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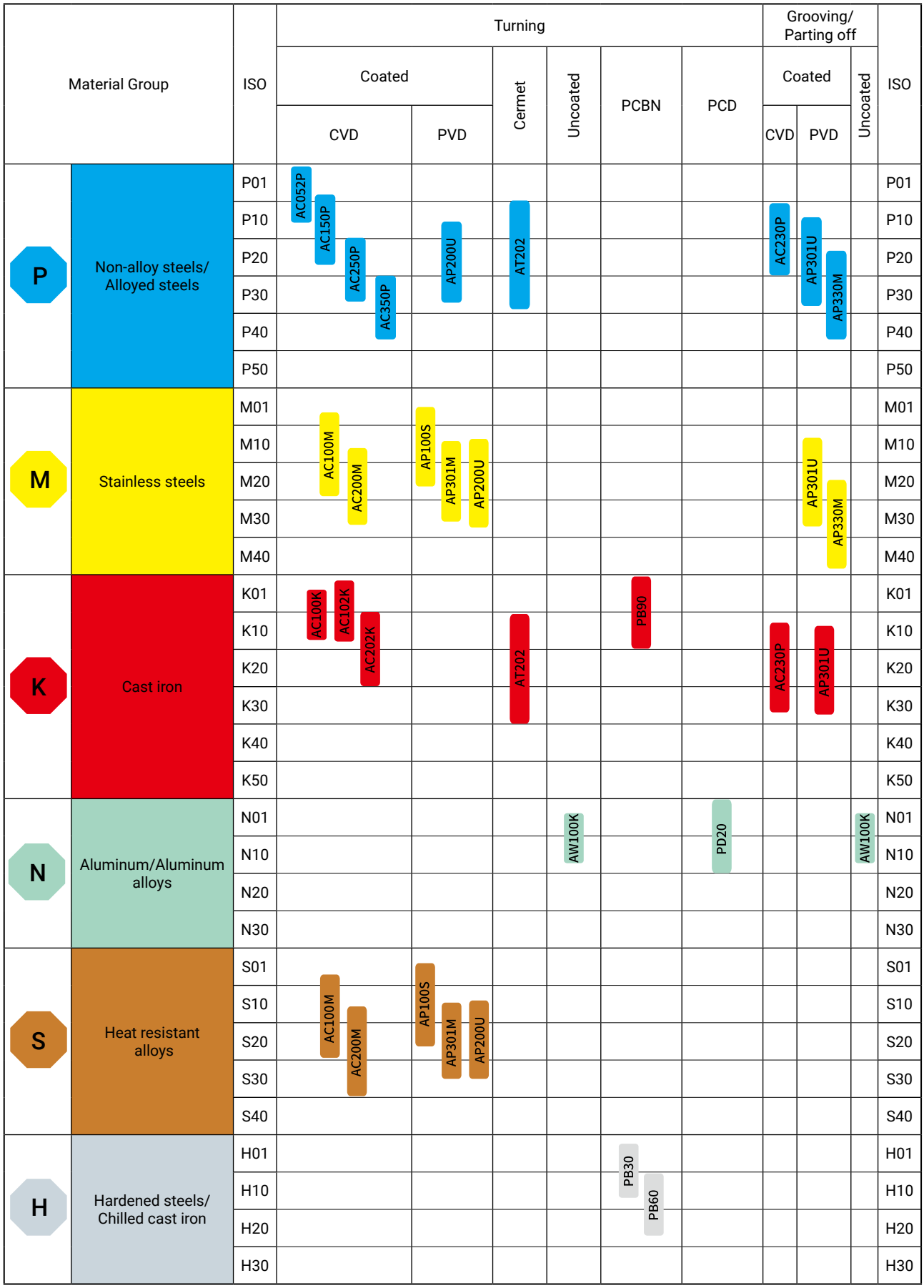
THE EXPERTS OF DIFFICULT MACHINING

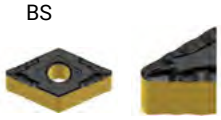
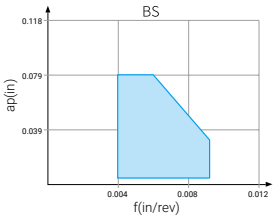
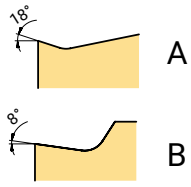
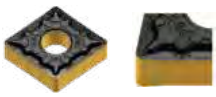
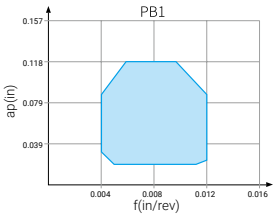
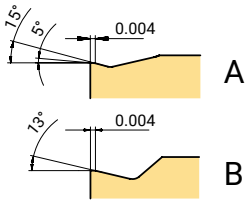
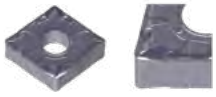
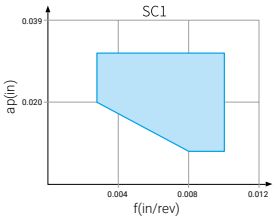
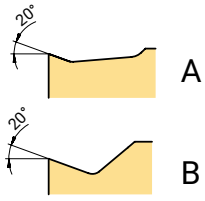
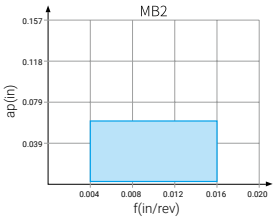
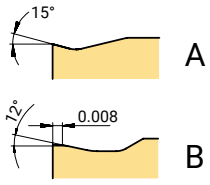
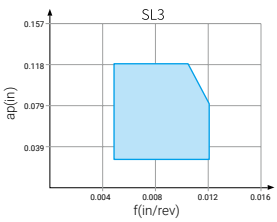
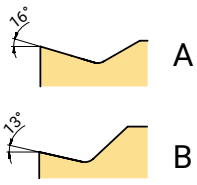
Turning Inserts

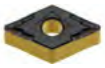
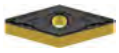
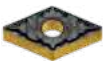
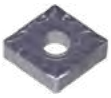
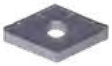
Turning and Grooving Grade Application Guide

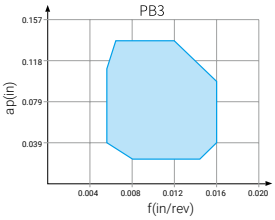
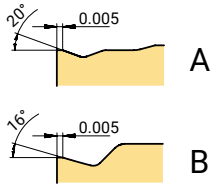
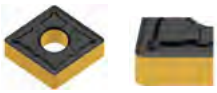
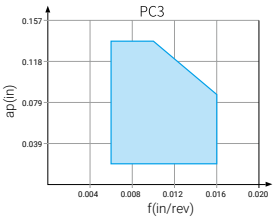
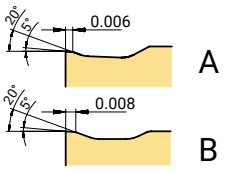
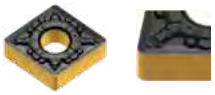
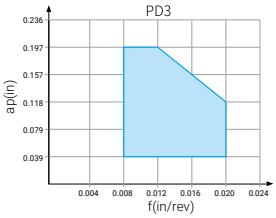
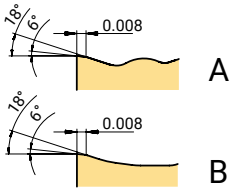
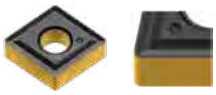
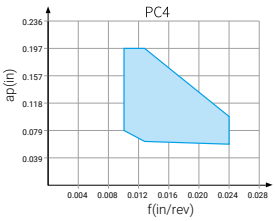
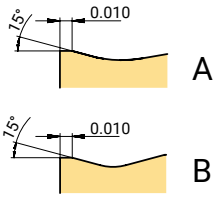
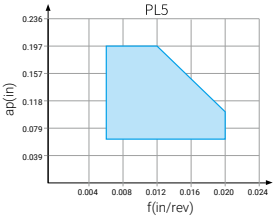
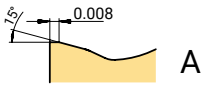


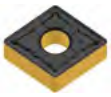
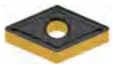
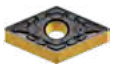
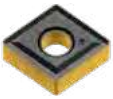
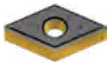
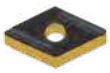
Overview of Turning Insert Geometries

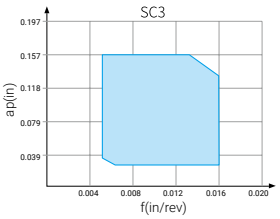
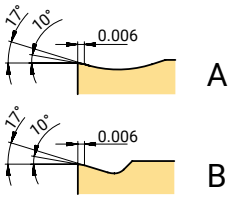
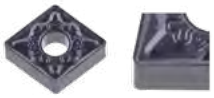
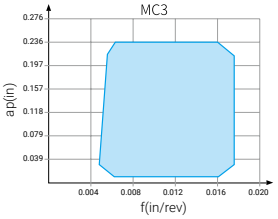
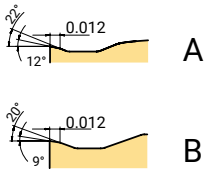
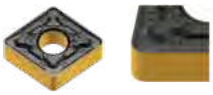
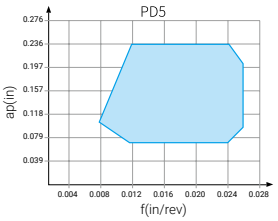
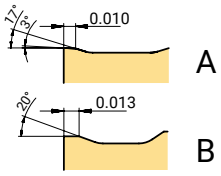
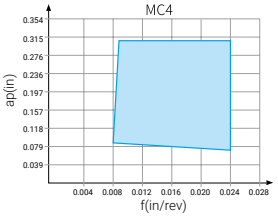
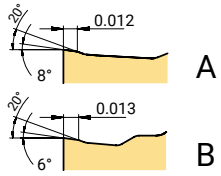
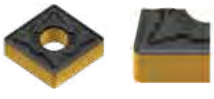
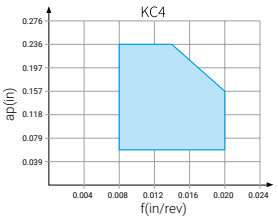
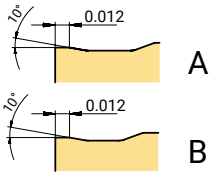
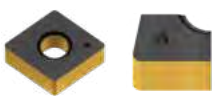
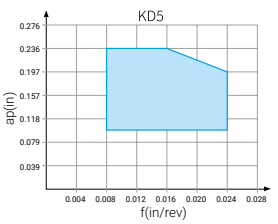
Negative Inserts

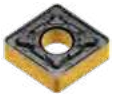
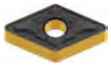
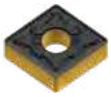
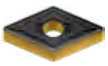
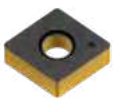
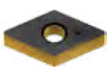
Application	Chip breaker	Features	Chip breaking range	Cross section geometry
Profiling	BS 	**Finishing and semi-finishing profile turning** Suitable for turning with changing depth of cut. Smooth chip evacuation		
Finishing	PB1 	**First choice for steel finish turning** Light cutting chip breaker, low cutting force, suitable for machining slender shaft, thin wall and unstably clamped parts, good cutting performance		
	SC1 	**First choice for heat resistant alloy finish turning** Excellent performance at low depth of cut.		
	MB2 	**First** 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.		
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.		

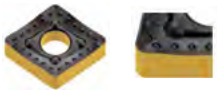
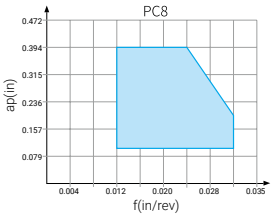
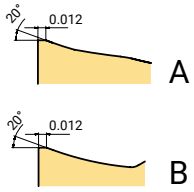
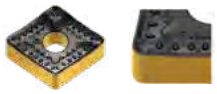
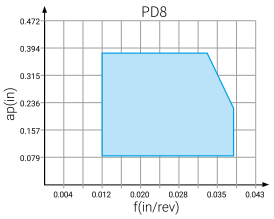
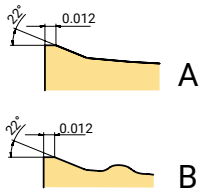
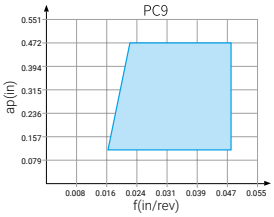
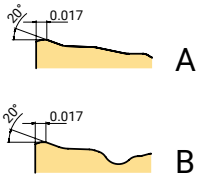
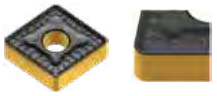
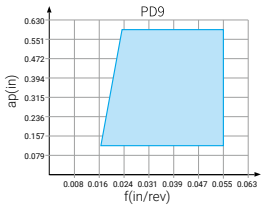
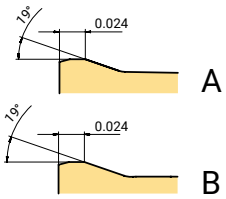
	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
		DNMG-BS  P54			VNMG-BS  P63		
	CNMG-PB1  P50	DNMG-PB1  P54	SNMG-PB1  P57	TNMG-PB1  P60	VNMG-PB1  P63	WNMG-PB1  P65	
	CNMG-SC1  P50	DNMG-SC1  P54		TNMG-SC1  P60	VNMG-SC1  P63	WNMG-SC1  P65	
	CNMG-MB2  P50	DNMG-MB2  P54	SNMG-MB2  P57	TNMG-MB2  P60	VNMG-MB2  P63	WNMG-MB2  P65	
	CNMG-SL3  P50	DNMG-SL3  P54	SNMG-SL3  P57	TNMG-SL3  P60	VNMG-SL3  P63	WNMG-SL3  P65	

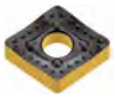
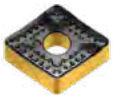
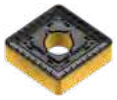
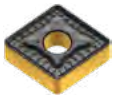
Application	Chip breaker	Features	Chip breaking range	Cross section geometry
Semi-finishing	PB3 	**First choice for steel semi finish turning** The positive rake angle combined with small land guarantees edge strength and sharpness, reducing the cutting forces. The wavy side edge design has a good chip breaking results in out-copying 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 for smooth cutting. Enhanced insert tip reduced crater wear.		
Medium	PD3 	**First 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.		
	PC4 	**First choice for cast iron medium turning** **Alternative chipbreaker for carbon steel and alloy steel medium turning** Flat T-land guarantees the strength of the cutting edge. This multi-purpose geometry can be used in universal applications.		
	PL5 	**First choice for steel slender bar turning** Open chip breaker leads to smooth cutting with low cutting force, which is suitable for slender shaft turning.		

	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
	CNMG-PB3  P50	DNMG-PB3  P54		TNMG-PB3  P60	VNMG PB3  P63	WNMG-PB3  P65	
	CNMG-PC3  P50	DNMG-PC3  P55	SNMG-PC3  P57	TNMG-PC3  P60	VNMG-PC3  P63	WNMG-PC3  P65	
	CNMG-PD3  P50	DNMG-PD3  P55	SNMG-PD3  P57	TNMG-PD3  P60	VNMG-PD3  P64	WNMG-PD3  P66	
	CNMG-PC4  P51	DNMG-PC4  P56	SNMG-PC4  P58	TNMG-PC4  P61	VNMG-PC4  P64	WNMG-PC4  P66	
		DNMG-PL5  P55		TNMG-PL5  P60		WNMG-PL5  P66	

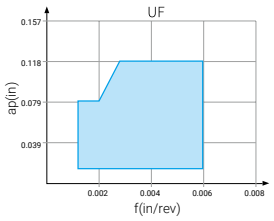
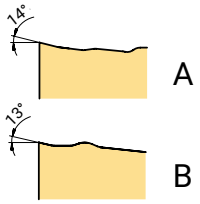
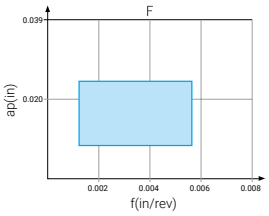
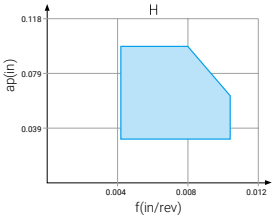
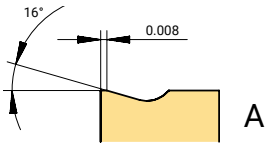
Application	Chip breaker	Features	Chip breaking range	Cross section geometry
Medium	SC3 	**First choice for heat resistant alloy medium turning** Used in heat resistant alloy and titanium alloy medium turning. Large rake angle and small land width design allows for easy cutting and is suitable for soft steel turning.		
	MC3 	**First choice for stainless steel medium turning** Sharp cutting edge, low cutting force, wide chip breaking range and good chip removability.		
Roughing	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.		
	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 	**First choice for cast iron turning** It has strong cutting edge, reliable and stable performance.		
	KD5 	**First choice for cast iron rough turning** High cutting edge strength, suitable for interrupt cutting and unstable cutting.		

	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
	CNMG-SC3  P51	DNMG-SC3  P55	SNMG-SC3  P57	TNMG-SC3  P60	VNMG-SC3  P64	WNMG-SC3  P66	
	CNMG-MC3  P51	DNMG-MC3  P55	SNMG-MC3  P57	TNMG-MC3  P61	VNMG-MC3  P64	WNMG-MC3  P66	
	CNMG-PD5  P52	DNMG-PD5  P56	SNMG-PD5  P58	TNMG-PD5  P61		WNMG-PD5  P67	
	CNMG-MC4  P51	DNMG-MC4  P56	SNMG-MC4  P58	TNMG-MC4  P61		WNMG-MC4  P67	
	CNMG-KC4  P52	DNMG-KC4  P56	SNMG-KC4  P58	TNMG-KC4  P61	VNMG-KC4  P64	WNMG-KC4  P67	
	CNMA-KD5  P52	DNMA-KD5  P56	SNMA-KD5  P59	TNMA-KD5  P62		WNMA-KD5  P67	

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 	**First 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 big cutting depth and high feed turning. High machining reliability.		

	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
	CNMM-PC8  P53						
	CNMM-PD8  P53		SNMM-PD8  P59	TNMM-PD8  P62			
	CNMM-PC9  P53		SNMM-PC9  P59				
	CNMM-PD9  P53		SNMM-PD9  P59				

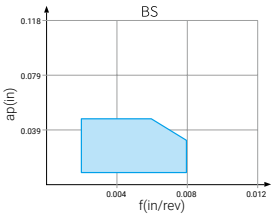
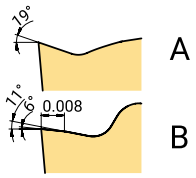
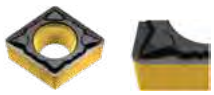
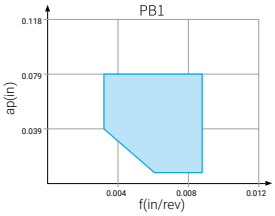
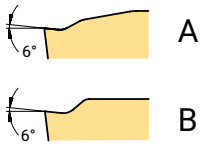
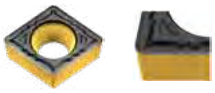
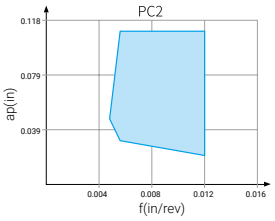
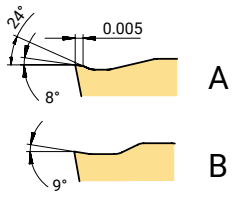
Negative Ground Insert

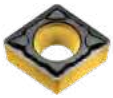
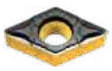
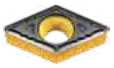
Application	Chip breaker	Features	Chip breaking range	Cross section geometry	
Finishing	UF 	**Suitable for precision turning** Low cutting forces, good chip breaking, suitable for finish turning.			
	F 	**Finish turning** Low cutting force, good chip control. The sharp edge produces a good surface finish.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

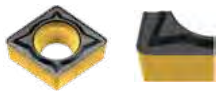
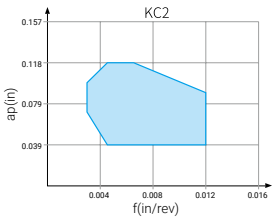
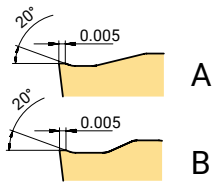
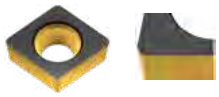
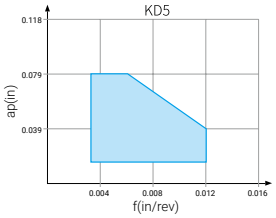
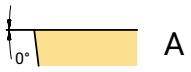
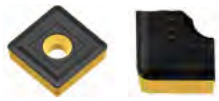
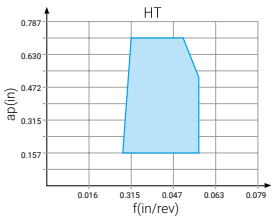
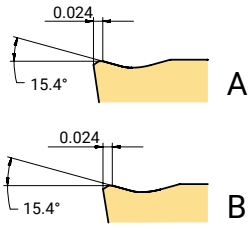
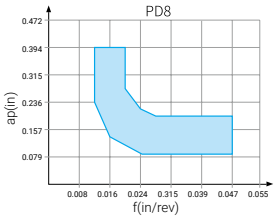
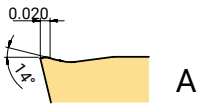
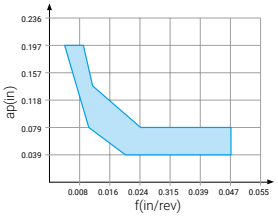
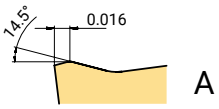
	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
				TNGG-UF  P62	VNGG-UF  P64		
				TNGG-F  P62			
				TNGG-H  P62			

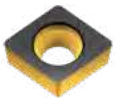
Overview of Turning Insert Geometry

Positive Pressed Insert

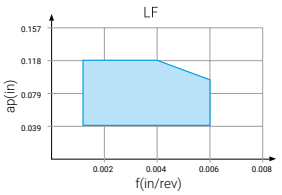
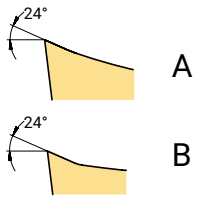
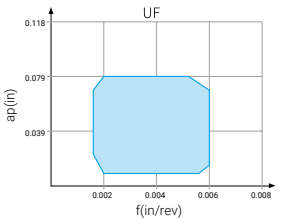
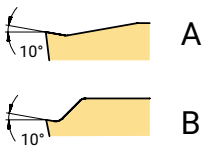
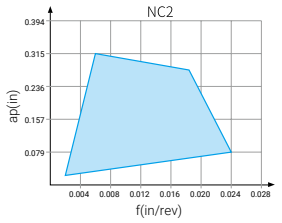
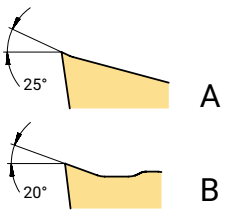
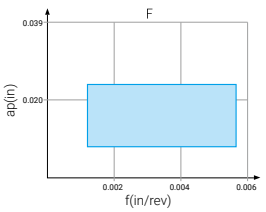
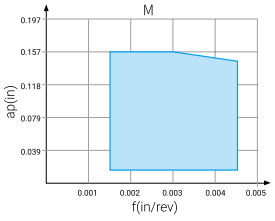
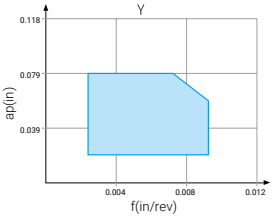
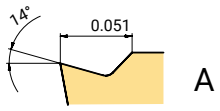
Application	Chip breaker	Features	Chip breaking range	Cross section geometry
Profiling	BS 	**Profile turning** Profile turning or turning with changing depth of cut, smooth chip evacuation.		
Finishing	PB1 	**First choice for steel finish turning** Positive rake angle reduces cutting force and built-up edge, and obtains better surface finish and longer tool life. Also can be used in stainless steel turning.		
Semi-finishing	PC2 	**First 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  P85		
	CCMT-PB1 CPMT-PB1  P71	DCMT-PB1  P75	SCMT-PB1  P78	TCMT-PB1 TPMT-PB1  P80	VBMT-PB1 VCMT-PB1  P86		
	CCMT-PC2 CPMT-PC2  P71	DCMT-PC2  P75	SCMT-PC2  P78	TCMT-PC2 TPMT-PC2  P80	VBMT-PC2 VCMT-PC2  P86		

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 heavy turning** The wide chip breaker avoids chip jamming at deep depth of cut. Has good chip control at light depth of cut as well.			
Medium	No code 	**Alternative chipbreaker for cast iron and alloy steel medium turning** Negative land and big rake angle design ensure cutting edge strength and sharpness.			

	80° Rhombus	55° Rhombus	90° Square	60° Triangle	35° Rhombus	80° Trigon	Round
	CCMT-KC2  P72	DCMT-KC2  P75	SCMT-KC2  P78	TCMT-KC2  P81	VBMT-KC2  P86		
	CCMW-KD5  P72	DCMW-KD5  P76	SCMW-KD5  P78	TCMW-KD5  P81			
			SCMT-HT  P78				
							RCMX-PD8  P90
							RCMX  P90

Positive Ground Insert

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 	**First 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 rates. Reliable machining. Big rake angle avoids work hardening. .		
Semi-finishing	Y 	**Choice for semi-finish 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  P70	DCGT-LF  P74		TCGT-LF  P79	VBGT-LF VCGT-LF VPGT-LF  P84		
	CCGT-UF  P70	DCGT-UF  P74		TCGT-UF  P79	VBGT-UF VCGT-UF VPGT-UF  P84, 85		
	CCGT-NC2  P71	DCGT-NC2  P75	SCGT-NC2  P78	TCGT-NC2  P79	VCGT-NC2  P85		RCGT-NC2  P90
	CCET-F  P73	DCET-F  P76		TBET-F TCET-F TPEH-F  P81, 82, 83	VBET-F VCET-F VPET-F  P86, 87	WBET-F  P89	
	CCET-M  P73	DCET-M  P77		TCET-M  P83	VBET-M VPET-M  P87, 88		
					VBET-Y  P88		

Turning Grade Description

Basic Grades for Turning

P 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 recommanded for high productivity medium and rough turning in stable condition, can keep edge reliability in dry or wet machining with high temperature.

AC150P P15(P10-P25)

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

AC250P P25(P20-P35)

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

AC350P P35(P25-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.

Supplemental grade

AP200U P25(P15-P35)

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

AC200M P35(P25-P40)

CVD coated grade. Supplemental grade for steel turning where high toughness is required.

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 where low cutting force are required.

M 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 recommanded 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.

AP200U M25(M15-M35)

PVD coated grade, used in finish turning at low to medium speed 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 required.

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

AP100S M15(M05-M25)

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

K 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 hard substrate, recommanded for grey cast iron high speed turning.

AC102K K05(K01-K15)

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.

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 required.

N Non-ferrous metals

Basic grade

AW100K N15 (N05-N15)

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.

S Heat resistant alloys

Basic grade

AP100S S15(S05-S25)

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

AP200U 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.

H 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 Recommandation--Negative Insert

Materials																	
ISO	Workpiece Materials			Brinell Hardness (HB)	Tensile strength Rm(lbs/in²)	AT202			AC052P			AC150P			AC250P		
						f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
						0.004	0.012	0.020	0.004	0.016	0.024	0.004	0.016	0.024	0.004	0.016	0.024
P	Unalloyed steel	C ⩽ 0.25%	Annealed	125	62000	650	330	230	2000	1470	1080	1590	1180	880	1240	850	680
		0.25 < C ⩽ 0.55%	Annealed	190	92700	650	330	230	1800	1300	960	1200	880	680	920	650	490
		0.25 < C ⩽ 0.55%	Heat-treated	210	103000	650	260	160	1300	920	650	850	720	550	650	520	440
		C > 0.55%	Annealed	190	92700	650	260	160	1700	1260	900	880	720	520	780	520	410
		C > 0.55%	Heat-treated	300	147000	650	260	160	1200	800	590	680	590	490	520	390	360
		Free cutting steel(short chip)	Annealed	220	108000	650	260	160	1900	1380	980	1440	1010	820	1110	720	570
	Low-alloyed steel	Annealed		175	85700	590	260	160	2000	1300	930	1140	850	720	780	570	440
		Heat-treated		300	146900	590	260	160	1700	1150	820	720	550	490	460	320	270
		Heat-treated		380	186000	590	260	160	1080	750	570	520	390	320	320	230	180
		Heat-treated		430	214200	590	260	160	870	600	460	290	230				
	High-alloyed steel and high-alloyed tool steel	Annealed		200	97900	520	260	160	1460	960	700	1080	750	490	680	470	270
		Hardened and tempered		300	147000	520	260	160	980	650	520	750	460	360	420	270	210
		Hardened and tempered		400	197000	490	260	160	720	460	340	260	230				
	Stainless steel	Ferritic/Martensite,Annealed		200	97900										590	490	390
		Martensite,Heat-treated		330	162000										460	320	230
M	Stainless steel	Austenitic,hardened		200	97900												
		Austenitic,precipitation hardened stainless steel(PH stainless steel)		300	147000												
		Austenitic,ferritic,duplex		230	113000												
K	Malleable cast iron	Ferritic		200	58000												
		Pearlitic		260	101000												
	Grey cast iron	Low tensile strength		180	29000												
		High tensile strength/Austenitic		245	50800												
	Nodular cast iron	Ferritic		155	58000												
		Pearlitic		265	101000												
	GGV(CGI)			230	58000												
N	Wrought aluminum alloy	Non-aging alloy		30	-												
		Aged alloy		100	49300												
	Cast aluminum alloy	⩽ 12% Si, non-aging alloy		75	37700												
		⩽ 12% Si, aged alloy		90	45000												
		> 12% Si, non-aging alloy		130	65300												
	Magnesium alloy			70	36300												
	Copper and copper alloy(bronze/brass)	Unalloyed,electrolytic copper		100	49300												
		Brass,bronze,red brass		90	45000												
		Cu alloy,short chip		110	55100												
		High tensile,Ampco alloy		300	146500												
S	Heat-resistant alloy	Fe-based	Annealed	200	98600												
			Aged	280	136000												
		Ni or Co based	Annealed	250	122000												
			Aged	350	171000												
			Cast	320	156600												
	Titanium alloy	Pure Titanium		200	98600												
		α and β alloy,aged		375	182700												
		β alloy		410	203000												
	Tungsten alloy			300	146500												
	Molybdenum alloy			300	146500												
H	Hardened steel	Hardened and tempered		50HRC													
		Hardened and tempered		55HRC													
		Hardened and tempered		60HRC													
	Chilled cast iron	Hardened and tempered		50HRC													

*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）

Achteck turning grade																											
Initial value of cutting speed Vc(sfm)																											
	AC350P			AC100M			AC200M			AP200U			AC100K			AC102K			AC202K			AW100K			AP100S		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
	0.004	0.016	0.024	0.004	0.012	0.020	0.004	0.012	0.020	0.004	0.012	0.020	0.004	0.016	0.024	0.004	0.016	0.024	0.004	0.016	0.024	0.004	0.008	0.016	0.004	0.012	0.020
	820	550	460							720	680																
	650	440	360							550	490																
	490	410	290							460	390																
	550	360	290							420	390																
	410	240	210																								
	720	470	370							620	550																
	650	540	490							420	360																
	440	290	230																								
	290	210	140																								
	590	490	270							390	260																
	360	270	210																								
	490	390	310	720	590	490	620	520	420	470	420	290															
	360	260	190	550	460	420	460	360	320	340	260	230															
				820	620	490	650	520	360	590	390	260													780	620	490
				590	520		490	390		360	290														490	270	
				620	550	420	520	420	320	390	320	230													550	470	320
													910	650	550	880	620	520	780	520	420						
													820	550	420	800	520	410	650	390	310						
													1600	850	650	1600	820	620	1300	680	490						
													820	590	460	780	550	420	650	490	320						
													880	650	490	850	620	820	750	550	390						
													680	520	460	650	490	420	550	390	320						
				260	190	130	230	160	100	130	80														320	210	
				230	160	90	190	130	65	100	65														260	180	
				230	160	110	190	130	80	100	80														260	180	
				230	160	100	190	130	65	100	65														230	140	
				230	160	100	190	130	65	100	65														190	100	
																									650	590	460
										210	140	110													290	180	140
										110	110	100													180	110	100

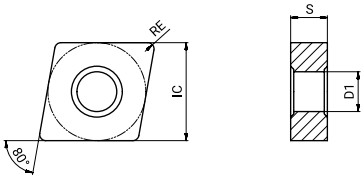
Cutting Data Recommandation--Positive Insert

ISO	Workpiece Materials			Brinell Hardness (HB)	Tensile strength Rm(lbs/in²)	AT202 f (in/rev)			AC052P f (in/rev)			AC150P f (in/rev)			AC250P f (in/rev)		
						0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016
P	Unalloyed steel	C ⩽ 0.25%	Annealed	125	62000	656	328	230	1960	1410	1010	1520	1310	1080	1180	1010	850
		0.25 < C ⩽ 0.55%	Annealed	190	92700	656	328	230	1770	1260	900	1180	1080	850	950	820	620
		0.25 < C ⩽ 0.55%	Heat-treated	210	103000	650	260	160	1250	850	590	880	780	720	650	590	520
		C > 0.55%	Annealed	190	92700	650	260	160	1700	1190	830	1080	980	950	820	720	680
		C > 0.55%	Heat-treated	300	147000	650	260	160	1180	730	520	680	590	550	520	420	390
		Free cutting steel(short chip)	Annealed	220	108000	650	260	160	1900	1310	910	1440	1310	1240	1050	950	900
	Low-alloyed steel	Annealed		175	85700	590	260	160	1930	1280	860	1140	1010	980	850	780	720
		Heat-treated		300	146900	590	260	160	1670	1080	750	650	550	520	440	390	320
		Heat-treated		380	186000	590	260	160	1050	680	500	390	320	290	320	270	210
		Heat-treated		430	214200	590	260	160	870	540	390	260	230		210	180	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	97900	520	260	160	1390	900	640	1050	950	910	880	780	720
		Hardened and tempered		300	147000	520	260	160	920	590	460	650	550	490	550	450	390
		Hardened and tempered		400	197000	490	260	160	650	390	340	260	230		210	180	
	Stainless steel	Ferritic/Martensite,Annealed		200	97900										620	550	490
		Martensite,Heat-treated		330	162000										290	260	190
M	Stainless steel	Austenitic,hardened		200	97900												
		Austenitic,precipitation hardened stainless steel(PH stainless steel)		300	147000												
		Austenitic,ferritic,duplex		230	113000												
K	Malleable cast iron	Ferritic		200	58000												
		Pearlitic		260	101000												
	Grey cast iron	Low tensile strength		180	29000												
		High tensile strength/Austenitic		245	50800												
	Nodular cast iron	Ferritic		155	58000												
		Pearlitic		265	101000												
	GGV(CGI)			230	58000												
N	Wrought aluminum alloy	Non-aging alloy		30	-												
		Aged alloy		100	49300												
	Cast aluminum alloy	⩽ 12% Si, non-aging alloy		75	37700												
		⩽ 12% Si, aged alloy		90	45000												
		> 12% Si, non-aging alloy		130	65300												
	Magnesium alloy			70	36300												
	Copper and copper alloy(bronze/brass)	Unalloyed,electrolytic copper		100	49300												
		Brass,bronze,red brass		90	45000												
		Cu alloy,short chip		110	55100												
		High tensile,Ampco alloy		300	146500												
S	Heat-resistant alloy	Fe-based	Annealed	200	98600												
			Aged	280	136000												
		Ni or Co based	Annealed	250	122000												
			Aged	350	171000												
			Cast	320	156600												
	Titanium alloy	Pure Titanium		200	98600												
		α and β alloy,aged		375	182700												
		β alloy		410	203000												
	Tungsten alloy			300	146500												
	Molybdenum alloy			300	146500												
H	Hardened steel	Hardened and tempered		50HRC													
		Hardened and tempered		55HRC													
		Hardened and tempered		60HRC													
	Chilled cast iron	Hardened and tempered		50HRC													

*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）

Achteck turning grade																											
Initial value of cutting speed Vc(sfm)																											
	AC350P			AC100M			AC200M			AP200U			AC100K			AC102K			AC202K			AW100K			AP100S		
	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016
	750	490	390							680	650																
	590	370	320							520	450																
	420	370	270							450	390																
	490	320	270							420	390																
	370	210	180																								
	680	440	340							620	550																
	620	500	420							420	360																
	410	260	210																								
	290	210	140																								
	550	450	240							390	260																
	320	260	190																								
	390	320	290	650	550	450	590	490	390	440	390	290															
	230	190	160	520	450	420	420	360	320	340	260	230															
				750	590	450	620	490	360	550	360	260													720	650	420
				550	490		450	360		320	260														520	450	
				590	520	420	490	390	320	360	290	230													550	490	360
													850	620	520	820	590	490	750	490	390						
													750	520	390	770	490	370	620	360	310						
													1540	820	620	1540	780	590	1280	650	450						
													750	550	420	720	520	390	620	450	320						
													820	620	450	780	590	780	720	520	360						
													620	490	420	590	450	390	520	360	320						
																						2460	1960	980			
																						2620	1470	980			
																						1640	980	650			
																						1960	1310	880			
																						1310	980	820			
																						910	650	420			
				240	180	110	210	140	904	130	80														320	230	
				210	140	90	180	110	606	90	60														260	190	
				210	140	110	180	110	80	90	80														260	190	
				210	140	90	180	110	60	90	60														230	160	
				210	140	90	180	110	60	90	60														190	130	
																									394	328	262
										210	140	110													213	148	115
										110	110	90													115	115	98

Negative 80°（C）

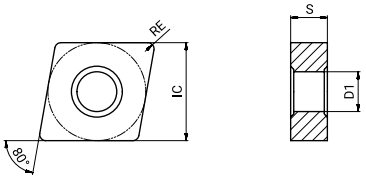


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		CNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●											CNMG 120404E-PB1
		CNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●		●	●											CNMG 120408E-PB1
		CNMG 433-PB1	3/64	0.006-0.018	0.031-0.126			●	●											CNMG 120412E-PB1
		CNMG 431-SC1	1/64	0.003-0.007	0.008-0.031								●							CNMG 120404E-SC1
		CNMG 432-SC1	1/32	0.004-0.010	0.008-0.031								●							CNMG 120408E-SC1
		CNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●							CNMG 120404E-MB2
		CNMG 432-MB2	1/32	0.004-0.012	0.02-0.126						●	●	●							CNMG 120408E-MB2
Light cutting		CNMG 431-SL3	1/64	0.005-0.010	0.024-0.118								●						●	CNMG 120404E-SL3
		CNMG 432-SL3	1/32	0.006-0.012	0.031-0.118								●						●	CNMG 120408E-SL3
Semi-finishing		CNMG 431-PB3	1/64	0.002-0.007	0.012-0.138	●		●	●											CNMG 120404E-PB3
		CNMG 432-PB3	1/32	0.005-0.014	0.024-0.138	●	●	●	●											CNMG 120408E-PB3
		CNMG 433-PB3	3/64	0.007-0.021	0.035-0.138	●	●	●	●											CNMG 120412E-PB3
		CNMG 431-PC3	1/64	0.003-0.008	0.013-0.154	●														CNMG 120404E-PC3
		CNMG 432-PC3	1/32	0.006-0.016	0.027-0.154	●	●	●	●											CNMG 120408E-PC3
		CNMG 433-PC3	3/64	0.008-0.024	0.04-0.154	●														CNMG 120412E-PC3
Medium		CNMG 431-PD3	1/64	0.003-0.009	0.016-0.169	●	●	●	●											CNMG 120404E-PD3
		CNMG 432-PD3	1/32	0.006-0.017	0.031-0.169	●	●	●	●	●										CNMG 120408E-PD3
		CNMG 433-PD3	3/64	0.009-0.026	0.047-0.169	●	●	●	●	●										CNMG 120412E-PD3
		CNMG 542-PD3	1/32	0.006-0.017	0.031-0.209		●	●	●	●										CNMG 160608E-PD3
		CNMG 543-PD3	3/64	0.009-0.026	0.047-0.209		●	●	●											CNMG 160612E-PD3
		CNMG 642-PD3	1/32	0.006-0.017	0.031-0.252		●	●	●	●										CNMG 190608E-PD3
		CNMG 643-PD3	3/64	0.009-0.026	0.047-0.252		●	●	●											CNMG 190612E-PD3
		CNMG 644-PD3	1/16	0.012-0.026	0.063-0.252		●	●	●											CNMG 190616E-PD3

●: Stock available

Negative 80°（C）

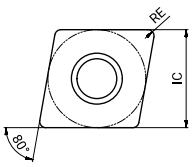


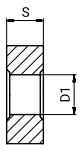
Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		**CNMG 431-SC3**	1/64	0.003-0.009	0.016-0.169						●	●	●						●	**CNMG 120404E-SC3**
		CNMG 432-SC3	1/32	0.006-0.017	0.031-0.169						●	●	●						●	**CNMG 120408E-SC3**
		CNMG 433-SC3	3/64	0.009-0.026	0.047-0.169						●	●	●						●	**CNMG 120412E-SC3**
		CNMG 543-SC3	3/64	0.009-0.026	0.047-0.209						●	●	●						●	**CNMG 160612E-SC3**
		CNMG 544-SC3	1/16	0.012-0.035	0.063-0.209						●	●	●						●	**CNMG 160616E-SC3**
		CNMG 643-SC3	3/64	0.009-0.026	0.047-0.252						●	●	●						●	**CNMG 190612E-SC3**
		CNMG 644-SC3	1/16	0.012-0.035	0.063-0.252						●	●	●						●	**CNMG 190616E-SC3**
		**CNMG 431-MC3**	1/64	0.003-0.009	0.013-0.169						●	●	●							**CNMG 120404E-MC3**
		CNMG 432-MC3	1/32	0.006-0.017	0.025-0.169						●	●	●						●	**CNMG 120408E-MC3**
		CNMG 433-MC3	3/64	0.009-0.026	0.038-0.169						●	●	●							**CNMG 120412E-MC3**
		CNMG 434-MC3	1/16	0.012-0.035	0.05-0.169						●	●	●							**CNMG 120416E-MC3**
		CNMG 542-MC3	1/32	0.006-0.017	0.025-0.209						●	●	●							**CNMG 160608E-MC3**
		CNMG 543-MC3	3/64	0.009-0.026	0.038-0.209						●	●	●							**CNMG 160612E-MC3**
		CNMG 642-MC3	1/32	0.006-0.017	0.025-0.252						●	●	●							**CNMG 190608E-MC3**
		CNMG 643-MC3	3/64	0.009-0.026	0.038-0.252						●	●	●							**CNMG 190612E-MC3**
		**CNMG 431-PC4**	1/64	0.003-0.009	0.016-0.169			●	●							●	●			**CNMG 120404E-PC4**
		CNMG 432-PC4	1/32	0.006-0.017	0.031-0.169		●	●	●							●	●			**CNMG 120408E-PC4**
		CNMG 433-PC4	3/64	0.009-0.026	0.047-0.169		●	●	●							●	●			**CNMG 120412E-PC4**
		CNMG 543-PC4	3/64	0.009-0.026	0.047-0.209		●	●	●							●	●			**CNMG 160612E-PC4**
		CNMG 544-PC4	1/16	0.012-0.035	0.063-0.209		●	●	●							●	●			**CNMG 160616E-PC4**
		CNMG 643-PC4	3/64	0.009-0.026	0.047-0.252		●	●	●							●	●			**CNMG 190612E-PC4**
Roughing		**CNMG 432-MC4**	1/32	0.008-0.024	0.047-0.252						●	●	●						●	**CNMG 120408E-MC4**
		CNMG 433-MC4	3/64	0.012-0.035	0.071-0.252						●	●	●						●	**CNMG 120412E-MC4**
		CNMG 543-MC4	3/64	0.012-0.035	0.071-0.319						●	●	●						●	**CNMG 160612E-MC4**
		CNMG 544-MC4	1/16	0.016-0.047	0.094-0.319						●	●	●							**CNMG 160616E-MC4**
		CNMG 643-MC4	3/64	0.012-0.035	0.071-0.382						●	●	●							**CNMG 190612E-MC4**
		CNMG 644-MC4	1/16	0.016-0.047	0.094-0.382						●	●	●							**CNMG 190616E-MC4**

●: Stock available

Negative 80°（C）



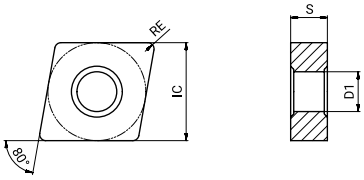


Dimension (in)			
Product code	IC	S	D1
CN_32_	3/8	1/8	0.150
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Roughing		**CNMG 322-KC4**	1/32	0.007-0.019	0.038-0.154											●	●			**CNMG 090308E-KC4**
		CNMG 431-KC4	1/64	0.004-0.009	0.019-0.205											●	●			**CNMG 120404E-KC4**
		CNMG 432-KC4	1/32	0.007-0.019	0.038-0.205										●	●	●			**CNMG 120408E-KC4**
		CNMG 433-KC4	3/64	0.01-0.028	0.057-0.205										●	●	●			**CNMG 120412E-KC4**
		CNMG 434-KC4	1/16	0.014-0.038	0.076-0.205											●	●			**CNMG 120416E-KC4**
		CNMG 542-KC4	1/32	0.007-0.019	0.038-0.252											●	●			**CNMG 160608E-KC4**
		CNMG 543-KC4	3/64	0.01-0.028	0.057-0.252											●	●			**CNMG 160612E-KC4**
		CNMG 544-KC4	1/16	0.014-0.038	0.076-0.252											●	●			**CNMG 160616E-KC4**
		CNMG 642-KC4	1/32	0.007-0.019	0.038-0.303											●	●			**CNMG 190608E-KC4**
		CNMG 643-KC4	3/64	0.01-0.028	0.057-0.303											●	●			**CNMG 190612E-KC4**
		CNMG 644-KC4	1/16	0.014-0.038	0.076-0.303											●	●			**CNMG 190616E-KC4**
		CNMG 646-KC4	3/32	0.021-0.057	0.113-0.303											●	●			**CNMG 190624E-KC4**
		**CNMG 432-PD5**	1/32	0.008-0.024	0.047-0.252		●	●	●	●										**CNMG 120408E-PD5**
		CNMG 433-PD5	3/64	0.012-0.035	0.071-0.252		●	●	●	●										**CNMG 120412E-PD5**
		CNMG 543-PD5	3/64	0.012-0.035	0.071-0.319		●	●	●	●										**CNMG 160612E-PD5**
		CNMG 544-PD5	1/16	0.016-0.047	0.094-0.319		●	●	●	●										**CNMG 160616E-PD5**
		CNMG 546-PD5	3/32	0.024-0.071	0.142-0.319		●	●	●											**CNMG 160624E-PD5**
		CNMG 643-PD5	3/64	0.012-0.035	0.071-0.382		●	●	●	●										**CNMG 190612E-PD5**
		CNMG 644-PD5	1/16	0.016-0.047	0.094-0.382		●	●	●	●										**CNMG 190616E-PD5**
		**CNMA 431-KD5**	1/64	0.004-0.012	0.024-0.252											●	●			**CNMA 120404E-KD5**
		CNMA 432-KD5	1/32	0.008-0.024	0.047-0.252										●	●	●			**CNMA 120408E-KD5**
		CNMA 433-KD5	3/64	0.012-0.035	0.071-0.252										●	●	●			**CNMA 120412E-KD5**
		CNMA 434-KD5	1/16	0.016-0.047	0.094-0.252										●	●	●			**CNMA 120416E-KD5**
		CNMA 542-KD5	1/32	0.008-0.024	0.047-0.319											●	●			**CNMA 160608E-KD5**
		CNMA 543-KD5	3/64	0.012-0.035	0.071-0.319										●	●	●			**CNMA 160612E-KD5**
		CNMA 544-KD5	1/16	0.016-0.047	0.094-0.319										●	●	●			**CNMA 160616E-KD5**
		CNMA 545-KD5	0.079	0.02-0.059	0.118-0.319											●	●			**CNMA 160620E-KD5**
		CNMA 642-KD5	1/32	0.008-0.024	0.047-0.382										●	●	●			**CNMA 190608E-KD5**
		CNMA 643-KD5	3/64	0.012-0.035	0.071-0.382										●	●	●			**CNMA 190612E-KD5**
		CNMA 644-KD5	1/16	0.016-0.047	0.094-0.382										●	●	●			**CNMA 190616E-KD5**

●: Stock available

Negative 80°（C）

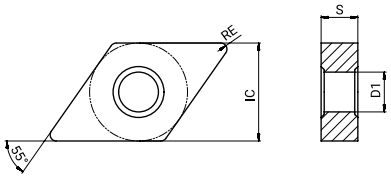


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313
CN_85_	1.0	5/16	0.359
CN_86_	1.0	3/8	0.359

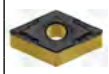
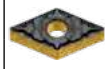
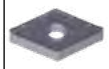
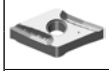
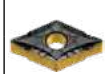
Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Heavy roughing		**CNMM 644-PC8**	1/16	0.013-0.025	0.113-0.303				●											**CNMM 190616E-PC8**
		CNMM 646-PC8	3/32	0.019-0.038	0.17-0.303				●											**CNMM 190624E-PC8**
		**CNMM 432-PD8**	1/32	0.006-0.013	0.057-0.205			●	●	●										**CNMM 120408E-PD8**
		CNMM 433-PD8	3/64	0.009-0.019	0.085-0.205			●	●											**CNMM 120412E-PD8**
		CNMM 543-PD8	3/64	0.009-0.019	0.085-0.252			●	●											**CNMM 160612E-PD8**
		CNMM 544-PD8	1/16	0.013-0.025	0.113-0.252			●	●											**CNMM 160616E-PD8**
		CNMM 546-PD8	3/32	0.019-0.038	0.17-0.252			●	●											**CNMM 160624E-PD8**
		CNMM 643-PD8	3/64	0.009-0.019	0.085-0.303			●	●											**CNMM 190612E-PD8**
		CNMM 644-PD8	1/16	0.013-0.025	0.113-0.303			●	●	●										**CNMM 190616E-PD8**
		CNMM 646-PD8	3/32	0.019-0.038	0.17-0.303			●	●	●										**CNMM 190624E-PD8**
		CNMM 856-PD8	3/32	0.019-0.038	0.17-0.406			●	●											**CNMM 250724E-PD8**
		CNMM 866-PD8	3/32	0.019-0.038	0.17-0.406			●	●											**CNMM 250924E-PD8**
		**CNMM 643-PC9**	3/64	0.01-0.024	0.094-0.382			●	●	●										**CNMM 190612S-PC9**
		CNMM 644-PC9	1/16	0.014-0.031	0.126-0.382			●	●	●										**CNMM 190616S-PC9**
		CNMM 646-PC9	3/32	0.021-0.047	0.189-0.382			●	●	●										**CNMM 190624S-PC9**
		CNMM 856-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●										**CNMM 250724S-PC9**
		CNMM 866-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●										**CNMM 250924S-PC9**
		**CNMM 643-PD9**	3/64	0.012-0.028	0.104-0.457			●	●	●										**CNMM 190612S-PD9**
		CNMM 644-PD9	1/16	0.016-0.038	0.139-0.457			●	●	●										**CNMM 190616S-PD9**
		CNMM 646-PD9	3/32	0.024-0.057	0.208-0.457			●	●	●										**CNMM 190624S-PD9**
		CNMM 856-PD9	3/32	0.024-0.057	0.208-0.61			●	●											**CNMM 250724S-PD9**
		CNMM 866-PD9	3/32	0.024-0.057	0.208-0.61			●	●	●										**CNMM 250924S-PD9**

●: Stock available

Negative 55°（D）

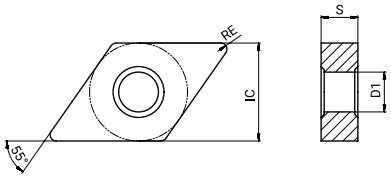


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Profiling		**DNMG 332-BS**	1/32	0.004-0.010	0.028-0.079		●													**DNMG 110408E-BS**
Finishing		**DNMG 331-PB1**	1/64	0.002-0.006	0.01-0.091	●		●	●											**DNMG 110404E-PB1**
		DNMG 431-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●											**DNMG 150404E-PB1**
		DNMG 432-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●											**DNMG 150408E-PB1**
		DNMG 441-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●											**DNMG 150604E-PB1**
		DNMG 442-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●											**DNMG 150608E-PB1**
		DNMG 443-PB1	3/64	0.006-0.014	0.031-0.122															**DNMG 150612E-PB1**
		**DNMG 431-SC1**	1/64	0.003-0.007	0.008-0.031															**DNMG 150404E-SC1**
		DNMG 432-SC1	1/32	0.004-0.010	0.008-0.031															**DNMG 150408E-SC1**
		DNMG 441-SC1	1/64	0.003-0.007	0.008-0.031															**DNMG 150604E-SC1**
		DNMG 442-SC1	1/32	0.004-0.010	0.008-0.031															**DNMG 150608E-SC1**
		**DNMG 431-MB2**	1/64	0.002-0.006	0.01-0.114						●	●							●	**DNMG 150404E-MB2**
		DNMG 432-MB2	1/32	0.004-0.012	0.02-0.114						●	●							●	**DNMG 150408E-MB2**
		DNMG 441-MB2	1/64	0.002-0.006	0.01-0.114						●	●							●	**DNMG 150604E-MB2**
		DNMG 442-MB2	1/32	0.004-0.012	0.02-0.114						●	●							●	**DNMG 150608E-MB2**
Light cutting		**DNMG 332-SL3**	1/32	0.005-0.012	0.031-0.098								●						●	**DNMG 110408E-SL3**
		DNMG 431-SL3	1/64	0.005-0.010	0.024-0.098								●						●	**DNMG 150404E-SL3**
		DNMG 432-SL3	1/32	0.005-0.012	0.031-0.098								●						●	**DNMG 150408E-SL3**
		DNMG 441-SL3	1/64	0.005-0.010	0.024-0.098								●						●	**DNMG 150604E-SL3**
		DNMG 442-SL3	1/32	0.005-0.012	0.031-0.098								●						●	**DNMG 150608E-SL3**
Semi-finishing		**DNMG 431R-M1T**	1/64	0.004-0.014	0.028-0.177	●														**DNMG 150404R-M1T**
		DNMG 432L-M1T	1/32	0.004-0.014	0.028-0.177	●														**DNMG 150408L-M1T**
		**DNMG 431-PB3**	1/64	0.002-0.007	0.012-0.122	●		●	●											**DNMG 150404E-PB3**
		DNMG 432-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●											**DNMG 150408E-PB3**
		DNMG 433-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●											**DNMG 150412E-PB3**
		DNMG 441-PB3	1/64	0.002-0.007	0.012-0.122	●		●	●											**DNMG 150604E-PB3**
		DNMG 442-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●											**DNMG 150608E-PB3**
		DNMG 443-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●											**DNMG 150612E-PB3**

●: Stock available

Negative 55°（D）

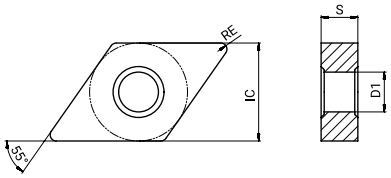


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

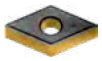
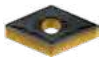
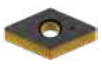
Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-finishing		DNMG 332-PC3	1/32	0.006-0.016	0.027-0.102		●	●	●											DNMG 110408E-PC3
		DNMG 333-PC3	3/64	0.008-0.024	0.04-0.102		●	●	●											DNMG 110412E-PC3
		DNMG 431-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●											DNMG 150404E-PC3
		DNMG 432-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●											DNMG 150408E-PC3
		DNMG 433-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●											DNMG 150412E-PC3
		DNMG 441-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●											DNMG 150604E-PC3
		DNMG 442-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●											DNMG 150608E-PC3
		DNMG 443-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●											DNMG 150612E-PC3
Medium		DNMG 331-PD3	1/64	0.003-0.009	0.016-0.114	●		●	●											DNMG 110404E-PD3
		DNMG 332-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●											DNMG 110408E-PD3
		DNMG 431-PD3	1/64	0.003-0.009	0.016-0.154	●		●	●											DNMG 150404E-PD3
		DNMG 432-PD3	1/32	0.006-0.017	0.031-0.154	●	●	●	●	●										DNMG 150408E-PD3
		DNMG 433-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●										DNMG 150412E-PD3
		DNMG 441-PD3	1/64	0.003-0.009	0.016-0.154			●	●											DNMG 150604E-PD3
		DNMG 442-PD3	1/32	0.006-0.017	0.031-0.154		●	●	●	●										DNMG 150608E-PD3
		DNMG 443-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●										DNMG 150612E-PD3
		DNMG 442R-PL5	1/32	0.006-0.017	0.031-0.154			●	●											DNMG 150608R-PL5
		DNMG 431-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●						●	DNMG 150404E-SC3
		DNMG 432-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●						●	DNMG 150408E-SC3
		DNMG 433-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●						●	DNMG 150412E-SC3
		DNMG 441-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●						●	DNMG 150604E-SC3
		DNMG 442-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●						●	DNMG 150608E-SC3
		DNMG 443-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●						●	DNMG 150612E-SC3
		DNMG 331-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●							DNMG 110404E-MC3
		DNMG 332-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●							DNMG 110408E-MC3
		DNMG 431-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●							DNMG 150404E-MC3
		DNMG 432-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●							DNMG 150408E-MC3
		DNMG 433-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●							DNMG 150412E-MC3
		DNMG 441-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●							DNMG 150604E-MC3
		DNMG 442-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●							DNMG 150608E-MC3
		DNMG 443-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●							DNMG 150612E-MC3

●: Stock available

Negative 55°（D）

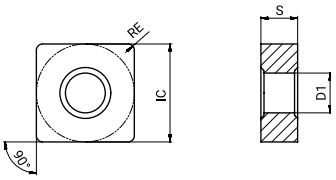


Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		**DNMG 431-PC4**	1/64	0.003-0.009	0.016-0.154	●		●	●							●	●			**DNMG 150404E-PC4**
		DNMG 432-PC4	1/32	0.006-0.017	0.031-0.154	●	●	●	●							●	●			**DNMG 150408E-PC4**
		DNMG 433-PC4	3/64	0.009-0.026	0.047-0.154		●	●	●							●	●			**DNMG 150412E-PC4**
		DNMG 441-PC4	1/64	0.003-0.009	0.016-0.154	●		●	●							●	●			**DNMG 150604E-PC4**
		DNMG 442-PC4	1/32	0.006-0.017	0.031-0.154	●	●	●	●							●	●			**DNMG 150608E-PC4**
		DNMG 443-PC4	3/64	0.009-0.026	0.047-0.154		●	●	●							●	●			**DNMG 150612E-PC4**
Roughing		**DNMG 432-MC4**	1/32	0.008-0.024	0.047-0.213						●	●	●							**DNMG 150408E-MC4**
		DNMG 433-MC4	3/64	0.012-0.035	0.071-0.213						●	●	●							**DNMG 150412E-MC4**
		DNMG 442-MC4	1/32	0.008-0.024	0.047-0.213						●	●	●						●	**DNMG 150608E-MC4**
		DNMG 443-MC4	3/64	0.012-0.035	0.071-0.213						●	●	●						●	**DNMG 150612E-MC4**
		**DNMG 331-KC4**	1/64	0.004-0.009	0.019-0.138											●	●			**DNMG 110404E-KC4**
		DNMG 332-KC4	1/32	0.007-0.019	0.038-0.138											●	●			**DNMG 110408E-KC4**
		DNMG 431-KC4	1/64	0.004-0.009	0.019-0.181											●	●			**DNMG 150404E-KC4**
		DNMG 432-KC4	1/32	0.007-0.019	0.038-0.181											●	●			**DNMG 150408E-KC4**
		DNMG 433-KC4	3/64	0.01-0.028	0.057-0.181											●	●			**DNMG 150412E-KC4**
		DNMG 441-KC4	1/64	0.004-0.009	0.019-0.181											●	●			**DNMG 150604E-KC4**
		DNMG 442-KC4	1/32	0.007-0.019	0.038-0.181											●	●			**DNMG 150608E-KC4**
		DNMG 443-KC4	3/64	0.01-0.028	0.057-0.181											●	●			**DNMG 150612E-KC4**
		**DNMG 432-PD5**	1/32	0.008-0.024	0.047-0.213		●	●	●	●										**DNMG 150408E-PD5**
		DNMG 433-PD5	3/64	0.012-0.035	0.071-0.213		●	●	●	●										**DNMG 150412E-PD5**
		DNMG 434-PD5	1/16	0.016-0.047	0.094-0.213		●	●	●											**DNMG 150416E-PD5**
		DNMG 442-PD5	1/32	0.008-0.024	0.047-0.213		●	●	●	●										**DNMG 150608E-PD5**
		DNMG 443-PD5	3/64	0.012-0.035	0.071-0.213		●	●	●	●										**DNMG 150612E-PD5**
		DNMG 444-PD5	1/16	0.016-0.047	0.094-0.213		●	●	●	●										**DNMG 150616E-PD5**
		**DNMA 431-KD5**	1/64	0.004-0.012	0.024-0.213											●	●			**DNMA 150404E-KD5**
		DNMA 432-KD5	1/32	0.008-0.024	0.047-0.213										●	●	●			**DNMA 150408E-KD5**
		DNMA 433-KD5	3/64	0.012-0.035	0.071-0.213										●	●	●			**DNMA 150412E-KD5**
		DNMA 441-KD5	1/64	0.004-0.012	0.024-0.213											●	●			**DNMA 150604E-KD5**
		DNMA 442-KD5	1/32	0.008-0.024	0.047-0.213										●	●	●			**DNMA 150608E-KD5**
		DNMA 443-KD5	3/64	0.012-0.035	0.071-0.213										●	●	●			**DNMA 150612E-KD5**

●: Stock available

Negative 90°（S）

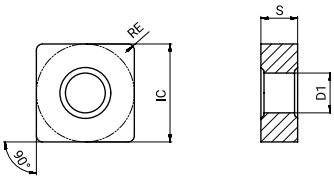


Dimension (in)			
Product code	IC	S	D1
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		SNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●											SNMG 120404E-PB1
		SNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●	●	●	●											SNMG 120408E-PB1
		SNMG 433-PB1	3/64	0.006-0.018	0.031-0.126		●	●	●											SNMG 120412E-PB1
		SNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●							SNMG 120404E-MB2
		SNMG 432-MB2	1/32	0.004-0.012	0.02-0.126						●	●	●							SNMG 120408E-MB2
Light cutting		SNMG 431-SL3	1/64	0.005-0.010	0.024-0.118								●						●	SNMG 120404E-SL3
		SNMG 432-SL3	1/32	0.006-0.012	0.031-0.118								●						●	SNMG 120408E-SL3
		SNMG 433-SL3	3/64	0.007-0.014	0.039-0.118								●						●	SNMG 120412E-SL3
Semi-finishing		SNMG 431-PC3	1/64	0.003-0.008	0.013-0.15	●		●	●											SNMG 120404E-PC3
		SNMG 432-PC3	1/32	0.006-0.016	0.027-0.15	●		●	●											SNMG 120408E-PC3
		SNMG 433-PC3	3/64	0.008-0.024	0.04-0.15	●		●	●											SNMG 120412E-PC3
Medium		SNMG 431-PD3	1/64	0.003-0.009	0.016-0.165	●		●	●	●										SNMG 120404E-PD3
		SNMG 432-PD3	1/32	0.006-0.017	0.031-0.165	●	●	●	●	●										SNMG 120408E-PD3
		SNMG 433-PD3	3/64	0.009-0.026	0.047-0.165	●	●	●	●	●										SNMG 120412E-PD3
		SNMG 642-PD3	1/32	0.006-0.017	0.031-0.248		●	●	●	●										SNMG 190608E-PD3
		SNMG 432-SC3	1/32	0.006-0.017	0.031-0.165						●	●	●						●	SNMG 120408E-SC3
		SNMG 433-SC3	3/64	0.009-0.026	0.047-0.165						●	●	●						●	SNMG 120412E-SC3
		SNMG 543-SC3	3/64	0.009-0.026	0.047-0.205						●	●	●						●	SNMG 150612E-SC3
		SNMG 544-SC3	1/16	0.012-0.035	0.063-0.205						●	●	●						●	SNMG 150616E-SC3
		SNMG 643-SC3	3/64	0.009-0.026	0.047-0.248						●	●	●						●	SNMG 190612E-SC3
		SNMG 431-M3T	1/64	0.008-0.016	0.039-0.157	●														SNMG 120404-M3T
		SNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●														SNMG 120408-M3T
		SNMG 431-MC3	1/64	0.003-0.009	0.013-0.165						●	●	●							SNMG 120404E-MC3
		SNMG 432-MC3	1/32	0.006-0.017	0.025-0.165						●	●	●							SNMG 120408E-MC3
		SNMG 433-MC3	3/64	0.009-0.026	0.038-0.165						●	●	●							SNMG 120412E-MC3
		SNMG 543-MC3	3/64	0.009-0.026	0.038-0.205						●	●	●							SNMG 150612E-MC3
		SNMG 544-MC3	1/16	0.012-0.035	0.05-0.205						●	●	●							SNMG 150616E-MC3
		SNMG 643-MC3	3/64	0.009-0.026	0.038-0.248						●	●	●							SNMG 190612E-MC3
		SNMG 644-MC3	1/16	0.012-0.035	0.05-0.248						●	●	●							SNMG 190616E-MC3

●: Stock available

Negative 90°（S）

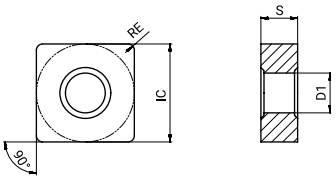


Dimension (in)			
Product code	IC	S	D1
SN_32_	3/8	1/8	0.150
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		**SNMG 431-PC4**	1/64	0.003-0.009	0.016-0.165	●		●	●							●	●			**SNMG 120404E-PC4**
		SNMG 432-PC4	1/32	0.006-0.017	0.031-0.165	●	●	●	●							●	●			**SNMG 120408E-PC4**
		SNMG 433-PC4	3/64	0.009-0.026	0.047-0.165	●	●	●	●							●	●			**SNMG 120412E-PC4**
Roughing		**SNMG 432-MC4**	1/32	0.008-0.024	0.047-0.252						●	●	●							**SNMG 120408E-MC4**
		SNMG 433-MC4	3/64	0.012-0.035	0.071-0.252						●	●	●							**SNMG 120412E-MC4**
		SNMG 543-MC4	3/64	0.012-0.035	0.071-0.311						●	●	●							**SNMG 150612E-MC4**
		SNMG 544-MC4	1/16	0.016-0.047	0.094-0.311						●	●	●							**SNMG 150616E-MC4**
		SNMG 643-MC4	3/64	0.012-0.035	0.071-0.374						●	●	●							**SNMG 190612E-MC4**
		SNMG 644-MC4	1/16	0.016-0.047	0.094-0.374						●	●	●							**SNMG 190616E-MC4**
		**SNMG 321-KC4**	1/64	0.004-0.009	0.019-0.15															**SNMG 090304E-KC4**
		SNMG 322-KC4	1/32	0.007-0.019	0.038-0.15															**SNMG 090308E-KC4**
		SNMG 431-KC4	1/64	0.004-0.009	0.019-0.201											●	●			**SNMG 120404E-KC4**
		SNMG 432-KC4	1/32	0.007-0.019	0.038-0.201											●	●			**SNMG 120408E-KC4**
		SNMG 433-KC4	3/64	0.01-0.028	0.057-0.201											●	●			**SNMG 120412E-KC4**
		SNMG 542-KC4	1/32	0.007-0.019	0.038-0.252											●	●			**SNMG 150608E-KC4**
		SNMG 543-KC4	3/64	0.01-0.028	0.057-0.252											●	●			**SNMG 150612E-KC4**
		SNMG 544-KC4	1/16	0.014-0.038	0.076-0.252											●	●			**SNMG 150616E-KC4**
		SNMG 642-KC4	1/32	0.007-0.019	0.038-0.299											●	●			**SNMG 190608E-KC4**
		SNMG 643-KC4	3/64	0.01-0.028	0.057-0.299											●	●			**SNMG 190612E-KC4**
		SNMG 644-KC4	1/16	0.014-0.038	0.076-0.299											●	●			**SNMG 190616E-KC4**
		SNMG 646-KC4	3/32	0.021-0.057	0.113-0.299															**SNMG 190624E-KC4**
		**SNMG 542-PD5**	1/32	0.008-0.024	0.047-0.311		●	●	●	●										**SNMG 150608E-PD5**
		SNMG 543-PD5	3/64	0.012-0.035	0.071-0.311		●	●	●	●										**SNMG 150612E-PD5**
		SNMG 544-PD5	1/16	0.016-0.047	0.094-0.311		●	●	●	●										**SNMG 150616E-PD5**
		SNMG 643-PD5	3/64	0.012-0.035	0.071-0.374		●	●	●	●										**SNMG 190612E-PD5**
		SNMG 644-PD5	1/16	0.016-0.047	0.094-0.374		●	●	●	●										**SNMG 190616E-PD5**

●: Stock available

Negative 90°（S）

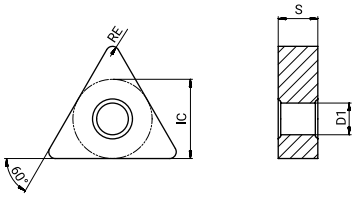


Dimension (in)			
Product code	IC	S	D1
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313
SN_85_	1	5/16	0.359
SN_86_	1	3/8	0.359
SN_10(6)_	1¼	3/8	0.372

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	◐	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Roughing		**SNMA 432-KD5**	1/32	0.008-0.024	0.047-0.252										●	●	●			**SNMA 120408E-KD5**
		SNMA 433-KD5	3/64	0.012-0.035	0.071-0.252										●	●	●			**SNMA 120412E-KD5**
		SNMA 434-KD5	1/16	0.016-0.047	0.094-0.252										●	●	●			**SNMA 120416E-KD5**
		SNMA 543-KD5	3/64	0.012-0.035	0.071-0.311											●	●			**SNMA 150612E-KD5**
		SNMA 544-KD5	1/16	0.016-0.047	0.094-0.311											●	●			**SNMA 150616E-KD5**
		SNMA 643-KD5	3/64	0.012-0.035	0.071-0.374											●	●			**SNMA 190612E-KD5**
		SNMA 644-KD5	1/16	0.016-0.047	0.094-0.374											●	●			**SNMA 190616E-KD5**
Heavy roughing		**SNMM 432-PD8**	1/32	0.006-0.013	0.057-0.201			●	●	●										**SNMM 120408E-PD8**
		SNMM 433-PD8	3/64	0.009-0.019	0.085-0.201			●	●	●										**SNMM 120412E-PD8**
		SNMM 543-PD8	3/64	0.009-0.019	0.085-0.252			●	●	●										**SNMM 150612E-PD8**
		SNMM 544-PD8	1/16	0.013-0.025	0.113-0.252		●	●	●	●										**SNMM 150616E-PD8**
		SNMM 643-PD8	3/64	0.009-0.019	0.085-0.299			●	●	●										**SNMM 190612E-PD8**
		SNMM 644-PD8	1/16	0.013-0.025	0.113-0.299		●	●	●	●										**SNMM 190616E-PD8**
		SNMM 646-PD8	3/32	0.019-0.038	0.17-0.299		●	●	●	●										**SNMM 190624E-PD8**
		SNMM 856-PD8	3/32	0.019-0.038	0.17-0.402			●	●	●										**SNMM 250724E-PD8**
		SNMM 866-PD8	3/32	0.019-0.038	0.17-0.402			●	●	●										**SNMM 250924E-PD8**
		SNMM 643-PC9	3/64	0.01-0.024	0.094-0.374			●	●											**SNMG 190612S-PC9**
		SNMM 644-PC9	1/16	0.014-0.031	0.126-0.374			●	●	●										**SNMG 190616S-PC9**
		SNMM 646-PC9	3/32	0.021-0.047	0.189-0.374			●	●	●										**SNMG 190624S-PC9**
		SNMM 856-PC9	3/32	0.021-0.047	0.189-0.5			●	●	●										**SNMG 250724S-PC9**
		SNMM 866-PC9	3/32	0.021-0.047	0.189-0.5			●	●	●										**SNMG 250924S-PC9**
		SNMH 10(6)6-PC9	3/32	0.021-0.047	0.189-0.626				●											**SNMH 310924S-PC9**
		SNMM 643-PD9	3/64	0.012-0.028	0.104-0.449			●	●	●										**SNMM 190612S-PD9**
		SNMM 644-PD9	1/16	0.016-0.038	0.139-0.449			●	●	●										**SNMM 190616S-PD9**
		SNMM 646-PD9	3/32	0.024-0.057	0.208-0.449			●	●	●										**SNMM 190624S-PD9**
		SNMM 856-PD9	3/32	0.024-0.057	0.208-0.598			●	●	●										**SNMM 250724S-PD9**
		SNMM 866-PD9	3/32	0.024-0.057	0.208-0.598			●	●	●										**SNMM 250924S-PD9**
		SNMX 10(6)6-PD9	3/32	0.024-0.057	0.208-0.752				●	●										**SNMX 310924S-PD9**

●: Stock available

Negative 60°（T）

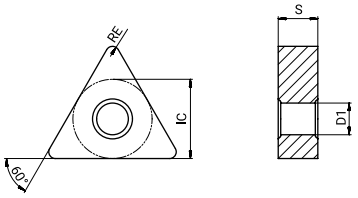


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		TNMG 331-PB1	1/64	0.002-0.006	0.01-0.122	●		●	●											TNMG 160404E-PB1
		TNMG 332-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●											TNMG 160408E-PB1
		TNMG 333-PB1	3/64	0.006-0.018	0.031-0.122	●	●	●	●											TNMG 160412E-PB1
		TNMG 331-SC1	1/64	0.003-0.007	0.008-0.031															TNMG 160404E-SC1
		TNMG 332-SC1	1/32	0.004-0.010	0.008-0.031															TNMG 160408E-SC1
		TNMG 331-MB2	1/64	0.002-0.006	0.01-0.122						●	●	●						●	TNMG 160404E-MB2
		TNMG 332-MB2	1/32	0.004-0.012	0.02-0.122						●	●	●						●	TNMG 160408E-MB2
Light cutting		TNMG 331-SL3	1/64	0.005-0.010	0.024-0.118								●						●	TNMG 160404E-SL3
		TNMG 332-SL3	1/32	0.006-0.012	0.031-0.118								●						●	TNMG 160408E-SL3
		TNMG 333-SL3	3/64	0.007-0.012	0.039-0.118								●						●	TNMG 160412E-SL3
Semi-finishing		TNMG 331R-M1T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404R-M1T
		TNMG 331L-M1T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404L-M1T
		TNMG 332R-M1T	1/32	0.004-0.012	0.028-0.138	●														TNMG 160408R-M1T
		TNMG 332L-M1T	1/32	0.004-0.012	0.028-0.138	●														TNMG 160408L-M1T
		TNMG 331-PB3	1/64	0.002-0.007	0.012-0.13	●		●	●											TNMG 160404E-PB3
		TNMG 332-PB3	1/32	0.005-0.014	0.024-0.13	●	●	●	●											TNMG 160408E-PB3
		TNMG 333-PB3	3/64	0.007-0.021	0.035-0.13	●	●	●	●											TNMG 160412E-PB3
		TNMG 331-PC3	1/64	0.003-0.008	0.013-0.146	●		●	●											TNMG 160404E-PC3
		TNMG 332-PC3	1/32	0.006-0.016	0.027-0.146	●		●	●											TNMG 160408E-PC3
		TNMG 333-PC3	3/64	0.008-0.024	0.04-0.146	●		●	●											TNMG 160412E-PC3
Medium		TNMG 331-PD3	1/64	0.003-0.009	0.016-0.161	●		●	●	●										TNMG 160404E-PD3
		TNMG 332-PD3	1/32	0.006-0.017	0.031-0.161	●	●	●	●	●										TNMG 160408E-PD3
		TNMG 333-PD3	3/64	0.009-0.026	0.047-0.161	●	●	●	●	●										TNMG 160412E-PD3
		TNMG 331R-M2T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404R-M2T
		TNMG 331L-M2T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404L-M2T
		TNMG 331R-PL5	1/64	0.003-0.009	0.016-0.161	●		●	●											TNMG 160404R-PL5
		TNMG 332R-PL5	1/32	0.006-0.017	0.031-0.161	●	●	●	●											TNMG 160408R-PL5
		TNMG 331L-PL5	1/64	0.003-0.009	0.016-0.161	●		●	●											TNMG 160404L-PL5
		TNMG 332L-PL5	1/32	0.006-0.017	0.031-0.161	●	●	●	●											TNMG 160408L-PL5

●: Stock available

Negative 60°（T）

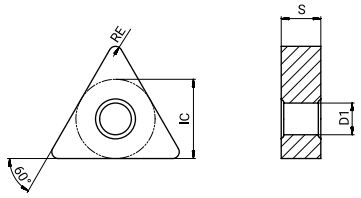


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		TNMG 331-SC3	1/64	0.003-0.009	0.016-0.161						●	●	●						●	TNMG 160404E-SC3
		TNMG 332-SC3	1/32	0.006-0.017	0.031-0.161						●	●	●						●	TNMG 160408E-SC3
		TNMG 333-SC3	3/64	0.009-0.026	0.047-0.161						●	●	●						●	TNMG 160412E-SC3
		TNMG 331-MC3	1/64	0.003-0.009	0.013-0.161						●	●	●							TNMG 160404E-MC3
		TNMG 332-MC3	1/32	0.006-0.017	0.025-0.161						●	●	●							TNMG 160408E-MC3
		TNMG 333-MC3	3/64	0.009-0.026	0.038-0.161						●	●	●							TNMG 160412E-MC3
		TNMG 432-MC3	1/32	0.006-0.017	0.025-0.193						●	●	●						●	TNMG 220408E-MC3
		TNMG 433-MC3	3/64	0.009-0.026	0.038-0.193						●	●	●							TNMG 220412E-MC3
		TNMG 331-PC4	1/64	0.003-0.009	0.016-0.161	●		●	●											TNMG 160404E-PC4
		TNMG 332-PC4	1/32	0.006-0.017	0.031-0.161	●	●	●	●											TNMG 160408E-PC4
		TNMG 333-PC4	3/64	0.009-0.026	0.047-0.161		●	●	●											TNMG 160412E-PC4
		TNMG 433-PC4	3/64	0.009-0.026	0.047-0.193			●	●											TNMG 220412E-PC4
Roughing		TNMG 332-MC4	1/32	0.008-0.024	0.047-0.228						●	●	●						●	TNMG 160408E-MC4
		TNMG 333-MC4	3/64	0.012-0.035	0.071-0.228						●	●	●						●	TNMG 160412E-MC4
		TNMG 432-MC4	1/32	0.008-0.024	0.047-0.26						●	●	●							TNMG 220408E-MC4
		TNMG 433-MC4	3/64	0.012-0.035	0.071-0.26						●	●	●							TNMG 220412E-MC4
		TNMG 221-KC4	1/64	0.004-0.009	0.019-0.13											●	●			TNMG 110304E-KC4
		TNMG 331-KC4	1/64	0.004-0.009	0.019-0.193											●	●			TNMG 160404E-KC4
		TNMG 332-KC4	1/32	0.007-0.019	0.038-0.193											●	●			TNMG 160408E-KC4
		TNMG 333-KC4	3/64	0.01-0.028	0.057-0.193											●	●			TNMG 160412E-KC4
		TNMG 334-KC4	1/16	0.014-0.038	0.076-0.193											●	●			TNMG 160416E-KC4
		TNMG 433-KC4	3/64	0.01-0.028	0.057-0.236											●	●			TNMG 220412E-KC4
		TNMG 434-KC4	1/16	0.014-0.038	0.076-0.236											●	●			TNMG 220416E-KC4
		TNMG 332-PD5	1/32	0.008-0.024	0.047-0.228		●	●	●	●										TNMG 160408E-PD5
		TNMG 333-PD5	3/64	0.012-0.035	0.071-0.228		●	●	●	●										TNMG 160412E-PD5
		TNMG 432-PD5	1/32	0.008-0.024	0.047-0.303		●	●	●	●										TNMG 220408E-PD5
		TNMG 433-PD5	3/64	0.012-0.035	0.071-0.303		●	●	●	●										TNMG 220412E-PD5
		TNMG 434-PD5	1/16	0.016-0.047	0.094-0.303		●	●	●	●										TNMG 220416E-PD5

●: Stock available

Negative 60°（T）

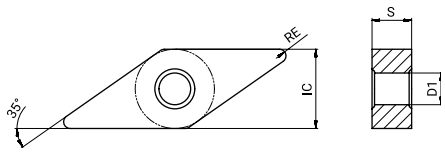


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●
				Recommanded parameters		P					M				K			N	S
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Roughing		**TNMA 331-KD5**	1/64	0.004-0.012	0.024-0.228											●	●			**TNMA 160404E-KD5**
		TNMA 332-KD5	1/32	0.008-0.024	0.047-0.228										●	●	●			**TNMA 160408E-KD5**
		TNMA 333-KD5	3/64	0.012-0.035	0.071-0.228										●	●	●			**TNMA 160412E-KD5**
		TNMA 334-KD5	1/16	0.016-0.047	0.094-0.228										●	●	●			**TNMA 160416E-KD5**
		TNMA 432-KD5	1/32	0.008-0.024	0.047-0.303											●	●			**TNMA 220408E-KD5**
		TNMA 433-KD5	3/64	0.012-0.035	0.071-0.303											●	●			**TNMA 220412E-KD5**
		TNMA 434-KD5	1/16	0.016-0.047	0.094-0.303											●	●			**TNMA 220416E-KD5**
Heavy roughing		**TNMM 332-PD8**	1/32	0.006-0.013	0.057-0.193				●											**TNMM 160408E-PD8**
		TNMM 333-PD8	3/64	0.009-0.019	0.085-0.193				●											**TNMM 160412E-PD8**
		TNMM 432-PD8	1/32	0.006-0.013	0.057-0.236				●											**TNMM 220408E-PD8**
		TNMM 433-PD8	3/64	0.009-0.019	0.085-0.236				●											**TNMM 220412E-PD8**
		TNMM 434-PD8	1/16	0.013-0.025	0.113-0.236				●											**TNMM 220416E-PD8**
Finishing		**TNGG 3(3)03FP-UF**	0.004	0.001-0.004	0.012-0.098									●						**TNGG 160401FP-UF**
		TNGG 3(3)05FP-UF	0.008	0.001-0.004	0.012-0.098									●						**TNGG 160402FP-UF**
		TNGG 331FP-UF	1/64	0.001-0.004	0.012-0.098									●						**TNGG 160404FP-UF**
		**TNGG 3(3)05FR-F**	0.008	0.003-0.008	0.02-0.091									●						**TNGG 160402FR-F**
		TNGG 3(3)05FL-F	0.008	0.003-0.008	0.02-0.091									●						**TNGG 160402FL-F**
		TNGG 331FR-F	1/64	0.003-0.008	0.02-0.091									●						**TNGG 160404FR-F**
		TNGG 331FL-F	1/64	0.003-0.008	0.02-0.091									●						**TNGG 160404FL-F**
Semi-finishing–Roughing		**TNGG 331R-H**	1/64	0.009-0.015	0.047-0.15									●						**TNGG 160404R-H**
		TNGG 331L-H	1/64	0.009-0.015	0.047-0.15									●						**TNGG 160404L-H**
		TNGG 332R-H	1/32	0.009-0.015	0.047-0.15									●						**TNGG 160408R-H**
		TNGG 332L-H	1/32	0.009-0.015	0.047-0.15									●						**TNGG 160408L-H**

●: Stock available

Negative 35°（V）

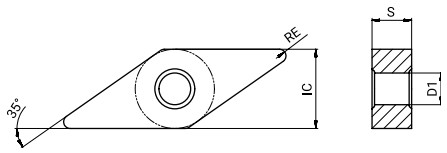


Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**VNMG 331-PB1**	1/64	0.002-0.006	0.01-0.083	●		●	●											**VNMG 160404E-PB1**
		VNMG 332-PB1	1/32	0.004-0.012	0.02-0.083	●	●	●	●											**VNMG 160408E-PB1**
		**VNMG 331-SC1**	1/64	0.004-0.010	0.008-0.031								●							**VNMG 160404E-SC1**
		VNMG 332-SC1	1/32	0.006-0.012	0.008-0.031								●							**VNMG 160408E-SC1**
		**VNMG 331-MB2**	1/64	0.002-0.006	0.01-0.083						●	●	●						●	**VNMG 160404E-MB2**
		VNMG 332-MB2	1/32	0.004-0.012	0.02-0.083						●	●	●						●	**VNMG 160408E-MB2**
Light cutting		**VNMG 331-SL3**	1/64	0.004-0.008	0.024-0.098								●						●	**VNMG 160404E-SL3**
		VNMG 332-SL3	1/32	0.005-0.010	0.031-0.098								●						●	**VNMG 160408E-SL3**
Profiling		**VNMG 331-BS**	1/64	0.003-0.008	0.008-0.079	●	●													**VNMG 160404E-BS**
		VNMG 332-BS	1/32	0.003-0.008	0.008-0.079	●	●													**VNMG 160408E-BS**
Semi-finishing		**VNMG 331-PB3**	1/64	0.002-0.007	0.012-0.122	●		●	●											**VNMG 160404E-PB3**
		VNMG 332-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●											**VNMG 160408E-PB3**
		VNMG 333-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●											**VNMG 160412E-PB3**
		**VNMG 331-PC3**	1/64	0.003-0.008	0.013-0.13	●		●	●											**VNMG 160404E-PC3**
		VNMG 332-PC3	1/32	0.006-0.016	0.027-0.13	●		●	●											**VNMG 160408E-PC3**
		VNMG 333-PC3	3/64	0.008-0.024	0.04-0.13	●		●	●											**VNMG 160412E-PC3**

●: Stock available

Negative 35°（V）

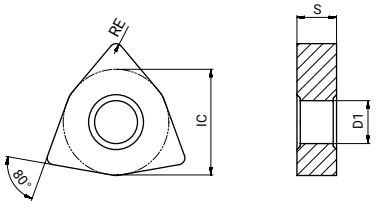


Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		VNMG 331-PD3	1/64	0.003-0.009	0.016-0.13	●		●	●											VNMG 160404E-PD3
		VNMG 332-PD3	1/32	0.006-0.017	0.031-0.13	●	●	●	●	●										VNMG 160408E-PD3
		VNMG 333-PD3	3/64	0.009-0.026	0.047-0.13	●	●	●	●	●										VNMG 160412E-PD3
		VNMG 331-M3T	1/64	0.008-0.016	0.039-0.157	●														VNMG 160404-M3T
		VNMG 332-M3T	1/32	0.008-0.016	0.039-0.157	●														VNMG 160408-M3T
		VNMG 331-SC3	1/64	0.003-0.009	0.016-0.13						●	●	●						●	VNMG 160404E-SC3
		VNMG 332-SC3	1/32	0.006-0.017	0.031-0.13						●	●	●						●	VNMG 160408E-SC3
		VNMG 333-SC3	3/64	0.009-0.026	0.047-0.13						●	●	●						●	VNMG 160412E-SC3
		VNMG 331-MC3	1/64	0.003-0.009	0.013-0.13						●	●	●							VNMG 160404E-MC3
		VNMG 332-MC3	1/32	0.006-0.017	0.025-0.13						●	●	●							VNMG 160408E-MC3
		VNMG 331-PC4	1/64	0.003-0.009	0.016-0.13	●		●	●							●	●			VNMG 160404E-PC4
		VNMG 332-PC4	1/32	0.006-0.017	0.031-0.13	●	●	●	●							●	●			VNMG 160408E-PC4
		VNMG 333-PC4	3/64	0.009-0.026	0.047-0.13	●	●	●	●							●	●			VNMG 160412E-PC4
Roughing		VNMG 331-KC4	1/64	0.004-0.009	0.019-0.13											●	●			VNMG 160404E-KC4
		VNMG 332-KC4	1/32	0.007-0.019	0.038-0.13											●	●			VNMG 160408E-KC4
		VNMG 333-KC4	3/64	0.01-0.028	0.057-0.13											●	●			VNMG 160412E-KC4
Finishing		VNGG 3(3)03FP-UF	0.004	0.001-0.004	0.020-0.079									●						VNGG 160401FP-UF
		VNGG 3(3)05FP-UF	0.008	0.001-0.004	0.020-0.079									●						VNGG 160402FP-UF
		VNGG 331FP-UF	1/64	0.001-0.004	0.020-0.079									●						VNGG 160404FP-UF

●: Stock available

Negative 80°（W）

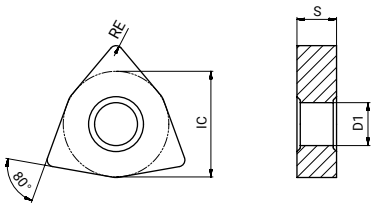


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**WNMG 431-F1T**	1/64	0.002-0.006	0.02-0.098	●														**WNMG 080404-F1T**
		WNMG 432-F1T	1/32	0.002-0.006	0.02-0.098	●														**WNMG 080408-F1T**
		**WNMG 431-PB1**	1/64	0.002-0.006	0.01-0.087	●		●	●											**WNMG 080404E-PB1**
		WNMG 432-PB1	1/32	0.004-0.012	0.02-0.087	●	●	●	●											**WNMG 080408E-PB1**
		WNMG 433-PB1	3/64	0.006-0.018	0.031-0.087	●	●	●	●											**WNMG 080412E-PB1**
		**WNMG 431-SC1**	1/64	0.004-0.010	0.008-0.031															**WNMG 080404E-SC1**
		WNMG 432-SC1	1/32	0.006-0.012	0.008-0.031															**WNMG 080408E-SC1**
		**WNMG 431-MB2**	1/64	0.002-0.006	0.01-0.087								●						●	**WNMG 080404E-MB2**
		WNMG 432-MB2	1/32	0.004-0.012	0.02-0.087								●						●	**WNMG 080408E-MB2**
Light cutting		**WNMG 331-SL3**	1/64	0.005-0.010	0.024-0.098								●						●	**WNMG 060404E-SL3**
		WNMG 332-SL3	1/32	0.006-0.010	0.031-0.098								●						●	**WNMG 060408E-SL3**
		WNMG 431-SL3	1/64	0.005-0.010	0.024-0.118								●						●	**WNMG 080404E-SL3**
		WNMG 432-SL3	1/32	0.006-0.010	0.031-0.118								●						●	**WNMG 080408E-SL3**
		WNMG 433-SL3	3/64	0.007-0.012	0.039-0.118								●						●	**WNMG 080412E-SL3**
Semi-finishing		**WNMG 431-PB3**	1/64	0.002-0.007	0.012-0.091	●		●	●											**WNMG 080404E-PB3**
		WNMG 432-PB3	1/32	0.005-0.014	0.024-0.091	●	●	●	●											**WNMG 080408E-PB3**
		WNMG 433-PB3	3/64	0.007-0.021	0.035-0.091	●	●	●	●											**WNMG 080412E-PB3**
		**WNMG 431-PC3**	1/64	0.003-0.008	0.013-0.102	●		●	●											**WNMG 080404E-PC3**
		WNMG 432-PC3	1/32	0.006-0.016	0.027-0.102	●		●	●											**WNMG 080408E-PC3**
		WNMG 433-PC3	3/64	0.008-0.024	0.04-0.102	●		●	●											**WNMG 080412E-PC3**

●: Stock available

Negative 80°（W）

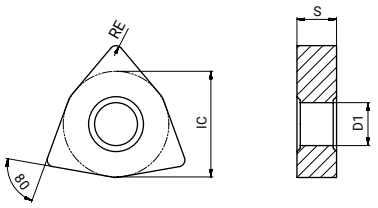


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Medium		**WNMG 431R-PL5**	1/64	0.008-0.020	0.016-0.157				●											**WNMG 080404R-PL5**
		WNMG 431L-PL5	1/64	0.008-0.020	0.016-0.157				●											**WNMG 080404L-PL5**
		WNMG 432R-PL5	1/32	0.008-0.020	0.016-0.197				●				●							**WNMG 080408R-PL5**
		WNMG 432L-PL5	1/32	0.008-0.020	0.016-0.197				●				●							**WNMG 080408L-PL5**
		**WNMG 332-PD3**	1/32	0.006-0.017	0.031-0.083		●	●	●											**WNMG 060408E-PD3**
		WNMG 431-PD3	1/64	0.003-0.009	0.016-0.114	●	●	●	●	●										**WNMG 080404E-PD3**
		WNMG 432-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●	●										**WNMG 080408E-PD3**
		WNMG 433-PD3	3/64	0.009-0.026	0.047-0.114	●	●	●	●	●										**WNMG 080412E-PD3**
		**WNMG 431-SC3**	1/64	0.003-0.009	0.016-0.114						●	●	●						●	**WNMG 080404E-SC3**
		WNMG 432-SC3	1/32	0.006-0.017	0.031-0.114						●	●	●						●	**WNMG 080408E-SC3**
		WNMG 433-SC3	3/64	0.009-0.026	0.047-0.114						●	●	●						●	**WNMG 080412E-SC3**
		**WNMG 431-M3T**	1/64	0.008-0.016	0.039-0.157	●														**WNMG 080404-M3T**
		WNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●														**WNMG 080408-M3T**
		**WNMG 332-MC3**	1/32	0.006-0.017	0.025-0.083						●	●	●							**WNMG 060408E-MC3**
		WNMG 333-MC3	3/64	0.009-0.026	0.038-0.083						●	●	●							**WNMG 060412E-MC3**
		WNMG 431-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●							**WNMG 080404E-MC3**
		WNMG 432-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●						●	**WNMG 080408E-MC3**
		WNMG 433-MC3	3/64	0.009-0.026	0.038-0.114						●	●	●							**WNMG 080412E-MC3**
		**WNMG 431-PC4**	1/64	0.003-0.009	0.016-0.114	●		●	●							●	●			**WNMG 080404E-PC4**
		WNMG 432-PC4	1/32	0.006-0.017	0.031-0.114	●	●	●	●							●	●			**WNMG 080408E-PC4**
		WNMG 433-PC4	3/64	0.009-0.026	0.047-0.114	●	●	●	●							●	●			**WNMG 080412E-PC4**

●: Stock available

Negative 80°（W）

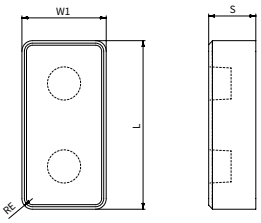


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Roughing		**WNMG 332-MC4**	1/32	0.008-0.024	0.047-0.13															**WNMG 060408E-MC4**
		WNMG 333-MC4	3/64	0.012-0.035	0.071-0.13						●	●	●							**WNMG 060412E-MC4**
		WNMG 432-MC4	1/32	0.008-0.024	0.047-0.169						●	●	●						●	**WNMG 080408E-MC4**
		WNMG 433-MC4	3/64	0.012-0.035	0.071-0.169						●	●	●						●	**WNMG 080412E-MC4**
		**WNMG 331-KC4**	1/64	0.004-0.009	0.019-0.102											●	●			**WNMG 060404E-KC4**
		WNMG 332-KC4	1/32	0.007-0.019	0.038-0.102											●	●			**WNMG 060408E-KC4**
		WNMG 431-KC4	1/64	0.004-0.009	0.019-0.138											●	●			**WNMG 080404E-KC4**
		WNMG 432-KC4	1/32	0.007-0.019	0.038-0.138										●	●	●			**WNMG 080408E-KC4**
		WNMG 433-KC4	3/64	0.01-0.028	0.057-0.138										●	●	●			**WNMG 080412E-KC4**
		WNMG 434-KC4	1/16	0.014-0.038	0.076-0.138											●	●			**WNMG 080416E-KC4**
		**WNMG 432-PD5**	1/32	0.008-0.024	0.047-0.169		●	●	●	●										**WNMG 080408E-PD5**
		WNMG 433-PD5	3/64	0.012-0.035	0.071-0.169		●	●	●	●										**WNMG 080412E-PD5**
		**WNMA 431-KD5**	1/64	0.004-0.012	0.024-0.169											●	●			**WNMA 080404E-KD5**
		WNMA 432-KD5	1/32	0.008-0.024	0.047-0.169										●	●	●			**WNMA 080408E-KD5**
		WNMA 433-KD5	3/64	0.012-0.035	0.071-0.169										●	●	●			**WNMA 080412E-KD5**
		WNMA 434-KD5	1/16	0.016-0.047	0.094-0.169											●	●			**WNMA 080416E-KD5**

●: Stock available

Negative 90°（L）



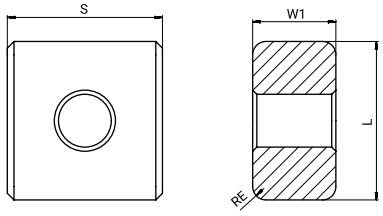
Dimension (in)			
Product code	L	S	W1
LN_5014_	2.0	0.559	1.0

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P				M				K			N	S	
				f (in/rev)	ap (in)	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Heavy roughing		–	0.126	0.028-0.063	0.236-1.575				●										**LNMX 501432S-HE**

●: Stock available

Negative 90°（L）

Railway wheel re-turning

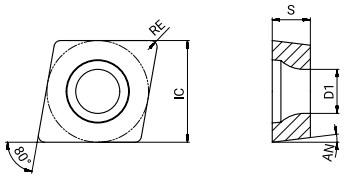


Dimension (in)			
Product code	L	S	W1
LN_1919_	3/4	3/4	0.394
LN_3019_	1.181	1.181	0.472

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ⧓ General condition ✱ Bad condition													ISO
						●	●	⧓	✱	●	⧓	⧓	⧓	●	●	✱	⧓	●	
				Recommanded parameters		P				M				K			N	S	
				f (in/rev)	ap (in)	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		–	0.157	0.028-0.047	0.079-0.394														**LNMX 191940-AS**
Medium		–	0.157	0.028-0.047	0.079-0.394	●													**LNMX 191940-AM**
		–	0.157	0.028-0.047	0.079-0.787														**LNMX 301940-AM**
		–	0.157	0.028-0.047	0.079-0.787														**LNMX 301940-AR**

●: Stock available

Positive 80°（C）

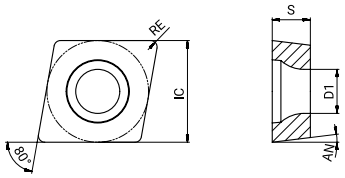


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
CC_2(1.5)_	1/4	3/32	0.110	7°
CC_3(2.5)_	3/8	5/32	0.173	7°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ⬌ General condition ✱ Bad condition														ISO
						●	●	●	⬌	✱	●	⬌	⬌	⬌	●	●	✱	⬌	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		CCGT 2(1.5)03FP-LF	<0.004	0.002-0.008	0.014-0.118									●						CCGT 060201FP-LF
		CCGT 2(1.5)05FP-LF	0.008	0.002-0.008	0.014-0.118									●						CCGT 060202FP-LF
		CCGT 2(1.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						CCGT 060204FP-LF
		CCGT 3(2.5)03FP-LF	<0.004	0.002-0.008	0.014-0.118									●						CCGT 09T301FP-LF
		CCGT 3(2.5)05FP-LF	0.008	0.002-0.008	0.014-0.118									●						CCGT 09T302FP-LF
		CCGT 3(2.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						CCGT 09T304FP-LF
		CCGT 2(1.5)03FP-UF	0.004	0.001-0.006	0.004-0.055									●						CCGT 060201FP-UF
		CCGT 2(1.5)05FP-UF	0.008	0.001-0.006	0.004-0.055									●						CCGT 060202FP-UF
		CCGT 2(1.5)1FP-UF	1/64	0.001-0.008	0.004-0.055									●						CCGT 060204FP-UF
		CCGT 3(2.5)03FP-UF	0.004	0.001-0.006	0.004-0.094									●						CCGT 09T301FP-UF
		CCGT 3(2.5)05FP-UF	0.008	0.001-0.006	0.004-0.094									●						CCGT 09T302FP-UF
		CCGT 3(2.5)1FP-UF	1/64	0.001-0.008	0.004-0.094									●						CCGT 09T304FP-UF
		CCGT 2(1.5)03F-UF	0.004	0.001-0.006	0.004-0.055									●						CCGT 060201F-UF
		CCGT 2(1.5)05F-UF	0.008	0.001-0.006	0.004-0.055									●						CCGT 060202F-UF
		CCGT 2(1.5)1F-UF	1/64	0.001-0.008	0.004-0.055									●						CCGT 060204F-UF
		CCGT 3(2.5)03F-UF	0.004	0.001-0.006	0.004-0.094									●						CCGT 09T301F-UF
		CCGT 3(2.5)05F-UF	0.008	0.001-0.006	0.004-0.094									●						CCGT 09T302F-UF
		CCGT 3(2.5)1F-UF	1/64	0.001-0.008	0.004-0.094									●						CCGT 09T304F-UF
		CCGT 3(2.5)2F-UF	1/32	0.001-0.010	0.004-0.094									●						CCGT 09T308F-UF
		CCGT 2(1.5)03-UF	0.004	0.001-0.006	0.004-0.055									●					●	CCGT 060201E-UF
		CCGT 2(1.5)05-UF	0.008	0.001-0.006	0.004-0.055									●					●	CCGT 060202E-UF
		CCGT 2(1.5)1-UF	1/64	0.001-0.008	0.004-0.055									●					●	CCGT 060204E-UF
		CCGT 3(2.5)03-UF	0.004	0.001-0.006	0.004-0.094									●					●	CCGT 09T301E-UF
		CCGT 3(2.5)05-UF	0.008	0.001-0.006	0.004-0.094									●					●	CCGT 09T302E-UF
		CCGT 3(2.5)1-UF	1/64	0.001-0.008	0.004-0.094									●					●	CCGT 09T304E-UF
		CCGT 3(2.5)2-UF	1/32	0.001-0.010	0.004-0.094									●					●	CCGT 09T308E-UF

●: Stock available

Positive 80°（C）

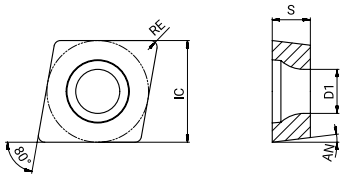


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
CC_2(1.5)_	1/4	3/32	0.110	7°
CC_3(2.5)_	3/8	5/32	0.173	7°
CC_43_	1/2	3/16	O.217	7°
CP_2.5(1.5)_	5/16	3/32	0.134	11°
CP_32_	3/8	1/8	0.173	11°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		**CCGT 2(1.5)1F-NC2**	1/64	0.002-0.008	0.013-0.114													●		**CCGT 060204F-NC2**
		CCGT 3(2.5)05F-NC2	0.008	0.001-0.004	0.006-0.173													●		**CCGT 09T302F-NC2**
		CCGT 3(2.5)1F-NC2	1/64	0.002-0.008	0.013-0.173													●		**CCGT 09T304F-NC2**
		CCGT 3(2.5)2F-NC2	1/32	0.004-0.016	0.025-0.173													●		**CCGT 09T308F-NC2**
		CCGT 431F-NC2	1/64	0.002-0.008	0.013-0.228													●		**CCGT 120404F-NC2**
		CCGT 432F-NC2	1/32	0.004-0.016	0.025-0.228													●		**CCGT 120408F-NC2**
Finishing		**CCMT 2(1.5)05-F1T**	0.008	0.002-0.006	0.012-0.059	●														**CCMT 060202-F1T**
		CCMT 2(1.5)1-F1T	1/64	0.002-0.006	0.012-0.059	●														**CCMT 060204-F1T**
		CCMT 2(1.5)05-PB1	0.008	0.001-0.003	0.006-0.063	●		●	●		●	●	●							**CCMT 060202E-PB1**
		CCMT 2(1.5)1-PB1	1/64	0.002-0.006	0.012-0.063	●		●	●		●	●	●							**CCMT 060204E-PB1**
		CCMT 2(1.5)2-PB1	1/32	0.004-0.011	0.024-0.063	●		●	●		●	●	●							**CCMT 060208E-PB1**
		CCMT 3(2.5)05-PB1	0.008	0.001-0.003	0.006-0.094	●		●	●		●	●	●							**CCMT 09T302E-PB1**
		CCMT 3(2.5)1-PB1	1/64	0.002-0.006	0.012-0.094	●		●	●		●	●	●						●	**CCMT 09T304E-PB1**
		CCMT 3(2.5)2-PB1	1/32	0.004-0.011	0.024-0.094	●		●	●		●	●	●							**CCMT 09T308E-PB1**
		CPMT 2.5(1.5)05-PB1	0.008	0.001-0.003	0.006-0.079	●														**CPMT 080202E-PB1**
		CPMT 2.5(1.5)1-PB1	1/64	0.002-0.006	0.012-0.079	●														**CPMT 080204E-PB1**
		CPMT 3(2)05-PB1	0.008	0.001-0.003	0.006-0.094	●														**CPMT 090302E-PB1**
		CPMT 321-PB1	1/64	0.002-0.006	0.012-0.094	●			●											**CPMT 090304E-PB1**
		CPMT 322-PB1	1/32	0.004-0.011	0.024-0.094	●			●											**CPMT 090308E-PB1**
Semi-Finishing		**CCMT 2(1.5)1-PC2**	1/64	0.002-0.006	0.014-0.075	●		●	●		●	●	●						●	**CCMT 060204E-PC2**
		CCMT 2(1.5)2-PC2	1/32	0.004-0.013	0.028-0.075	●		●	●		●	●	●						●	**CCMT 060208E-PC2**
		CCMT 3(2.5)1-PC2	1/64	0.002-0.006	0.014-0.114	●	●	●	●		●	●	●						●	**CCMT 09T304E-PC2**
		CCMT 3(2.5)2-PC2	1/32	0.004-0.013	0.028-0.114	●	●	●	●		●	●	●						●	**CCMT 09T308E-PC2**
		CCMT 3(2.5)3-PC2	3/64	0.006-0.019	0.041-0.114		●	●	●		●	●	●							**CCMT 09T312E-PC2**
		CCMT 431-PC2	1/64	0.002-0.006	0.014-0.154	●		●	●		●	●	●						●	**CCMT 120404E-PC2**
		CCMT 432-PC2	1/32	0.004-0.013	0.028-0.154	●		●	●		●	●	●						●	**CCMT 120408E-PC2**
		CCMT 433-PC2	3/64	0.006-0.019	0.041-0.154	●		●	●		●	●	●						●	**CCMT 120412E-PC2**
		CPMT 321-PC2	1/64	0.002-0.006	0.014-0.114	●														**CPMT 090304E-PC2**
		CPMT 322-PC2	1/32	0.004-0.013	0.028-0.114	●														**CPMT 090308E-PC2**

●: Stock available

Positive 80°（C）

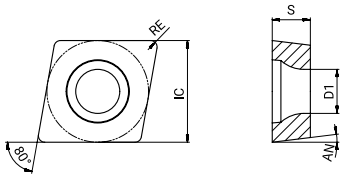


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
CC_1.2(1)_	0.138	0.055	0.079	7°
CC_2(1.5)_	1/4	3/32	0.110	7°
CC_3(2.5)_	3/8	5/32	0.173	7°
CC_43_	1/2	3/16	O.217	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ⬌ General condition ✱ Bad condition														ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		**CCMT 3(2.5)1-M2T**	1/64	0.004-0.010	0.028-0.138	●														**CPMT 09T304-M2T**
		CCMT 3(2.5)2-M2T	1/32	0.004-0.010	0.028-0.138	●														**CPMT 09T308-M2T**
		**CCMT 2(1.5)1-KC2**	1/64	0.002-0.007	0.016-0.083	●		●	●	●	●	●	●			●	●		●	**CCMT 060204E-KC2**
		CCMT 2(1.5)2-KC2	1/32	0.005-0.014	0.031-0.083	●		●	●	●	●	●	●			●	●			**CCMT 060208E-KC2**
		CCMT 3(2.5)1-KC2	1/64	0.002-0.007	0.016-0.126	●		●	●	●	●	●	●		●	●	●			**CCMT 09T304E-KC2**
		CCMT 3(2.5)2-KC2	1/32	0.005-0.014	0.031-0.126	●		●	●	●	●	●	●		●	●	●			**CCMT 09T308E-KC2**
		CCMT 431-KC2	1/64	0.002-0.007	0.016-0.169	●		●	●	●	●	●	●			●	●			**CCMT 120404E-KC2**
		CCMT 432-KC2	1/32	0.005-0.014	0.031-0.169	●		●	●	●	●	●	●			●	●			**CCMT 120408E-KC2**
		CCMT 433-KC2	3/64	0.007-0.021	0.047-0.169	●		●	●	●	●	●	●			●	●			**CCMT 120412E-KC2**
Roughing		**CCMW 2(1.5)1-KD5**	1/64	0.004-0.009	0.016-0.126											●	●			**CCMW 060204E-KD5**
		CCMW 3(2.5)1-KD5	1/64	0.004-0.009	0.016-0.189											●	●			**CCMW 09T304E-KD5**
		CCMW 3(2.5)2-KD5	1/32	0.008-0.017	0.031-0.189											●	●			**CCMW 09T308E-KD5**
		CCMW 431-KD5	1/64	0.004-0.009	0.016-0.252											●	●			**CCMW 120404E-KD5**
		CCMW 432-KD5	1/32	0.008-0.017	0.031-0.252											●	●			**CCMW 120408E-KD5**
		CCMW 433-KD5	3/64	0.012-0.026	0.047-0.252											●	●			**CCMW 120412E-KD5**
Finishing		**CCET 1.2(1)01FR-F**	<0.03	0.0004-0.002	0.004-0.012									●						**CCET 0301003FR-F**
		CCET 1.2(1)01FL-F	<0.001	0.0004-0.002	0.004-0.012									●						**CCET 0301003FL-F**
		CCET 1.2(1)013FR-F	<0.002	0.0004-0.002	0.004-0.012									●						**CCET 0301005FR-F**
		CCET 1.2(1)013FL-F	<0.002	0.0004-0.002	0.004-0.012									●						**CCET 0301005FL-F**
		CCET 1.2(1)03FR-F	<0.004	0.0004-0.002	0.004-0.012									●						**CCET 030101FR-F**
		CCET 1.2(1)03FL-F	<0.004	0.0004-0.002	0.004-0.012									●						**CCET 030101FL-F**
		CCET 1.2(1)05FR-F	<0.008	0.0004-0.002	0.004-0.012									●						**CCET 030102FR-F**
		CCET 1.2(1)05FL-F	<0.008	0.0004-0.002	0.004-0.012									●						**CCET 030102FL-F**
		CCET 1.2(1)1FR-F	<1/64	0.0004-0.002	0.004-0.012									●						**CCET 030104FR-F**
		CCET 1.2(1)1FL-F	<1/64	0.0004-0.002	0.004-0.012									●						**CCET 030104FL-F**

●: Stock available

Positive 80°（C）

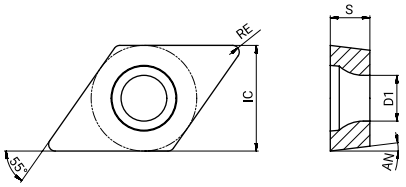


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
CC_1.5(1)_	0.169	0.071	0.091	7°
CC_2(1.5)_	1/4	3/32	0.110	7°
CC_3(2.5)_	3/8	5/32	0.173	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters																
						P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		CCET 1.5(1)01FR-F	<0.001	0.0004-0.002	0.004-0.016									●						CCET 0401003FR-F
		CCET 1.5(1)01FL-F	<0.001	0.0004-0.002	0.004-0.016									●						CCET 0401003FL-F
		CCET 1.5(1)013FR-F	<0.002	0.0004-0.002	0.004-0.016									●						CCET 0401005FR-F
		CCET 1.5(1)013FL-F	<0.002	0.0004-0.002	0.004-0.016									●						CCET 0401005FL-F
		CCET 1.5(1)03FR-F	<0.004	0.0004-0.002	0.004-0.016									●						CCET 040101FR-F
		CCET 1.5(1)03FL-F	<0.004	0.0004-0.002	0.004-0.016									●						CCET 040101FL-F
		CCET 1.5(1)05FR-F	<0.008	0.0004-0.002	0.004-0.016									●						CCET 040102FR-F
		CCET 1.5(1)05FL-F	<0.008	0.0004-0.002	0.004-0.016									●						CCET 040102FL-F
		CCET 1.5(1)1FR-F	<1/64	0.0004-0.002	0.004-0.016									●						CCET 040104FR-F
		CCET 1.5(1)1FL-F	<1/64	0.0004-0.002	0.004-0.016									●						CCET 040104FL-F
Low feed		CCET 2(1)01FR-M	<0.001	0.001-0.004	0.02-0.098									●						CCET 0602003FR-M
		CCET 2(1)01FL-M	<0.001	0.001-0.004	0.02-0.098									●						CCET 0602003FL-M
		CCET 2(1)03FR-M	<0.004	0.001-0.004	0.02-0.098									●						CCET 060201FR-M
		CCET 2(1)03FL-M	<0.004	0.001-0.004	0.02-0.098									●						CCET 060201FL-M
		CCET 2(1)05FR-M	<0.008	0.001-0.004	0.02-0.098									●						CCET 060202FR-M
		CCET 2(1)05FL-M	<0.008	0.001-0.004	0.02-0.098									●						CCET 060202FL-M
		CCET 211FR-M	<1/64	0.0004-0.004	0.02-0.098									●						CCET 060204FR-M
		CCET 211FL-M	<1/64	0.0004-0.004	0.02-0.098									●						CCET 060204FL-M
		CCET 3(2.5)01FR-M	<0.001	0.001-0.004	0.02-0.157									●						CCET 09T3003FR-M
		CCET 3(2.5)01FL-M	<0.001	0.001-0.004	0.02-0.157									●						CCET 09T3003FL-M
		CCET 3(2.5)013FR-M	<0.002	0.001-0.004	0.02-0.157									●						CCET 09T3005FR-M
		CCET 3(2.5)013FL-M	<0.002	0.001-0.004	0.02-0.157									●						CCET 09T3005FL-M
		CCET 3(2.5)03FR-M	<0.004	0.001-0.004	0.02-0.157									●						CCET 09T301FR-M
		CCET 3(2.5)03FL-M	<0.004	0.001-0.004	0.02-0.157									●						CCET 09T301FL-M
		CCET 3(2.5)05FR-M	<0.008	0.001-0.004	0.02-0.157									●						CCET 09T302FR-M
		CCET 3(2.5)05FL-M	<0.008	0.001-0.004	0.02-0.157									●						CCET 09T302FL-M
		CCET 3(2.5)1FR-M	<1/64	0.001-0.004	0.02-0.157									●						CCET 09T304FR-M
		CCET 3(2.5)1FL-M	<1/64	0.001-0.004	0.02-0.157									●						CCET 09T304FL-M

●: Stock available

Positive 55°（D）

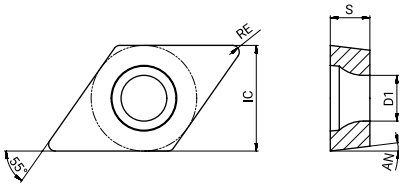


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
DC_2(1.5)_	1/4	3/32	0.110	7°
DC_3(2.5)_	3/8	5/32	0.173	7°

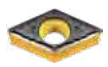
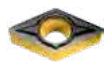
Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		DCGT 2(1.5)013FP-LF	<0.002	0.002-0.006	0.014-0.118									●						DCGT 0702005FP-LF
		DCGT 2(1.5)013FP-LF	<0.004	0.002-0.008	0.014-0.118									●						DCGT 070201FP-LF
		DCGT 2(1.5)05FP-LF	0.008	0.002-0.008	0.014-0.118									●						DCGT 070202FP-LF
		DCGT 2(1.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						DCGT 070204FP-LF
		DCGT 3(2.5)03FP-LF	<0.004	0.002-0.008	0.014-0.118									●						DCGT 11T301FP-LF
		DCGT 3(2.5)05FP-LF	0.008	0.002-0.008	0.014-0.118									●						DCGT 11T302FP-LF
		DCGT 3(2.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						DCGT 11T304FP-LF
		DCGT 2(1.5)013FP-UF	<0.002	0.001-0.006	0.004-0.055									●						DCGT 0702005FP-UF
		DCGT 2(1.5)03FP-UF	<0.004	0.001-0.006	0.004-0.055									●						DCGT 070201FP-UF
		DCGT 2(1.5)05FP-UF	0.008	0.001-0.006	0.004-0.055									●						DCGT 070202FP-UF
		DCGT 2(1.5)1FP-UF	1/64	0.001-0.008	0.004-0.055									●						DCGT 070204FP-UF
		DCGT 3(2.5)03FP-UF	<0.004	0.001-0.006	0.004-0.055									●						DCGT 11T301FP-UF
		DCGT 3(2.5)05FP-UF	0.008	0.001-0.006	0.004-0.055									●						DCGT 11T302FP-UF
		DCGT 3(2.5)1FP-UF	1/64	0.001-0.008	0.004-0.055									●						DCGT 11T304FP-UF
		DCGT 2(1.5)013F-UF	<0.002	0.001-0.006	0.004-0.055									●						DCGT 0702005F-UF
		DCGT 2(1.5)03F-UF	0.004	0.001-0.006	0.004-0.055									●						DCGT 070201F-UF
		DCGT 2(1.5)05F-UF	0.008	0.001-0.006	0.004-0.055									●						DCGT 070202F-UF
		DCGT 2(1.5)1F-UF	1/64	0.001-0.008	0.004-0.055									●						DCGT 070204F-UF
		DCGT 3(2.5)03F-UF	0.004	0.001-0.006	0.004-0.094									●						DCGT 11T301F-UF
		DCGT 3(2.5)05F-UF	0.008	0.001-0.006	0.004-0.094									●						DCGT 11T302F-UF
		DCGT 3(2.5)1F-UF	1/64	0.001-0.008	0.004-0.094									●						DCGT 11T304F-UF
		DCGT 2(1.5)03-UF	0.004	0.001-0.006	0.004-0.055									●					●	DCGT 070201E-UF
		DCGT 2(1.5)05-UF	0.008	0.001-0.006	0.004-0.055									●					●	DCGT 070202E-UF
		DCGT 2(1.5)1-UF	1/64	0.001-0.008	0.004-0.055									●					●	DCGT 070204E-UF
		DCGT 3(2.5)03-UF	0.004	0.001-0.006	0.004-0.094									●					●	DCGT 11T301E-UF
		DCGT 3(2.5)05-UF	0.008	0.001-0.006	0.004-0.094									●					●	DCGT 11T302E-UF
		DCGT 3(2.5)1-UF	1/64	0.001-0.008	0.004-0.094									●					●	DCGT 11T304E-UF

●: Stock available

Positive 55°（D）

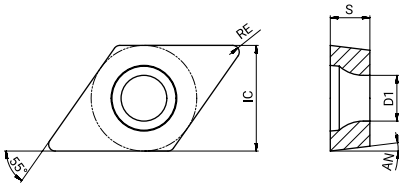


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
DC_2(1.5)_	1/4	3/32	0.110	7°
DC_3(2.5)_	3/8	5/32	0.173	7°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		**DCGT 2(1.5)05F-NC2**	0.008	0.001-0.004	0.006-0.138													●		**DCGT 070202F-NC2**
		DCGT 2(1.5)1F-NC2	1/64	0.002-0.008	0.013-0.138													●		**DCGT 070204F-NC2**
		DCGT 3(2.5)05F-NC2	0.008	0.001-0.004	0.006-0.205													●		**DCGT 11T302F-NC2**
		DCGT 3(2.5)1F-NC2	1/64	0.002-0.008	0.013-0.205													●		**DCGT 11T304F-NC2**
		DCGT 3(2.5)2F-NC2	1/32	0.004-0.016	0.025-0.205													●		**DCGT 11T308F-NC2**
Finishing		**DCMT 2(1.5)05-F1T**	0.008	0.003-0.008	0.016-0.059	●														**DCMT 070202-F1T**
		DCMT 2(1.5)1-F1T	1/64	0.003-0.008	0.016-0.059	●														**DCMT 070204-F1T**
		DCMT 3(2.5)05-F1T	0.008	0.003-0.008	0.016-0.059	●														**DCMT 11T302-F1T**
		DCMT 3(2.5)1-F1T	1/64	0.004-0.010	0.024-0.059	●														**DCMT 11T304-F1T**
		DCMT 3(2.5)2-F1T	1/32	0.004-0.010	0.024-0.059	●														**DCMT 11T308-F1T**
		**DCMT 2(1.5)05-PB1**	0.008	0.001-0.003	0.006-0.059	●		●	●		●	●	●							**DCMT 070202E-PB1**
		DCMT 2(1.5)1-PB1	1/64	0.002-0.006	0.012-0.059	●		●	●		●	●	●							**DCMT 070204E-PB1**
		DCMT 3(2.5)05-PB1	0.008	0.001-0.003	0.006-0.091	●		●	●		●	●	●							**DCMT 11T302E-PB1**
		DCMT 3(2.5)1-PB1	1/64	0.002-0.006	0.012-0.091	●		●	●		●	●	●							**DCMT 11T304E-PB1**
		DCMT 3(2.5)2-PB1	1/32	0.004-0.011	0.024-0.091	●		●	●		●	●	●							**DCMT 11T308E-PB1**
Semi-Finishing		**DCMT 2(1.5)05-PC2**	1/64	0.002-0.006	0.014-0.083	●		●	●		●	●	●						●	**DCMT 070204E-PC2**
		DCMT 2(1.5)1-PC2	1/32	0.004-0.013	0.028-0.083	●		●	●		●	●	●						●	**DCMT 070208E-PC2**
		DCMT 3(2.5)05-PC2	1/64	0.002-0.006	0.014-0.122	●	●	●	●		●	●	●						●	**DCMT 11T304E-PC2**
		DCMT 3(2.5)1-PC2	1/32	0.004-0.013	0.028-0.122	●	●	●	●		●	●	●						●	**DCMT 11T308E-PC2**
		DCMT 3(2.5)2-PC2	3/64	0.006-0.019	0.041-0.122	●		●	●		●	●	●						●	**DCMT 11T312E-PC2**
		**DCMT 2(1.5)05-M2T**	1/64	0.004-0.010	0.020-0.118	●														**DCMT 11T304-M2T**
		DCMT 2(1.5)1-M2T	1/32	0.004-0.010	0.020-0.118	●														**DCMT 11T308-M2T**
Medium		**DCMT 2(1.5)05-KC2**	1/64	0.002-0.007	0.016-0.091	●		●	●	●						●	●			**DCMT 070204E-KC2**
		DCMT 2(1.5)1-KC2	1/32	0.005-0.014	0.031-0.091	●		●	●	●						●	●			**DCMT 070208E-KC2**
		DCMT 3(2.5)05-KC2	1/64	0.002-0.007	0.016-0.138	●		●	●	●						●	●			**DCMT 11T304E-KC2**
		DCMT 3(2.5)1-KC2	1/32	0.005-0.014	0.031-0.138	●	●	●	●	●					●	●	●			**DCMT 11T308E-KC2**
		DCMT 3(2.5)2-KC2	3/64	0.007-0.021	0.047-0.138		●	●	●	●						●	●			**DCMT 11T312E-KC2**

●: Stock available

Positive 55°（D）

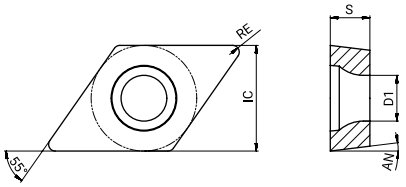


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
DC_2(1.5)_	1/4	3/32	0.110	7°
DC_3(2.5)_	3/8	5/32	0.173	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Roughing		DCMW 2(1.5)05-KD5	1/64	0.002-0.007	0.016-0.154											●	●			DCMW 070204E-KD5
		DCMW 2(1.5)1-KD5	1/32	0.005-0.014	0.031-0.154											●	●			DCMW 070208E-KD5
		DCMW 3(2.5)05-KD5	1/64	0.002-0.007	0.016-0.228											●	●			DCMW 11T304E-KD5
		DCMW 3(2.5)1-KD5	1/32	0.005-0.014	0.031-0.228											●	●			DCMW 11T308E-KD5
Finishing		DCET 2(1.5)01FR-F	<0.001	0.001-0.007	0.004-0.016									●						DCET 0702003FR-F
		DCET 2(1.5)01FL-F	<0.001	0.001-0.007	0.004-0.016									●						DCET 0702003FL-F
		DCET 2(1.5)013FR-F	<0.002	0.001-0.007	0.004-0.016									●						DCET 0702005FR-F
		DCET 2(1.5)013FL-F	<0.002	0.001-0.007	0.004-0.016									●						DCET 0702005FL-F
		DCET 2(1.5)03FR-F	<0.004	0.001-0.007	0.004-0.016									●						DCET 070201FR-F
		DCET 2(1.5)03FL-F	<0.004	0.001-0.007	0.004-0.016									●						DCET 070201FL-F
		DCET 2(1.5)05FR-F	<0.008	0.001-0.007	0.004-0.016									●						DCET 070202FR-F
		DCET 2(1.5)05FL-F	<0.008	0.001-0.007	0.004-0.016									●						DCET 070202FL-F
		DCET 2(1.5)1FR-F	<1/64	0.001-0.007	0.004-0.016									●						DCET 070204FR-F
		DCET 2(1.5)1FL-F	<1/64	0.001-0.007	0.004-0.016									●						DCET 070204FL-F
		DCET 3(2.5)01FR-F	<0.001	0.001-0.008	0.004-0.016									●						DCET 11T3003FR-F
		DCET 3(2.5)01FL-F	<0.001	0.001-0.008	0.004-0.016									●						DCET 11T3003FL-F
		DCET 3(2.5))013FR-F	<0.002	0.001-0.008	0.004-0.016									●						DCET 11T3005FR-F
		DCET 3(2.5)013FL-F	<0.002	0.001-0.008	0.004-0.016									●						DCET 11T3005FL-F
		DCET 3(2.5))03FR-F	<0.004	0.001-0.008	0.004-0.016									●						DCET 11T301FR-F
		DCET 3(2.5)03FL-F	<0.004	0.001-0.008	0.004-0.016									●						DCET 11T301FL-F
		DCET 3(2.5)05FR-F	<0.008	0.001-0.008	0.004-0.016									●						DCET 11T302FR-F
		DCET 3(2.5)05FL-F	<0.008	0.001-0.008	0.004-0.016									●						DCET 11T302FL-F
		DCET 3(2.5)1FR-F	<1/64	0.001-0.008	0.004-0.016									●						DCET 11T304FR-F
		DCET 3(2.5)1FL-F	<1/64	0.001-0.008	0.004-0.016									●						DCET 11T304FL-F

●: Stock available

Positive 55°（D）

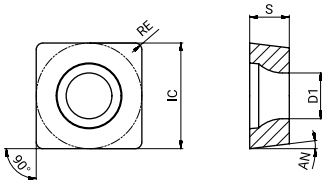


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
DC_2(1.5)_	1/4	3/32	0.110	7°
DC_3(2.5)_	3/8	5/32	0.173	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Low feed		**DCET 2(1.5)01FR-M**	<0.001	0.0004-0.003	0.020-0.110									●						**DCET 0702003FR-M**
		DCET 2(1.5)01FL-M	<0.001	0.0004-0.003	0.020-0.110									●						**DCET 0702003FL-M**
		DCET 2(1.5)013FR-M	<0.002	0.0004-0.003	0.020-0.110									●						**DCET 0702005FR-M**
		DCET 2(1.5)013FL-M	<0.002	0.0004-0.003	0.020-0.110									●						**DCET 0702005FL-M**
		DCET 2(1.5)03FR-M	<0.004	0.0004-0.003	0.020-0.110									●						**DCET 070201FR-M**
		DCET 2(1.5)03FL-M	<0.004	0.0004-0.003	0.020-0.110									●						**DCET 070201FL-M**
		DCET 2(1.5)05FR-M	<0.008	0.0004-0.003	0.020-0.110									●						**DCET 070202FR-M**
		DCET 2(1.5)05FL-M	<0.008	0.0004-0.003	0.020-0.110									●						**DCET 070202FL-M**
		DCET 2(1.5)1FR-M	<1/64	0.0004-0.003	0.020-0.110									●						**DCET 070204FR-M**
		DCET 2(1.5)1FL-M	<1/64	0.0004-0.003	0.020-0.110									●						**DCET 070204FL-M**
		**DCET 3(2.5)01FR-M**	<0.001	0.0004-0.004	0.020-0.157									●						**DCET 11T3003FR-M**
		DCET 3(2.5)01FL-M	<0.001	0.0004-0.004	0.020-0.157									●						**DCET 11T3003FL-M**
		DCET 3(2.5))013FR-M	<0.002	0.0004-0.004	0.020-0.157									●						**DCET 11T3005FR-M**
		DCET 3(2.5)013FL-M	<0.002	0.0004-0.004	0.020-0.157									●						**DCET 11T3005FL-M**
		DCET 3(2.5))03FR-M	<0.004	0.0004-0.004	0.020-0.157									●						**DCET 11T301FR-M**
		DCET 3(2.5)03FL-M	<0.004	0.0004-0.004	0.020-0.157									●						**DCET 11T301FL-M**
		DCET 3(2.5)05FR-M	<0.008	0.0004-0.004	0.020-0.157									●						**DCET 11T302FR-M**
		DCET 3(2.5)05FL-M	<0.008	0.0004-0.004	0.020-0.157									●						**DCET 11T302FL-M**
		DCET 3(2.5)1FR-M	<1/64	0.0004-0.004	0.020-0.157									●						**DCET 11T304FR-M**
		DCET 3(2.5)1FL-M	<1/64	0.0004-0.004	0.020-0.157									●						**DCET 11T304FL-M**

●: Stock available

Positive 90°（S）

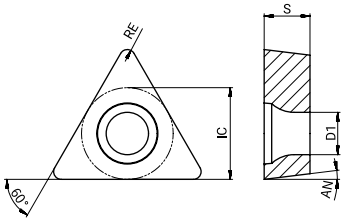


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
SC_3(2.5)_	3/8	5/32	0.173	7°
SC_43_	1/2	3/16	0.217	7°
SC_3809_	1½	3/8	0.386	7°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition													ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		**SCGT 3(2.5)2F-NC2**	1/32	0.004-0.016	0.025-0.169													●		**SCGT 09T308F-NC2**
Finishing		**SCMT 3(2.5)1-PB1**	1/64	0.002-0.006	0.012-0.094	●		●	●		●	●	●							**SCMT 09T304E-PB1**
		SCMT 3(2.5)2-PB1	1/32	0.004-0.011	0.024-0.094	●		●	●		●	●	●							**SCMT 09T308E-PB1**
		SCMT 431-PB1	1/64	0.002-0.006	0.012-0.126			●	●		●	●	●							**SCMT 120404E-PB1**
Semi-Finishing		**SCMT 3(2.5)1-PC2**	1/64	0.002-0.006	0.014-0.114	●		●	●		●	●	●						●	**SCMT 09T304E-PC2**
		SCMT 3(2.5)2-PC2	1/32	0.004-0.013	0.028-0.114	●		●	●		●	●	●						●	**SCMT 09T308E-PC2**
		SCMT 431-PC2	1/64	0.002-0.006	0.014-0.15	●		●	●		●	●	●						●	**SCMT 120404E-PC2**
		SCMT 432-PC2	1/32	0.004-0.013	0.028-0.15	●	●	●	●		●	●	●						●	**SCMT 120408E-PC2**
		SCMT 433-PC2	3/64	0.006-0.019	0.041-0.15		●	●	●		●	●	●						●	**SCMT 120412E-PC2**
		SCMT 3(2.5)1-M2T	1/64	0.004-0.010	0.028-0.138	●														**SCMT 09T304-M2T**
		SCMT 3(2.5)2-M2T	1/32	0.004-0.010	0.028-0.138	●														**SCMT 09T308-M2T**
Medium		**SCMT 3(2.5)1-KC2**	1/64	0.002-0.007	0.016-0.122	●		●	●	●						●	●			**SCMT 09T304E-KC2**
		SCMT 3(2.5)2-KC2	1/32	0.005-0.014	0.031-0.122	●		●	●	●						●	●			**SCMT 09T308E-KC2**
		SCMT 431-KC2	1/64	0.002-0.007	0.016-0.165	●		●	●	●						●	●			**SCMT 120404E-KC2**
		SCMT 432-KC2	1/32	0.005-0.014	0.031-0.165	●		●	●	●						●	●			**SCMT 120408E-KC2**
		SCMT 433-KC2	3/64	0.007-0.021	0.047-0.165			●	●	●						●	●			**SCMT 120412E-KC2**
		SCMW 3(2.5)1-KD5	1/64	0.004-0.009	0.016-0.189											●	●			**SCMW 09T304E-KD5**
		SCMW 3(2.5)2-KD5	1/32	0.008-0.017	0.031-0.189										●	●	●			**SCMW 09T308E-KD5**
		SCMW 431-KD5	1/64	0.004-0.009	0.016-0.252											●	●			**SCMW 120404E-KD5**
		SCMW 432-KD5	1/32	0.008-0.017	0.031-0.252											●	●			**SCMW 120408E-KD5**
Roughing		-	1/8	0.028-0.055	0.157-0.709					●										**SCMT 380932S-HT**

●: Stock available

Positive 60°（T）

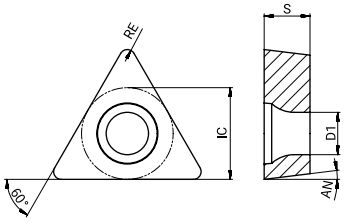


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
TC_2(1.5)_	1/4	3/32	0.110	7°
TC_3(2.5)_	3/8	5/32	0.173	7°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		TCGT 2(1.5)03FP-LF	<0.004	0.002-0.008	0.014-0.118									●						TCGT 110201FP-LF
		TCGT 2(1.5)05FP-LF	0.008	0.002-0.008	0.014-0.118									●						TCGT 110202FP-LF
		TCGT 2(1.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						TCGT 110204FP-LF
		TCGT 3(2.5)1FP-LF	1/64	0.002-0.008	0.014-0.118									●						TCGT 16T304FP-LF
		TCGT 2(1.5)03FP-UF	<0.004	0.001-0.006	0.004-0.094									●						TCGT 110201FP-UF
		TCGT 2(1.5)05FP-UF	0.008	0.001-0.006	0.008-0.094									●						TCGT 110202FP-UF
		TCGT 2(1.5)1FP-UF	1/64	0.001-0.008	0.008-0.094									●						TCGT 110204FP-UF
		TCGT 3(2.5)1FP-UF	1/64	0.001-0.008	0.008-0.094									●						TCGT 16T304FP-UF
		TCGT 2(1.5)03F-UF	0.004	0.001-0.006	0.004-0.094									●						TCGT 110201F-UF
		TCGT 2(1.5)05F-UF	0.008	0.001-0.006	0.008-0.094									●						TCGT 110202F-UF
		TCGT 2(1.5)1F-UF	1/64	0.001-0.008	0.008-0.094									●						TCGT 110204F-UF
		TCGT 3(2.5)1F-UF	1/64	0.001-0.008	0.008-0.094									●						TCGT 16T304F-UF
		TCGT 2(1.5)03-UF	0.004	0.001-0.006	0.004-0.094									●					●	TCGT 110201E-UF
		TCGT 2(1.5)05-UF	0.008	0.001-0.006	0.008-0.094									●					●	TCGT 110202E-UF
		TCGT 2(1.5)1-UF	1/64	0.001-0.008	0.008-0.094									●					●	TCGT 110204E-UF
		TCGT 3(2.5)1-UF	1/64	0.001-0.008	0.008-0.094									●					●	TCGT 16T304E-UF
Semi-Finishing		TCGT 2(1.5)1-NC2	1/64	0.002-0.008	0.013-0.193													●		TCGT 110204F-NC2
		TCGT 3(2.5)1-NC2	1/64	0.002-0.008	0.013-0.291													●		TCGT 16T304F-NC2
		TCGT 3(2.5)2-NC2	1/32	0.004-0.016	0.025-0.291													●		TCGT 16T308F-NC2

●: Stock available

Positive 60°（T）

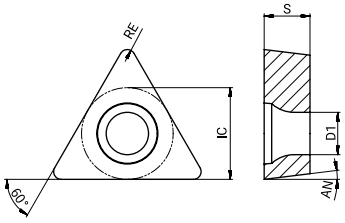


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
TCMT_1.8(1.5)_	0.219	0.094	0.098	7°
TC_2(1.5)_	1/4	3/32	0.110	7°
TC_3(2.5)_	3/8	5/32	0.173	7°
TPMT_1.8(1.5)_	0.219	0.094	0.098	11°
TPMT_22_	1/4	1/8	0.134	11°
TPMT_32_	3/8	1/8	0.173	11°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**TCMT 1.8(1.5)1-PB1**	1/64	0.002-0.006	0.012-0.075	●		●	●		●	●	●							**TCMT 090204E-PB1**
		TCMT 2(1.5)05-PB1	0.008	0.001-0.003	0.006-0.087	●		●	●		●	●	●							**TCMT 110202E-PB1**
		TCMT 2(1.5)1-PB1	1/64	0.002-0.006	0.012-0.087	●		●	●		●	●	●							**TCMT 110204E-PB1**
		TCMT 2(1.5)2-PB1	1/32	0.004-0.011	0.024-0.087	●		●	●		●	●	●							**TCMT 110208E-PB1**
		TCMT 3(2.5)1-PB1	1/64	0.002-0.006	0.012-0.13	●		●	●		●	●	●							**TCMT 16T304E-PB1**
		TCMT 3(2.5)2-PB1	1/32	0.004-0.011	0.024-0.13	●		●	●		●	●	●							**TCMT 16T308E-PB1**
		**TPMT 1.8(1.5)05-PB1**	0.008	0.001-0.003	0.006-0.075	●														**TPMT 090202E-PB1**
		TPMT 1.8(1.5)1-PB1	1/64	0.002-0.006	0.012-0.075	●														**TPMT 090204E-PB1**
		TPMT 1.8(1.5)2-PB1	1/32	0.004-0.011	0.024-0.075	●														**TPMT 090208E-PB1**
		TPMT 2(1.5)05-PB1	0.008	0.001-0.003	0.006-0.087	●														**TPMT 110302E-PB1**
		TPMT 2(1.5)1-PB1	1/64	0.002-0.006	0.012-0.13	●														**TPMT 110304E-PB1**
		TPMT 2(1.5)2-PB1	1/32	0.004-0.011	0.024-0.13	●														**TPMT 110308E-PB1**
		TPMT 3(2.5)1-PB1	1/64	0.002-0.006	0.012-0.13	●														**TPMT 160304E-PB1**
		TPMT 3(2.5)2-PB1	1/32	0.004-0.011	0.024-0.13	●														**TPMT 160308E-PB1**
Semi-Finishing		**TCMT 1.8(1.5)1-PC2**	1/64	0.002-0.006	0.014-0.102	●														**TCMT 090204E-PC2**
		TCMT 1.8(1.5)2-PC2	1/32	0.004-0.013	0.028-0.102	●														**TCMT 090208E-PC2**
		TCMT 2(1.5)1-PC2	1/64	0.002-0.006	0.014-0.118	●														**TCMT 110204E-PC2**
		TCMT 2(1.5)2-PC2	1/32	0.004-0.013	0.028-0.118	●														**TCMT 110208E-PC2**
		TCMT 3(2.5)1-PC2	1/64	0.002-0.006	0.014-0.177	●														**TCMT 16T304E-PC2**
		TCMT 3(2.5)2-PC2	1/32	0.004-0.013	0.028-0.177	●														**TCMT 16T308E-PC2**
		TCMT 3(2.5)3-PC2	3/64	0.006-0.019	0.041-0.177															**TCMT 16T312E-PC2**
		TPMT 1.8(1.5)1-PC2	1/64	0.002-0.006	0.014-0.102	●														**TPMT 090204E-PC2**
		TPMT 1.8(1.5)2-PC2	1/32	0.004-0.013	0.028-0.102	●														**TPMT 090208E-PC2**
		TPMT 221-PC2	1/64	0.002-0.006	0.014-0.118	●														**TPMT 110304E-PC2**
		TPMT 222-PC2	1/32	0.004-0.013	0.028-0.118	●														**TPMT 110308E-PC2**

●: Stock available

Positive 60°（T）

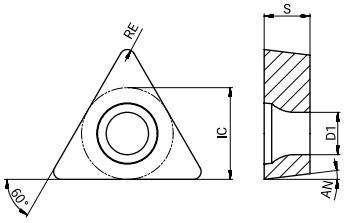


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
TBET_1.2(1)_	0.156	0.063	0.091	5°
TCMT_1.8(1.5)_	0.219	0.094	0.098	7°
TC_2(1.5)_	1/4	3/32	0.110	7°
TC_3(2.5)_	3/8	5/32	0.173	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters																
						P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		**TCMT 221-M2T**	1/64	0.004-0.010	0.024-0.079	●														**TCMT 110204-M2T**
		TCMT 222-M2T	1/32	0.004-0.010	0.024-0.079	●														**TCMT 110208-M2T**
		**TCMT 3(2.5)1-M2T**	1/64	0.004-0.010	0.024-0.079	●														**TCMT 16T304-M2T**
		TCMT 3(2.5)2-M2T	1/32	0.004-0.010	0.024-0.079	●														**TCMT 16T308-M2T**
Medium		**TCMT 1.8(1.5)1-KC2**	1/64	0.002-0.007	0.016-0.114	●	●	●	●		●	●	●			●	●			**TCMT 090204E-KC2**
		TCMT 1.8(1.5)2-KC2	1/32	0.005-0.014	0.031-0.114	●	●	●	●		●	●	●			●	●			**TCMT 090208E-KC2**
		TCMT 2(1.5)1-KC2	1/64	0.002-0.007	0.016-0.13	●	●	●	●		●	●	●			●	●			**TCMT 110204E-KC2**
		TCMT 2(1.5)2-KC2	1/32	0.005-0.014	0.031-0.13	●	●	●	●		●	●	●			●	●			**TCMT 110208E-KC2**
		TCMT 3(2.5)1-KC2	1/64	0.002-0.007	0.016-0.193	●	●	●	●		●	●	●			●	●			**TCMT 16T304E-KC2**
		TCMT 3(2.5)2-KC2	1/32	0.005-0.014	0.031-0.193	●	●	●	●		●	●	●			●	●			**TCMT 16T308E-KC2**
		TCMT 3(2.5)3-KC2	3/64	0.007-0.021	0.047-0.193		●	●	●		●	●	●			●	●			**TCMT 16T312E-KC2**
Roughing		**TCMW 2(1.5)1-KD5**	1/64	0.002-0.007	0.016-0.217											●	●			**TCMW 110204E-KD5**
		TCMW 2(1.5)2-KD5	1/32	0.005-0.014	0.031-0.217											●	●			**TCMW 110208E-KD5**
		TCMW 3(2.5)1-KD5	1/64	0.002-0.007	0.016-0.323											●	●			**TCMW 16T304E-KD5**
		TCMW 3(2.5)2-KD5	1/32	0.005-0.014	0.031-0.323											●	●			**TCMW 16T308E-KD5**
Finishing		**TBET 1.2(1)01FR-F**	<0.001	0.001-0.003	0.004-0.02									●						**TBET 0601003FR-F**
		TBET 1.2(1)01FL-F	<0.001	0.001-0.003	0.004-0.02									●						**TBET 0601003FL-F**
		TBET 1.2(1)013FR-F	<0.002	0.001-0.003	0.004-0.02									●						**TBET 0601005FR-F**
		TBET 1.2(1)013FL-F	<0.002	0.001-0.003	0.004-0.02									●						**TBET 0601005FL-F**
		TBET 1.2(1)03FR-F	<0.004	0.001-0.003	0.004-0.02									●						**TBET 060101FR-F**
		TBET 1.2(1)03FL-F	<0.004	0.001-0.003	0.004-0.02									●						**TBET 060101FL-F**
		TBET 1.2(1)05FR-F	<0.008	0.001-0.003	0.004-0.02									●						**TBET 060102FR-F**
		TBET 1.2(1)05FL-F	<0.008	0.001-0.003	0.004-0.02									●						**TBET 060102FL-F**
		TBET 1.2(1)1FR-F	<1/64	0.001-0.003	0.004-0.02									●						**TBET 060104FR-F**
		TBET 1.2(1)1FL-F	<1/64	0.001-0.003	0.004-0.02									●						**TBET 060104FL-F**

●: Stock available

Positive 60°（T）

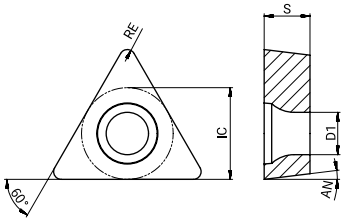


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
TPEH_1.5(1.5)_	0.187	0.094	0.091	11°
TPEH_1.8(1.5)_	0.219	0.094	0.118	11°
TCET_22_	1/4	0.125	0.11	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		TCET 2(2)03FR-F	<0.004	0.001-0.003	0.004-0.031									●						TCET 110201FR-F
		TCET 2(2)03FL-F	<0.004	0.001-0.003	0.004-0.031									●						TCET 110201FL-F
		TCET 2(2)05FR-F	<0.008	0.001-0.003	0.004-0.031									●						TCET 110202FR-F
		TCET 2(2)05FL-F	<0.008	0.001-0.003	0.004-0.031									●						TCET 110202FL-F
		TCET 221FR-F	<1/64	0.001-0.003	0.004-0.031									●						TCET 110204FR-F
		TCET 221FL-F	<1/64	0.001-0.003	0.004-0.031									●						TCET 110204FL-F
		TCET 222FR-F	<1/32	0.001-0.003	0.004-0.031									●						TCET 110208FR-F
		TCET 222FL-F	<1/32	0.001-0.003	0.004-0.031									●						TCET 110208FL-F
		TPEH 1.5(1.5)03FR-F	<0.004	0.0004-0.004	0.004-0.031									●						TPEH 080201FR-F
		TPEH 1.5(1.5)03FL-F	<0.004	0.0004-0.004	0.004-0.031									●						TPEH 080201FL-F
		TPEH 1.5(1.5)05FR-F	<0.008	0.0004-0.004	0.004-0.031									●						TPEH 080202FR-F
		TPEH 1.5(1.5)05FL-F	<0.008	0.0004-0.004	0.004-0.031									●						TPEH 080202FL-F
		TPEH 1.5(1.5)1FR-F	<1/64	0.0004-0.004	0.004-0.031									●						TPEH 080204FR-F
		TPEH 1.5(1.5)1FL-F	<1/64	0.0004-0.004	0.004-0.031									●						TPEH 080204FL-F
		TPEH 1.8(1.5)03FR-F	<0.004	0.0004-0.004	0.004-0.031									●						TPEH 090201FR-F
		TPEH 1.8(1.5)03FL-F	<0.004	0.0004-0.004	0.004-0.031									●						TPEH 090201FL-F
		TPEH 1.8(1.5)05FR-F	<0.008	0.0004-0.004	0.004-0.031									●						TPEH 090202FR-F
		TPEH 1.8(1.5)05FL-F	<0.008	0.0004-0.004	0.004-0.031									●						TPEH 090202FL-F
		TPEH 1.8(1.5)1FR-F	<1/64	0.0004-0.004	0.004-0.031									●						TPEH 090204FR-F
		TPEH 1.8(1.5)1FL-F	<1/64	0.0004-0.004	0.004-0.031									●						TPEH 090204FL-F

●: Stock available

Positive 60°（T）

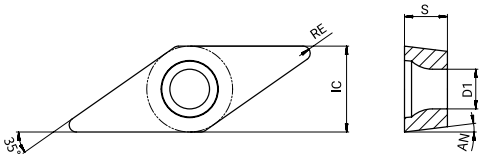


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
TCET_1.5(1.5)_	0.187	0.094	0.091	7°
TCET_22_	1/4	0.125	0.11	7°
TPEH_22_	1/4	0.125	0.130	11°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters		●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
						P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**TPEH 2(2)05FR-F**	<0.008	0.0004-0.005	0.008-0.031									●						TPEH 110302FR-F
		TPEH 2(2)05FL-F	<0.008	0.0004-0.005	0.008-0.031									●						TPEH 110302FL-F
		TPEH 221FR-F	<1/64	0.0004-0.005	0.008-0.031									●						TPEH 110304FR-F
		TPEH 221FL-F	<1/64	0.0004-0.005	0.008-0.031									●						TPEH 110304FL-F
		TPEH 222FR-F	<1/32	0.0004-0.005	0.008-0.031									●						TPEH 110308FR-F
		TPEH 222FL-F	<1/32	0.0004-0.005	0.008-0.031									●						TPEH 110308FL-F
Low feed		**TCET 1.5(1.5)01FR-M**	<0.001	0.0004-0.003	0.02-0.098									●						TCET 0802003FR-M
		TCET 1.5(1.5)01FL-M	<0.001	0.0004-0.003	0.02-0.098									●						TCET 0802003FL-M
		TCET 1.5(1.5)03FR-M	<0.004	0.0004-0.003	0.02-0.098									●						TCET 080201FR-M
		TCET 1.5(1.5)03FL-M	<0.004	0.0004-0.003	0.02-0.098									●						TCET 080201FL-M
		TCET 1.5(1.5)05FR-M	<0.008	0.0004-0.003	0.02-0.098									●						TCET 080202FR-M
		TCET 1.5(1.5)05FL-M	<0.008	0.0004-0.003	0.02-0.098									●						TCET 080202FL-M
		**TCET 2(2)01FR-M**	<0.001	0.001-0.004	0.02-0.157									●						TCET 1103003FR-M
		TCET 2(2)01FL-M	<0.001	0.001-0.004	0.02-0.157									●						TCET 1103003FL-M
		TCET 2(2)03FR-M	<0.004	0.001-0.004	0.02-0.157									●						TCET 110301FR-M
		TCET 2(2)03FL-M	<0.004	0.001-0.004	0.02-0.157									●						TCET 110301FL-M
		TCET 2(2)05FR-M	<0.008	0.001-0.004	0.02-0.157									●						TCET 110302FR-M
		TCET 2(2)05FL-M	<0.008	0.001-0.004	0.02-0.157									●						TCET 110302FL-M
		TCET 221FR-M	<1/64	0.001-0.004	0.02-0.157									●						TCET 110304FR-M
		TCET 221FL-M	<1/64	0.001-0.004	0.02-0.157									●						TCET 110304FL-M

●: Stock available

Positive 35°（V）

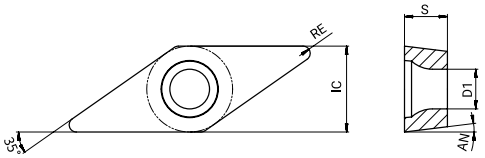


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VC_22_	1/4	1/8	0.110	7°
VP_22_	1/4	1/8	0.110	11°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ⬌ General condition ✱ Bad condition													ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		VBGT 2(2)013FP-LF	<0.002	0.002-0.008	0.014-0.118									●						VBGT 1103005FP-LF
		VBGT 2(2)03FP-LF	<0.004	0.002-0.008	0.014-0.119									●						VBGT 110301FP-LF
		VBGT 2(2)05FP-LF	0.008	0.002-0.008	0.014-0.120									●						VBGT 110302FP-LF
		VBGT 221FP-LF	1/64	0.002-0.008	0.014-0.121									●						VBGT 110304FP-LF
		VBGT 3(3)03FP-LF	<0.004	0.002-0.008	0.014-0.122									●						VBGT 160401FP-LF
		VBGT 3(3)05FP-LF	0.008	0.002-0.008	0.014-0.123									●						VBGT 160402FP-LF
		VCGT 2(2)013FP-LF	<0.002	0.002-0.008	0.014-0.124									●						VCGT 1103005FP-LF
		VCGT 2(2)03FP-LF	<0.004	0.002-0.008	0.014-0.125									●						VCGT 110301FP-LF
		VCGT 2(2)05FP-LF	0.008	0.002-0.008	0.014-0.126									●						VCGT 110302FP-LF
		VCGT 221FP-LF	1/64	0.002-0.008	0.014-0.127									●						VCGT 110304FP-LF
		VPGT 2(2)013FP-LF	<0.002	0.002-0.008	0.014-0.128									●						VPGT 1103005FP-LF
		VPGT 2(2)03FP-LF	<0.004	0.002-0.008	0.014-0.129									●						VPGT 110301FP-LF
		VPGT 2(2)05FP-LF	0.008	0.002-0.008	0.014-0.130									●						VPGT 110302FP-LF
		VBGT 2(2)03FP-UF	0.004	0.001-0.006	0.004-0.055									●						VBGT 110301FP-UF
		VBGT 2(2)05FP-UF	0.008	0.001-0.006	0.008-0.055									●						VBGT 110302FP-UF
		VBGT 221FP-UF	1/64	0.001-0.008	0.008-0.055									●						VBGT 110304FP-UF
		VBGT 3(3)03FP-UF	0.004	0.001-0.006	0.004-0.055									●						VBGT 160401FP-UF
		VBGT 3(3)05FP-UF	0.008	0.001-0.006	0.008-0.055									●						VBGT 160402FP-UF
		VBGT 2(2)03F-UF	0.004	0.001-0.006	0.004-0.055									●						VBGT 110301F-UF
		VBGT 2(2)05F-UF	0.008	0.001-0.006	0.008-0.055									●						VBGT 110302F-UF
		VBGT 221F-UF	1/64	0.001-0.008	0.008-0.055									●						VBGT 110304F-UF
		VBGT 3(3)03F-UF	0.004	0.001-0.006	0.004-0.055									●						VBGT 160401F-UF
		VBGT 3(3)05F-UF	0.008	0.001-0.006	0.008-0.055									●						VBGT 160402F-UF
		VBGT 2(2)03-UF	0.004	0.001-0.006	0.004-0.055									●					●	VBGT 110301E-UF
		VBGT 2(2)05-UF	0.008	0.001-0.006	0.008-0.055									●					●	VBGT 110302E-UF
		VBGT 221-UF	1/64	0.001-0.008	0.008-0.055									●					●	VBGT 110304E-UF
		VBGT 3(3)03-UF	0.004	0.001-0.006	0.004-0.055									●					●	VBGT 160401E-UF
		VBGT 3(3)05-UF	0.008	0.001-0.006	0.008-0.055									●					●	VBGT 160402E-UF

●: Stock available

Positive 35°（V）

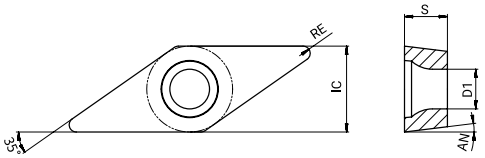


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VC_22_	1/4	1/8	0.110	7°
VC_33_	3/8	3/16	0.173	7°
VC_4(3.5)_	1/2	0.219	0.217	7°
VP_22_	1/4	1/8	0.110	11°
VP_4(3.5)_	1/2	0.219	0.217	11°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ⬌ General condition ✱ Bad condition													ISO
				Recommanded parameters		●	●	●	⬌	✱	●	⬌	⬌	⬌	●	●	✱	⬌	●
						P					M				K			N	S
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		VCGT 2(2)013FP-UF	<0.002	0.001-0.006	0.004-0.055									●						VCGT 1103005FP-UF
		VCGT 2(2)03FP-UF	0.004	0.001-0.006	0.004-0.055									●						VCGT 110301FP-UF
		VCGT 2(2)05FP-UF	0.008	0.001-0.006	0.008-0.055									●						VCGT 110302FP-UF
		VCGT 221FP-UF	1/64	0.001-0.008	0.008-0.055									●						VCGT 110304FP-UF
		VCGT 2(2)013-UF	<0.002	0.001-0.006	0.004-0.055									●						VCGT 1103005E-UF
		VCGT 2(2)03F-UF	0.004	0.001-0.006	0.004-0.055									●						VCGT 110301F-UF
		VCGT 2(2)05F-UF	0.008	0.001-0.006	0.008-0.055									●						VCGT 110302F-UF
		VCGT 221F-UF	1/64	0.001-0.008	0.008-0.055									●						VCGT 110304F-UF
		VCGT 2(2)03-UF	0.004	0.001-0.006	0.004-0.055									●					●	VCGT 110301E-UF
		VCGT 2(2)05-UF	0.008	0.001-0.006	0.008-0.055									●					●	VCGT 110302E-UF
		VCGT 221-UF	1/64	0.001-0.008	0.008-0.055									●					●	VCGT 110304E-UF
		VPGT 2(2)03FP-UF	0.004	0.001-0.006	0.004-0.055									●						VPGT 110301FP-UF
		VPGT 2(2)05FP-UF	0.008	0.001-0.006	0.008-0.055									●						VPGT 110302FP-UF
		VPGT 2(2)03F-UF	0.004	0.001-0.006	0.004-0.055									●						VPGT 110301F-UF
		VPGT 2(2)05F-UF	0.008	0.001-0.006	0.008-0.055									●						VPGT 110302F-UF
Semi-Finishing		VCGT 2(2)05F-NC2	0.008	0.001-0.004	0.006-0.11													●		VCGT 110302F-NC2
		VCGT 221F-NC2	1/64	0.002-0.008	0.013-0.11													●		VCGT 110304F-NC2
		VCGT 331F-NC2	1/64	0.002-0.008	0.013-0.165													●		VCGT 160404F-NC2
		VCGT 332F-NC2	1/32	0.004-0.016	0.025-0.165													●		VCGT 160408F-NC2
		VCGT 333F-NC2	3/64	0.006-0.024	0.038-0.165													●		VCGT 160412F-NC2
		-	3.0	0.014-0.059	0.094-0.217													●		VCGT 220530F-NC2
		VPGT 4(3.5)5-NC2	5/64	0.009-0.039	0.063-0.217													●		VPGT 220520E-NC2
		VPGT 4(3.5)5F-NC2	5/64	0.009-0.039	0.063-0.217													●		VPGT 220520F-NC2
Profiling machinging		VBMT 2(2)05-BS	0.008	0.002-0.006	0.012-0.051	●	●													VBMT 110302E-BS
		VBMT 221-BS	1/64	0.002-0.006	0.012-0.051	●	●													VBMT 110304E-BS
		VBMT 222-BS	1/32	0.002-0.008	0.012-0.051	●	●													VBMT 110308E-BS
		VBMT 331-BS	1/64	0.002-0.006	0.012-0.059	●	●													VBMT 160404E-BS
		VBMT 332-BS	1/32	0.002-0.006	0.012-0.059	●	●													VBMT 160408E-BS
		VBMT 333-BS	3/64	0.002-0.009	0.012-0.059	●	●													VBMT 160412E-BS

●: Stock available

Positive 35°（V）

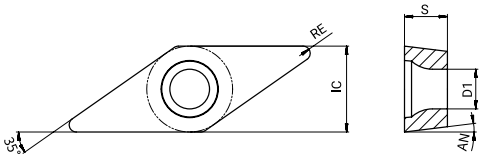


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VC_22_	1/4	1/8	0.110	7°
VC_33_	3/8	3/16	0.173	7°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ⬮ General condition ✱ Bad condition														ISO
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**VBMT 221-PB1**	1/64	0.002-0.006	0.012-0.055	●		●	●		●	●	●							**VBMT 110304E-PB1**
		VBMT 222-PB1	1/32	0.004-0.011	0.024-0.055	●		●	●		●	●	●							**VBMT 110308E-PB1**
		VBMT 3(3)05-PB1	0.008	0.001-0.003	0.006-0.083	●		●	●		●	●	●							**VBMT 160402E-PB1**
		VBMT 331-PB1	1/64	0.002-0.006	0.012-0.083	●		●	●		●	●	●							**VBMT 160404E-PB1**
		VBMT 332-PB1	1/32	0.004-0.011	0.024-0.083	●		●	●		●	●	●							**VBMT 160408E-PB1**
		VCMT 331-PB1	1/64	0.002-0.006	0.012-0.083			●	●		●	●	●							**VCMT 160404E-PB1**
		VCMT 332-PB1	1/32	0.004-0.011	0.024-0.083			●	●		●	●	●							**VCMT 160408E-PB1**
Semi-Finishing		**VBMT 221-PC2**	1/64	0.002-0.006	0.014-0.083	●		●	●		●	●	●						●	**VBMT 110304E-PC2**
		VBMT 222-PC2	1/32	0.004-0.013	0.028-0.083	●		●	●		●	●	●						●	**VBMT 110308E-PC2**
		VBMT 331-PC2	1/64	0.002-0.006	0.014-0.122	●	●	●	●		●	●	●						●	**VBMT 160404E-PC2**
		VBMT 332-PC2	1/32	0.004-0.013	0.028-0.122	●	●	●	●		●	●	●						●	**VBMT 160408E-PC2**
		VBMT 333-PC2	3/64	0.006-0.019	0.041-0.122		●	●	●		●	●	●						●	**VBMT 160412E-PC2**
		VCMT 221-PC2	1/64	0.002-0.006	0.014-0.083			●	●		●	●	●							**VCMT 110304E-PC2**
		VCMT 222-PC2	1/32	0.004-0.013	0.028-0.083			●	●		●	●	●							**VCMT 110308E-PC2**
		VCMT 331-PC2	1/64	0.002-0.006	0.014-0.122			●	●		●	●	●							**VCMT 160404E-PC2**
		VCMT 332-PC2	1/32	0.004-0.013	0.028-0.122			●	●		●	●	●							**VCMT 160408E-PC2**
Medium		**VBMT 331-KC2**	1/64	0.002-0.007	0.016-0.13	●		●	●		●	●	●			●	●			**VBMT 160404E-KC2**
		VBMT 332-KC2	1/32	0.005-0.014	0.031-0.13	●	●	●	●		●	●	●			●	●			**VBMT 160408E-KC2**
		VBMT 333-KC2	3/64	0.007-0.021	0.047-0.13	●	●	●	●		●	●	●			●	●			**VBMT 160412E-KC2**
Finishing		**VBET 2(2)01FR-F**	<0.001	0.0004-0.007	0.004-0.012									●						**VBET 1103003FR-F**
		VBET 2(2)01FL-F	<0.001	0.0004-0.007	0.004-0.012									●						**VBET 1103003FL-F**
		VBET 2(2)013FR-F	<0.002	0.0004-0.007	0.004-0.012									●						**VBET 1103005FR-F**
		VBET 2(2)013FL-F	<0.002	0.0004-0.007	0.004-0.012									●						**VBET 1103005FL-F**
		VBET 2(2)03FR-F	<0.004	0.0004-0.007	0.004-0.012									●						**VBET 110301FR-F**
		VBET 2(2)03FL-F	<0.004	0.0004-0.007	0.004-0.012									●						**VBET 110301FL-F**
		VBET 2(2)05FR-F	<0.008	0.0004-0.007	0.004-0.012									●						**VBET 110302FR-F**
		VBET 2(2)05FL-F	<0.008	0.0004-0.007	0.004-0.012									●						**VBET 110302FL-F**

●: Stock available

Positive 35°（V）

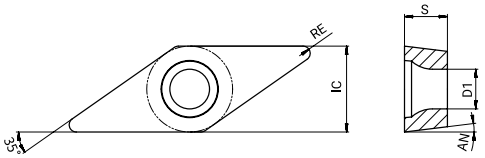


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VC_22_	1/4	1/8	0.110	7°
VP_1.5(1.5)_	0.187	0.094	0.091	11°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters		●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
						P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Low feed		**VBET 2(2)013FR-M**	<0.002	0.0004-0.002	0.008-0.079									●						**VBET 1103005FR-M**
		VBET 2(2)013FL-M	<0.002	0.0004-0.002	0.008-0.079									●						**VBET 1103005FL-M**
		VBET 2(2)03FR-M	<0.004	0.0004-0.002	0.008-0.079									●						**VBET 110301FR-M**
		VBET 2(2)03FL-M	<0.004	0.0004-0.002	0.008-0.079									●						**VBET 110301FL-M**
		VBET 2(2)05FR-M	<0.008	0.0004-0.002	0.008-0.079									●						**VBET 110302FR-M**
		VBET 2(2)05FL-M	<0.008	0.0004-0.002	0.008-0.079									●						**VBET 110302FL-M**
		VBET 221FR-M	<1/64	0.0004-0.002	0.008-0.079									●						**VBET 110304FR-M**
		VBET 221FL-M	<1/64	0.0004-0.002	0.008-0.079									●						**VBET 110304FL-M**
Finishing		**VCET 2(2)013FR-F**	<0.002	0.0004-0.007	0.004-0.012									●						**VCET 1103005FR-F**
		VCET 2(2)013FL-F	<0.002	0.0004-0.007	0.004-0.012									●						**VCET 1103005FL-F**
		VCET 2(2)03FR-F	<0.004	0.0004-0.007	0.004-0.012									●						**VCET 110301FR-F**
		VCET 2(2)03FL-F	<0.004	0.0004-0.007	0.004-0.012									●						**VCET 110301FL-F**
		VCET 2(2)05FR-F	<0.008	0.0004-0.007	0.004-0.012									●						**VCET 110302FR-F**
		VCET 2(2)05FL-F	<0.008	0.0004-0.007	0.004-0.012									●						**VCET 110302FL-F**
		VCET 221FR-F	<1/64	0.0004-0.007	0.004-0.012									●						**VCET 110304FR-F**
		VCET 221FL-F	<1/64	0.0004-0.007	0.004-0.012									●						**VCET 110304FL-F**
		**VPET 1.5(1.5)03FR-F**	<0.004	0.001-0.006	0.002-0.008									●						**VPET 080201FR-F**
		VPET 1.5(1.5)03FL-F	<0.004	0.001-0.006	0.002-0.008									●						**VPET 080201FL-F**
		VPET 1.5(1.5)05FR-F	<0.008	0.001-0.006	0.002-0.008									●						**VPET 080202FR-F**
		VPET 1.5(1.5)05FL-F	<0.008	0.001-0.006	0.002-0.008									●						**VPET 080202FL-F**

●: Stock available

Positive 35°（V）

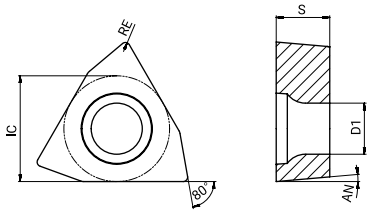


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VP_1.5(1.5)_	0.187	0.094	0.091	11°
VP_22_	1/4	1/8	0.110	11°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
				Recommanded parameters		●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
						P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Low feed		VPET 1.5(1.5)03FR-M	<0.004	0.0004-0.002	0.008-0.059									●						VPET 080201FR-M
		VPET 1.5(1.5)03FL-M	<0.004	0.0004-0.002	0.008-0.059									●						VPET 080201FL-M
		VPET 1.5(1.5)05FR-M	<0.008	0.0004-0.002	0.008-0.059									●						VPET 080202FR-M
		VPET 1.5(1.5)05FL-M	<0.008	0.0004-0.002	0.008-0.059									●						VPET 080202FL-M
		VPET 2(2)03FR-M	<0.004	0.0004-0.002	0.008-0.079									●						VPET 110301FR-M
		VPET 2(2)03FL-M	<0.004	0.0004-0.002	0.008-0.079									●						VPET 110301FL-M
		VPET 2(2)05FR-M	<0.008	0.0004-0.002	0.008-0.079									●						VPET 110302FR-M
		VPET 2(2)05FL-M	<0.008	0.0004-0.002	0.008-0.079									●						VPET 110302FL-M
		VPET 221FR-M	<1/64	0.0004-0.002	0.008-0.079									●						VPET 110304FR-M
		VPET 221FL-M	<1/64	0.0004-0.002	0.008-0.079									●						VPET 110304FL-M
		VBET 2(2)01FR-Y	<0.001	0.003-0.009	0.02-0.071									●						VBET 1103003FR-Y
		VBET 2(2)01FL-Y	<0.001	0.003-0.009	0.02-0.071									●						VBET 1103003FL-Y
		VBET 2(2)013FR-Y	<0.002	0.003-0.009	0.02-0.071									●						VBET 1103005FR-Y
		VBET 2(2)013FL-Y	<0.002	0.003-0.009	0.02-0.071									●						VBET 1103005FL-Y
		VBET 2(2)03FR-Y	<0.004	0.003-0.009	0.02-0.071									●						VBET 110301FR-Y
		VBET 2(2)03FL-Y	<0.004	0.003-0.009	0.02-0.071									●						VBET 110301FL-Y
		VBET 2(2)05FR-Y	<0.008	0.003-0.009	0.02-0.071									●						VBET 110302FR-Y
		VBET 2(2)05FL-Y	<0.008	0.003-0.009	0.02-0.071									●						VBET 110302FL-Y
		VBET 221FR-Y	<1/64	0.003-0.009	0.02-0.071									●						VBET 110304FR-Y
		VBET 221FL-Y	<1/64	0.003-0.009	0.02-0.071									●						VBET 110304FL-Y
		VBET 3(3)05FR-Y	<0.008	0.004-0.01	0.031-0.079									●						VBET 160402FR-Y
		VBET 3(3)05FL-Y	<0.008	0.004-0.01	0.031-0.079									●						VBET 160402FL-Y
		VBET 331FR-Y	<1/64	0.004-0.01	0.031-0.079									●						VBET 160404FR-Y
		VBET 331FL-Y	<1/64	0.004-0.01	0.031-0.079									●						VBET 160404FL-Y
		VBET 332FR-Y	1/32	0.004-0.01	0.031-0.079									●						VBET 160408FR-Y
		VBET 332FL-Y	1/32	0.004-0.01	0.031-0.079									●						VBET 160408FL-Y

●: Stock available

Positive 80°（W）

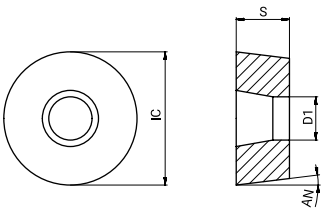


Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
WB_31_	0.156	0.139	0.063	5°
WB_4(1.5)_	0.187	0.188	0.094	5°

Inserts Left-hand shown where it's applicable		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing		**WBET 3(1)01FR-F**	<0.001	0.002-0.003	0.004-0.031									●						**WBET 0601003FR-F**
		WBET 3(1)01FL-F	<0.001	0.002-0.003	0.004-0.031									●						**WBET 0601003FL-F**
		WBET 3(1)03FR-F	<0.004	0.002-0.003	0.004-0.031									●						**WBET 060101FR-F**
		WBET 3(1)03FL-F	<0.004	0.002-0.003	0.004-0.031									●						**WBET 060101FL-F**
		WBET 3(1)05FR-F	<0.008	0.002-0.003	0.004-0.031									●						**WBET 060102FR-F**
		WBET 3(1)05FL-F	<0.008	0.002-0.003	0.004-0.031									●						**WBET 060102FL-F**
		WBET 311FR-F	<1/64	0.002-0.003	0.004-0.031									●						**WBET 060104FR-F**
		WBET 311FL-F	<1/64	0.002-0.003	0.004-0.031									●						**WBET 060104FL-F**
		**WBET 4(1.5)01FR-F**	<0.001	0.002-0.003	0.004-0.031									●						**WBET 0802003FR-F**
		WBET 4(1.5)01FL-F	<0.001	0.002-0.003	0.004-0.031									●						**WBET 0802003FL-F**
		WBET 4(1.5)03FR-F	<0.004	0.002-0.003	0.004-0.031									●						**WBET 080201FR-F**
		WBET 4(1.5)03FL-F	<0.004	0.002-0.003	0.004-0.031									●						**WBET 080201FL-F**
		WBET 4(1.5)05FR-F	<0.008	0.002-0.003	0.004-0.031									●						**WBET 080202FR-F**
		WBET 4(1.5)05FL-F	<0.008	0.002-0.003	0.004-0.031									●						**WBET 080202FL-F**
		WBET 4(1.5)FR-F	<1/64	0.002-0.003	0.004-0.031									●						**WBET 080204FR-F**
		WBET 4(1.5)1FL-F	<1/64	0.002-0.003	0.004-0.031									●						**WBET 080204FL-F**

●: Stock available

Positive Round Insert



Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
RCGT_0803_	0.315	1/8	0.134	7°
RCGT_1003_	0.394	1/8	0.173	7°
RCGT_10T3_	0.394	5/32	0.173	7°
RCMX_1003_	0.394	1/8	0.142	7°
RCMX_1204_	0.472	3/16	0.165	7°

Dimension (in)				Clearance Angle(°)
Product code	IC	S	D1	AN
RCMX_1606_	0.630	1/4	0.205	7°
RCMX_2006_	0.787	1/4	0.256	7°
RCMX_2507_	0.984	5/16	0.283	7°
RCMX_3209_	1.260	3/8	0.378	7°

Inserts		ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ✱ Bad condition														ISO
						●	●	●	◐	✱	●	◐	◐	◐	●	●	✱	◐	●	
				Recommanded parameters		P					M				K			N	S	
				f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Semi-Finishing		-	-	0.004-0.039	0.028-0.13													●		**RCGT 0803MOF-NC2**
		-	-	0.008-0.051	0.035-0.157													●		**RCGT 1003MOF-NC2**
		-	-	0.008-0.051	0.035-0.157													●		**RCGT 10T3MOF-NC2**
		-	-	0.019-0.035	0.138-0.354															**RCMX 2006MOS-PD8**
		-	-	0.022-0.047	0.157-0.472															**RCMX 2507MOS-PD8**
		-	-	0.026-0.059	0.197-0.591															**RCMX 3209MOS-PD8**
Medium		-	-	0.01-0.02	0.059-0.157			●	●											**RCMX 100300S**
		-	-	0.012-0.024	0.098-0.197		●	●	●											**RCMX 120400S**
		-	-	0.016-0.03	0.118-0.276		●	●	●											**RCMX 160600S**
		-	-	0.019-0.035	0.138-0.354		●	●	●											**RCMX 200600S**
		-	-	0.022-0.047	0.157-0.472		●	●	●											**RCMX 250700S**
		-	-	0.026-0.059	0.197-0.591		●	●	●											**RCMX 320900S**

●: Stock available