS	1.20	0.18-0.54	1.20-3.30	●	●	●	○											
Finishing		VBMT 110302E-PA1	0.20	0.04-0.25	0.10-1.00	●	●	●	●											
		160404E-PA1	0.40	0.04-0.25	0.10-1.00	●	●	●	●											
		160408E-PA1	0.80	0.05-0.30	0.10-1.00	●	●	●	●											
		VBMT 110304E-PB1	0.40	0.04-0.14	0.30-1.40	●	●		●	○		●	●	●	●					
		110308E-PB1	0.80	0.09-0.28	0.60-1.40	●	●		○	○		●	●	●	●					
		160402E-PB1	0.20	0.02-0.07	0.15-2.10	●	●		○	●		●	●	●	●					
		160404E-PB1	0.40	0.04-0.14	0.30-2.10	●	●		○	○		●	●	●	●					
		160408E-PB1	0.80	0.09-0.28	0.60-2.10	●	●	○	●	●		●	●	●	●					

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 35° (V)

(mm)



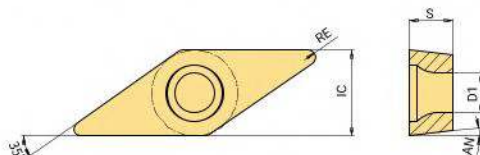
Product code	IC	S	D1	AN
VB_1103_	6.35	3.18	2.80	5°
VB_1604_	9.52	4.76	4.40	5°

				Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions															
						● ● ● ◐ ✖ ✖						● ◐ ◐ ◐				● ◐ ✖		● ●			
Inserts		Product code	RE (mm)	Recommended parameters		P						M				K		N	S		
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		VBMT 110304-F2K	0.40	0.08-0.20	0.50-2.00	●	●														
		160404-F2K	0.40	0.08-0.20	0.50-2.00	●	●														
		160408-F2K	0.80	0.10-0.25	0.50-2.00	●	●														
Semi-finishing		VBMT 110304E-PC2	0.40	0.05-0.16	0.35-2.10	●	●					●	●	●	●				●		
		110308E-PC2	0.80	0.10-0.32	0.70-2.10	●	●					●	●	●	●				●		
		160404E-PC2	0.40	0.05-0.16	0.35-3.10	●	●	●				●	●	●	●				●		
		160408E-PC2	0.80	0.10-0.32	0.70-3.10	●	●	●				●	●	●	●				●		
		160412E-PC2	1.20	0.16-0.48	1.05-3.10			●				●	●	●	●				●		
Medium		VBMT 160404E-KC2	0.40	0.06-0.18	0.40-3.30	●	●		●	○		●	●	●			●	●			
		160408E-KC2	0.80	0.12-0.36	0.80-3.30	●	●	●	●	●		●	●	●			●	●			
		160412E-KC2	1.20	0.18-0.54	1.20-3.30	●	●	●	●	○		●	●	●			●	●			
Finishing		VBET 1103003FR-F	<0.03	0.01-0.18	0.10-0.30									○	●						
		1103003FL-F	<0.03	0.01-0.18	0.10-0.30									○	●						
		1103005FR-F	<0.05	0.01-0.18	0.10-0.30									○	●						
		1103005FL-F	<0.05	0.01-0.18	0.10-0.30									○	●						
		110301FR-F	<0.10	0.01-0.18	0.10-0.30		○							○	●						
		110301FL-F	<0.10	0.01-0.18	0.10-0.30		○							○	●						
		110302FR-F	<0.20	0.01-0.18	0.10-0.30		●							○	●						
		110302FL-F	<0.20	0.01-0.18	0.10-0.30		○							○	●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 35° (V)

(mm)



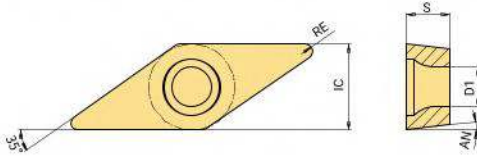
Product code	IC	S	D1	AN
VB_1103_	6.35	3.18	2.80	5°
VB_1604_	9.52	4.76	4.40	5°

					● Good Conditions ◐ General Conditions ✱ Bad Conditions																
				Machining conditions																	
Inserts	Product code	RE (mm)	Recommended parameters		P						M				K			N	S		
			f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Low feed		VBET 1103005FR-M	<0.05	0.01-0.06	0.20-2.00									○	●						
		1103005FL-M	<0.05	0.01-0.06	0.20-2.00									○	●						
		110301FR-M	<0.10	0.01-0.06	0.20-2.00		○							○	●						
		110301FL-M	<0.10	0.01-0.06	0.20-2.00		○							○	●						
		110302FR-M	<0.20	0.01-0.06	0.20-2.00		●							○	●						
		110302FL-M	<0.20	0.01-0.06	0.20-2.00		○							○	●						
		110304FR-M	<0.40	0.01-0.06	0.20-2.00		●							○	●						
		110304FL-M	<0.40	0.01-0.06	0.20-2.00		○							○	●						
		VBET 1103003FR-Y	<0.03	0.08-0.22	0.50-1.80									○	●						
		1103003FL-Y	<0.03	0.08-0.22	0.50-1.80									○	●						
		1103005FR-Y	<0.05	0.08-0.22	0.50-1.80									○	●						
		1103005FL-Y	<0.05	0.08-0.22	0.50-1.80									○	●						
		110301FR-Y	<0.10	0.08-0.22	0.50-1.80		○							○	●						
		110301FL-Y	<0.10	0.08-0.22	0.50-1.80		○							○	●						
		110302FR-Y	<0.20	0.08-0.22	0.50-1.80		●							○	●						
		110302FL-Y	<0.20	0.08-0.22	0.50-1.80		○							○	●						
		110304FR-Y	<0.40	0.08-0.22	0.50-1.80		●							○	●						
		110304FL-Y	<0.40	0.08-0.22	0.50-1.80		○							○	●						
		VBET 160402FR-Y	<0.20	0.10-0.25	0.80-2.00		●							○	●						
		160402FL-Y	<0.20	0.10-0.25	0.80-2.00		○							○	●						
		160404FR-Y	<0.40	0.10-0.25	0.80-2.00		●							○	●						
		160404FL-Y	<0.40	0.10-0.25	0.80-2.00		○							○	●						
		160408FR-Y	0.80	0.10-0.25	0.80-2.00		○							○	●						
		160408FL-Y	0.80	0.10-0.25	0.80-2.00		○							○	●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 35° (V)

(mm)



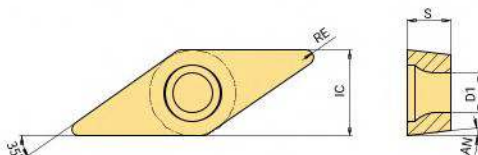
Product code	IC	S	D1	AN
VC_1103_	6.35	3.18	2.80	7°
VC_1604_	9.525	4.76	4.40	7°
VC_2205_	12.70	5.56	5.50	7°

						● Good Conditions ● General Conditions ✖ Bad Conditions															

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 35° (V)

(mm)



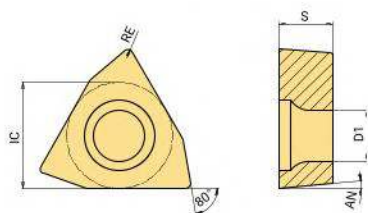
Product code	IC	S	D1	AN
VP_0802_	4.76	2.38	2.30	11°
VP_1103_	6.35	3.18	2.80	11°
VP_2205_	12.70	5.56	5.50	11°

						Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions																
								Recommended parameters		P						M				K			N	S
										f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K
Inserts		Product code	RE (mm)																					
Finishing		VPGT 1103005FP-LF	<0.05	0.05-0.20	0.35-3.00										○	●								
		110301FP-LF	<0.10	0.05-0.20	0.35-3.00											○	●							
		110302FP-LF	0.20	0.05-0.20	0.35-3.00											○	●							
		VPGT 110301FP-UF	0.10	0.02-0.15	0.10-1.40											○	●							
		110302FP-UF	0.20	0.02-0.15	0.20-1.40											○	●							
		VPGT 110301F-UF	0.10	0.02-0.15	0.10-1.40		○																	
110302F-UF		0.20	0.02-0.15	0.20-1.40		○																		
Semi-finishing		VPGT 220520E-NC2	2.00	0.24-1.00	1.60-5.50																	●		
		220520F-NC2	2.00	0.24-1.00	1.60-5.50																	●		
Finishing		VPET 080201FR-F	<0.10	0.02-0.15	0.05-0.20		○								○	●								
		080201FL-F	<0.10	0.02-0.15	0.05-0.20		○								○	●								
		080202FR-F	<0.20	0.02-0.15	0.05-0.20		○								○	●								
		080202FL-F	<0.20	0.02-0.15	0.05-0.20		●								○	●								
Low feed		VPET 080201FR-M	<0.10	0.01-0.06	0.20-1.50		○								○	●								
		080201FL-M	<0.10	0.01-0.06	0.20-1.50		○								○	●								
		080202FR-M	<0.20	0.01-0.06	0.20-1.50		○								○	●								
		080202FL-M	<0.20	0.01-0.06	0.20-1.50		●								○	●								
		VPET 110301FR-M	<0.10	0.01-0.06	0.20-2.00		○								○	●								
		110301FL-M	<0.10	0.01-0.06	0.20-2.00		○								○	●								
		110302FR-M	<0.20	0.01-0.06	0.20-2.00		●								○	●								
		110302FL-M	<0.20	0.01-0.06	0.20-2.00		○								○	●								
		110304FR-M	<0.40	0.01-0.06	0.20-2.00		●								○	●								
		110304FL-M	<0.40	0.01-0.06	0.20-2.00		○								○	●								

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive 80° (W)

(mm)



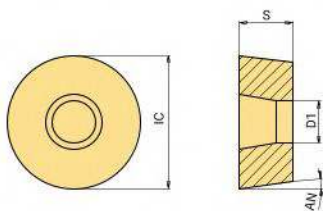
Product code	IC	S	D1	AN
WB_0601_	3.97	1.59	2.30	5°
WB_0802_	4.76	2.38	2.30	5°

Inserts		Product code	RE (mm)	Recommended parameters		Machining conditions															
						● Good Conditions ◐ General Conditions ✖ Bad Conditions															
						●	●	●	◐	✖	✖	●	◐	◐	◐	●	◐	✖	●	●	
						P						M				K			N	S	
						AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		WBET 0601003FR-F	<0.03	0.05-0.08	0.10-0.80										●						
		0601003FL-F	<0.03	0.05-0.08	0.10-0.80										●						
		060101FR-F	<0.10	0.05-0.08	0.10-0.80										●						
		060101FL-F	<0.10	0.05-0.08	0.10-0.80										●						
		060102FR-F	<0.20	0.05-0.08	0.10-0.80										●						
		060102FL-F	<0.20	0.05-0.08	0.10-0.80										●						
		060104FR-F	<0.40	0.05-0.08	0.10-0.80										●						
		060104FL-F	<0.40	0.05-0.08	0.10-0.80										●						
		WBET 0802003FR-F	<0.03	0.05-0.08	0.10-0.80										●						
		0802003FL-F	<0.03	0.05-0.08	0.10-0.80										●						
		080201FR-F	<0.10	0.05-0.08	0.10-0.80										●						
		080201FL-F	<0.10	0.05-0.08	0.10-0.80										●						
		080202FR-F	<0.20	0.05-0.08	0.10-0.80										●						
		080202FL-F	<0.20	0.05-0.08	0.10-0.80										●						
		080204FR-F	<0.40	0.05-0.08	0.10-0.80										●						
		080204FL-F	<0.40	0.05-0.08	0.10-0.80										●						

● : Standard stock ○ : Made-to-Order

Turning Inserts Positive Round (R)

(mm)



Product code	IC	S	D1	AN
RCGT_0803_	8.00	3.18	3.40	7°
RCGT_1003_	10.00	3.18	4.40	7°
RCGT_10T3_	10.00	3.97	4.40	7°
RCMX_1003_	10.00	3.18	3.60	7°
RCMX_1204_	12.00	4.76	4.20	7°
RCMX_1606_	16.00	6.35	5.20	7°
RCMX_2006_	20.00	6.35	6.50	7°
RCMX_2507_	25.00	7.94	7.20	7°
RCMX_3209_	32.00	9.525	9.60	7°

				Machining conditions		● Good Conditions ● General Conditions ✱ Bad Conditions															
						●	●	●	●	✱	✱	✱	●	●	●	●	✱	●	●		
Inserts		Product code	RE (mm)	Recommended parameters		P						M				K			N	S	
				f (mm/rev)	ap (mm)	AT202	AT210A	AC052P	AC152P	AC252P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-finishing		RCGT 0803MOF-NC2	-	0.10-1.00	0.70-3.30														●		
		1003MOF-NC2	-	0.20-1.30	0.90-4.00														●		
		10T3MOF-NC2	-	0.20-1.30	0.90-4.00														●		
		RCMT 0803MOE-PD8	-	0.06-0.31	0.80-3.20																
		10T3MOS-PD8	-	0.06-0.31	1.00-4.00																
		1204MOS-PD8	-	0.08-0.38	1.20-4.80		○	○	○												
		1606MOS-PD8	-	0.10-0.50	1.60-6.40																
		2006MOS-PD8	-	0.21-1.26	2.00-8.00																
		2507MOS-PD8	-	0.28-1.53	2.50-10		○														
		RCMX 2006MOS-PD8	-	0.48-0.90	3.50-9.00			●	●												
		2507MOS-PD8	-	0.55-1.20	4.00-12.00			●	●												
		3209MOS-PD8	-	0.65-1.50	5.00-15.00			●	●												
Medium		RCMX 100300S	-	0.25-0.50	1.50-4.00		○	○	●												
		120400S	-	0.30-0.60	2.50-5.00			●	○												
		160600S	-	0.40-0.75	3.00-7.00			●	○												
		200600S	-	0.48-0.90	3.50-9.00			●	○												
		250700S	-	0.55-1.20	4.00-12.00			○	○												
		320900S	-	0.65-1.50	5.00-15.00		○	●	○												

● : Standard stock ○ : Made-to-Order



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PCBN/PCD Insert



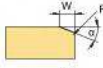
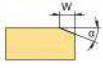
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PCBN Insert Denomination System

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

1- Standard ISO Code System	2- Cutting Edge Shape S-- Land + Honed  T-- Land 	3- T-land Width 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 Insert Structure FT-- Full-face composite  SD-- Solid CBN  SL-- Standard  QL-- Heavy-duty through-cut 	6- Number Of Cutting Edges 2-- Two cutting edges 3-- Three cutting edges	7- Cutting Edge Preparation CB-- With chip breaker WG-- With wiper edge "None"-- Without chip breaker	8- Grade PB30-- Low content CBN PB60-- Medium content CBN PB90-- High content CBN

PCBN Insert Grade Introduction

Grade	Grade Characteristics	Main Applications	ISO Group
PB30	Excellent wear resistance for medium-to-high-speed machining	Versatile; suitable for continuous and light interrupted cutting of hardened steel	H05-H15
PB60	Balanced toughness for medium cutting speeds	Moderate-interrupted cutting of hardened steel, interrupted and continuous machining of powder metallurgy, gray cast iron machining	H10-H25
PB90	High CBN content with superior hardness & fracture resistance	K- Mainly for cast iron machining H- Severe interrupted cutting of hardened steel, powder metallurgy machining	K01-K20

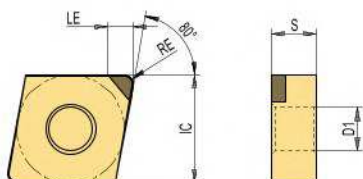
Recommended Parameters for PCBN Insert

Grade	Workpiece Material	Hardness Range	Cutting Speed Vc (m/min)	Feed fn (mm/rev)	Depth of Cut ap (mm)	Recommended Application Conditions
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
	Powder metallurgy	-	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	150--450	0.03--0.3	0.30-0.5	Continuous/Interrupted
	Powder metallurgy	-	300--800	0.03--0.3	0.10-0.3	Continuous/Interrupted

Grade Application Guide

Material Group		ISO	ISO Group of PCBN Insert Grade			ISO
			Uncoated			
			PB30	PB60	PB90	
P	Non-alloy steels/ Alloyed steels	P01				P01
		P10				P10
		P20				P20
		P30				P30
		P40				P40
		P50				P50
M	Stainless steels	M01				M01
		M10				M10
		M20				M20
		M30				M30
		M40				M40
K	Cast iron	K01			PB90	K01
		K10				K10
		K20				K20
		K30				K30
		K40				K40
		K50				K50
N	Aluminum/ Aluminum alloys	N01				N01
		N10				N10
		N20				N20
		N30				N30
S	Heat resistant alloys	S01				S01
		S10				S10
		S20				S20
		S30				S30
		S40				S40
H	Hardened steels/ Chilled cast iron	H01	PB30			H01
		H10		PB60		H10
		H20				H20
		H30				H30

Overview Of PCBN Negative Inserts



(mm)

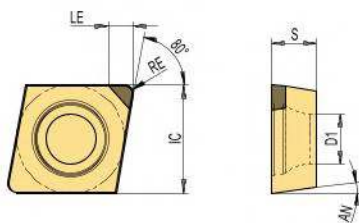
Product code	IC	S	LE	D1
CN_1204_	12.7	4.76	2.2	5.16
DN_1504_	12.7	4.76	2.2	5.16
DN_1506_	12.7	6.35	2.2	5.16
TN_1604_	9.525	4.76	2.2	3.81
VN_1604_	9.525	4.76	2.2	3.81
WN_0804_	12.7	4.76	2.2	5.16

			Machining conditions		● Good Conditions ⚙ General Conditions ✖ Bad Conditions		
					●	⚙	●
Inserts	Product code	RE (mm)	Recommended parameters		H		K
			f (mm/rev)	a _p (mm)	PB30	PB60	PB90
	CNGA 120404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	120408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	120412-S01020-SL-2	1.2	0.03-0.3	0.05-0.5			●
	DNGA 150404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	150408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	150412-S01020-SL-2	1.2	0.03-0.3	0.05-0.5			●
	150604-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	150608-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	150612-S01020-SL-2	1.2	0.03-0.3	0.05-0.5			●
	TNGA 160404-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	160408-S01020-SL-3	0.8	0.03-0.3	0.05-0.5	●	●	●
	160412-S01020-SL-3	1.2	0.03-0.3	0.05-0.5			●
	VNGA 160404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	160408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	160412-S01020-SL-2	1.2	0.03-0.3	0.05-0.5			●
	WNGA 080404-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	080408-S01020-SL-3	0.8	0.03-0.3	0.05-0.5	●	●	●
	080412-S01020-SL-3	1.2	0.03-0.3	0.05-0.5			●

For hard material turning, negative PCBN Inserts are preferred to use double-clamped D-type tool holders to reduce vibration and chipping.

● : Standard stock ○ : Made-to-Order

(mm)

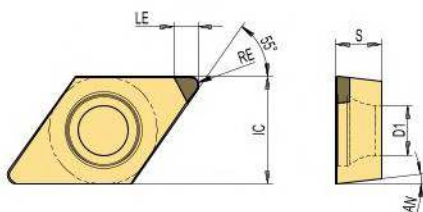


Product code	IC	S	LE	D1	AN
CC_0602_	6.35	2.38	2.2	2.8	7°
CC_09T3_	9.525	3.97	2.2	4.4	7°
CC_1204_	12.7	4.76	2.2	5.5	7°
TC_1102_	6.35	2.38	2.2	2.8	7°
TP_0802_	4.76	2.38	2.2	2.3	11°
TP_0902_	5.56	2.38	2.2	2.8	11°
TP_1103_	6.35	3.18	2.2	3.4	11°
TP_1604_	9.525	3.18	2.2	4.4	11°

			Machining conditions		● Good Conditions ⚙ General Conditions ✖ Bad Conditions		
					●	⚙	●
Inserts	Product code	RE (mm)	Recommanded parameters		H		K
			f (mm/rev)	ap (mm)	PB30	PB60	PB90
	CCGW 060202-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●	●	
	060204-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	09T302-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	09T304-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	09T308-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	120404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	120408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	120412-S01020-SL-2	1.2	0.03-0.3	0.05-0.5			●
	TPGW 080202-S01020-SL-3	0.2	0.03-0.3	0.05-0.5	●	●	
	080204-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	090202-S01020-SL-3	0.2	0.03-0.3	0.05-0.5	●	●	
	090204-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	090208-S01020-SL-3	0.8	0.03-0.3	0.05-0.5	●	●	●
	110302-S01020-SL-3	0.2	0.03-0.3	0.05-0.5	●	●	
	110304-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	160402-S01020-SL-3	0.2	0.03-0.3	0.05-0.5	●	●	
	160404-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	160408-S01020-SL-3	0.8	0.03-0.3	0.05-0.5	●	●	●
	TCGW 110204-S01020-SL-3	0.4	0.03-0.3	0.05-0.5	●	●	●
	110208-S01020-SL-3	0.8	0.03-0.3	0.05-0.5	●	●	●

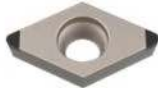
● : Standard stock ○ : Made-to-Order

Overview Of PCBN Positive Inserts



(mm)

Product code	IC	S	LE	D1	AN
DC_0702_	6.35	2.38	2.2	2.8	7°
DC_1173_	9.525	3.97	2.2	4.4	7°
VB_1103_	6.35	3.18	2.2	2.8	5°
VC_1103_	6.35	3.18	2.2	2.8	7°
VB_1604_	9.525	4.76	2.2	4.4	5°
VC 1604	9.525	4.76	2.2	4.4	7°

			Machining conditions		● Good Conditions ◐ General Conditions ✖ Bad Conditions		
					●	◐	●
Inserts	Product code	RE (mm)	Recommanded parameters		H		K
			f (mm/rev)	ap (mm)	PB30	PB60	PB90
	DCGW 070202-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	070204-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	070208-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	11T302-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	11T304-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	11T308-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	11T312-S01020-SL-2	1.2	0.03-0.3	0.05-0.5		●	●
	VBGW 110302-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	110304-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	110308-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	160402-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	160404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	160408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	VCGW 110302-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	110304-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	110308-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●
	160402-S01020-SL-2	0.2	0.03-0.3	0.05-0.5	●		
	160404-S01020-SL-2	0.4	0.03-0.3	0.05-0.5	●	●	●
	160408-S01020-SL-2	0.8	0.03-0.3	0.05-0.5	●	●	●

● : Standard stock ○ : Made-to-Order

PCD Insert Denomination System

CCGW 09T304	-	1	-	NL	-	05	-	CB	PD20
1		2		3		4		5	6

1- Standard ISO Code System

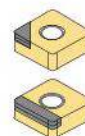
2- Number Of Cutting Edges

1-- One cutting edge

3- PCD Insert Structure

NL--Standard

LL--Full edge tippe



4- Rake Angle

00--0° 07--7°
05--5° 10--10°

5- Cutting Edge Preparation

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

6- Grade

PD01-- Fine grain PCD
PD10-- Medium grain PCD
PD20-- Mixed grain PCD

PCD Insert Grade Introduction

Grade	Grade Characteristics	Main Applications	ISO Group
PD20	2-30μm mixed grain size; superior wear resistance & edge integrity; excellent surface finish	1st choice for general aluminum machining, roughing of high-silicon Al, graphite, carbide rolls	N01-N20
PD10	10μm avg. grain size; balanced toughness & wear resistance; premium finish	Single-workpiece roughing/finishing; medium/low-silicon aluminum	N01-N20

PCD Recommended Cutting Parameter

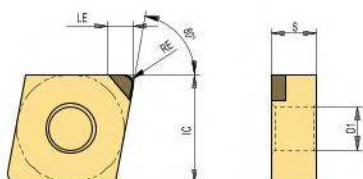
Grade	Workpiece Material	Cutting Speed Vc (m/min)	Feed fn (mm/rev)	Depth of Cut ap (mm)
PD20	Low-Si Al (si ≤ 12%)	600-2000	0.03-0.3	0.05-0.5
	High-Si Al (si > 12%)	300-500	0.03-0.2	0.05-0.2
	Copper alloys	400-1000	0.1-0.3	0.1-2
	Sintered carbides	20-40	0.03-0.2	0.05-0.2
	CFRP/graphite	100-600	0.1-0.3	0.1-2

Grade Application Guide

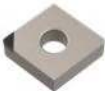
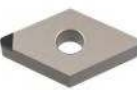
Material Group		ISO	ISO Group of PCD Insert Grade		ISO
			Uncoated		
			PD20		
P	Non-alloy steels/ Alloyed steels	P01			P01
		P10			P10
		P20			P20
		P30			P30
		P40			P40
		P50			P50
M	Stainless steels	M01			M01
		M10			M10
		M20			M20
		M30			M30
		M40			M40
K	Cast iron	K01			K01
		K10			K10
		K20			K20
		K30			K30
		K40			K40
		K50			K50
N	Aluminum/ Aluminum alloys	N01		PD20	N01
		N10			N10
		N20			N20
		N30			N30
S	Heat resistant alloys	S01			S01
		S10			S10
		S20			S20
		S30			S30
		S40			S40
H	Hardened steels/ Chilled cast iron	H01			H01
		H10			H10
		H20			H20
		H30			H30

Overview Of PCD Negative Inserts

(mm)

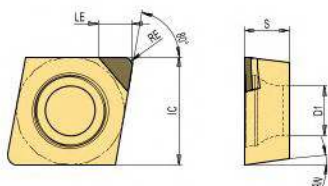


Product code	IC	S	LE	D1
CN_1204_	12.7	4.76	3.0	5.16
DN_1504_	12.7	4.76	3.0	5.16
TN_1604_	9.525	4.76	3.0	3.81
VN_1604_	9.525	4.76	3.0	3.81

Inserts	Product code	RE (mm)	Machining conditions		● Good Conditions
			Recommended parameters		N
			f (mm/rev)	ap (mm)	PD20
	CNGA 120404-1-NL-00	0.4	0.03-0.2	0.05-0.5	●
	120408-1-NL-00	0.8	0.03-0.2	0.05-0.5	●
	DNGA 150404-1-NL-00	0.4	0.03-0.2	0.05-0.5	●
	150408-1-NL-00	0.8	0.03-0.2	0.05-0.5	●
	TNGA 160404-1-NL-00	0.4	0.03-0.2	0.05-0.5	●
	160408-1-NL-00	0.8	0.03-0.2	0.05-0.5	●
	VNGA 160404-1-NL-00	0.4	0.03-0.2	0.05-0.5	●
	160408-1-NL-00	0.8	0.03-0.2	0.05-0.5	●

● : Standard stock ○ : Made-to-Order

Overview Of PCD Positive Inserts



(mm)

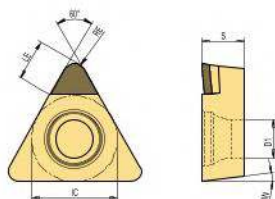
Product code	IC	S	LE	D1	AN
CC_0602_	6.35	2.38	3.0	2.8	7°
CC_09T3_	9.525	3.97	3.0	4.4	7°
CC 1204_	12.7	4.76	3.0	5.5	7°

[illegible]

● : Standard stock ○ : Made-to-Order

Overview Of PCD Positive Inserts

(mm)

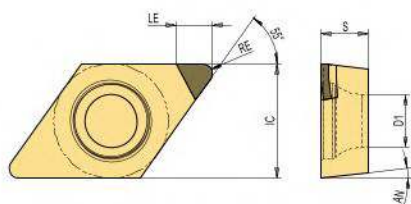


Product code	IC	S	LE	D1	AN
TB_0601_	3.97	1.59	2.0	2.2	5°
TC_1102_	6.35	2.38	3.0	2.8	7°
TC_1103_	6.35	3.18	3.0	2.8	7°
TC_16T3_	9.525	3.97	3.0	4.4	7°
TP_0802_	4.76	2.38	3.0	2.4	11°
TP_0902_	5.56	2.38	3.0	2.8	11°

Inserts	Product code	RE (mm)	Rake Angle (°)	Machining conditions		● Good Conditions
				Recommended parameters		●
				f (mm/rev)	ap (mm)	N
	TBGW 060102-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	060104-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●
	TCGW 110202-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	110204-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●
	110302-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	110304-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●
	110308-1-NL-05	0.8	5°	0.03-0.2	0.05-0.5	●
	16T302-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	16T304-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●
	16T308-1-NL-05	0.8	5°	0.03-0.2	0.05-0.5	●
	TPGW 080202-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	080204-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●
	090202-1-NL-05	0.2	5°	0.03-0.2	0.05-0.5	●
	090204-1-NL-05	0.4	5°	0.03-0.2	0.05-0.5	●

● : Standard stock ○ : Made-to-Order

Overview Of PCD Positive Inserts



					(mm)
Product code	IC	S	LE	D1	AN
DC_0702_	6.35	2.38	3.0	2.8	7°
DC_11T3_	9.525	3.97	3.0	4.4	7°
VB_1103_	6.35	3.18	3.0	2.8	5°
VB_1604	9.525	4.76	3.0	4.4	5°

[illegible]

● : Standard stock ○ : Made-to-Order