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KORLOY CUTTING TOOLS

TURNING

Korloy turning tools cover a wide application range with a full line-up of ISO tools and FGT tools that produce high quality and high precision parts for all manufacturers requirements.

SPT SUNCOAST INC. PRECISION TOOLS ESTABLISHED 1963

TU

C O N T E N T S

RNING

Boring Bar

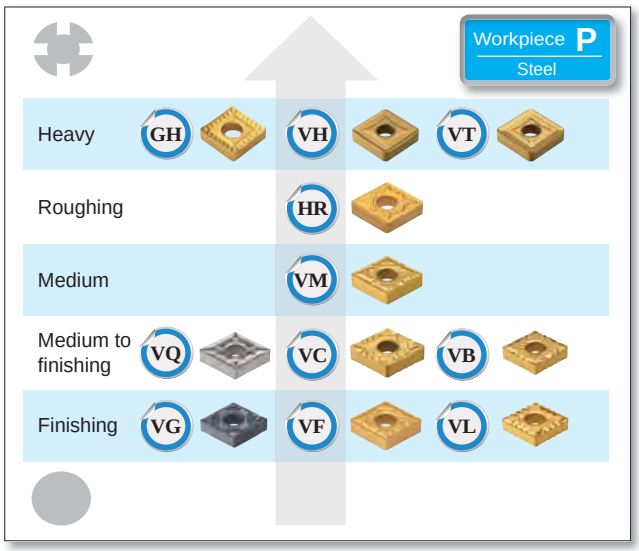
Cartridges

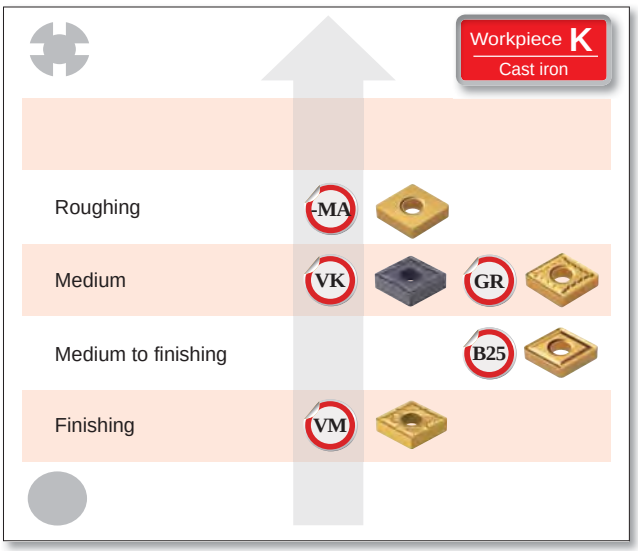
Auto tools

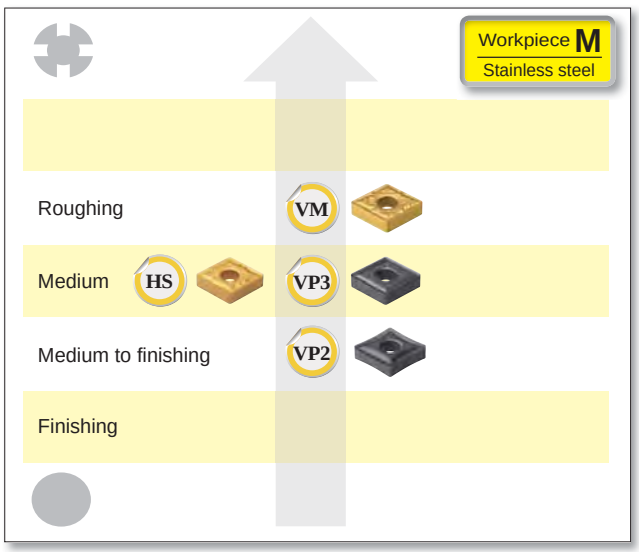
MSB tools

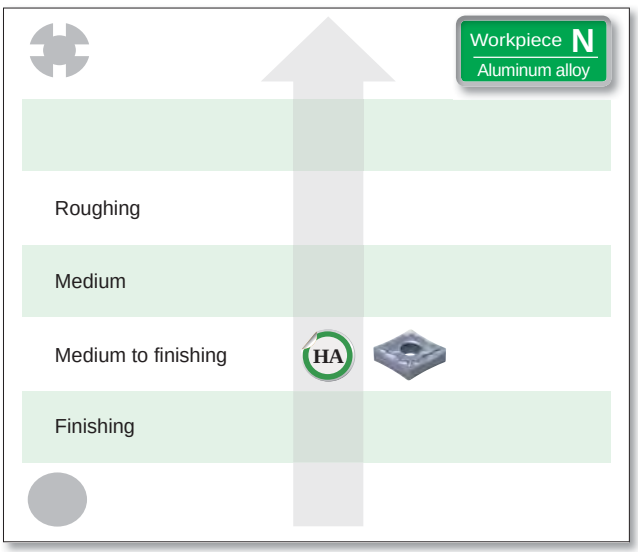
Applications range of chip breakers

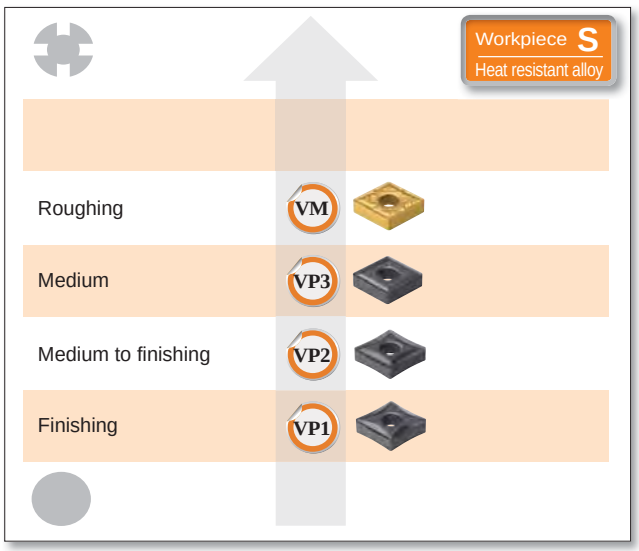
Negative inserts





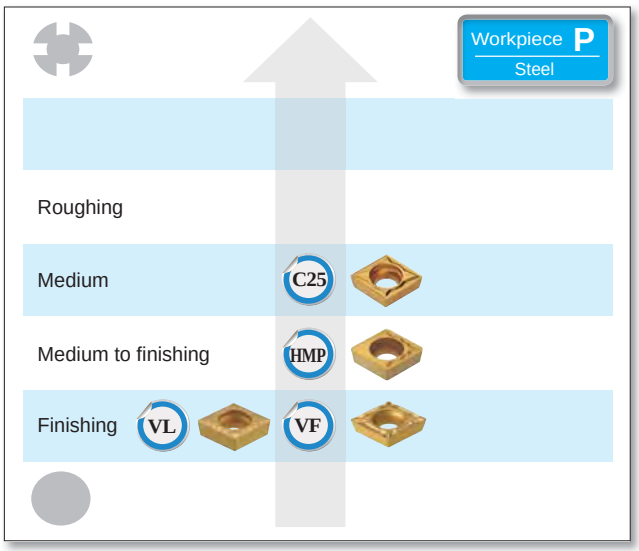


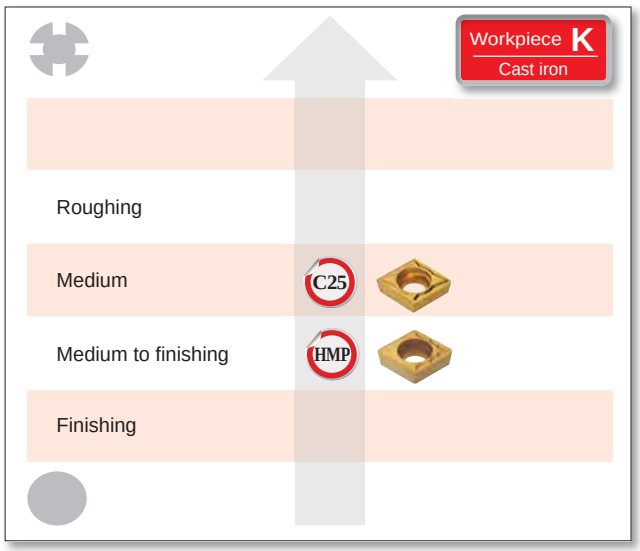


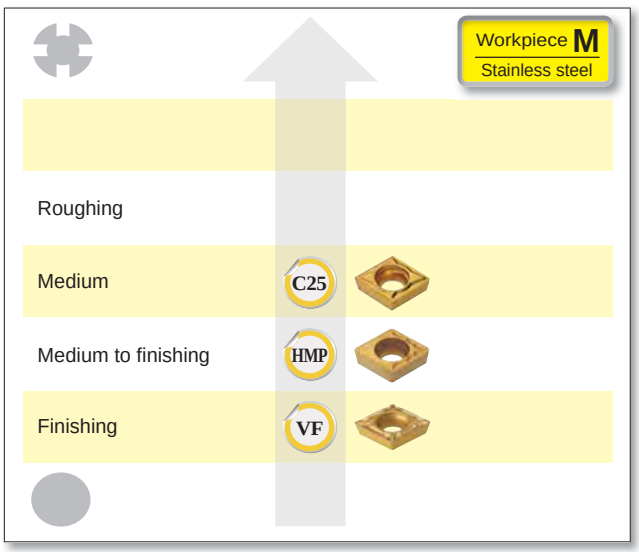


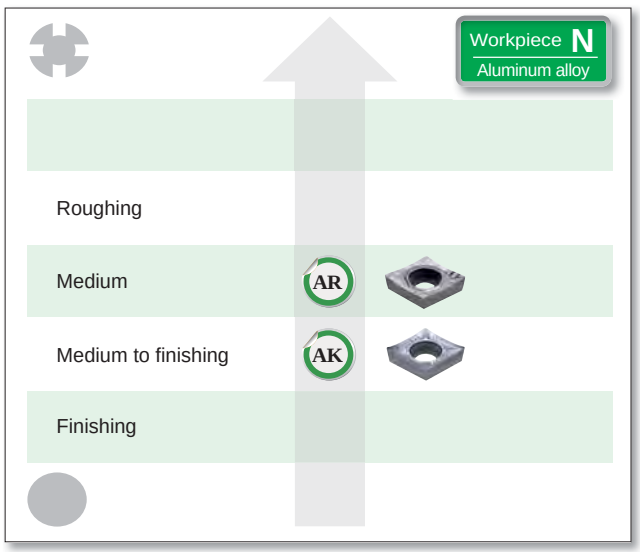
Applications range of chip breakers

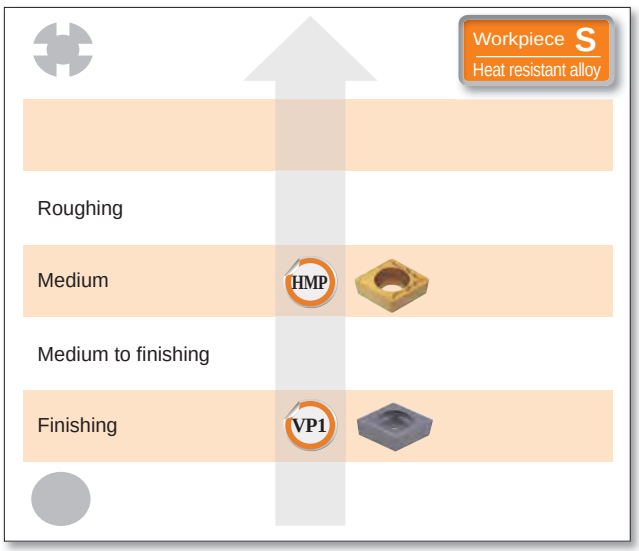
Positive inserts











Recommended chip breaker for workpiece

Materials : 1010, 1015, 1025, 8615, 5120, 4130
Hardness : under 180HB

Workpiece **P** Steel

Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape: 80°	55°	90°	60°	35°	80°
Negative 0.008 ~ 0.031 ~ 0.059 finishing	VL		0.004 ~ 0.008 ~ 0.014	NC3010 NC3220 CN1000 CN2000	990 990 891 858	CNMG p. B20	DNMG p. B25	SNMG p. B31	TNMG p. B38	VNMG p. B43	WNMG p. B46
0.020 ~ 0.039 ~ 0.059 finishing	VF		0.002 ~ 0.006 ~ 0.014	NC3010 NC3120 NC3220 NC5330	1023 891 1023 759	CNMG p. B20	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B43	WNMG p. B46
0.020 ~ 0.039 ~ 0.079 finishing	VB		0.006 ~ 0.008 ~ 0.016	NC3010 NC3220 CN1000 CN2000	990 825 755 656	CNMG p. B20	DNMG p. B25		TNMG p. B38		WNMG p. B46
0.020 ~ 0.059 ~ 0.138 medium to finishing	VC		0.005 ~ 0.010 ~ 0.018	NC3010 NC3220 NC3120 NC5330	957 825 825 660	CNMG p. B20	DNMG p. B25	SNMG p. B31	TNMG p. B38	VNMG p. B43	WNMG p. B46
0.031 ~ 0.059 ~ 0.138 medium to finishing	HA		0.004 ~ 0.008 ~ 0.016	NC3010 NC3120 NC3220 NC9025	990 759 759 594	CNMG p. B19	DNMG p. B24	SNMG p. B30	TNMG p. B37	VNMG p. B42	WNMG p. B45
0.039 ~ 0.098 ~ 0.197 medium machining	VM		0.004 ~ 0.010 ~ 0.020	NC3010 NC3120 NC3220 NC3030 NC5330 CN2000	891 759 759 693 660 726	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
0.098 ~ 0.157 ~ 0.276 roughing	HR		0.010 ~ 0.018 ~ 0.026	NC3010 NC3120 NC3220 NC3030	495 429 429 330	CNMG p. B19	DNMG p. B24	SNMG p. B31	TNMG p. B38		WNMG p. B45
0.236 ~ 0.394 ~ 0.591 Heavy (General)	VH		0.028 ~ 0.039 ~ 0.055	NC3010 NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B22		SNMM p. B33			
0.276 ~ 0.472 ~ 0.669 Heavy (High feed cutting)	VT		0.030 ~ 0.047 ~ 0.063	NC3010 NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B33		SNMM p. B33			

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : 1010, 1015, 1025, 8615, 5120, 4130
Hardness : under 180HB

Workpiece
P
Steel

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Positive	0.004 ~ 0.020 ~ 0.039 finishing	VL		0.002 ~ 0.004 ~ 0.008	NC3010	957	CCMT	DCMT	SCMT	TC(P)MT	VC(B)MT	
					NC3220	825						
					NC3120	825						
					NC5330	660						
					CN1000	787						
					CN2000	722	p. B50	p. B53	p. B55	p. B59	p. B65	
	0.004 ~ 0.020 ~ 0.059 finishing	VF		0.020 ~ 0.006 ~ 0.010	NC3010	924	CCMT	DCMT	SCMT	TCMT	VCMT	
					NC3120	825						
					NC3220	825						
					NC5330	825						
					CC105	858						
					CN1000	792						
					CN2000	759	p. B50	p. B53	p. B55	p. B59	p. B45	
	0.020 ~ 0.059 ~ 0.138 medium to finishing	HMP		0.003 ~ 0.008 ~ 0.016	NC3010	858	CCMT	DCMT	SCMT	TCMT	VCMT	
					NC3120	759						
					NC3220	759						
					NC5330	660						
					CN1000	792						
					CN2000	759	p. B50	p. B53	p. B55	p. B59	p. B64	
	0.039 ~ 0.079 ~ 0.118 medium machining	C25		0.004 ~ 0.010 ~ 0.014	NC3010	825	CCMT	DCMT	SCMT	TCMT		
					NC3120	726						
					NC3220	726						
					NC5330	660						
					CN1000	792						
					CN2000	759	p. B50	p. B54	p. B55	p. B59		

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : 1045, 1049, 4140, 1522
Hardness : under 180~260HB

Workpiece **P** Steel

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape: 80°	55°	90°	60°	35°	80°
Negative	0.020 ~ 0.039 ~ 0.059 finishing	VF		0.002 ~ 0.006 ~ 0.014	NC3010 NC3220 NC3120	726 660 627	CNMG p. B20	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B43	WNMG p. B47
	0.020 ~ 0.039 ~ 0.079 finishing	VB		0.006 ~ 0.008 ~ 0.016	NC3010 NC3220 CN1000 CN2000	990 825 755 656	CNMG p. B20	DNMG p. B25		TNMG p. B38		WNMG p. B46
	0.020 ~ 0.059 ~ 0.138 Medium to finishing	VC		0.005 ~ 0.010 ~ 0.018	NC3010 NC3220 NC3120 CN5330	957 825 825 660	CNMG p. B20	DNMG p. B25	SNMG p. B31	TNMG p. B38	VNMG p. B43	WNMG p. B47
	0.039 ~ 0.098 ~ 0.197 medium machining	VM		0.004 ~ 0.010 ~ 0.002	NC3010 NC3120 NC3220 NC3030 CN2000	660 561 594 495 561	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
	0.098 ~ 0.157 ~ 0.276 roughing	HR		0.010 ~ 0.018 ~ 0.026	NC3010 NC3120 NC3220 NC3030	561 495 495 429	CNMG p. B19	DNMG p. B24	SNMG p. B31	TNMG p. B38		WNMG p. B46
	0.236 ~ 0.394 ~ 0.591 Heavy (General)	VH		0.028 ~ 0.039 ~ 0.055	NC3010 NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B22		SNMM p. B33			
	0.276 ~ 0.472 ~ 0.669 Heavy (High feed cutting)	VT		0.030 ~ 0.047 ~ 0.063	NC3010 NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B22		SNMM p. B33			
Positive	0.004 ~ 0.020 ~ 0.039 Finishing	VL		0.002 ~ 0.004 ~ 0.008	NC3010 NC3220 NC3120 NC5330 CN1000 CN2000	957 825 825 660 787 722	p. B50	p. B53	p. B55	p. B59	p. B65	
	0.004 ~ 0.020 ~ 0.059 finishing	VF		0.002 ~ 0.006 ~ 0.010	NC3010 NC3120 NC3220 NC5330 CC105 CN1000 CN2000	924 825 825 825 858 891 858	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B64	
	0.020 ~ 0.059 ~ 0.138 finishing	HFP		0.003 ~ 0.008 ~ 0.016	NC3010 NC3120 NC3220 NC5330 CC105 CN1000	726 627 627 594 858 660	CCG(M)T p. B50	DCG(M)T p. B53	SCG(M)T p. B55	TCG(M)T p. B59	VCG(M)T p. B64	
	0.039 ~ 0.079 ~ 0.118 medium machining	C25		0.004 ~ 0.010 ~ 0.014	NC3010 NC3120 NC3220 NC3030 CN1000 CN2000	660 561 594 495 561 528	CCMT p. B50	DCMT p. B54	SCMT p. B55	TCMT p. B59		

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : 4320, 4340, 5140, F2, D3, 4140, Hardened steel
Hardness : 260~350HB

Workpiece **P** Steel

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Negative	0.020 ~ **0.039** ~ 0.059 finishing	VF		0.003 ~ **0.006** ~ 0.012	NC3010 **NC3220** NC3120	429 363 363	CNMG p. B20	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B43	WNMG p. B47
	0.020 ~ **0.039** ~ 0.079 finishing	VB		0.006 ~ **0.008** ~ 0.016	NC3010 **NC3220** CN1000 CN2000	990 825 756 656	CNMG p. B20	DNMG p. B25		TNMG p. B38		WNMG p. B46
	0.020 ~ **0.059** ~ 0.138 Medium to finishing	VC		0.005 ~ **0.010** ~ 0.018	NC3010 **NC3220** NC3120 CN5330	957 825 825 660	CNMG p. B20	DNMG p. B25	SNMG p. B31	TNMG p. B38	VNMG p. B43	WNMG p. B47
	0.039 ~ **0.098** ~ 0.197 medium to roughing	VM		0.004 ~ **0.010** ~ 0.002	NC3010 NC3120 **NC3220** CN2000	429 330 363 297	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
	0.098 ~ **0.157** ~ 0.276 roughing	HR		0.010 ~ **0.014** ~ 0.024	NC3010 NC3120 **NC3220** NC3030	330 297 297 264	CNMG p. B19	DNMG p. B24	SNMG p. B31	TNMG p. B38		WNMG p. B46
	0.236 ~ **0.394** ~ 0.591 Heavy (General)	VH		0.028 ~ **0.039** ~ 0.055	**NC3010** NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B22		SNMM p. B33			
	0.276 ~ **0.472** ~ 0.669 Heavy (High feed cutting)	VT		0.030 ~ **0.047** ~ 0.063	**NC3010** NC3030 NC500H NC5330	165~825 165~495 165~495 165~495	CNMM p. B22		SNMM p. B33			
Positive	0.004 ~ **0.020** ~ 0.039 Finishing	VL		0.002 ~ **0.004** ~ 0.008	NC3010 **NC3220** NC3120 NC5330 CN1000 CN2000	957 825 825 660 656 591	CCMT p. B50	DCMT p. B53	SCMT p. B55	TC(P)MT p. B59	VC(B)MT p. B65	
	0.004 ~ **0.020** ~ 0.059 finishing	VF		0.002 ~ **0.006** ~ 0.010	NC3010 NC3120 **NC3220** NC5330 CC105 CN1000 CN2000	924 825 825 825 858 825 792	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B64	
	0.020 ~ **0.059** ~ 0.138 finishing	HFP		0.003 ~ **0.008** ~ 0.016	NC3010 NC3120 **NC3220** CC105	429 363 396 396	CCG(M)T p. B50	DCG(M)T p. B53	SCG(M)T p. B55	TCG(M)T p. B59	VCG(M)T p. B64	
	0.039 ~ **0.079** ~ 0.118 medium machining	C25		0.004 ~ **0.010** ~ 0.014	NC3010 NC3120 **NC3220** NC3030 CN1000 CN2000	363 330 330 297 330 297	CCMT p. B50	DCMT p. B54	SCMT p. B55	TCMT p. B59		

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : 304, 316, 430, 630
Ferrite, austenite, martensite, precipitation hardening stainless steels
Hardness : 135~300HB

Workpiece **M** Stainless steel

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Negative	0.039~ **0.098** ~ 0.157 medium machining	HS		0.004 ~ **0.010** ~ 0.016	PC8110 NC9025 PC5300 PC9030	924 660 528 396	CNMG p. B20	DNMG p. B24	SNMG p. B31	TNMG p. B38	VNMG p. B42	WNMG p. B46
	0.079 ~ **0.177** ~ 0.256 roughing	VM		0.008 ~ **0.016** ~ 0.024	PC8110 NC5330 PC5300 PC9030	825 594 495 396	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
	0.020 ~ **0.059** ~ 0.157 Medium to finishing	VP2		0.002 ~ **0.008** ~ 0.016	PC8110 NC9025 PC5300 PC9030	825 594 495 396	CNMG p. B21	DNMG p. B26	SNMG p. B32	TNMG p. B39		WNMG p. B48
	0.039 ~ **0.079** ~ 0.177 Medium	VP3		0.004 ~ **0.010** ~ 0.018	PC8110 NC9025 PC5300 PC9030	924 660 528 396	CNMG p. B21	DNMG p. B26	SNMG p. B32	TNMG p. B39	VNMG p. B43	WNMG p. B48
Positive	0.004 ~ **0.020** ~ 0.059 finishing	VF		0.002 ~ **0.006** ~ 0.010	NC3010 NC3120 NC3220 NC5330 CC105 CN1000 CN2000	924 825 825 825 858 891 858	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B65	
	0.020 ~ **0.059** ~ 0.118 medium to finishing	HMP		0.004 ~ **0.008** ~ 0.012	PC8110 NC9025 PC5300 PC9030 CN1000 CN2000	825 660 594 495 858 792	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B65	
	0.039 ~ **0.079** ~ 0.118 medium machining	C25		0.004 ~ **0.010** ~ 0.014	PC8110 NC9025 PC5300 PC9030 CN1000 CN2000	825 660 561 462 495 429	CCMT p. B50	DCMT p. B54	SCMT p. B55	TCMT p. B59		

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : No208B, No55B, 60-40-18, 80-55-06, etc : Gray cast iron, Ductile cast iron
Hardness : 135 ~185HB
Tensile strength : 450N/mm²

Workpiece **K** Cast iron

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape: 80°	55°	90°	60°	35°	80°
Negative	0.039 ~ 0.098 ~ 0.236 roughing	C/B None		0.002 ~ 0.004 ~ 0.024	KB410 KB350 KB370 NC6205 NC6210 NC315K	495 ~ 660 660 ~ 1650 1650 ~ 6600 825 ~ 1485 660 ~ 1155 495 ~ 990	CNMA p. B18	DNMA p. B23	SNMA p. B29	TNMA p. B36		
	0.020 ~ 0.079 ~ 0.138 medium to finishing	B25		0.008 ~ 0.014 ~ 0.024	NC6205 NC6210 NC315K	1320~1485 990~1320 495~825	CNMG p. B18	DNMG p. B23	SNMG p. B29	TNMG p. B36	VNMG p. B45	
	0.039 ~ 0.098 ~ 0.157 medium machining	VM		0.006 ~ 0.012 ~ 0.020	NC6205 NC6210 NC315K	1485~1815 1155~1485 660~825	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
	0.039 ~ 0.118 ~ 0.177 medium to roughing	GR		0.008 ~ 0.014 ~ 0.020	NC6205 NC6210 NC315K	1485~1815 1155~1485 660~825	CNMG p. B19	DNMG p. B23	SNMG p. B30	TNMG p. B37		WNMG p. B45
	0.039 ~ 0.098 ~ 0.197 medium to roughing	VK		0.006 ~ 0.010 ~ 0.020	NC6205 NC6210 NC315K	1485~1815 1155~1485 660~825	CNMG p. B22	DNMG p. B26	SNMG p. B33	TNMG p. B40	VNMG p. B44	WNMG p. B48
	0.169 ~ 0.256 ~ 0.394 heavy roughing	GH		0.012 ~ 0.028 ~ 0.043	NC6210 NC315K	594 495	CNMM p. B22		SNMM p. B33			
Positive	0.020 ~ 0.059 ~ 0.138 medium to finishing	HMP		0.003 ~ 0.008 ~ 0.016	NC6205 NC6210 NC315K	825 795 660	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B65	
	0.039 ~ 0.079 ~ 0.138 medium machining	C25		0.004 ~ 0.010 ~ 0.016	NC6205 NC6210 NC315K	825 795 660	CCMT p. B50	DCMT p. B54	SCMT p. B55	TCMT p. B59		

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : Aluminum alloy
Hardness : 20~110HB

Workpiece **N** Aluminum alloy

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Negative	0.020 ~ 0.079 ~ 0.236 medium machining	HA		0.004 ~ 0.008 ~ 0.020	H01	1650	CNMG p. B19	DNMG p. B24	SNMG p. B30	TNMG p. B37	VNMG p. B42	WNMG p. B45
Positive	0.004 ~ 0.039 ~ 0.157 medium to finishing	AK		0.001 ~ 0.008 ~ 0.016	H01 ND1000 PD1000	3300 3300 3300	CCGT p. B68	DCGT p. B69	SCGT p. B71	TCGT p. B72	VCGT p. B73	RCGT p. B70
	0.020 ~ 0.059 ~ 0.157 medium machining	AR		0.002 ~ 0.012 ~ 0.020	H01 ND1000 PD1000	3300 3300 3300	CCGT p. B68	DCGT p. B69	SCGT p. B71	TCGT p. B72	VCGT p. B73	RCGT p. B70

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : Copper Bronze alloy
Hardness : 20~110HB

Workpiece **N** Aluminum alloy

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Negative	0.020 ~ 0.079 ~ 0.157 medium machinin	HA		0.004 ~ 0.008 ~ 0.020	H01	3300	CNMG p. B19	DNMG p. B24	SNMG p. B30	TNMG p. B37	VNMG p. B42	WNMG p. B45
Positive	0.004 ~ 0.039 ~ 0.118 medium to finishing	AK		0.001 ~ 0.008 ~ 0.012	H01	3300	CCGT p. B68	DCGT p. B69	SCGT p. B71	TCGT p. B72	VCGT p. B73	RCGT p. B70
	0.020 ~ 0.059 ~ 0.118 medium machinin	AR		0.002 ~ 0.010 ~0.016	H01	3300	CCGT p. B68	DCGT p. B69	SCGT p. B71	TCGT p. B72	VCGT p. B73	RCGT p. B70

●: The first recommended cutting condition

Recommended chip breaker for workpiece

Materials : Inconel, Nimonic, Stellite, Ti alloy
Hardness : 160~350HB

Workpiece
S
Heat resistant alloy

	Depth of cut (inch)	C/B	Cutting edge	Feed (ipr)	Grades	Cutting Speed (sfm)	Insert shape 80°	55°	90°	60°	35°	80°
Negative	0.059 ~ **0.118** ~ 0.217 medium to roughing	GS		0.006 ~ **0.012** ~ 0.020	PC8110 NC9025 PC5300	264 165 99	CNMG p. B19	DNMG p. B24	SNMG p. B30	TNMG p. B37		WNMG p. B45
	0.079 ~ **0.177** ~ 0.236 medium to roughing	VM		0.008 ~ **0.016** ~ 0.024	PC8110 NC5330 PC5300	264 165 99	CNMG p. B21	DNMG p. B25	SNMG p. B32	TNMG p. B39	VNMG p. B44	WNMG p. B47
	0.004 ~ **0.020** ~ 0.059 Finishing	VP1		0.002 ~ **0.004** ~ 0.008	PC8110 PC5300 NC5330	198 165 165	CNMG p. B21	DNMG p. B26				
	0.020 ~ **0.059** ~ 0.157 Medium to finishing	VP2		0.004 ~ **0.008** ~ 0.016	PC8110 PC5300 NC5330	198 165 165	CNMG p. B21	DNMG p. B26	SNMG p. B32	TNMG p. B39		WNMG p. B48
	0.039 ~ **0.079** ~ 0.177 Medium	VP3		0.004~ **0.010** ~ 0.018	PC8110 PC5300 NC5330	198 165 165	CNMG p. B21	DNMG p. B26	SNMG p. B32	TNMG p. B39	VNMG p. B43	WNMG p. B48
Positive	0.004 ~ **0.020** ~ 0.059 finishing	HFP		0.002 ~ **0.006** ~ 0.010	PC8110 NC9025 PC5300	264 165 99	CCG(M)T p. B50	DCG(M)T p. B53	SCG(M)T p. B55	TCG(M)T p. B59	VCG(M)T p. B65	
	0.020 ~ **0.059** ~ 0.118 medium to finishing	HMP		0.004 ~ **0.008** ~ 0.012	PC8110 NC9025 PC5300 PC9030	264 165 198 99	CCMT p. B50	DCMT p. B53	SCMT p. B55	TCMT p. B59	VCMT p. B65	
	0.039 ~ **0.059** ~ 0.118 medium machining	C25		0.006 ~ **0.010** ~ 0.014	PC8110 NC9025 PC5300	264 165 99	CCMT p. B50	DCMT p. B54	SCMT p. B55	TCMT p. B59		

●: The first recommended cutting condition

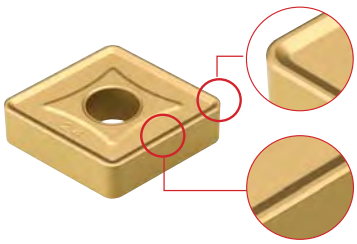
New Chip Breakers

VH / VT Chip Breaker (Heavy duty machining)

- Heavy duty chip breaker suitable for Heavy machining in the ship building and power plant industries
- Suitable for large horizontal machines when machining shafts, rollers, rotors and optimal for the big flange machining

Special features of VH

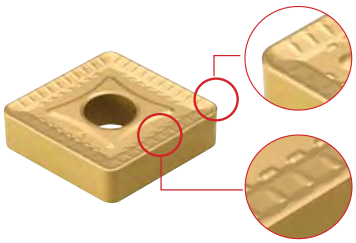
• For good chip control in heavy machining (comprehensive type)



- ▶ Designed from the study of heavy cutting mechanism
- ▶ Smooth chip control from the high rake angle
- ▶ Wider cutting edge land provides stronger cutting
- ▶ Unique cutting edge treatment provides smooth cutting
- ▶ Optimized chip pocket design provides smooth chip flow

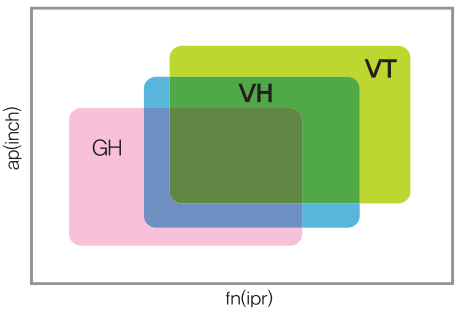
Special features of VT

• For long tool life and stable cutting (higher feeds, big depth) in heavy machining



- ▶ Designed from the study of heavy cutting mechanism
- ▶ Strong edge design provides long and stable cutting (2 step rake angle of cutting edge)
- ▶ Varied cutting edge land strengthens the cutting edge
- ▶ The positioning of the chip breaking convex dot deflects the machining heat, optimizes inserts wear & absorb shock

Applications range of Chip breakers

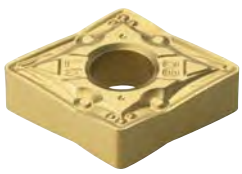


GH : ap=0.20~0.47inch fn=0.021~0.047ipr
VH : ap=0.24~0.59inch fn=0.027~0.055ipr
VT : ap=0.28~0.67inch fn=0.030~0.063ipr

LW / VW Chip Breaker (High feed cutting)

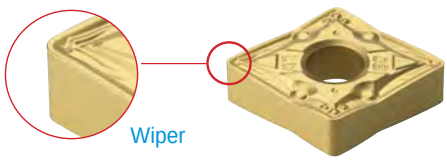
- Improved productivity with higher feed rates and surface finishes
- Improved wear resistance and toughness

Special features of LW



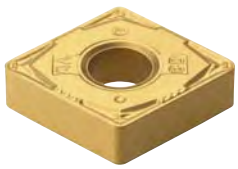
- ▶ **Curvilinear cutting edge**
  - Reduces cutting force
- ▶ **Cutting edge design able to handle deeper depth of cuts**
  - lower cutting load & reduces heat
- ▶ **Greater chip control at shallow depths of cuts**
  - Chip pocket design improves smooth chip flow
- ▶ **For shallow depth cutting and low speed machining**
  - 3D design at the corner

Wiper Insert

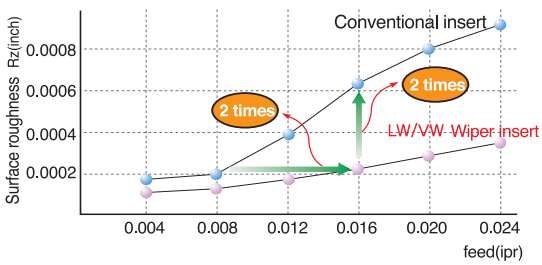


- ▶ High productivity
- ▶ Improved surface roughness
- ▶ High feed-reducing machining time
- ▶ Improved tool life due to reduce cutting force

Special features of VW



- ▶ **Excellent Finishing applications**
  - Excellent chip control
- ▶ **Insert design great for stable clmaping**
  - Chip breaker designed close to the cutting edge
- ▶ **Similar cutting edge to C/B for medium**
  - strong cutting edge
- ▶ **3 Dimensional dot design on cutting corner**
  - reduces cutting force and good chip control at shallow depth of cut



New Chip Breakers

VL Chip Breaker (Mild steel)

- Improved chip control for machining material that have high toughness such as low carbon steel, pipe, steel plate etc
- Improved chip control and decreased cutting load on external, facing, and copying applications
- Improved strength of the cutting edge for measurable efficiency in automated production

Special features of VL

- ▶ **2 steps designed chip-breaker** - Suitable Mild steel
  - Stable chip control on the low feed and cutting depth
- ▶ **Designed with special dots** - Stable chip breaking on the low cutting depth
- ▶ **Applied side rake angle** - Improved chip control on facing, copying applications
  - Decreased cutting load and better surface finish

Chip control test

VL Chip Breakers | Comp. A | Comp. B | Comp. C

- **Workpiece** : AISI1020
- **Cutting Condition** : vc=830sfm
  fn=0.008ipr(Side)
  ap=0.02inch
  wet
- **Designation** : DNMG432-VL

FEM Cutting simulation analysis in the design

- ▶ For design of geometry, chip shapes and chip flow are predictable
- ▶ Optimal chip breaker design by various cutting conditions and workpieces

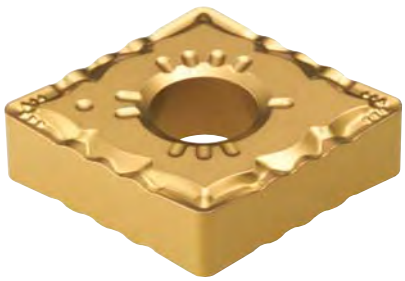
VB Chip Breaker (Copying)

- Excellent chip evacuation in continuous and high speed machining of various workpieces.
- Longer tool life due to 3 dimensional chip breaker realizing low cutting resistance and high rigidity of the cutting edge.
- Stable chip control in copying and internal machining.

Special features of VB

6 bumps on the insert corner

Superior chip control and chip cutting in copying with various depths of cut



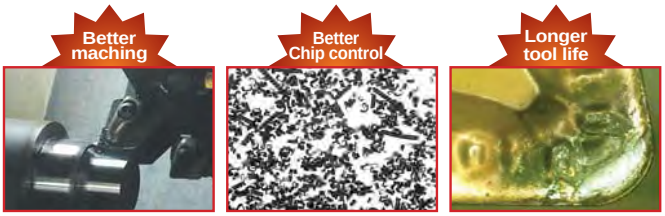
Side rake angle

Superb chip cutting in facing and copying
Superior tool life due to improved surface roughness and lower cutting resistance

Cutting edge on 100° part for medium machining (For CNMG)

Excellent chip evacuation and toughness in machining with high depth of cut

Performance



VB Chip Breakers

Conventional chip breaker

New Chip Breakers

VC Chip Breaker (Medium-finishing)

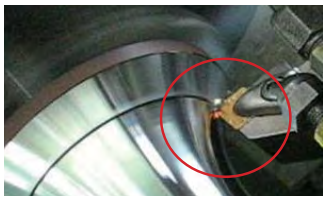
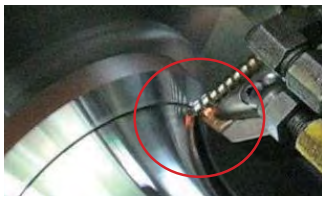
- Superior chip evacuation in high speed and continuous machining of various workpieces (carbon steel, alloy steel etc.)
- Korloy 3 dimensional chip breaker ensures longer tool life due to low cutting load and improved cutting edge strength.
- Stable chip control in copying and internal machining

Special features of VC

4 bums on the insert corner

Excellent chip control in various depths of cut and superb chip cutting in external, internal, copy machining and facing.

Superior chip control in copy machining

VC Chip Breakers		Conventional chip breaker	
			

VP Chip Breaker

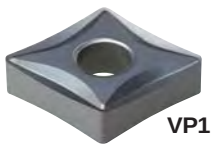
(For hard-to-cut materials machining)

- High positive cutting edge reduces chip contact
- Minimized temperature while machining ensures longer tool life
- Stable machining with superior chip evacuation in high depths of cut

VP1(for finishing)

High positive cutting edge

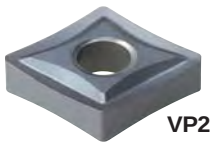
- Longer tool life due to minimizing chip contact and reducing cutting heat while machining.
- Recommended cutting condition • fn=0.002~0.008ipr • ap=0.004~0.060inch



VP2(for medium to finishing)

High positive cutting edge and side rake angle

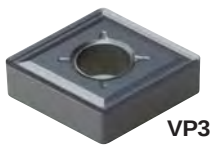
- Improved machining performance with stable chip control in ball machining with various depth of cuts.
- Recommended cutting condition • fn=0.004~0.016ipr • ap=0.020~0.177inch



VP3(for medium machining)

High positive cutting edge and wide land

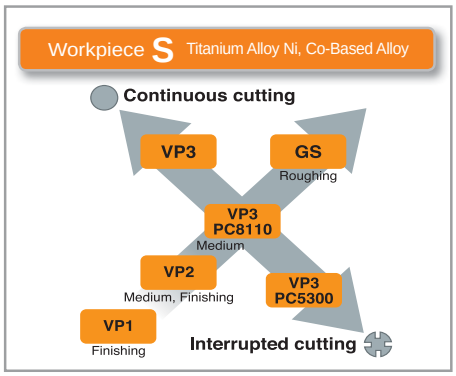
- Stable machinability in interrupted machining toughness.
  Stable chip evacuation and machining in machining with high depth of cut.
- Recommended cutting condition • fn=0.004~0.018ipr • ap=0.020~0.200inch



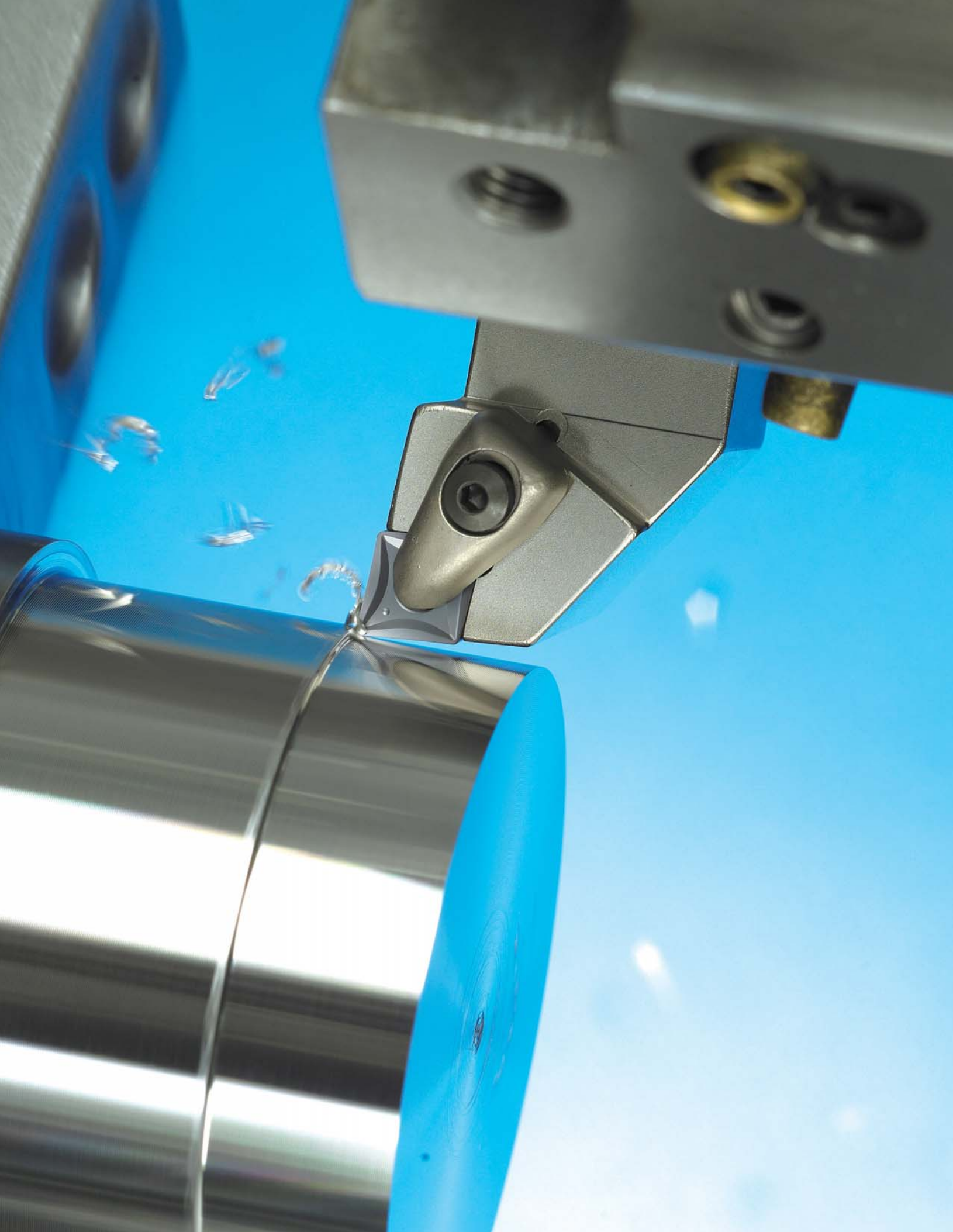
Machining of Hard-to-cut material

(Difficulty factors of Hard-to-cut material)

- Rapid wear on the cutting edge.
- Frequent fracture and chipping on the cutting edge.
- High cutting resistance.
- Rapidly rising temperature on the cutting edge.
- Increased built-up-edge due to bad chip control.



Line-up for chip breakers for hard-to-cut material machining

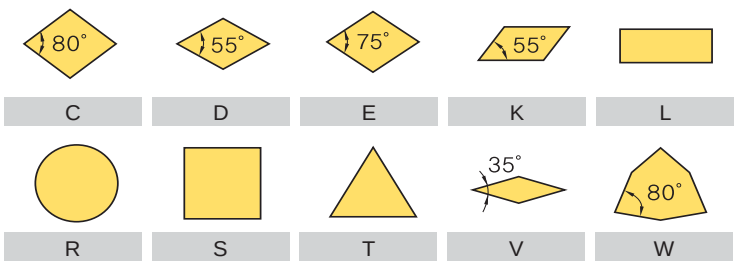


C N M G 3

1	2	3	4	5
Insert Shape	Relief Angle	Tolerance	Cross Section Type	Cutting Edge Length, Diameter of Inscribed Circle

1 Insert Shape

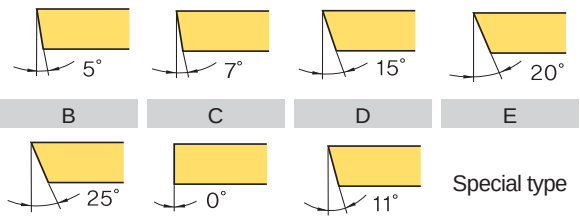
C N M G 3 3 2 - VM



C	D	E	K	L
R	S	T	V	W

2 Relief Angle

C N M G 3 3 2 - VM



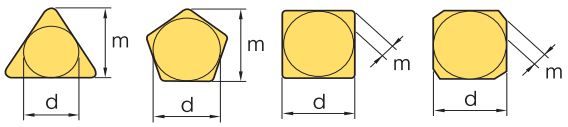
B	C	D	E
F	N	P	O

Special type

3 Tolerance

C N M G 3 3 2 - VM

d : Inscribed circle
t : Thickness
m : Refer to figure



(inch)

Class	d	m	t
A	±0.0010	±0.0002	±0.0010
C	±0.0010	±0.0005	±0.0010
H	±0.0005	±0.0005	±0.0010
E	±0.0010	±0.0010	±0.0010
G	±0.0010	±0.0010	±0.0005
J *	±0.002 ~ ±0.006	±0.0002	±0.0010
K *	±0.002 ~ ±0.006	±0.0005	±0.0010
L *	±0.002 ~ ±0.006	±0.0010	±0.0010
M *	±0.002 ~ ±0.006	±0.003 ~ ±0.008	±0.0005
N *	±0.002 ~ ±0.006	±0.003 ~ ±0.007	±0.0010
U *	±0.003 ~ ±0.010	±0.005 ~ ±0.015	±0.0005

* Sides are based on unground insert

Tolerance on C,E,H,M,O,P,R,S,T,W Insert Shape (Exceptional case)

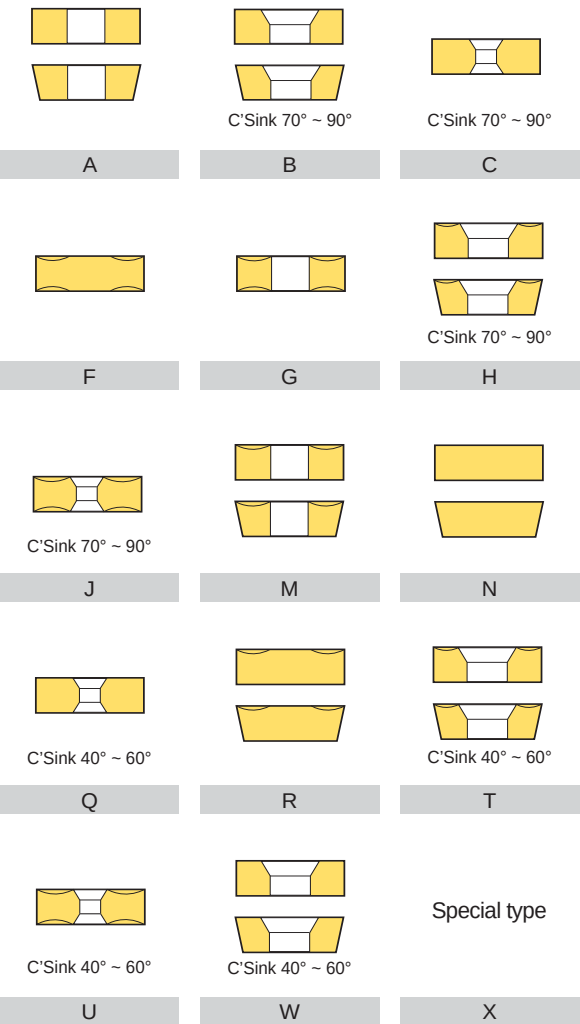
d	Tolerance on d		Tolerance on m	
	J, K, L, M, N	U	M, N	U
6.35	±0.002	±0.003	±0.003	±0.005
9.525	±0.002	±0.003	±0.003	±0.005
12.7	±0.003	±0.005	±0.005	±0.008
15.875	±0.004	±0.007	±0.06	±0.011
19.05	±0.004	±0.007	±0.06	±0.011
25.4	±0.005	±0.01	±0.07	±0.015

Tolerance on D Insert Shape (Exceptional case)

d	Tolerance on d	Tolerance on m
6.35	±0.002	±0.0043
9.525	±0.002	±0.0043
12.7	±0.003	±0.006
15.875	±0.004	±0.007
19.05	±0.004	±0.007

4 Cross Section Type

C N M G 3 3 2 - VM



A	B	C
F	G	H
J	M	N
Q	R	T
U	W	X

Special type

3 2 - VM

6	7	8
Height of Cutting Edge	Nose Radius (Nose R)	Chip Breaker for Turning

5 Cutting Edge Length, Diameter of Inscribed Circle

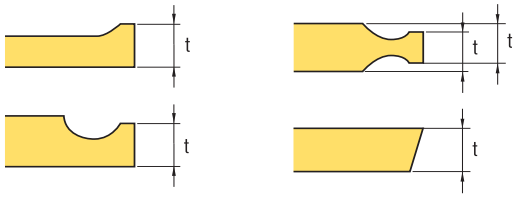
C N M G **3** **3** 2 - VM

Symbol							IC	
C	d	S	T	R	V	W	Inch	
Metric								d(inch)
03	04	03	06	03	-	02	1.2(5)	5/32
04	05	04	08	04	08	S3	1.5(6)	3/16
05	06	05	09	05	09	03	1.8(7)	7/32
-	-	-	-	06	-	-	-	0.236
06	07	06	11	06	11	04	2	1/4
08	09	07	13	07	13	05	2.5	5/16
-	-	-	-	08	-	-	-	0.315
09	11	09	16	09	16	06	3	3/8
-	-	-	-	10	-	-	-	0.394
11	13	11	19	11	19	07	3.5	7/16
-	-	-	-	12	-	-	-	0.472
12	15	12	22	12	22	08	4	1/2
14	17	14	24	14	24	09	4.5	9/16
16	19	15	27	15	27	10	5	5/8
-	-	-	-	16	-	-	-	0.630
17	21	17	30	17	30	11	5.5	11/16
19	23	19	33	19	33	13	6	3/4
-	-	-	-	20	-	-	-	0.787
22	27	22	38	22	38	15	7	7/8
-	-	-	-	25	-	-	-	0.984
25	31	25	44	25	44	17	8	1
32	38	31	54	31	54	21	10	11/4
-	-	-	-	32	-	-	-	1.260

( ) Symbol for small size insert

6 Height of Cutting Edge

C N M G 3 **3** 2 - VM

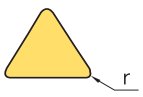


Symbol		Height of Cutting Edge(t)	
Metric	Inch	mm	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

( ) Symbol for small size insert

7 Nose Radius (Nose R)

C N M G 3 3 **2** - VM



Symbol		Corner Radius	
Metric	Inch	Metric	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round insert(Inch)	
M0	-	Round insert(Metric)	

8 Chip Breaker for Turning

C N M G 3 3 2 - **VM**

VG VL VF VB VC VQ

VW VM VH VT VK VP1

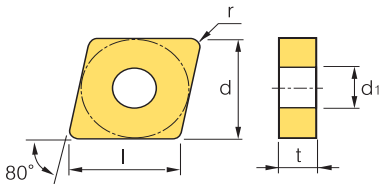
VP2 VP3 HA HS HR GS

GM GR GH B25 VF HMP

C25 AK AR

CN○○

Rhombic **80° Negative**



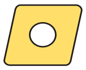
Workpiece		
Steel	P	● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ●
Cast iron	K	● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ●
Hardened steel	H	● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

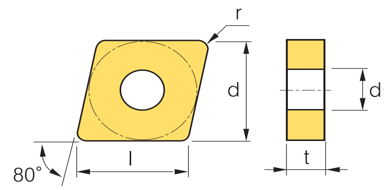
Inserts	Designation	Coated												Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
CNGG-VP1 (New) Finishing	430.5-VP1																						0.496	1/2	3/16	1/128	13/64	0.004~0.039	0.000~0.004	MCKNR/L	B106
	431-VP1																						0.488	1/2	3/16	1/64	13/64	0.004~0.059	0.002~0.006	MCLNR/L	B106
	432-VP1																						0.472	1/2	3/16	1/32	13/64	0.004~0.059	0.003~0.008	MCMNN	B106
																														MCRNR/L	B107
																														PCBNR/L	B94
																														PCLNR/L	B95
CNMA Roughing	322																						0.346	3/8	1/8	1/32	1/8	0.004~0.012	0.020~0.118	MCKNR/L	B106
	431													●							●		0.488	1/2	3/16	1/64	13/64	0.006~0.024	0.008~0.197	MCLNR/L	B106
	432													●							●		0.472	1/2	3/16	1/32	13/64	0.006~0.025	0.008~0.315	MCMNN	B106
	433											●	●	●								●	0.457	1/2	3/16	3/64	13/64	0.006~0.028	0.012~0.315	MCRNR/L	B107
	434												●										0.441	1/2	3/16	1/16	13/64	0.008~0.039	0.012~0.394	PCBNR/L	B94
	542																						0.602	5/8	1/4	1/32	1/4	0.006~0.031	0.012~0.394	PCLNR/L	B95
	543												●										0.583	5/8	1/4	3/64	1/4	0.006~0.031	0.012~0.394		
	544																						0.567	5/8	1/4	1/16	1/4	0.008~0.039	0.012~0.394		
	642												●										0.728	3/4	1/4	1/32	5/16	0.006~0.024	0.008~0.472		
	643												●										0.713	3/4	1/4	3/64	5/16	0.008~0.031	0.008~0.472		
	644												●										0.697	3/4	1/4	1/16	5/16	0.008~0.039	0.008~0.472		
CNMG-B25 Medium Roughing	431-B25	●		●	●			●		●			●			●							0.488	1/2	3/16	1/64	13/64	0.007~0.018	0.039~0.197	MCKNR/L	B106
	432-B25	●		●	●	●	●	●	●	●	●	●	●			●							0.472	1/2	3/16	1/32	13/64	0.009~0.024	0.059~0.197	MCLNR/L	B106
	433-B25	●		●	●			●					●										0.457	1/2	3/16	3/64	13/64	0.010~0.024	0.079~0.197	MCMNN	B106
	542-B25				●																		0.602	5/8	1/4	1/32	1/4	0.010~0.024	0.079~0.256	MCRNR/L	B107
	543-B25			●																			0.583	5/8	1/4	3/61	1/4	0.011~0.024	0.079~0.256	PCBNR/L	B94
	544-B25																						0.567	5/8	1/4	1/16	1/4	0.011~0.024	0.079~0.256	PCLNR/L	B95
	641-B25		●		●					●													0.744	3/4	1/4	1/64	5/16	0.008~0.018	0.118~0.315		
	642-B25		●		●			●					●										0.728	3/4	1/4	1/32	5/16	0.010~0.024	0.118~0.315		
	643-B25	●			●			●	●				●										0.713	3/4	1/4	3/64	5/16	0.012~0.024	0.118~0.315		
	644-B25				●																		0.697	3/4	1/4	1/16	5/16	0.009~0.028	0.118~0.315		
CNMG-GM Medium	321-GM																						0.362	3/8	1/8	1/64	5/32	0.002~0.012	0.035~0.138	MCKNR/L	B106
	322-GM																						0.346	3/8	1/8	1/32	5/32	0.004~0.018	0.039~0.138	MCLNR/L	B106
	431-GM				●												●						0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	MCMNN	B106
	432-GM	●	●	●	●			●								●							0.472	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	MCRNR/L	B107
	433-GM																						0.457	1/2	3/16	3/64	13/64	0.007~0.024	0.012~0.197	PCBNR/L	B94
	642-GM																						0.728	3/4	1/4	1/32	5/16	0.004~0.020	0.039~0.315	PCLNR/L	B95

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

CN○○



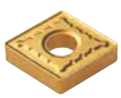
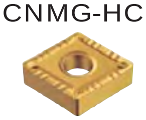
Rhombic **80° Negative**



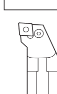
Workpiece			NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Workpiece	Steel	P	●	◉	◉	⊕	⊕			◉							●	◉	◉	●	●			
	Stainless steel	M				◉		◉	◉	◉	●	◉	◉									◉		
	Cast iron	K								◉				●	◉	⊕	●						●	◉
	Non-ferrous metal	N																						
	Heat resistant alloy, Titanium alloy	S								◉	●	◉												
	Hardened steel	H																						

Machining types

- ● Continuous cutting
- ◉ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	Coated														Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
CNMG-GR	432-GR	●	●	●	●				●				●	●	●									0.472	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	MCKNR/L	B106
	433-GR	●	●	●	●				●					●										0.457	1/2	3/16	3/64	13/64	0.010~0.020	0.051~0.276	MCLNR/L	B106
Roughing	434-GR													●										0.441	1/2	3/16	1/16	13/64	0.010~0.024	0.071~0.236	MCMNN	B106
	542-GR			●	●									●										0.602	5/8	1/4	1/32	1/4	0.008~0.028	0.039~0.315	MCRNR/L	B107
	543-GR	●	●	●	●				●					●										0.583	5/8	1/4	3/64	1/4	0.010~0.028	0.051~0.315	PCBNR/L	B94
	544-GR			●	●																			0.567	5/8	1/4	1/16	1/4	0.010~0.030	0.071~0.315	PCLNR/L	B95
	642-GR		●		●				●					●										0.728	3/4	1/4	1/32	5/16	0.008~0.028	0.067~0.394		
	643-GR	●	●		●	●			●					●										0.713	3/4	1/4	3/64	5/16	0.012~0.030	0.067~0.394		
	644-GR	●	●		●	●			●															0.697	3/4	1/4	1/16	5/16	0.012~0.031	0.071~0.394		
	646-GR																							0.661	3/4	1/4	3/32	5/16	0.014~0.033	0.079~0.472		
	856-GR																							0.917	1	5/16	3/32	23/64	0.016~0.039	0.091~0.591		
	866-GR				●				●															0.917	1	3/8	3/32	23/64	0.016~0.039	0.091~0.591		
CNMG-GS	431-GS						●	●		●	●	●												0.488	1/2	3/16	1/64	13/64	0.002~0.010	0.004~0.118	MCKNR/L	B106
	432-GS				●		●	●		●	●	●												0.472	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	MCLNR/L	B106
Medium Roughing	433-GS						●	●		●	●	●												0.457	1/2	3/16	3/64	13/64	0.005~0.026	0.039~0.197	MCMNN	B106
	542-GS																							0.602	5/8	1/4	1/32	1/4	0.004~0.020	0.039~0.256	MCRNR/L	B107
	543-GS																							0.583	5/8	1/4	3/64	1/4	0.005~0.026	0.039~0.256	PCBNR/L	B94
	643-GS							●		●														0.713	3/4	1/4	3/64	5/16	0.005~0.026	0.039~0.307	PCLNR/L	B95
	644-GS									●														0.697	3/4	1/4	1/16	5/16	0.005~0.026	0.039~0.307		
CNMG-HA	431-HA						●	●		●	●	●										●		0.488	1/2	3/16	1/64	13/64	0.002~0.008	0.031~0.138	MCKNR/L	B106
	432-HA						●	●		●	●	●										●		0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.138	MCLNR/L	B106
Medium to finishing	433-HA											●												0.457	1/2	3/16	3/64	13/64	0.005~0.022	0.031~0.138	MCMNN	B106
																															MCRNR/L	B107
																															PCBNR/L	B94
																															PCLNR/L	B95
CNMG-HC	431-HC	●			●				●															0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.138	MCKNR/L	B106
	432-HC	●	●		●				●															0.472	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157	MCLNR/L	B106
Medium to finishing	433-HC																							0.457	1/2	3/16	3/64	13/64	0.007~0.020	0.039~0.157	MCMNN	B106
																															MCRNR/L	B107
																															PCBNR/L	B94
																															PCLNR/L	B95
CNMG-HR	431-HR																							0.488	1/2	3/16	1/64	13/64	0.006~0.012	0.031~0.236	MCKNR/L	B106
	432-HR	●			●				●															0.472	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	MCLNR/L	B106
Roughing	433-HR	●			●				●															0.457	1/2	3/16	3/64	13/64	0.010~0.028	0.051~0.276	MCMNN	B106
	434-HR																							0.411	1/2	3/16	1/16	13/64	0.013~0.030	0.071~0.276	MCRNR/L	B107
	542-HR																							0.602	5/8	1/4	1/32	13/64	0.008~0.020	0.039~0.315	PCBNR/L	B94
	543-HR	●	●		●																			0.583	5/8	1/4	1/64	1/4	0.010~0.028	0.051~0.315	PCLNR/L	B95
	544-HR	●																						0.567	5/8	1/4	1/16	1/4	0.012~0.031	0.071~0.315		
	546-HR																							0.535	5/8	1/4	3/32	1/4	0.013~0.035	0.091~0.394		
	642-HR																							0.728	3/4	1/4	1/32	1/4	0.008~0.020	0.067~0.394		
	643-HR				●	●								●										0.713	3/4	1/4	3/64	5/16	0.010~0.028	0.051~0.394		
	644-HR		●		●																			0.697	3/4	1/4	1/16	5/16	0.012~0.031	0.071~0.394		
	646-HR																							0.661	3/4	1/4	3/32	5/16	0.013~0.035	0.091~0.394		
	866-HR																							0.917	1	3/8	3/32	5/16	0.016~0.039	0.091~0.394		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item



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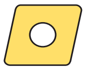
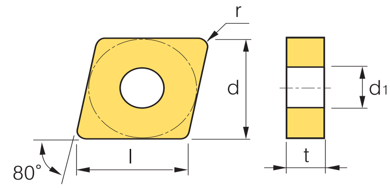
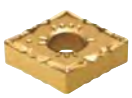


Rhombic **80° Negative**



Workpiece		P/M/K/N/S/H	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
	Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
	Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
	Cast iron	K							◐				●	◐	✱	●						●	◐
	Non-ferrous metal	N																					
	Heat resistant alloy, Titanium alloy	S							◐	●	◐												
	Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

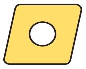
Inserts	Designation	Coated NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet CN1000	CN2000	CN20	Coated CC105	CC115	Uncoated U20	H01	G10
CNMG-HS  Medium cutting	321-HS					●					●											
	322-HS										●											
	431-HS					●	●		●	●	●											
	432-HS					●	●		●	●	●											
	433-HS						●		●	●	●											
	543-HS										●											
	544-HS										●											
	643-HS					●			●	●	●											
	644-HS						●		●		●											
CNMG-LW  Medium cutting(Wiper)	432-LW							●														
	433-LW																					
CNMG-VB  Finishing	431-VB	●		●					●													
	432-VB	●		●				●	●													
	433-VB																					
CNMG-VC  Finishing (Mild steel)	431-VC	●		●				●	●													
	432-VC	●		●				●	●													
	433-VC			●																		
CNMG-VL  Mild steel	431-VL	●		●				●							●							
	432-VL	●		●				●							●							
	433-VL																					
CNMG-VF  Finishing	321-VF	●	●	●																		
	322-VF																					
	431-VF	●	●	●				●														
	432-VF	●		●				●														
	433-VF																					

Designation	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
321-HS	0.362	3/8	1/8	1/64	5/32	0.002~0.008	0.039~0.098	MCKNR/L	B106
322-HS	0.346	3/8	1/8	1/32	5/32	0.004~0.008	0.039~0.098	MCLNR/L	B106
431-HS	0.488	1/2	3/16	1/64	13/64	0.004~0.008	0.039~0.177	MCMNN	B106
432-HS	0.472	1/2	3/16	1/32	13/64	0.005~0.022	0.039~0.177	MCRNR/L	B107
433-HS	0.457	1/2	3/16	3/64	13/64	0.005~0.022	0.039~0.177	PCBNR/L	B94
543-HS	0.583	5/8	1/4	3/61	1/4	0.005~0.022	0.079~0.236	PCLNR/L	B95
544-HS	0.567	5/8	1/4	1/16	1/4	0.006~0.024	0.079~0.236		
643-HS	0.713	3/4	1/4	3/64	5/16	0.005~0.022	0.079~0.287		
644-HS	0.697	3/4	1/4	1/16	5/16	0.006~0.024	0.079~0.287		
432-LW	0.472	1/2	3/16	1/32	13/64	0.006~0.024	0.040~0.200	MCKNR/L	B106
433-LW	0.457	1/2	3/16	3/64	13/64	0.008~0.028	0.040~0.240	MCLNR/L	B106
								MCMNN	B106
								MCRNR/L	B107
								PCBNR/L	B94
								PCLNR/L	B95
431-VB	0.472	1/2	3/16	1/32	13/64	0.006~0.024	0.040~0.200	MCKNR/L	B106
432-VB	0.457	1/2	3/16	3/64	13/64	0.008~0.028	0.040~0.240	MCLNR/L	B106
433-VB	0.457	1/2	3/16	3/64	13/64	0.008~0.020	0.040~0.240	MCMNN	B106
								MCRNR/L	B107
								PCBNR/L	B94
								PCLNR/L	B95
431-VC	0.488	1/2	3/16	1/64	13/64	0.004~0.014	0.012~0.079	MCKNR/L	B106
432-VC	0.472	1/2	3/16	1/32	13/64	0.006~0.016	0.020~0.118	MCLNR/L	B106
433-VC	0.457	1/2	3/16	3/64	13/64	0.008~0.018	0.020~0.118	MCMNN	B106
								MCRNR/L	B107
								PCBNR/L	B94
								PCLNR/L	B95
431-VL	0.488	1/2	3/16	1/64	13/64	0.002~0.010	0.004~0.040	MCKNR/L	B106
432-VL	0.472	1/2	3/16	1/32	13/64	0.004~0.014	0.008~0.060	MCLNR/L	B106
433-VL	0.457	1/2	3/16	3/64	13/64	0.004~0.014	0.008~0.060	MCMNN	B106
								MCRNR/L	B107
								PCBNR/L	B94
								PCLNR/L	B95
321-VF	0.362	3/8	1/8	1/64	5/32	0.003~0.012	0.020~0.059	MCKNR/L	B106
322-VF	0.346	3/8	1/8	1/32	5/32	0.005~0.006	0.020~0.059	MCLNR/L	B106
431-VF	0.488	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	MCMNN	B106
432-VF	0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059	MCRNR/L	B107
433-VF	0.457	1/2	3/16	3/64	13/64	0.004~0.020	0.024~0.059	PCBNR/L	B94
								PCLNR/L	B95

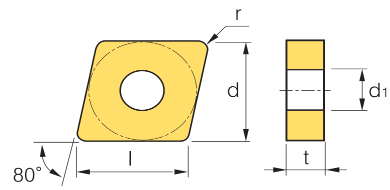
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

CN○○

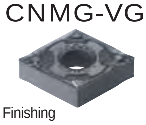
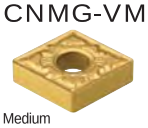
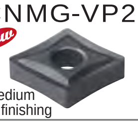
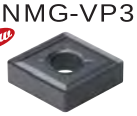
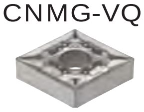
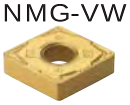


Rhombic 80° Negative



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	✱	◐								◐		
Cast iron	K							◐					●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐	✱											
Hardened steel	H																					

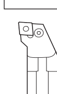
Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
		Coated													Cermet			Coated		Uncoated		
CNMG-VG  Finishing	321-VG																					
	322-VG																					
	431-VG															●						
	432-VG														●							
CNMG-VM  Medium	321-VM				●																	
	322-VM		●	●	●																	
	431-VM	●	●	●	●			●			●	●		●		●						
	432-VM	●	●	●	●	●		●	●	●	●	●		●		●						
	433-VM	●	●	●	●			●	●	●				●								
	434-VM							●														
	542-VM			●	●			●														
	543-VM			●	●			●														
CNMG-VP2 New  Medium to finishing	431-VP2			●					●	●	●											
	432-VP2			●					●	●	●											
CNMG-VP3 New  Medium	431-VP3										●											
	432-VP3								●	●	●											
	433-VP3								●	●												
CNMG-VQ  Medium to finishing	321-VQ																					
	322-VQ																					
	431-VQ														●	●			●			
	432-VQ														●	●			●			
CNMG-VW  Finishing(Wiper)	431-VW																					
	432-VW	●																				

Inserts	Designation	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
CNMG-VG	321-VG	0.362	3/8	1/8	1/64	5/32	0.003~0.012	0.020~0.059	MCKNR/L	B106
	322-VG	0.346	3/8	1/8	1/32	5/32	0.003~0.012	0.020~0.059	MCLNR/L	B106
	431-VG	0.488	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	MCMNN	B106
	432-VG	0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059	MCRNR/L	B107
									PCBNR/L	B94
									PCLNR/L	B95
CNMG-VM	321-VM	0.362	3/8	1/8	1/64	5/32	0.002~0.012	0.035~0.138	MCKNR/L	B106
	322-VM	0.346	3/8	1/8	1/32	5/32	0.004~0.018	0.039~0.138	MCLNR/L	B106
	431-VM	0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	MCMNN	B106
	432-VM	0.472	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	MCRNR/L	B107
	433-VM	0.457	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197	PCBNR/L	B94
	434-VM	0.441	1/2	3/16	1/16	13/64	0.008~0.023	0.059~0.197	PCLNR/L	B95
	542-VM	0.602	5/8	1/4	1/32	1/4	0.004~0.020	0.039~0.264		
	543-VM	0.583	5/8	3/16	3/64	1/4	0.005~0.024	0.051~0.264		
CNMG-VP2	431-VP2	0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.004~0.118	MCKNR/L	B106
	432-VP2	0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.177	MCLNR/L	B106
									MCMNN	B106
									MCRNR/L	B107
									PCBNR/L	B94
									PCLNR/L	B95
CNMG-VP3	431-VP3	0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.004~0.118	MCKNR/L	B106
	432-VP3	0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.177	MCLNR/L	B106
	433-VP3	0.457	1/2	3/16	3/64	13/64	0.005~0.020	0.020~0.197	MCMNN	B106
									MCRNR/L	B107
									PCBNR/L	B94
									PCLNR/L	B95
CNMG-VQ	321-VQ	0.362	3/8	1/8	1/64	3/20	0.002~0.012	0.002~0.138	MCKNR/L	B106
	322-VQ	0.346	3/8	1/8	1/32	3/20	0.003~0.012	0.003~0.157	MCLNR/L	B106
	431-VQ	0.488	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.157	MCMNN	B106
	432-VQ	0.472	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157	MCRNR/L	B107
									PCBNR/L	B94
									PCLNR/L	B95
CNMG-VW	431-VW	0.488	1/2	3/16	1/64	13/64	0.004~0.012	0.020~0.118	MCKNR/L	B106
	432-VW	0.472	1/2	3/16	1/32	13/64	0.006~0.020	0.020~0.157	MCLNR/L	B106
									MCMNN	B106
									MCRNR/L	B107
									PCBNR/L	B94
									PCLNR/L	B95

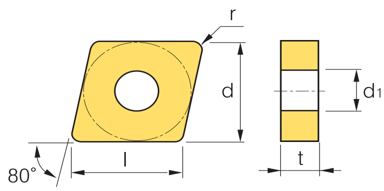
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item



CN○○

Rhombic 80° Negative

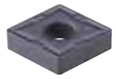
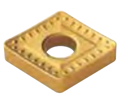
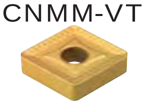
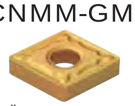
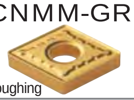


Workpiece / Machining types (● Continuous cutting, ◐ General cutting, ✣ Interrupted cutting)

Workpiece		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✣	✣			◐						●	◐	◐	●	●			
Stainless steel	M				◐		◐	◐	◐	●	◐	◐								◐		
Cast iron	K								◐				●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S								◐	●	◐											
Hardened steel	H																					

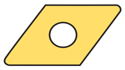
Machining types
- ● Continuous cutting
- ◐ General cutting
- ✣ Interrupted cutting

Grades: Coated (NC3010 – NC6210), Cermet (CN1000, CN2000, CN20), Coated cermet (CC105, CC115), Uncoated (U20, H01, G10). Dimensions (inch).

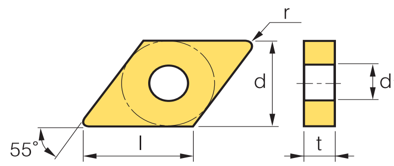
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders Designation	Page
CNMG-VK  Medium Roughing	432-VK												●	●									0.472	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.197	MCKNR/L	B106
	433-VK												●	●									0.457	1/2	3/16	3/64	13/64	0.010~0.020	0.051~0.236	MCLNR/L	B106
	434-VK													●									0.441	1/2	3/16	1/16	13/64	0.010~0.024	0.071~0.276	MCMNN	B106
																														MCRNR/L	B107
																														PCBNR/L	B94
																														PCLNR/L	B95
CNMM-GH  Heavy	432-GH			●	●				●														0.472	1/2	3/16	1/32	13/64	0.012~0.024	0.098~0.315	MCKNR/L	B106
	433-GH		●	●	●																		0.457	1/2	3/16	3/64	13/64	0.012~0.028	0.098~0.315	MCLNR/L	B106
	533-GH																						0.583	5/8	3/16	3/64	1/4	0.012~0.028	0.098~0.315	MCMNN	B106
	536-GH																						0.535	5/8	3/16	3/32	1/4	0.012~0.047	0.098~0.315	MCRNR/L	B107
	543-GH				●																		0.583	5/8	1/4	3/64	1/4	0.012~0.035	0.098~0.315	PCBNR/L	B94
	544-GH																						0.567	5/8	1/4	1/16	1/4	0.012~0.047	0.098~0.315	PCLNR/L	B95
	546-GH																						0.535	5/8	1/4	3/32	1/4	0.012~0.059	0.098~0.315		
	642-GH								●														0.728	3/4	1/4	1/32	5/16	0.012~0.024	0.098~0.315		
	643-GH	●	●		●	●			●														0.713	3/4	1/4	3/64	5/16	0.012~0.028	0.118~0.315		
	644-GH	●	●		●	●			●														0.697	3/4	1/4	1/16	5/16	0.018~0.035	0.118~0.315		
	646-GH	●	●						●														0.661	3/4	1/4	3/32	5/16	0.022~0.047	0.157~0.354		
	854-GH																						0.950	1	5/16	1/16	23/64	0.020~0.039	0.177~0.394		
	856-GH																						0.917	1	5/16	3/32	23/64	0.022~0.047	0.197~0.472		
	866-GH	●			●	●			●														0.917	1	3/8	3/32	23/64	0.022~0.047	0.197~0.472		
	8612.5-GH																						0.809	1	3/8	25/128	23/64	0.026~0.051	0.236~0.472		
CNMM-VH  Heavy(General)	643-VH				●																		0.713	3/4	1/4	3/64	5/16	0.020~0.036	0.200~0.400	PCBNR/L	B94
	644-VH																						0.697	3/4	1/4	1/16	5/16	0.020~0.044	0.200~0.400	PCLNR/L	B95
	646-VH					●																	0.661	3/4	1/4	3/32	5/16	0.024~0.048	0.240~0.480		
	856-VH																						0.917	3/4	5/16	3/32	23/64	0.028~0.056	0.240~0.600		
	866-VH																						0.917	1	3/8	3/32	23/64	0.028~0.056	0.240~0.600		
CNMM-VT  Heavy(High feed cutting)	643-VT								●														0.713	3/4	1/4	3/64	5/16	0.024~0.040	0.240~0.520	PCBNR/L	B94
	644-VT					●																	0.697	3/4	1/4	1/16	5/16	0.024~0.044	0.200~0.400	PCLNR/L	B95
	646-VT																						0.661	3/4	1/4	3/32	5/16	0.024~0.064	0.280~0.520		
	856-VT																						0.917	3/4	5/16	3/32	23/64	0.030~0.064	0.280~0.680		
	866-VT																						0.917	1	3/8	3/32	23/64	0.030~0.064	0.280~0.680		
CNMM-GM  Medium	432-GM																						0.472	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	PCBNR/L	B94
																														PCLNR/L	B95
CNMM-GR  Roughing	432-GR																						0.472	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	PCBNR/L	B94
	433-GR																						0.457	1/2	3/16	3/64	13/64	0.010~0.020	0.051~0.276	PCLNR/L	B95
	643-GR				●																		0.713	3/4	1/4	3/64	5/16	0.012~0.030	0.067~0.394		
	644-GR																						0.697	3/4	1/4	1/16	5/16	0.012~0.031	0.071~0.394		
CNMM-HA  Medium to finishing	432-HA																						0.472	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.138	PCBNR/L	B94
																														PCLNR/L	B95

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

DN○○

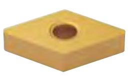
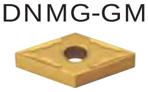
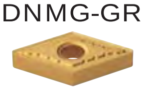


Rhombic **55° Negative**



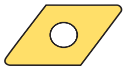
Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	◎			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	◎	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ◎ Interrupted cutting

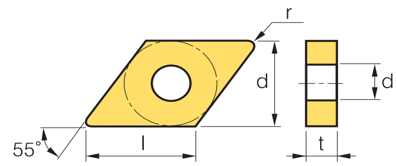
Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10	Dimensions (inch): l	d	t	r	d1	Cutting Condition: fn (ipr)	ap (inch)	Available tool holders: Designation	Page
DNGG-VP1	431-VP1																						0.594	1/2	3/16	1/64	13/64	0.002~0.006	0.004~0.059	MDJNR/L	B107
New	432-VP1																						0.579	1/2	3/16	1/32	13/64	0.003~0.008	0.004~0.059	MDNNN	B107
	441-VP1																						0.594	1/2	1/4	1/64	13/64	0.002~0.006	0.004~0.059	MDQNR/L	B108
Finishing	442-VP1																						0.579	1/2	1/4	1/32	13/64	0.003~0.008	0.004~0.059	MDUNR/L	B132
																														PDJNR/L	B96
																														PDNNR/L	B96
																														PDSNR/L	B128
																														PDUNR/L	B129
DNMA	332																						0.425	3/8	3/16	1/32	5/32	0.007~0.018	0.031~0.118	MDJNR/L	B107
	431																						0.594	1/2	3/16	1/64	13/64	0.007~0.022	0.016~0.157	MDNNN	B107
Roughing	432												●										0.579	1/2	3/16	1/32	13/64	0.010~0.022	0.031~0.157	MDQNR/L	B108
	433												●										0.567	1/2	3/16	3/64	13/64	0.010~0.026	0.059~0.157	MDUNR/L	B132
	441												●										0.594	1/2	1/4	1/64	13/64	0.007~0.022	0.016~0.157	PDJNR/L	B96
	442												●										0.579	1/2	1/4	1/32	13/64	0.010~0.022	0.031~0.157	PDNNR/L	B96
	443																						0.567	1/2	1/4	3/64	13/64	0.010~0.026	0.047~0.157	PDSNR/L	B128
	542																						0.728	5/8	1/4	1/32	5/16	0.012~0.031	0.098~0.512	PDUNR/L	B129
DNMG-B25	430.5-B25																						0.598	1/2	3/16	1/128	13/64	0.006~0.016	0.020~0.138	MDJNR/L	B107
	431-B25				●																		0.594	1/2	3/16	1/64	13/64	0.007~0.018	0.039~0.157	MDNNN	B107
Medium Roughing	432-B25			●	●								●										0.579	1/2	3/16	1/32	13/64	0.007~0.022	0.059~0.157	MDQNR/L	B108
	433-B25																						0.567	1/2	3/16	3/64	13/64	0.010~0.022	0.059~0.157	MDUNR/L	B132
	436.5-B25																						0.520	1/2	3/16	13/128	13/64	0.014~0.026	0.098~0.217	PDJNR/L	B96
	440.5-B25																						0.598	1/2	1/4	1/128	13/64	0.006~0.016	0.020~0.138	PDNNR/L	B96
	441-B25			●	●			●					●		●								0.594	1/2	1/4	1/64	13/64	0.007~0.022	0.059~0.157	PDSNR/L	B128
	442-B25	●		●	●			●	●		●		●										0.579	1/2	1/4	1/32	13/64	0.007~0.022	0.059~0.157	PDUNR/L	B129
	443-B25												●										0.567	1/2	1/4	3/64	13/64	0.010~0.022	0.059~0.157		
	446.5-B25																						0.520	1/2	1/4	13/128	13/64	0.014~0.026	0.098~0.217		
DNMG-GM	322-GM																						0.425	3/8	1/8	1/32	5/32	0.004~0.020	0.039~0.157	MDJNR/L	B107
	331-GM																						0.441	3/8	3/16	1/64	5/32	0.002~0.012	0.035~0.157	MDNNN	B107
Medium	332-GM																						0.425	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	MDQNR/L	B108
	431-GM				●																		0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	MDUNR/L	B132
	432-GM		●		●																		0.579	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	PDJNR/L	B96
	433-GM																						0.567	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197	PDNNR/L	B96
	441-GM				●										●	●	●						0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.035~0.197	PDSNR/L	B128
	442-GM	●	●		●																		0.579	1/2	1/4	1/32	13/64	0.004~0.020	0.039~0.197	PDUNR/L	B129
	443-GM				●																		0.567	1/2	1/4	3/64	13/64	0.005~0.024	0.051~0.197		
DNMG-GR	432-GR			●	●								●										0.579	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	MDJNR/L	B107
	433-GR												●										0.567	1/2	3/16	3/64	13/64	0.010~0.035	0.051~0.276	MDNNN	B107
Roughing	434-GR																						0.551	1/2	3/16	1/16	13/64	0.012~0.030	0.071~0.276	MDQNR/L	B108
	442-GR			●	●			●					●										0.579	1/2	1/4	1/32	13/64	0.008~0.020	0.039~0.276	MDUNR/L	B132
	443-GR			●	●								●										0.567	1/2	1/4	3/64	13/64	0.010~0.028	0.051~0.276	PDJNR/L	B96
	444-GR			●				●															0.551	1/2	1/4	1/16	13/64	0.008~0.030	0.071~0.276	PDNNR/L	B96
																														PDSNR/L	B128
																														PDUNR/L	B129

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

DN○○

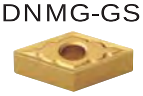
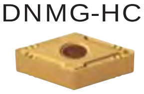
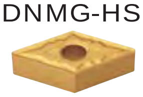


Rhombic 55° Negative



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
		Coated													Cermet			Coated		Uncoated		
DNMG-GS  Medium Roughing	431-GS																					
	432-GS									●												
	433-GS																					
	441-GS					●			●		●											
	442-GS								●	●	●											
	443-GS						●															
DNMG-HA  Medium to finishing	431-HA								●		●										●	
	432-HA								●	●	●										●	
	441-HA		●				●		●		●										●	
	442-HA								●		●										●	
DNMG-HC  Medium to finishing	431-HC																					
	432-HC	●																				
	433-HC																					
	441-HC																					
	442-HC				●																	
	443-HC																					
DNMG-HR  Roughing	432-HR																					
	433-HR																					
	434-HR																					
	442-HR	●			●																	
	443-HR	●																				
	444-HR	●																				
	543-HR																					
DNMG-HS  Medium	331-HS						●				●											
	332-HS						●				●											
	431-HS								●	●	●											
	432-HS								●	●	●											
	433-HS																					
	441-HS					●	●		●	●	●											
	442-HS					●	●		●	●	●											
	443-HS						●				●											
DNMG-LW  Medium(Wiper)	432-LW																					
	433-LW																					
	442-LW	●																				
	443-LW																					

Designation	l	d	t	r	d1	fn (ipr)	ap (inch)
	Dimensions (inch)					Cutting Condition	
431-GS	0.594	1/2	3/16	1/64	13/64	0.003~0.016	0.039~0.197
432-GS	0.579	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197
433-GS	0.567	1/2	3/16	3/64	13/64	0.002~0.026	0.039~0.197
441-GS	0.594	1/2	1/4	1/64	13/64	0.003~0.016	0.039~0.197
442-GS	0.579	1/2	1/4	1/32	13/64	0.004~0.020	0.039~0.197
443-GS	0.567	1/2	1/4	3/64	13/64	0.004~0.026	0.039~0.197
431-HA	0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.138
432-HA	0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.138
441-HA	0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.031~0.138
442-HA	0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.031~0.138
431-HC	0.594	1/2	3/16	1/64	13/64	0.007~0.008	0.002~0.138
432-HC	0.579	1/2	3/16	1/64	13/64	0.007~0.008	0.031~0.157
433-HC	0.567	1/2	3/16	3/64	13/64	0.005~0.020	0.035~0.157
441-HC	0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.031~0.157
442-HC	0.579	1/2	1/4	1/32	13/64	0.003~0.016	0.031~0.157
443-HC	0.567	1/2	1/4	3/64	13/64	0.005`0.020	0.035~0.157
432-HR	0.579	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276
433-HR	0.567	1/2	3/16	3/64	13/64	0.010~0.028	0.051~0.276
434-HR	0.551	1/2	3/16	1/16	13/64	0.012~0.030	0.071~0.276
442-HR	0.579	1/2	1/4	1/32	13/64	0.008~0.020	0.039~0.276
443-HR	0.567	1/2	1/4	3/64	13/64	0.010~0.028	0.051~0.276
444-HR	0.551	1/2	1/4	1/16	13/64	0.008~0.030	0.071~0.276
543-HR	0.711	5/8	1/4	3/64	5/16	0.008~0.030	0.071~0.315
331-HS	0.441	3/8	3/16	1/64	5/32	0.002~0.014	0.031~0.098
332-HS	0.425	3/8	3/16	1/32	5/32	0.004~0.016	0.039~0.098
431-HS	0.594	1/2	3/16	1/64	13/64	0.002~0.014	0.031~0.157
432-HS	0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.039~0.157
433-HS	0.567	1/2	3/16	3/64	13/64	0.005~0.022	0.039~0.177
441-HS	0.594	1/2	1/4	1/64	13/64	0.002~0.014	0.031~0.157
442-HS	0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.039~0.177
443-HS	0.567	1/2	1/4	3/64	13/64	0.004~0.022	0.039~0.177
432-LW	0.579	1/2	3/16	1/32	13/64	0.006~0.020	0.028~0.177
433-LW	0.567	1/2	3/16	3/64	13/64	0.008~0.024	0.039~0.197
442-LW	0.579	1/2	1/4	1/32	13/64	0.006~0.020	0.028~0.177
443-LW	0.567	1/2	1/4	3/64	13/64	0.008~0.024	0.039~0.197

Available tool holders (for each of DNMG-GS, DNMG-HA, DNMG-HC, DNMG-HR, DNMG-HS, DNMG-LW):

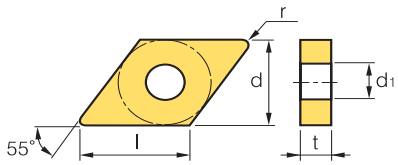
Inserts	Designation	Page
DNMG-GS	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129
DNMG-HA	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129
DNMG-HC	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129
DNMG-HR	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129
DNMG-HS	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129
DNMG-LW	MDJNR/L	B107
	MDNNN	B107
	MDQNR/L	B108
	MDUNR/L	B132
	PDJNR/L	B96
	PDNNR/L	B96
	PDSNR/L	B128
	PDUNR/L	B129

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

DN○○

Rhombic 55° Negative



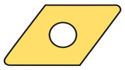
Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

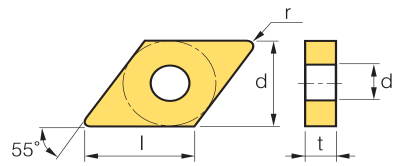
Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders: Designation	Page
DNMG-VB	431-VB	●		●					●														0.594	1/2	3/16	1/64	13/64	0.004~0.012	0.012~0.080	MDJNR/L	B107
	432-VB			●				●	●														0.579	1/2	3/16	1/32	13/64	0.006~0.018	0.020~0.080	MDNNN	B107
	441-VB	●		●				●															0.594	1/2	1/4	1/64	13/64	0.004~0.012	0.012~0.080	MDQNR/L	B108
	442-VB			●				●		●													0.594	1/2	1/4	1/32	13/64	0.006~0.018	0.020~0.080	MDUNR/L	B132
	443-VB			●																			0.567	1/2	1/4	3/64	13/64	0.008~0.020	0.020~0.098	PDJNR/L	B96
Finishing																														PDNNR/L	B96
																														PDSNR/L	B128
																														PDUNR/L	B129
DNMG-VC	431-VC	●		●					●	●													0.594	1/2	3/16	1/64	13/64	0.004~0.014	0.012~0.079	MDJNR/L	B107
	432-VC			●				●															0.579	1/2	3/16	1/32	13/64	0.006~0.016	0.020~0.118	MDNNN	B107
	433-VC																						0.567	1/2	3/16	3/64	13/64	0.006~0.018	0.020~0.118	MDQNR/L	B108
	441-VC	●		●					●	●													0.594	1/2	1/4	1/64	13/64	0.004~0.014	0.012~0.079	MDUNR/L	B132
	442-VC	●		●				●															0.579	1/2	1/4	1/32	13/64	0.006~0.016	0.020~0.118	PDJNR/L	B96
Medium to finishing	443-VC																						0.567	1/2	1/4	3/64	13/64	0.006~0.018	0.020~0.118	PDNNR/L	B96
																														PDSNR/L	B128
																														PDUNR/L	B129
DNMG-VL	332-VL																						0.425	3/8	3/16	1/32	5/32	0.002~0.008	0.004~0.040	MDJNR/L	B107
	431-VL	●		●				●															0.594	1/2	3/16	1/64	13/64	0.002~0.010	0.004~0.060	MDNNN	B107
	432-VL			●				●															0.579	1/2	3/16	1/32	13/64	0.002~0.012	0.008~0.060	MDQNR/L	B108
	433-VL																						0.567	1/2	3/16	3/64	13/64	0.004~0.012	0.010~0.060	MDUNR/L	B132
	441-VL	●		●																			0.594	1/2	1/4	1/64	13/64	0.002~0.010	0.004~0.060	PDJNR/L	B96
Finishing(Mild steel)	442-VL	●		●				●															0.579	1/2	1/4	1/32	13/64	0.002~0.012	0.008~0.060	PDNNR/L	B96
	443-VL																						0.567	1/2	1/4	3/64	13/64	0.004~0.012	0.010~0.060	PDSNR/L	B128
																														PDUNR/L	B129
DNMG-VF	330.5-VF																						0.449	3/8	3/16	1/128	5/32	0.002~0.008	0.008~0.039	MDJNR/L	B107
	331-VF			●				●															0.441	3/8	3/16	1/64	5/32	0.003~0.012	0.020~0.059	MDNNN	B107
	332-VF																						0.425	3/8	3/16	1/32	5/32	0.004~0.016	0.020~0.059	MDQNR/L	B108
	431-VF	●		●					●					●									0.594	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	MDUNR/L	B132
	432-VF			●																			0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059	PDJNR/L	B96
Finishing	433-VF																						0.567	1/2	3/16	3/64	13/64	0.006~0.020	0.024~0.059	PDNNR/L	B96
	441-VF	●	●	●				●															0.594	1/2	1/4	1/64	13/64	0.005~0.012	0.020~0.059	PDSNR/L	B128
	442-VF	●	●	●				●															0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.020~0.059	PDUNR/L	B129
	443-VF			●																			0.567	1/2	1/4	3/64	13/64	0.006~0.020	0.024~0.059		
DNMG-VG	331-VG																						0.441	3/8	3/16	1/64	5/32	0.003~0.012	0.020~0.059	MDJNR/L	B107
	332-VG																						0.425	3/8	3/16	1/32	5/32	0.004~0.016	0.020~0.059	MDNNN	B107
	431-VG																						0.594	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	MDQNR/L	B108
	432-VG																						0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059	MDUNR/L	B132
	441-VG														●	●							0.594	1/2	1/4	1/64	13/64	0.005~0.012	0.020~0.059	PDJNR/L	B96
Finishing	442-VG																						0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.020~0.059	PDNNR/L	B96
																														PDSNR/L	B128
																														PDUNR/L	B129
DNMG-VM	331-VM			●												●							0.441	3/8	3/16	1/64	5/32	0.002~0.012	0.035~0.157	MDJNR/L	B107
	332-VM	●	●	●				●															0.425	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	MDNNN	B107
	333-VM																						0.406	3/8	3/16	3/64	5/32	0.005~0.020	0.051~0.157	MDQNR/L	B108
	431-VM			●	●			●		●				●									0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	MDUNR/L	B132
	432-VM	●		●	●	●		●		●	●			●									0.579	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	PDJNR/L	B96
	433-VM			●	●			●															0.567	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197	PDNNR/L	B96
Medium	441-VM		●	●	●			●		●	●		●			●							0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.035~0.197	PDSNR/L	B128
	442-VM	●	●	●	●			●		●	●	●	●										0.579	1/2	1/4	1/32	13/64	0.004~0.020	0.039~0.197	PDUNR/L	B129
	443-VM			●	●			●		●						●							0.567	1/2	1/4	3/64	13/64	0.005~0.024	0.051~0.197		

Cutting edge geometry **A31 ~ A34** | Recommended chip breaker **B04 ~ B11** | Code system **B16 ~ B17** | S.P : **Special** | ● : Stock item

DN○○



Rhombic **55° Negative**

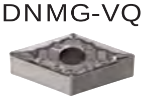
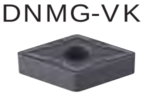


Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✚			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	✚	◐								◐		
Cast iron	K							◐					●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐	✚											
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✚ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
		Coated													Cermet			Coated		Uncoated		
DNMG-VP2	431-VP2								●	●	●											
	432-VP2								●	●	●											
	441-VP2			●					●	●	●											
	442-VP2			●					●	●	●											
DNMG-VP3	431-VP3										●											
	432-VP3								●	●	●											
	433-VP3								●	●												
	441-VP3										●											
	442-VP3								●	●	●											
	443-VP3								●	●												
DNMG-VQ	331-VQ															●						
	332-VQ																					
	431-VQ															●						
	432-VQ															●						
	441-VQ														●	●						
	442-VQ															●						
DNMG-VW	431-VW																					
	432-VW																					
	441-VW																					
	442-VW	●			●																	
DNMG-VK	431-VK													●								
	432-VK													●								
	433-VK												●	●								
	441-VK																					
	442-VK													●								
	443-VK												●	●								
DNMX-SH	431R-SH																					
	432R-SH																					
	441R-SH																					
	442R-SH																					
	431L-SH																					
	432L-SH																					
	441L-SH																					
	442L-SH																					

Inserts	Designation	l	d	t	r	d1	fn (ipr)	ap (inch)
		Dimensions (inch)					Cutting Condition	
DNMG-VP2 (New) Medium to finishing	431-VP2	0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.004~0.118
	432-VP2	0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.177
	441-VP2	0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.004~0.118
	442-VP2	0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.020~0.177
DNMG-VP3 (New) Medium	431-VP3	0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.004~0.118
	432-VP3	0.579	1/2	3/16	1/32	13/64	0.004~0.018	0.020~0.197
	433-VP3	0.567	1/2	3/16	3/64	13/64	0.005~0.020	0.020~0.197
	441-VP3	0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.004~0.118
	442-VP3	0.579	1/2	1/4	1/32	13/64	0.004~0.018	0.020~0.197
	443-VP3	0.567	1/2	1/4	3/64	13/64	0.005~0.020	0.020~0.197
DNMG-VQ Medium to finishing	331-VQ	0.441	3/8	3/16	1/64	5/32	0.002~0.012	0.020~0.138
	332-VQ	0.425	3/8	3/16	1/32	5/32	0.003~0.016	0.031~0.157
	431-VQ	0.594	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.138
	432-VQ	0.579	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157
	441-VQ	0.594	1/2	1/4	1/64	13/64	0.002~0.012	0.031~0.157
	442-VQ	0.579	1/2	1/4	1/32	13/64	0.003~0.016	0.031~0.157
DNMG-VW Finishing(Wiper)	431-VW	0.594	1/2	3/16	1/64	13/64	0.004~0.014	0.012~0.118
	432-VW	0.579	1/2	3/16	1/32	13/64	0.004~0.016	0.012~0.118
	441-VW	0.594	1/2	1/4	1/64	13/64	0.004~0.014	0.012~0.118
	442-VW	0.579	1/2	1/4	1/32	13/64	0.004~0.016	0.012~0.118
DNMG-VK Medium Roughing	431-VK	0.594	1/2	3/16	1/64	13/64	0.006~0.020	0.031~0.236
	432-VK	0.579	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276
	433-VK	0.567	1/2	3/16	3/64	13/64	0.010~0.028	0.051~0.276
	441-VK	0.594	1/2	1/4	1/64	13/64	0.008~0.020	0.039~0.276
	442-VK	0.579	1/2	1/4	1/32	13/64	0.008~0.020	0.039~0.276
	443-VK	0.567	1/2	1/4	3/64	13/64	0.010~0.028	0.051~0.276
DNMX-SH Medium	431R-SH	0.594	1/2	3/16	1/64	13/64	0.006~0.012	0.039~0.157
	432R-SH	0.579	1/2	3/16	1/32	13/64	0.006~0.020	0.059~0.197
	441R-SH	0.594	1/2	1/4	1/64	13/64	0.006~0.012	0.039~0.157
	442R-SH	0.579	1/2	1/4	1/32	13/64	0.006~0.020	0.059~0.197
	431L-SH	0.594	1/2	3/16	1/64	13/64	0.006~0.012	0.039~0.157
	432L-SH	0.579	1/2	3/16	1/32	13/64	0.006~0.020	0.059~0.197
	441L-SH	0.594	1/2	1/4	1/64	13/64	0.006~0.012	0.039~0.157
	442L-SH	0.579	1/2	1/4	1/32	13/64	0.006~0.020	0.059~0.197

Insert images: DNMG-VP2  DNMG-VP3  DNMG-VQ  DNMG-VW  DNMG-VK  DNMX-SH 

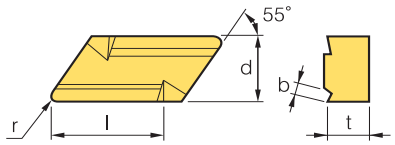
Available tool holders (same for DNMG-VP2, DNMG-VP3, DNMG-VQ, DNMG-VW, DNMG-VK, DNMX-SH):

Designation	Page
MDJNR/L	B107
MDNNN	B107
MDQNR/L	B108
MDUNR/L	B132
PDJNR/L	B96
PDNNR/L	B96
PDSNR/L	B128
PDUNR/L	B129

Cutting edge geometry **A31 ~ A34** · Recommended chip breaker **B04 ~ B11** · Code system **B16 ~ B17** · S.P : **Special** · ● : Stock item

KNOO

Parallelogram 55° Negative

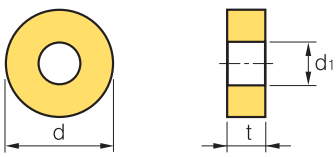


Workpiece		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	◓ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: ST10	H01	G10	Dimensions (inch) l	d	t	r	b	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
KNUX-11	160405R11	●	●	●	●		●		●			●		●									0.756	3/8	3/16	5/256	11/128	0.008~0.014	0.039~0.236	CKJNR/L	B104
	160410R11			●	●				●					●									0.740	3/8	3/16	5/128	11/128	0.012~0.024	0.059~0.236	CKNNR/L	B104
	160405L11	●	●	●	●		●		●														0.756	3/8	3/16	5/256	1/8	0.008~0.014	0.039~0.236	CKUNR/L	B131
Medium	160410L11			●	●				●														0.740	3/8	3/16	5/128	1/8	0.012~0.024	0.059~0.236		
KNUX-12	160405R12			●	●				●														0.756	3/8	3/16	5/256	11/128	0.008~0.014	0.039~0.236	CKJNR/L	B104
	160410R12			●	●				●														0.740	3/8	3/16	5/128	11/128	0.012~0.024	0.059~0.236	CKNNR/L	B104
	160405L12			●																			0.756	3/8	3/16	5/256	1/8	0.008~0.014	0.039~0.236	CKUNR/L	B131
Roughing	160410L12			●	●																		0.740	3/8	3/16	5/128	1/8	0.012~0.024	0.059~0.236		

RNOO

Round Negative



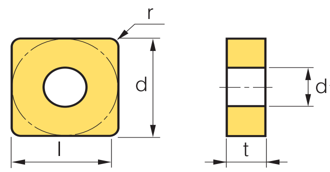
Workpiece		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	◓ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: ST10	H01	G10	Dimensions (inch) d	t	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
RNMG-B25	32-B25																						3/8	1/8	5/32	0.036~0.177	0.004~0.035		
	43-B25				●																		1/2	3/16	13/64	0.047~0.189	0.005~0.047		
	64-B25				●																		3/4	1/4	5/16	0.075~0.299	0.007~0.075		
	84-B25				●																		1	1/4	23/64	0.098~0.394	0.010~0.098	-	-
	86-B25																						1	3/8	23/64	0.098~0.394	0.010~0.098		
	106-B25				●																		1.25	3/8	1/2	0.138~0.512	0.012~0.098		
Medium Roughing																													

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

SN○○

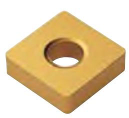
Square 90° Negative

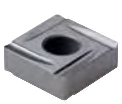


Workpiece		Grades with symbols (NC3010 → G10)
Steel	P	NC3010 ●, NC3120 ◒, NC3220 ◒, NC3030 ✚, NC5330 ◒, CN1000 ●, CN2000 ◒, CN20 ◒, CC105 ●, CC115 ●, ST30A ◒
Stainless steel	M	NC3030 ◒, NC9020 ◒, NC9025 ◒, NC5330 ◒, PC8110 ●, PC5300 ◒, PC9030 ◒
Cast iron	K	NC5330 ◒, NC6205 ●, NC6210 ◒, NC315K ✚, CN1000 ●, H01 ●, G10 ◒
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	NC5330 ◒, PC8110 ●, PC5300 ◒
Hardened steel	H	

Machining types
- ● Continuous cutting
- ◒ General cutting
- ✚ Interrupted cutting

		Coated													Cermet			Coated		Uncoated		
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
SNGA (Roughing)	321																					
	322																					
	431																					
	432																					
	433																					
	542																					
	543																					
	642																					
	643																					
SNGG (Medium)	321R																					
	322R																					
	431R															●						
	432R																					
	433R																					
	321L																					
	322L																					
	431L																					
	432L																					
	433L																					
SNGG-HU (Finishing)	432-HU																					
SNGN (Roughing)	320.5																					
	321																					
	322																●					
	421																					
	422																					
	423																					
	430.5																					
	431																					
	432																					
	433																●					
	436																					
	530.5																					
	532																●					
	533																					
	534																					
	630.5																					
	633																					
	634																					
	841																					
	844																					


SNGA – Roughing


SNGG – Medium

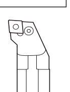

SNGG-HU – Finishing


SNGN – Roughing

		Dimensions (inch)					Cutting Condition		Available tool holders	
Inserts	Designation	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
SNGA	321	0.358	3/8	1/8	1/64	5/32	0.007~0.020	0.020~0.177	MSBNR/L	B108
	322	0.343	3/8	1/8	1/32	5/32	0.007~0.020	0.020~0.177	MSDNN	B108
	431	0.484	1/2	3/16	1/64	13/64	0.006~0.024	0.059~0.315	MSKNR/L	B109
	432	0.469	1/2	3/16	1/32	13/64	0.006~0.024	0.059~0.315	MSRNR/L	B109
	433	0.453	1/2	3/16	3/64	13/64	0.008~0.031	0.059~0.315	MSSNR/L	B110
	542	0.591	5/8	1/4	1/32	1/4	0.008~0.031	0.079~0.394	PSBNR/L	B98
	543	0.559	5/8	1/4	1/16	1/4	0.008~0.035	0.079~0.394	PSDNN	B98
	642	0.717	3/4	1/4	1/32	5/16	0.006~0.024	0.118~0.472	PSKNR/L	B129
	643	0.701	3/4	1/4	3/64	5/16	0.008~0.031	0.118~0.472	PSSNR/L	B99
SNGG	321R	0.358	3/8	1/8	1/64	5/32	0.005~0.014	0.039~0.118	MSBNR/L	B108
	322R	0.343	3/8	1/8	1/32	5/32	0.006~0.014	0.039~0.118	MSDNN	B108
	431R	0.484	1/2	3/16	1/64	13/64	0.006~0.014	0.039~0.157	MSKNR/L	B109
	432R	0.469	1/2	3/16	1/32	13/64	0.006~0.014	0.039~0.157	MSRNR/L	B109
	433R	0.453	1/2	3/16	3/64	13/64	0.006~0.014	0.039~0.157	MSSNR/L	B110
	321L	0.358	3/8	1/8	1/34	5/32	0.005~0.014	0.039~0.118	PSBNR/L	B98
	322L	0.343	3/8	1/8	1/32	5/32	0.006~0.014	0.039~0.118	PSDNN	B98
	431L	0.484	1/2	3/16	1/34	13/64	0.006~0.014	0.039~0.157	PSKNR/L	B129
	432L	0.469	1/2	3/16	1/32	13/64	0.006~0.014	0.039~0.157	PSSNR/L	B99
	433L	0.453	1/2	3/16	3/64	13/64	0.006~0.014	0.039~0.157		
SNGG-HU	432-HU	0.489	1/2	3/16	1/32	13/64	0.004~0.012	0.004~0.012	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
SNGN	320.5	0.367	3/8	1/8	1/128	-	0.002~0.012	0.020~0.157	CSDNN	B120
	321	0.358	3/8	1/8	1/64	-	0.004~0.014	0.020~0.157	CSKNR/L	B121
	322	0.343	3/8	1/8	1/32	-	0.004~0.016	0.039~0.157		
	421	0.484	1/2	1/8	1/64	-	0.005~0.020	0.051~0.197		
	422	0.469	1/2	1/8	1/32	-	0.006~0.024	0.059~0.236		
	423	0.453	1/2	1/8	3/64	-	0.007~0.024	0.067~0.236		
	430.5	0.492	1/2	3/16	1/128	-	0.004~0.018	0.039~0.197		
	431	0.484	1/2	3/16	1/64	-	0.005~0.020	0.051~0.197		
	432	0.469	1/2	3/16	1/32	-	0.006~0.024	0.059~0.236		
	433	0.453	1/2	3/16	3/64	-	0.007~0.024	0.067~0.236		
	436	0.406	1/2	3/16	3/32	-	0.008~0.026	0.079~0.236		
	530.5	0.617	5/8	3/16	1/128	-	0.004~0.020	0.020~0.236		
	532	0.591	5/8	3/16	1/32	-	0.006~0.024	0.059~0.315		
	533	0.575	5/8	3/16	3/64	-	0.007~0.024	0.079~0.315		
	534	0.559	5/8	3/16	1/16	-	0.008~0.026	0.098~0.335		
	630.5	0.742	3/4	3/16	1/128	-	0.004~0.024	0.079~0.335		
	633	0.685	3/4	3/16	3/64	-	0.007~0.028	0.098~0.394		
	634	0.687	3/4	3/16	1/16	-	0.008~0.030	0.098~0.394		
	841	0.984	1	1/4	1/64	-	0.012~0.031	0.118~0.472		
	844	0.937	1	1/4	1/16	-	0.014~0.039	0.157~0.472		

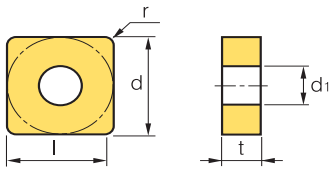
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item



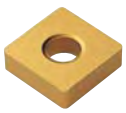
SN○○

Square **90° Negative**



Workpiece		
Steel	P	● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

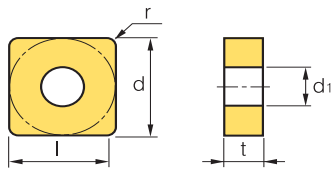
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated												Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
SNGX  Roughing	432R													●	●								●	0.469	1/2	3/16	1/32	13/64	0.039~0.157	0.006~0.014	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
SNMA  Medium Roughing	321																							0.358	3/8	1/8	1/64	5/32	0.004~0.018	0.020~0.177	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	322																							0.343	3/8	1/8	1/32	5/32	0.006~0.020	0.020~0.177		
	323																							0.370	3/8	1/8	3/64	5/32	0.008~0.020	0.020~0.177		
	430.5																							0.492	1/2	3/16	1/128	13/64	0.004~0.020	0.039~0.177		
	431																							0.484	1/2	3/16	1/64	13/64	0.006~0.024	0.039~0.197		
	432	●												●	●								●	0.469	1/2	3/16	1/32	13/64	0.006~0.028	0.039~0.236		
	433													●										0.453	1/2	3/16	3/67	13/64	0.008~0.031	0.059~0.236		
	434													●										0.437	1/2	3/16	1/16	13/64	0.012~0.039	0.079~0.236		
	437.5																							0.382	1/2	3/16	1/16	13/64	0.012~0.028	0.098~0.197		
	543													●										0.575	5/8	1/4	3/64	1/4	0.008~0.031	0.079~0.315		
	544																							0.559	5/8	1/4	1/16	1/4	0.010~0.033	0.098~0.394		
	642																							0.717	3/4	1/4	1/32	5/16	0.008~0.031	0.079~0.394		
	643													●	●									0.701	3/4	1/4	3/64	5/16	0.008~0.031	0.079~0.394		
	644													●	●									0.685	3/4	1/4	1/16	5/16	0.010~0.033	0.098~0.394		
	646																							0.654	3/4	1/4	3/32	5/16	0.014~0.035	0.118~0.394		
	856																							0.906	1	5/16	3/32	23/64	0.016~0.039	0.118~0.512		
	866																							0.906	1	3/8	3/32	23/64	0.016~0.039	0.118~0.512		
SNMG-B25  Medium Roughing	322-B25																							0.343	3/8	1/8	1/32	5/32	0.007~0.018	0.031~0.138	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	431-B25			●	●				●					●											0.484	1/2	3/16	1/64	13/64	0.007~0.018	0.039~0.138		
	432-B25			●	●		●		●		●	●		●		●								0.469	1/2	3/16	1/32	13/64	0.009~0.024	0.059~0.197		
	433-B25			●	●				●					●										0.453	1/2	3/16	3/64	13/64	0.010~0.024	0.079~0.197		
	434-B25				●				●															0.437	1/2	3/16	1/16	13/64	0.014~0.028	0.098~0.197		
	435-B25																							0.421	1/2	3/16	5/64	13/64	0.016~0.028	0.118~0.197		
	542-B25				●																			0.591	5/8	1/4	1/32	1/4	0.010~0.024	0.059~0.236		
	543-B25			●																				0.575	5/8	1/4	3/64	1/4	0.010~0.024	0.079~0.236		
	544-B25		●	●																				0.559	5/8	1/4	1/16	1/4	0.014~0.028	0.079~0.236		
	642-B25				●																			0.717	3/4	1/4	1/32	5/16	0.010~0.024	0.118~0.315		
	643-B25				●	●			●	●				●										0.701	3/4	1/4	1/21	5/16	0.014~0.028	0.118~0.315		
	644-B25				●					●														0.685	3/4	1/4	1/16	5/16	0.014~0.028	0.157~0.472		
	854-B25																							0.937	1	5/16	1/16	23/64	0.014~0.028	0.157~0.472		
	856-B25								●															0.906	1	5/16	3/32	23/64	0.020~0.039	0.197~0.472		

Cutting edge geometry **A31 ~ A34** | Recommended chip breaker **B04 ~ B11** | Code system **B16 ~ B17** | S.P : **Special** | ● : Stock item

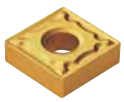
SN○○

Square **90° Negative**



Workpiece		
Steel	P	● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ●
Cast iron	K	● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ●
Hardened steel	H	● ●

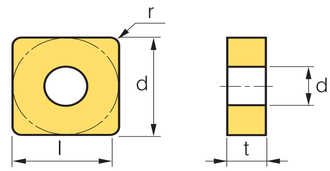
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders: Designation	Page
SNMG-GM  Medium	431-GM				●																			0.484	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	MSBNR/L	B108
	432-GM	●			●																			0.469	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	MSDNN	B108
	433-GM				●																			0.453	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197	MSKNR/L	B109
																															MSRNR/L	B109
																															MSSNR/L	B110
																															PSBNR/L	B98
																															PSDNN	B98
																															PSKNR/L	B129
																															PSSNR/L	B99
SNMG-GR  Roughing	431-GR																							0.484	1/2	3/16	1/64	13/64	0.006~0.018	0.003~0.236	MSBNR/L	B108
	432-GR			●	●				●					●										0.469	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	MSDNN	B108
	433-GR			●	●	●								●	●									0.453	1/2	3/16	3/64	13/64	0.008~0.020	0.039~0.276	MSKNR/L	B109
	542-GR			●	●																			0.591	5/8	1/4	1/32	1/4	0.010~0.024	0.039~0.276	MSRNR/L	B109
	543-GR	●	●	●	●																			0.575	5/8	1/4	3/64	1/4	0.011~0.030	0.055~0.276	MSSNR/L	B110
	642-GR				●																			0.717	3/4	1/4	1/32	5/16	0.012~0.031	0.067~0.354	PSBNR/L	B98
	643-GR		●		●	●			●															0.701	3/4	1/4	3/64	5/16	0.012~0.031	0.067~0.354	PSDNN	B98
	644-GR		●		●	●			●															0.685	3/4	1/4	1/16	5/16	0.012~0.032	0.075~0.484	PSKNR/L	B129
	856-GR				●																			0.906	1	5/16	3/32	23/64	0.018~0.047	0.102~0.551	PSSNR/L	B99
	866-GR				●																			0.906	1	3/8	3/32	23/64	0.020~0.047	0.102~0.551		
SNMG-GS  Medium Roughing	431-GS						●																	0.484	1/2	3/16	1/64	13/64	0.004~0.018	0.031~0.177	MSBNR/L	B108
	432-GS				●		●	●		●	●	●												0.469	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197	MSDNN	B108
	433-GS							●		●														0.453	1/2	3/16	3/64	13/64	0.005~0.026	0.039~0.197	MSKNR/L	B109
	434-GS																							0.437	1/2	3/16	1/16	13/64	0.006~0.028	0.039~0.197	MSRNR/L	B109
	643-GS							●			●													0.701	3/4	1/4	3/64	5/16	0.012~0.031	0.067~0.354	MSSNR/L	B110
																															PSBNR/L	B98
																															PSDNN	B98
																															PSKNR/L	B129
																															PSSNR/L	B99
SNMG-HA  Medium to finishing	431-HA							●			●											●		0.484	1/2	3/16	1/64	13/64	0.004~0.014	0.031~0.138	MSBNR/L	B108
	432-HA						●		●		●											●		0.469	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.138	MSDNN	B108
	433-HA																							0.453	1/2	3/16	3/64	13/64	0.005~0.022	0.031~0.138	MSKNR/L	B109
																															MSRNR/L	B109
																															MSSNR/L	B110
																															PSBNR/L	B98
																															PSDNN	B98
																															PSKNR/L	B129
																															PSSNR/L	B99
SNMG-HC  Medium to finishing	431-HC																							0.484	1/2	3/16	1/64	13/64	0.002~0.014	0.031~0.157	MSBNR/L	B108
	432-HC																							0.469	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157	MSDNN	B108
																															MSKNR/L	B109
																															MSRNR/L	B109
																															MSSNR/L	B110
																															PSBNR/L	B98
																															PSDNN	B98
																															PSKNR/L	B129
																															PSSNR/L	B99

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

SN○○

Square 90° Negative



Workpiece		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✣	✣			◐						●	◐	◐	●	●			
Stainless steel	M				◐		◐	◐	◐	●	◐	◐								◐		
Cast iron	K								◐				●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S								◐	●	◐											
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✣ Interrupted cutting

Grades: Coated: NC3010, NC3120, NC3220, NC3030, NC500H, NC9020, NC9025, NC5330, PC8110, PC5300, PC9030, NC6205, NC6210; Cermet: CN1000, CN2000, CN20; Coated (cermet): CC105, CC115; Uncoated: U20, H01, G10. Dimensions in inch.

SNMG-HR

Roughing

Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)
432-HR																						0.469	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276
433-HR	●																					0.453	1/2	3/16	3/64	13/64	0.010~0.028	0.051~0.276
343-HR																						0.437	1/2	3/16	1/16	13/64	0.013~0.030	0.071~0.276
542-HR				●																		0.591	5/8	1/4	1/32	1/4	0.008~0.020	0.071~0.315
543-HR				●																		0.575	5/8	1/4	3/64	1/4	0.008~0.028	0.051~0.315
544-HR																						0.559	5/8	1/4	1/16	1/4	0.012~0.031	0.071~0.315
546-HR																						0.528	5/8	1/4	3/32	1/4	0.013~0.035	0.087~0.315
642-HR																						0.717	3/4	1/4	1/32	5/16	0.008~0.020	0.039~0.394
643-HR																						0.701	3/4	1/4	3/64	5/16	0.010~0.028	0.051~0.394
644-HR	●			●																		0.685	3/4	1/4	1/16	5/16	0.012~0.031	0.071~0.394
646-HR																						0.654	3/4	1/4	3/32	5/16	0.013~0.035	0.091~0.394
856-HR																						0.906	1	5/16	3/32	23/64	0.016~0.047	0.091~0.591
866-HR		●		●																		0.906	1	3/8	3/32	23/64	0.016~0.047	0.091~0.591

Available tool holders: MSBNR/L B108, MSDNN B108, MSKNR/L B109, MSRNR/L B109, MSSNR/L B110, PSBNR/L B98, PSDNN B98, PSKNR/L B129, PSSNR/L B99

SNMG-HS

Medium

Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)
321-HS							●				●											0.358	3/8	1/8	1/64	5/32	0.002~0.010	0.039~0.098
322-HS									●													0.343	3/8	1/8	1/32	5/32	0.004~0.012	0.039~0.098
431-HS							●				●											0.484	1/2	3/16	1/64	13/64	0.002~0.012	0.039~0.177
432-HS						●	●		●	●	●											0.469	1/2	3/16	1/32	13/64	0.004~0.016	0.039~0.177
433-HS						●			●	●	●											0.453	1/2	3/16	3/64	13/64	0.005~0.022	0.039~0.177
543-HS											●											0.575	5/8	1/4	3/64	1/4	0.005~0.022	0.039~0.240
544-HS																						0.559	5/8	1/4	1/16	1/4	0.006~0.024	0.039~0.177
643-HS						●			●	●	●											0.701	3/4	1/4	3/64	5/16	0.005~0.022	0.039~0.299
644-HS									●	●	●											0.685	3/4	1/4	1/16	5/16	0.006~0.024	0.039~0.299

Available tool holders: MSBNR/L B108, MSDNN B108, MSKNR/L B109, MSRNR/L B109, MSSNR/L B110, PSBNR/L B98, PSDNN B98, PSKNR/L B129, PSSNR/L B99

SNMG-VC

Medium to finishing

Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)
432-VC	●		●					●	●													0.469	1/2	3/16	1/32	13/64	0.006~0.016	0.020~0.157

Available tool holders: MSBNR/L B108, MSDNN B108, MSKNR/L B109, MSRNR/L B109, MSSNR/L B110, PSBNR/L B98, PSDNN B98, PSKNR/L B129, PSSNR/L B99

SNMG-VL

Finishing(Mild steel)

Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)
432-VL	●																					0.469	1/2	3/16	1/32	13/64	0.004~0.014	0.008~0.060

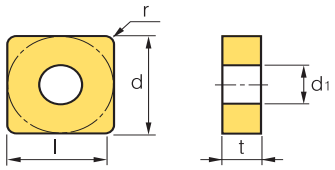
Available tool holders: MSBNR/L B108, MSDNN B108, MSKNR/L B109, MSRNR/L B109, MSSNR/L B110, PSBNR/L B98, PSDNN B98, PSKNR/L B129, PSSNR/L B99

Cutting edge geometry A31 ~ A34 · Recommended chip breaker B04 ~ B11 · Code system B16 ~ B17 · S.P : Special

● : Stock item

SN○○

Square **90° Negative**



Workpiece

Steel	P
Stainless steel	M
Cast iron	K
Non-ferrous metal	N
Heat resistant alloy, Titanium alloy	S
Hardened steel	H

Machining types

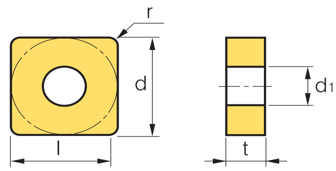
- ● Continuous cutting
- ◓ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated											Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
SNMG-VF Finishing	321-VF																					0.358	3/8	1/8	1/64	5/32	0.003~0.012	0.020~0.059	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	322-VF																					0.343	3/8	1/8	1/32	5/32	0.003~0.012	0.020~0.059		
	431-VF	●		●																		0.484	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059		
	432-VF	●		●				●														0.469	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059		
SNMG-VG Finishing	321-VG														●							0.358	3/8	1/8	1/64	5/32	0.003~0.012	0.020~0.059	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	322-VG																					0.343	3/8	1/8	1/32	5/32	0.004~0.012	0.020~0.059		
	431-VG													●	●							0.484	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059		
	432-VG														●							0.469	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059		
SNMG-VM Medium	321-VM																					0.358	3/8	1/8	1/64	5/32	0.002~0.012	0.035~0.138	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	322-VM																					0.343	3/8	1/8	1/32	5/32	0.004~0.197	0.039~0.138		
	431-VM	●		●	●			●			●											0.484	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197		
	432-VM		●	●	●			●	●	●	●		●									0.469	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197		
	433-VM			●				●		●			●									0.453	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197		
	643-VM																					0.701	3/4	1/4	3/64	5/16	0.010~0.024	0.098~0.295		
SNMG-VP2 New Medium to finishing	431-VP2			●					●	●	●											0.484	1/2	3/16	1/64	13/64	0.002~0.014	0.004~0.118	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	432-VP2			●					●	●	●											0.469	1/2	3/16	1/32	13/64	0.004~0.018	0.020~0.177		
	433-VP2																					0.453	1/2	3/16	3/64	13/64	0.004~0.020	0.020~0.197		
SNMG-VP3 New Medium	431-VP3										●											0.484	1/2	3/16	1/64	13/64	0.002~0.012	0.004~0.118	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	432-VP3								●	●	●											0.469	1/2	3/16	1/32	13/64	0.004~0.018	0.039~0.197		
	433-VP3								●	●												0.453	1/2	3/16	3/64	13/64	0.005~0.020	0.039~0.197		
SNMG-VQ Medium to finishing	321-VQ																					0.358	3/8	1/8	1/64	5/32	0.002~0.012	0.002~0.138	MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L PSSNR/L	B108 B108 B109 B109 B110 B98 B98 B129 B99
	322-VQ																					0.343	3/8	1/8	1/32	5/32	0.003~0.012	0.003~0.157		
	431-VQ													●								0.484	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.157		
	432-VQ																					0.469	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

SN○○

Square 90° Negative

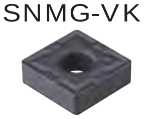


Workpiece		NC3010	NC3120	NC3220	NC3030	NC500H	CX269	NC9025	NC5330	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	General	General	Interrupted	Interrupted			General						●	General	General	●	●			
Stainless steel	M				General		●	General	General	General	General									General		
Cast iron	K								General			●	General	Interrupted	●						●	General
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S						●		General	General												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- General cutting
- Interrupted cutting

Grades (Coated: NC3010–NC315K; Cermet: CN1000, CN2000, CN20; Coated: CC105, CC115; Uncoated: U20, H01, G10)

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC500H	CX269	NC9025	NC5330	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
SNMG-VK	431-VK												●									
	432-VK											●	●									
	433-VK												●									
SNMM-GH	432-GH			●	●				●													
	433-GH			●	●																	
	543-GH			●	●				●													
	643-GH		●		●				●													
	644-GH	●	●		●	●			●													
	646-GH				●				●													
	856-GH		●		●	●	●		●													
	866-GH	●			●	●	●		●													
	868-GH																					
SNMM-VH	643-VH						●															
	644-VH																					
	646-VH					●	●															
	856-VH																					
	865-VH				●	●	●															
	866-VH																					
		●					●															
SNMM-VT	643-VT						●		●													
	644-VT				●		●															
	646-VT	●					●															
	856-VT				●	●																
	865-VT																					
	866-VT	●			●		●															
SNMM-GM	432-GM																					
	433-GM																					

SNMG-VK  Medium Roughing

SNMM-GH  Heavy

SNMM-VH  Heavy(General)

SNMM-VT  Heavy(High feed cutting)

SNMM-GM  Medium

Dimensions (inch) and Cutting Condition

Inserts	Designation	l	d	t	r	d1	fn (ipr)	ap (inch)
SNMG-VK	431-VK	0.484	1/2	3/16	1/64	13/64	0.006~0.020	0.031~0.315
	432-VK	0.469	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276
	433-VK	0.453	1/2	3/16	3/64	13/64	0.008~0.020	0.039~0.276
SNMM-GH	432-GH	0.469	1/2	3/16	1/32	13/64	0.012~0.024	0.000~0.001
	433-GH	0.453	1/2	3/16	3/64	13/64	0.012~0.028	0.000~0.001
	543-GH	0.575	5/8	1/4	3/64	1/4	0.012~0.028	0.098~0.315
	643-GH	0.701	3/4	1/4	3/64	5/16	0.012~0.028	0.118~0.315
	644-GH	0.685	3/4	1/4	1/16	5/16	0.018~0.039	0.157~0.354
	646-GH	0.654	3/4	1/4	3/32	5/16	0.022~0.047	0.157~0.354
	856-GH	0.906	1	5/16	3/32	23/64	0.022~0.047	0.197~0.472
	866-GH	0.906	1	3/8	3/32	23/64	0.022~0.047	0.197~0.472
	868-GH	0.874	1	3/8	1/8	23/64	0.022~0.047	0.197~0.472
SNMM-VH	643-VH	0.701	3/4	1/4	3/64	5/16	0.020~0.036	0.200~0.400
	644-VH	0.685	3/4	1/4	1/16	5/16	0.020~0.044	0.200~0.400
	646-VH	0.654	3/4	1/4	3/32	5/16	0.024~0.048	0.240~0.480
	856-VH	0.906	1	5/16	3/32	23/64	0.028~0.056	0.240~0.600
	865-VH	0.936	1	3/8	5/64	23/64	0.028~0.056	0.240~0.600
	866-VH	0.906	1	3/8	3/32	23/64	0.028~0.056	0.240~0.600
SNMM-VT	643-VT	0.701	3/4	1/4	3/64	5/16	0.024~0.040	0.240~0.520
	644-VT	0.685	3/4	1/4	1/16	5/16	0.024~0.044	0.240~0.520
	646-VT	0.654	3/4	1/4	3/32	5/16	0.024~0.064	0.280~0.520
	856-VT	0.906	1	5/16	3/32	23/64	0.030~0.064	0.280~0.600
	865-VT	0.936	1	3/8	5/64	23/64	0.030~0.064	0.280~0.600
	866-VT	0.906	1	3/8	3/32	23/64	0.030~0.064	0.280~0.680
SNMM-GM	432-GM	0.469	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197
	433-GM	0.453	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.197

Available tool holders

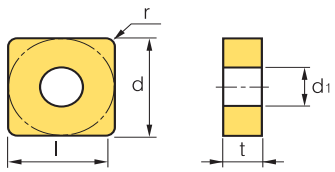
Inserts	Designation	Page
SNMG-VK	MSBNR/L	**B108**
	MSDNN	**B108**
	MSKNR/L	**B109**
	MSRNR/L	**B109**
	MSSNR/L	**B110**
	PSBNR/L	**B98**
	PSDNN	**B98**
	PSKNR/L	**B129**
	PSSNR/L	**B99**
SNMM-GH	MSBNR/L	**B108**
	MSDNN	**B108**
	MSKNR/L	**B109**
	MSRNR/L	**B109**
	MSSNR/L	**B110**
	PSBNR/L	**B98**
	PSDNN	**B98**
	PSKNR/L	**B129**
	PSSNR/L	**B99**
SNMM-VH	PSBNR/L	**B98**
	PSDNN	**B98**
	PSKNR/L	**B129**
	PSSNR/L	**B99**
SNMM-VT	PSBNR/L	**B98**
	PSDNN	**B98**
	PSKNR/L	**B129**
	PSSNR/L	**B99**
SNMM-GM	MSBNR/L	**B108**
	MSDNN	**B108**
	MSKNR/L	**B109**
	MSRNR/L	**B109**
	MSSNR/L	**B110**
	PSBNR/L	**B98**
	PSDNN	**B98**
	PSKNR/L	**B129**
	PSSNR/L	**B99**

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

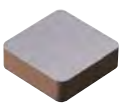
SN○○

Square **90° Negative**



Workpiece			NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
	Steel	P	●	●	●	✱			●							●	●	●	●	●	●		
	Stainless steel	M				●	●	●	●	●	●	●											
	Cast iron	K							●				●	●	✱	●						●	●
	Non-ferrous metal	N																					
	Heat resistant alloy, Titanium alloy	S							●	●	●												
	Hardened steel	H																					

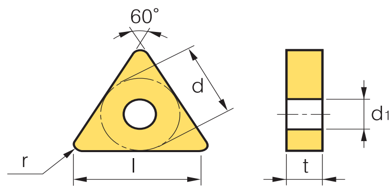
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated														Cermet		Coated			Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
SNMM-GR  Roughing	432-GR																						0.469	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	MSBNR/L	**B108**
	433-GR				●																		0.453	1/2	3/16	3/64	13/64	0.010~0.026	0.051~0.276	MSDNN	**B108**
	643-GR				●																		0.701	3/4	1/4	3/64	5/16	0.010~0.026	0.051~0.453	MSKNR/L	**B109**
	644-GR																						0.685	3/4	1/4	1/16	5/16	0.013~0.033	0.071~0.453	MSRNR/L	**B109**
																														MSSNR/L	**B110**
																														PSBNR/L	**B98**
																														PSDNN	**B98**
																														PSKNR/L	**B129**
																														PSSNR/L	**B99**
SNMN  Medium Roughing	421																						0.484	1/2	1/8	1/64	-	0.007~0.018	0.039~0.138	CSDNN	**B120**
	422																						0.469	1/2	1/8	1/32	-	0.009~0.024	0.059~0.236	CSKNR/L	**B121**
	423																						0.453	1/2	1/8	3/64	-	0.010~0.024	0.079~0.197		
	431																						0.484	1/2	3/16	1/64	-	0.007~0.018	0.039~0.138		
	432																						0.469	1/2	3/16	1/32	-	0.009~0.024	0.059~0.197		
	433																						0.453	1/2	3/16	3/64	-	0.010~0.024	0.079~0.197		
	531																						0.609	5/8	3/16	1/64	-	0.008~0.020	0.059~0.236		
	532																						0.591	5/8	3/16	1/32	-	0.010~0.024	0.059~0.236		
	533																						0.453	1/2	3/16	3/64	-	0.010~0.024	0.079~0.236		
	634																						0.685	3/4	3/16	1/16	-	0.014~0.028	0.079~0.236		
SNMX  Medium	432R																						0.469	1/2	3/16	1/32	13/64	0.006~0.014	0.039~0.157	MSBNR/L	**B108**
																														MSDNN	**B108**
																														MSKNR/L	**B109**
																														MSRNR/L	**B109**
																														MSSNR/L	**B110**
																														PSBNR/L	**B98**
																														PSDNN	**B98**
																														PSKNR/L	**B129**
																														PSSNR/L	**B99**
SNUN  Medium Roughing	432																			●			0.469	1/2	3/16	1/32	-	0.009~0.024	0.059~0.197	CSDNN	**B120**
	433																			●			0.453	1/2	3/16	1/32	-	0.010~0.024	0.079~0.197	CSKNR/L	**B121**
	633																						0.685	3/4	3/16	3/64	-	0.012~0.039	0.118~0.394		
	433TN																						0.453	1/2	3/16	3/64	-	0.010~0.024	0.079~0.197		
	866TN																						0.906	1	5/16	3/32	-	0.012~0.047	0.118~0.472		

Cutting edge geometry **A31 ~ A34** | Recommended chip breaker **B04 ~ B11** | Code system **B16 ~ B17** | S.P : **Special** | ● : Stock item

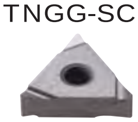
TN○○

Triangular 60° Negative



Workpiece		Symbol	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
Steel		P	●	◐	◐	✱			◐							●	◐	◐	●	●	◐		
Stainless steel		M				◐	◐	◐	◐	●	◐	◐											
Cast iron		K							◐				●	◐	✱	●						●	◐
Non-ferrous metal		N																					
Heat resistant alloy, Titanium alloy		S							◐	●	◐												
Hardened steel		H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

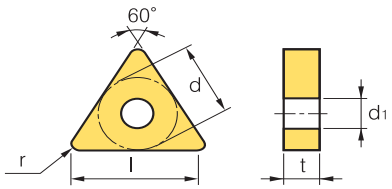
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders: Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition			
TNGA	220.5																						0.413	1/4	1/8	1/128	3/32	0.002~0.012	0.008~0.118	MTENN	B110
	221																						0.394	1/4	1/8	1/64	3/32	0.002~0.012	0.016~0.118	MTFNR/L	B110
Roughing	321																						0.610	3/8	1/8	1/64	5/32	0.004~0.014	0.016~0.157	MTGNR/L	B111
	330.5																						0.630	3/8	3/16	1/128	5/32	0.004~0.012	0.008~0.157	MTJNR/L	B111
	331														●	●						●	0.610	3/8	3/16	1/64	5/32	0.004~0.014	0.016~0.197	PTFNR/L	B100,130
	332														●								0.571	3/8	3/16	1/32	5/32	0.005~0.016	0.020~0.197	PTGNR/L	B100
	421																						0.827	1/2	1/8	1/64	13/64	0.004~0.014	0.020~0.197	PTTNR/L	B101
	430.5																						0.856	1/2	3/16	1/128	13/64	0.002~0.012	0.008~0.118	WTENN	B102
	431																					●	0.827	1/2	3/16	1/64	13/64	0.004~0.014	0.016~0.197	WTJNR/L	B102
	432																●						0.787	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.197	WTXNR/L	B102
	433																						0.748	1/2	3/16	3/64	13/64	0.005~0.018	0.039~0.217		
	543																						0.965	5/8	1/4	3/64	1/4	0.005~0.018	0.039~0.276		
	546																						0.839	5/8	1/4	3/32	1/4	0.008~0.022	0.079~0.276		
TNGG	221R																						0.394	1/4	1/8	1/64	3/32	0.002~0.012	0.002~0.010	MTENN	B110
	330.5R														●	●							0.630	3/8	3/16	1/128	5/32	0.003~0.012	0.020~0.138	MTFNR/L	B110
Medium	331R														●	●	●						0.610	3/8	3/16	1/64	5/32	0.005~0.012	0.039~0.138	MTGNR/L	B111
	332R														●	●							0.571	1/2	3/16	1/32	5/32	0.006~0.014	0.051~0.138	MTJNR/L	B111
	431R														●	●							0.827	1/2	3/16	1/64	13/64	0.005~0.012	0.039~0.197	PTFNR/L	B100,130
	432R															●							0.787	1/2	3/16	1/32	13/64	0.006~0.014	0.051~0.197	PTGNR/L	B100
	433R																						0.748	1/2	3/16	3/64	13/64	0.007~0.016	0.059~0.197	PTTNR/L	B101
	221L																						0.394	1/4	3/16	1/64	3/32	0.002~0.012	0.002~0.010	WTENN	B102
	330.5L																						0.630	3/8	3/16	1/32	5/32	0.003~0.012	0.020~0.138	WTJNR/L	B102
	331L														●	●	●						0.610	3/8	1/8	1/64	5/32	0.005~0.012	0.039~0.138	WTXNR/L	B102
	332L															●							0.571	1/2	3/16	1/128	5/32	0.006~0.014	0.051~0.138		
	431L																						0.827	1/2	3/16	1/64	13/64	0.005~0.012	0.039~0.197		
	432L																						0.787	1/2	3/16	1/32	13/64	0.006~0.014	0.051~0.197		
	433L																						0.748	1/2	3/16	1/64	13/64	0.007~0.016	0.059~0.197		
TNGG-SC	330.5R-SC															●							0.630	3/8	3/16	1/128	5/32	0.001~0.008	0.004~0.059	MTENN	B110
	331R-SC															●							0.610	3/8	3/16	1/64	5/32	0.002~0.010	0.012~0.079	MTFNR/L	B110
Finishing	330.5L-SC																						0.630	3/8	3/16	1/128	5/32	0.001~0.008	0.004~0.059	MTGNR/L	B111
	331L-SC																						0.610	3/8	3/16	1/64	5/32	0.002~0.010	0.012~0.079	MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102

Cutting edge geometry A31 ~ A34 Recommended chip breaker B04 ~ B11 Code system B16 ~ B17 S.P : Special

● : Stock item

TN○○

Triangular **60° Negative**



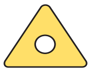
Workpiece		
Steel	P	● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ✱ ● ● ●
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	● ● ● ● ●
Hardened steel	H	

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

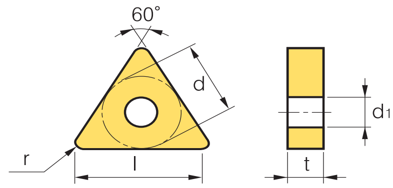
Inserts	Designation	Coated												Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC500H	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TNGN Medium	220.5																						0.412	1/4	1/8	1/128	-	0.002~0.010	0.008~0.098	CTFNR/L	B121
	221																						0.394	1/4	1/8	1/64	-	0.004~0.012	0.020~0.098	CTGNR/L	B121
	222																						0.354	1/4	1/8	1/32	-	0.004~0.012	0.031~0.098		
	320.5																						0.630	3/8	1/8	1/128	-	0.002~0.012	0.008~0.118		
	321																						0.610	3/8	1/8	1/64	-	0.004~0.012	0.020~0.157		
	322																						0.571	3/8	1/8	1/32	-	0.004~0.016	0.031~0.157		
	331																						0.610	3/8	3/16	1/64	-	0.004~0.016	0.020~0.157		
	332																						0.571	3/8	3/16	1/32	-	0.004~0.016	0.039~0.157		
	333																						0.531	3/8	3/16	3/64	-	0.004~0.020	0.059~0.177		
	431																						0.827	1/2	3/16	1/64	-	0.004~0.014	0.039~0.157		
	432																●						0.787	1/2	3/16	1/32	-	0.006~0.016	0.059~0.197		
	433																						0.748	1/2	3/16	3/64	-	0.008~0.020	0.059~0.197		
	434																						0.717	1/2	3/16	1/16	-	0.010~0.022	0.059~0.197		
	436																						0.685	1/2	3/16	3/32	-	0.012~0.026	0.079~0.197		
	547.5																						0.776	5/8	1/4	2/17	-	0.014~0.028	0.079~0.197		
TNMA Roughing	222																						0.354	1/4	1/8	1/32	3/32	0.002~0.012	0.020~0.118	MTENN	B110
	331												●										0.610	3/8	3/16	1/64	5/32	0.004~0.012	0.039~0.157	MTFNR/L	B110
	332	●											●	●									0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.039~0.157	MTGNR/L	B111
	333												●										0.531	3/8	3/16	3/64	5/32	0.004~0.020	0.059~0.177	MTJNR/L	B111
	334																						0.492	3/8	3/16	1/16	5/32	0.006~0.022	0.059~0.177	PTFNR/L	B100,130
	431																						0.827	1/2	3/16	1/64	13/64	0.004~0.014	0.039~0.157	PTGNR/L	B100
	432												●										0.787	1/2	3/16	1/32	13/64	0.006~0.016	0.059~0.197	PTTNR/L	B101
	433	●											●	●									0.748	1/2	3/16	3/64	13/64	0.008~0.020	0.059~0.197	WTENN	B102
	434																						0.171	1/2	3/16	1/16	13/64	0.010~0.022	0.059~0.197	WTJNR/L	B102
	435																						0.661	1/2	3/16	5/64	13/64	0.012~0.026	0.079~0.197	WTXNR/L	B102
	438																						0.650	1/2	3/16	1/8	13/64	0.014~0.028	0.079~0.197		
	542																						1.000	5/8	1/4	1/32	1/4	0.008~0.018	0.079~0.276		
	543																						0.959	5/8	1/4	3/64	1/4	0.010~0.022	0.118~0.276		
	544																						0.919	5/8	1/4	1/16	1/4	0.012~0.026	0.118~0.276		
	666																						1.067	3/4	3/8	3/32	5/16	0.014~0.030	0.118~0.354		
TNMG-B25 Medium Roughing	222-B25																						0.354	1/4	1/8	1/32	3/32	0.007~0.016	0.059~0.118	MTENN	B110
	321-B25																						0.610	3/8	1/8	1/64	5/32	0.007~0.018	0.079~0.138	MTFNR/L	B110
	322-B25				●																		0.571	3/8	1/8	1/32	5/32	0.007~0.022	0.079~0.138	MTGNR/L	B111
	323-B25																						0.531	3/8	1/8	3/64	5/32	0.010~0.022	0.079~0.138	MTJNR/L	B111
	324-B25																						0.492	3/8	1/8	1/16	5/32	0.012~0.024	0.098~0.118	PTFNR/L	B100,130
	331-B25			●	●								●										0.610	3/8	3/16	1/64	5/32	0.007~0.018	0.079~0.138	PTGNR/L	B100
	332-B25			●	●							●	●										0.571	3/8	3/16	1/32	5/32	0.007~0.022	0.079~0.138	PTTNR/L	B101
	333-B25				●																		0.531	3/8	3/16	3/64	5/32	0.010~0.022	0.079~0.138	WTENN	B102
	334-B25												●										0.492	3/8	3/16	1/46	5/32	0.012~0.024	0.098~0.118	WTJNR/L	B102
	431-B25			●	●																		0.827	1/2	3/16	1/64	13-64	0.007~0.018	0.059~0.197	WTXNR/L	B102
	432-B25			●	●			●															0.787	1/2	3/16	1/32	13-64	0.007~0.022	0.079~0.197		
	433-B25				●																		0.748	1/2	3/16	3/64	13-64	0.010~0.022	0.079~0.197		
	434-B25				●																		0.717	1/2	3/16	1/16	13-64	0.012~0.024	0.079~0.197		
	436-B25																						0.677	1/2	3/16	3/32	13-64	0.014~0.028	0.118~0.276		
	438-B25																						0.650	1/2	3/16	1/8	13-64	0.016~0.030	0.138~0.276		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

TN○○



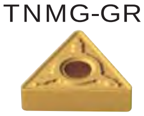
Triangular **60° Negative**



Workpiece		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
Steel	P	●	◐	◐	✱	✱			◐							●	◐	◐	●	●	◐		
Stainless steel	M				◐		◐	◐	◐	●	◐	◐											
Cast iron	K								◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																						
Heat resistant alloy, Titanium alloy	S								◐	●	◐												
Hardened steel	H																						

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

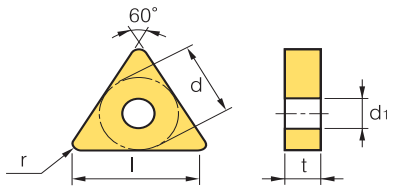
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders Designation	Page
		Coated														Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition			
TNMG-B25  Medium Roughing	542-B25				●																			1.004	5/8	1/4	1/32	1/4	0.007~0.022	0.079~0.197	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	543-B25	●		●	●																			0.965	5/8	1/4	3/64	1/4	0.010~0.022	0.118~0.276		
	544-B25																							0.925	5/8	1/4	1/16	1/4	0.012~0.024	0.118~0.276		
	654-B25																							1.142	3/4	5/16	1/16	5/16	0.014~0.028	0.118~0.354		
	666-B25																							1.067	3/4	3/8	3/32	5/16	0.016~0.031	0.118~0.354		
TNMG-GM  Medium	321-GM																							0.610	3/8	1/8	1/64	5/32	0.002~0.012	0.031~0.197	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	331-GM	●	●		●												●	●						0.610	3/8	3/16	1/64	5/32	0.002~0.012	0.031~0.197		
	332-GM	●	●		●												●							0.571	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.197		
	333-GM																							0.531	3/8	3/16	3/64	5/32	0.005~0.024	0.051~0.197		
	431-GM				●																			0.827	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.248		
	432-GM	●			●																			0.787	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.260		
	433-GM				●																			0.748	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.260		
TNMG-GR  Roughing	322-GR			●	●									●	●									0.571	3/8	3/16	1/32	5/32	0.008~0.020	0.039~0.276	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	333-GR			●	●									●										0.531	3/8	3/16	3/64	5/32	0.009~0.021	0.047~0.315		
	432-GR		●	●	●				●					●										0.787	1/2	3/16	1/32	13/64	0.009~0.024	0.043~0.307		
	433-GR		●	●	●									●										0.748	1/2	3/16	3/64	13/64	0.011~0.031	0.047~0.307		
	434-GR			●	●																			0.717	1/2	3/16	1/16	13/64	0.012~0.030	0.059~0.307		
	542-GR				●																			1.004	5/8	1/4	1/32	1/4	0.012~0.030	0.059~0.307		
	543-GR			●	●																			0.965	5/8	1/4	3/64	1/4	0.012~0.030	0.059~0.307		
	544-GR				●																			0.925	5/8	1/4	1/16	1/4	0.014~0.039	0.063~0.307		
	666-GR				●																			1.067	3/4	3/8	3/32	5/16	0.016~0.039	0.079~0.354		
TNMG-GS  Medium Roughing	331-GS						●	●		●		●												0.610	3/8	3/16	1/64	5/32	0.002~0.014	0.039~0.177	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	332-GS			●			●	●		●	●	●												0.571	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.197		
	333-GS																							0.531	3/8	3/16	3/64	5/32	0.005~0.026	0.039~0.197		
	432-GS									●														0.787	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.268		
	433-GS																							0.748	1/2	3/16	3/64	13/64	0.006~0.020	0.047~0.236		
TNMG-HA  Medium to finishing	331-HA						●			●		●										●		0.610	3/8	3/16	1/64	5/32	0.002~0.012	0.031~0.138	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	332-HA						●	●		●		●										●		0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.031~0.138		
	333-HA																							0.531	3/8	3/16	3/64	5/32	0.005~0.022	0.031~0.138		
	432-HA											●												0.787	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.209		
TNMG-HC  Medium to finishing	331-HC	●							●															0.610	3/8	3/16	1/64	5/32	0.002~0.014	0.020~0.138	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100,130 B100 B101 B102 B102 B102
	332-HC	●	●		●				●															0.571	3/8	3/16	1/32	5/32	0.003~0.016	0.031~0.157		
	333-HC																							0.531	3/8	3/16	3/64	5/32	0.005~0.020	0.035~0.157		
	432-HC																							0.787	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

TN○○

Triangular **60° Negative**

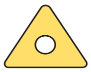


Workpiece		Machining types	
Steel	P	●	Continuous cutting
Stainless steel	M	⬬	General cutting
Cast iron	K	✱	Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

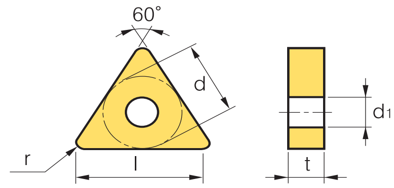
Inserts	Designation	Coated											Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TNMG-HR	332-HR	●																					0.571	3/8	3/16	1/32	5/32	0.008~0.020	0.039~0.276	MTENN	B110
	333-HR		●																				0.531	3/8	3/16	3/64	5/32	0.010~0.024	0.051~0.276	MTFNR/L	B110
	431-HR																						0.827	1/2	3/16	1/64	13/64	0.008~0.018	0.039~0.295	MTGNR/L	B111
	432-HR																						0.787	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.315	MTJNR/L	B111
	433-HR		●																				0.748	1/2	3/16	3/64	13/64	0.010~0.024	0.051~0.315	PTFNR/L	B100,130
	434-HR																						0.717	1/2	3/16	1/16	13/64	0.013~0.028	0.071~0.315	PTGNR/L	B100
	542-HR																						1.004	5/8	1/4	1/32	1/4	0.014~0.020	0.071~0.512	PTTNR/L	B101
	543-HR																						0.965	5/8	1/4	3/64	1/4	0.014~0.028	0.091~0.512	WTENN	B102
	548-HR																						0.925	5/8	1/4	1/8	1/4	0.016~0.035	0.118~0.512	WTJNR/L	B102
	654-HR																						1.142	3/4	5/16	1/16	5/16	0.016~0.028	0.071~0.354	WTXNR/L	B102
	666-HR																						1.067	3/4	3/8	1/32	5/16	0.018~0.035	0.130~0.630		
Roughing																															
TNMG-HS	331-HS					●	●		●	●	●												0.610	3/8	3/16	1/64	5/32	0.003~0.014	0.020~0.157	MTENN	B110
	332-HS					●	●		●	●	●												0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.039~0.177	MTFNR/L	B110
	333-HS									●	●												0.531	3/8	3/16	3/64	5/32	0.005~0.022	0.039~0.177	MTGNR/L	B111
	432-HS					●	●		●	●	●												0.787	1/2	3/16	1/32	13/64	0.004~0.016	0.039~0.248	MTJNR/L	B111
	433-HS										●												0.748	1/2	3/16	1/21	13/64	0.005~0.022	0.039~0.248	PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
Medium																															
TNMG-LW	332-LW	●																					0.571	3/8	3/16	1/32	5/32	0.006~0.020	0.028~0.177	MTENN	B110
	333-LW																						0.531	3/8	3/16	3/64	5/32	0.008~0.024	0.039~0.197	MTFNR/L	B110
																														MTGNR/L	B111
																														MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
Medium(Wiper)																															
TNMG-VB	331-VB																						0.610	3/8	3/16	1/64	5/32	0.004~0.014	0.012~0.059	MTENN	B110
	332-VB			●				●	●														0.571	3/8	3/16	1/32	5/32	0.006~0.018	0.020~0.276	MTFNR/L	B110
	432-VB			●				●															0.787	1/2	3/16	1/32	13/64	0.006~0.018	0.020~0.098	MTGNR/L	B111
	433-VB																						0.748	1/2	3/16	3/64	13/64	0.008~0.020	0.039~0.276	MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
Finishing																															
TNMG-VC	331-VC	●		●				●															0.610	3/8	3/16	1/64	5/32	0.004~0.014	0.012~0.079	MTENN	B110
	332-VC			●				●															0.571	3/8	3/16	1/32	5/32	0.006~0.016	0.020~0.118	MTFNR/L	B110
	333-VC			●				●															0.531	3/8	3/16	3/64	5/32	0.006~0.018	0.020~0.118	MTGNR/L	B111
	432-VC			●																			0.787	1/2	3/16	1/32	13/64	0.006~0.016	0.020~0.118	MTJNR/L	B111
	433-VC																						0.748	1/2	3/16	3/64	13/64	0.006~0.018	0.020~0.118	PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
Medium to finishing																															

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

TN○○



Triangular **60° Negative**



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	⊖	⊖	✱			⊖							●	⊖	⊖	●	●			
Stainless steel	M				⊖	⊖	⊖	⊖	●	⊖	✱	⊖								⊖		
Cast iron	K							⊖					●	⊖	●						●	⊖
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							⊖	●	⊖	✱											
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ⊖ General cutting
- ✱ Interrupted cutting

Grade groups: Coated (NC3010–NC6210), Cermet (CN1000, CN2000, CN20), Coated (CC105, CC115), Uncoated (U20, H01, G10)

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders
TNMG-VL (Finishing)	331-VL	●		●																			0.610	3/8	3/16	1/64	5/32	0.002~0.010	0.004~0.040	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	332-VL	●		●				●															0.571	3/8	3/16	1/32	5/32	0.004~0.014	0.008~0.060	
	432-VL																						0.787	1/2	3/16	1/32	13/64	0.004~0.014	0.008~0.060	
	433-VL																						0.748	1/2	3/16	3/64	13/64	0.004~0.014	0.020~0.079	
TNMG-VF (Finishing)	221-VF							●								●							0.394	1/4	1/8	1/64	3/32	0.002~0.079	0.008~0.039	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	331-VF	●	●					●	●							●							0.610	3/8	3/16	1/64	5/32	0.003~0.012	0.020~0.059	
	332-VF	●	●	●				●															0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.020~0.059	
	333-VF			●																			0.531	3/8	3/16	3/64	5/32	0.006~0.020	0.020~0.059	
	431-VF			●				●				●											0.827	1/2	3/16	1/64	13/64	0.004~0.016	0.020~0.059	
	432-VF			●																			0.787	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059	
TNMG-VG (Finishing)	221-VG																						0.394	1/4	1/8	1/64	3/32	0.002~0.008	0.008~0.039	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	331-VG														●	●							0.610	3/8	3/16	1/64	5/32	0.003~0.012	0.020~0.059	
	332-VG																						0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.020~0.059	
	431-VG																						0.827	1/2	3/16	1/64	13/64	0.004~0.016	0.020~0.059	
TNMG-VM (Medium)	222-VM																						0.354	1/4	1/8	1/32	3/32	0.002~0.012	0.031~0.157	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	331-VM	●	●	●	●	●		●			●			●		●							0.610	3/8	3/16	1/64	5/32	0.002~0.012	0.035~0.197	
	332-VM	●	●	●	●			●		●	●	●		●		●							0.571	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.197	
	333-VM		●	●	●					●						●							0.531	3/8	3/16	3/64	5/32	0.005~0.024	0.051~0.197	
	431-VM			●																			0.827	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.260	
	432-VM		●	●				●	●	●													0.787	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.260	
	433-VM			●	●																		0.748	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.260	
TNMG-VP2 New (Medium to finishing)	331-VP2			●					●	●	●												0.610	3/8	3/16	1/64	5/32	0.002~0.012	0.004~0.118	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	332-VP2			●					●	●	●												0.571	3/8	3/16	1/32	5/32	0.004~0.018	0.020~0.197	
TNMG-VP3 New (Medium)	331-VP3							●	●		●												0.610	3/8	3/16	1/64	5/32	0.002~0.012	0.004~0.118	MTENN B110, MTFNR/L B110, MTGNR/L B111, MTJNR/L B111, PTFNR/L B100,130, PTGNR/L B100, PTTNR/L B101, WTENN B102, WTJNR/L B102, WTXNR/L B102
	332-VP3							●	●		●												0.571	3/8	3/16	1/32	5/32	0.004~0.018	0.020~0.197	

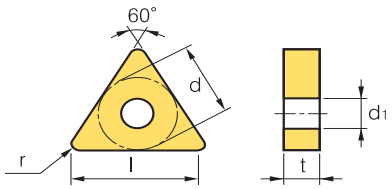



Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

TNOO

Triangular **60° Negative**



Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ✱ ● ● ● ● ● ● ● ●
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	

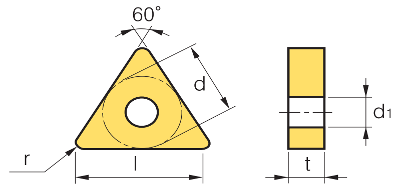
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders: Designation	Page
TNMG-VQ  Medium to finishing	221-VQ														●	●			●				0.394	1/4	1/8	1/64	3/32	0.002~0.012	0.020~0.138	MTENN	B110
	331-VQ														●	●			●				0.610	3/8	3/16	1/64	5/32	0.002~0.014	0.020~0.138	MTFNR/L	B110
	332-VQ															●			●				0.571	3/8	3/16	1/32	5/32	0.003~0.016	0.031~0.157	MTGNR/L	B111
	431-VQ																						0.827	1/2	3/16	1/64	13/64	0.002~0.014	0.020~0.157	MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMG-VW  Finishing(Wiper)	331-VW																						0.610	3/8	3/16	1/64	5/32	0.004~0.014	0.012~0.118	MTENN	B110
	332-VW												●										0.571	3/8	3/16	1/32	5/32	0.004~0.016	0.012~0.118	MTFNR/L	B110
																														MTGNR/L	B111
																														MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMG-VK  Heavy duty machining	331-VK											●											0.610	3/8	3/16	1/64	5/32	0.006~0.020	0.031~0.197	MTENN	B110
	332-VK								●			●											0.571	3/8	3/16	1/32	5/32	0.008~0.020	0.039~0.217	MTFNR/L	B110
	334-VK											●											0.492	3/8	3/16	3/64	5/32	0.006~0.020	0.059~0.217	MTGNR/L	B111
	432-VK											●											0.787	1/2	3/16	1/32	13/64	0.010~0.024	0.059~0.236	MTJNR/L	B111
	433-VK																						0.748	1/2	3/16	3/64	13/64	0.010~0.024	0.079~0.236	PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMM-GH  Heavy	332-GH			●																			0.571	3/8	3/16	1/32	5/32	0.008~0.020	0.039~0.276	MTENN	B110
	432-GH																						0.787	1/2	3/16	1/32	13/64	0.010~0.024	0.051~0.276	MTFNR/L	B110
	433-GH		●	●																			0.748	1/2	3/16	3/64	13/64	0.008~0.020	0.039~0.315	MTGNR/L	B111
	434-GH			●																			0.717	1/2	3/16	1/16	13/64	0.010~0.024	0.051~0.315	MTJNR/L	B111
	544-GH																						0.191	5/8	1/4	1/16	1/4	0.013~0.028	0.071~0.315	PTFNR/L	B100,130
	546-GH																						0.837	5/8	1/4	3/32	1/4	0.014~0.020	0.071~0.512	PTGNR/L	B100
	666-GH																						1.067	3/4	3/8	3/32	5/16	0.014~0.028	0.091~0.512	PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

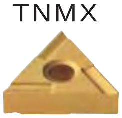
TN○○

Triangular 60° Negative



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	⊕	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

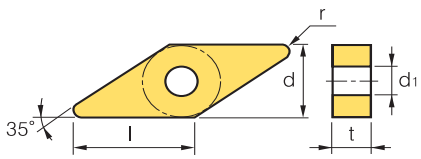
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TNMM-GM  Medium	333-GM																						0.531	3/8	3/16	3/64	5/32	0.005~0.024	0.051~0.197	MTENN	B110
	432-GM																						0.787	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.260	MTFNR/L	B110
	433-GM																						0.748	1/2	3/16	3/64	13/64	0.005~0.024	0.051~0.260	MTGNR/L	B111
	434-GM																						0.717	1/2	3/16	1/16	13/64	0.006~0.026	0.059~0.276	MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMM-GR  Roughing	432-GR																						0.787	1/2	3/16	1/32	13/64	0.009~0.024	0.043~0.307	MTENN	B110
	433-GR																						0.748	1/2	3/16	3/64	13/64	0.011~0.031	0.047~0.307	MTFNR/L	B110
	434-GR																						0.717	1/2	3/16	1/16	13/64	0.012~0.030	0.059~0.307	MTGNR/L	B111
																														MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMN  Medium Roughing	332																						0.571	3/8	3/16	1/32	-	0.004~0.012	0.039~0.157	CTFNR/L	B121
	432															●							0.787	1/2	3/16	1/32	-	0.006~0.016	0.059~0.197	CTGNR/L	B121
	433																						0.748	1/2	3/16	3/64	-	0.008~0.020	0.059~0.197		
TNMX  Medium Roughing	330.5R															●							0.650	3/8	3/16	1/128	5/32	0.004~0.012	0.020~0.118	MTENN	B110
	331R		●	●	●			●								●	●						0.610	3/8	3/16	1/64	5/32	0.005~0.012	0.039~0.138	MTFNR/L	B110
	332R			●	●											●	●						0.571	3/8	3/16	1/32	5/32	0.006~0.014	0.051~0.134	MTGNR/L	B111
	431R																						0.827	1/2	3/16	1/64	13/64	0.005~0.012	0.039~0.197	MTJNR/L	B111
	432R																						0.787	1/2	3/16	1/32	13/64	0.006~0.014	0.051~0.197	PTFNR/L	B100,130
	331L		●	●												●							0.610	3/8	3/16	1/64	5/32	0.005~0.012	0.039~0.138	PTGNR/L	B100
	332L		●	●	●																		0.571	3/8	3/16	1/32	5/32	0.006~0.014	0.051~0.134	PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102
TNMX-SH  New Medium	331R-SH																						0.610	3/8	3/16	1/64	5/32	0.006~0.012	0.020~0.157	MTENN	B110
	332R-SH																						0.571	3/8	3/16	1/32	5/32	0.006~0.018	0.039~0.157	MTFNR/L	B110
	331L-SH																						0.610	3/8	3/16	1/64	5/32	0.006~0.012	0.020~0.157	MTGNR/L	B111
	332L-SH																						0.571	3/8	3/16	1/32	5/32	0.006~0.018	0.039~0.157	MTJNR/L	B111
																														PTFNR/L	B100,130
																														PTGNR/L	B100
																														PTTNR/L	B101
																														WTENN	B102
																														WTJNR/L	B102
																														WTXNR/L	B102

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

VNOO

Rhombic **35° Negative**

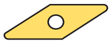


Workpiece			Machining types	
	Steel	P		Continuous cutting
	Stainless steel	M		General cutting
	Cast iron	K		Interrupted cutting
	Non-ferrous metal	N		
	Heat resistant alloy, Titanium alloy	S		
	Hardened steel	H		

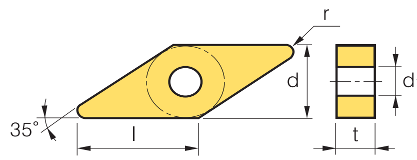
Inserts	Designation	Coated												Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC3020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
VNGG-HA	332-HA								●														0.575	3/8	3/16	1/32	5/32	0.004~0.016	0.031~0.138	MVJNR/L	**B111**
																													MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Medium to finishing																														
VNMG-GM	331-GM				●										●	●							0.614	3/8	3/16	1/64	5/32	0.003~0.018	0.020~0.138	MVJNR/L	**B111**
	332-GM				●										●								0.575	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.197	MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Medium																														
VNMG-HA	331-HA								●												●		0.614	3/8	3/16	1/64	5/32	0.003~0.014	0.020~0.118	MVJNR/L	**B111**
	332-HA								●														0.575	3/8	3/16	1/32	5/32	0.004~0.016	0.032~0.138	MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Medium to finishing																														
VNMG-HR	332-HR																						0.575	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	MVJNR/L	**B111**
																													MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Roughing																														
VNMG-HS	331-HS						●		●	●	●												0.614	3/8	3/16	1/64	5/32	0.003~0.014	0.020~0.157	MVJNR/L	**B111**
	332-HS								●	●	●												0.575	3/8	3/16	1/32	5/32	0.004~0.016	0.039~0.177	MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Medium																														
VNMG-VB	331-VB	●		●					●														0.614	3/8	3/16	1/64	5/32	0.004~0.014	0.012~0.059	MVJNR/L	**B111**
	332-VB			●																			0.575	3/8	3/16	1/32	5/32	0.006~0.018	0.020~0.079	MVQNR/L	**B112**
																													MVVNN	**B112**
																													MVUNR/L	**B133**
Finishing																														

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

VN○○



Rhombic **35° Negative**



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	✱	◐								◐		
Cast iron	K							◐					●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐	✱											
Hardened steel	H																					

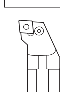
Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

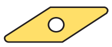
Inserts	Designation	Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
VNMG-VC  Medium to finishing	331-VC																						0.614	3/8	3/16	1/64	5/32	0.004~0.014	0.012~0.079	MVJNR/L	B111
	332-VC																						0.575	3/8	3/16	1/32	5/32	0.006~0.016	0.020~0.118	MVQNR/L	B112
																														MVVNN	B112
																														MVUNR/L	B133
VNMG-VP3  Medium	331-VP3										●												0.614	3/8	3/16	1/64	5/32	0.002~0.012	0.004~0.118	MVJNR/L	B111
	332-VP3								●	●	●												0.575	3/8	3/16	1/32	5/32	0.004~0.018	0.020~0.197	MVQNR/L	B112
																														MVVNN	B112
																														MVUNR/L	B133
VNMG-VL  Finishing(Mild steel)	331-VL	●		●				●															0.614	3/8	3/16	1/64	5/32	0.002~0.008	0.004~0.040	MVJNR/L	B111
	332-VL	●		●				●								●							0.575	3/8	3/16	1/32	5/32	0.004~0.010	0.008~0.006	MVQNR/L	B112
																														MVVNN	B112
																														MVUNR/L	B133
VNMG-VF  Finishing	330.5-VF		●						●					●		●							0.634	3/8	3/16	1/128	5/32	0.002~0.008	0.012~0.039	MVJNR/L	B111
	331-VF	●	●	●				●								●							0.614	3/8	3/16	1/64	5/32	0.002~0.008	0.020~0.059	MVQNR/L	B112
	332-VF		●	●				●															0.575	3/8	3/16	1/32	5/32	0.003~0.012	0.020~0.059	MVVNN	B112
																														MVUNR/L	B133

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

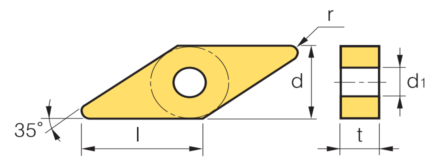
● : Stock item



VN○○



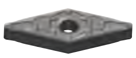
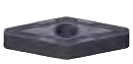
Rhombic **35° Negative**



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	⊕	◐								◐		
Cast iron	K							◐					●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐	⊕											
Hardened steel	H																					

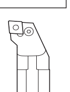
Machining types

- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition			
VNMG-VG  Finishing	331-VG																						0.614	3/8	3/16	1/64	5/32	0.002~0.008	0.020~0.059	MVJNR/L	**B111**
	332-VG																						0.575	3/8	3/16	1/32	5/32	0.003~0.012	0.020~0.059	MVQNR/L	**B112**
																														MVVNN	**B112**
																														MVUNR/L	**B133**
VNMG-VM  Medium	331-VM	●		●	●			●		●	●			●		●							0.614	3/8	3/16	1/64	5/32	0.003~0.018	0.020~0.138	MVJNR/L	**B111**
	332-VM	●	●	●	●			●	●	●	●	●		●		●							0.575	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	MVQNR/L	**B112**
	333-VM			●																			0.535	3/8	3/16	3/64	5/32	0.008~0.020	0.059~0.157	MVVNN	**B112**
	431-VM																						0.831	1/2	3/16	1/64	5/32	0.003~0.018	0.039~0.197	MVUNR/L	**B133**
	432-VM																						0.787	1/2	3/16	1/32	5/32	0.004~0.020	0.059~0.197		
VNMG-VQ  Medium to finishing	331-VQ														●	●			●				0.614	3/8	3/16	1/64	5/32	0.004~0.016	0.020~0.138	MVJNR/L	**B111**
	332-VQ															●			●				0.575	3/8	3/16	1/32	5/32	0.005~0.018	0.020~0.138	MVQNR/L	**B112**
																														MVVNN	**B112**
																														MVUNR/L	**B133**
VNMG-VK  Medium Roughing	333-VK													●									0.535	3/8	3/16	3/64	5/32	0.006~0.020	0.031~0.157	MVJNR/L	**B111**
																														MVQNR/L	**B112**
																														MVVNN	**B112**
																														MVUNR/L	**B133**

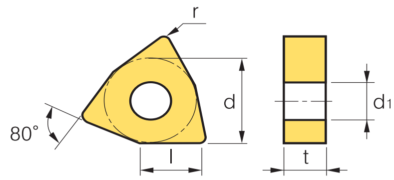
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item



WN○○

Trigon 80° Negative



Workpiece		P/M/K/N/S/H	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
	Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
	Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
	Cast iron	K							◐				●	◐	✱	●						●	◐
	Non-ferrous metal	N																					
	Heat resistant alloy, Titanium alloy	S							◐	●	◐												
	Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

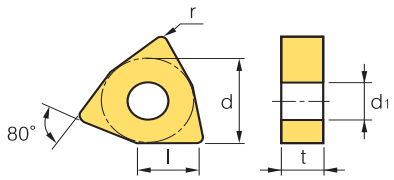
Inserts	Designation	Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
WNMA	331																						0.244	3/8	3/16	1/64	5/32	0.004~0.012	0.020~0.118	MWLNR/L	B112
	332												●										0.240	3/8	3/16	1/32	5/32	0.004~0.012	0.020~0.118	PWLNR/L	B130
	333																						0.236	3/8	3/16	3/64	5/32	0.004~0.012	0.039~0.118	WWLNR/L	B103
	431																						0.331	1/2	3/16	1/64	13/64	0.006~0.024	0.039~0.197		
	432											●	●	●									0.327	1/2	3/16	1/32	13/64	0.006~0.024	0.039~0.236		
Roughing	433												●										0.323	1/2	3/16	3/64	13/64	0.006~0.028	0.059~0.236		
WNMG-B25	431-B25																						0.331	1/2	3/16	1/64	13/64	0.007~0.018	0.039~0.197	MWLNR/L	B112
	432-B25			●	●								●										0.327	1/2	3/16	1/32	13/64	0.009~0.024	0.059~0.197	PWLNR/L	B130
Medium Roughing	433-B25																						0.323	1/2	3/16	3/64	13/64	0.010~0.024	0.079~0.197	WWLNR/L	B103
WNMG-GM	331-GM																						0.244	3/8	3/16	1/64	5/32	0.002~0.012	0.004~0.118	MWLNR/L	B112
	332-GM	●			●																		0.240	3/8	3/16	1/32	5/32	0.004~0.018	0.039~0.138	PWLNR/L	B130
	431-GM				●																		0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197	WWLNR/L	B103
	432-GM	●	●		●																		0.327	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197		
Medium	433-GM	●											●										0.323	1/2	3/16	3/64	13/64	0.004~0.024	0.051~0.197		
WNMG-GR	431-GR																						0.331	1/2	3/16	1/64	13/64	0.006~0.020	0.003~0.236	MWLNR/L	B112
	432-GR	●	●	●	●			●					●	●									0.327	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	PWLNR/L	B130
	433-GR	●	●	●	●			●						●									0.323	1/2	3/16	3/64	13/64	0.010~0.020	0.051~0.276	WWLNR/L	B103
Roughing	434-GR	●																					0.319	1/2	3/16	1/16	13/64	0.010~0.024	0.071~0.236		
WNMG-GS	331-GS								●														0.244	3/8	3/16	1/64	5/32	0.002~0.010	0.039~0.118	MWLNR/L	B112
	332-GS								●	●													0.240	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	PWLNR/L	B130
	333-GS																						0.236	3/8	3/16	3/64	5/32	0.004~0.020	0.039~0.157	WWLNR/L	B103
	431-GS					●			●	●	●												0.331	1/2	3/16	1/64	13/64	0.002~0.010	0.039~0.118		
	432-GS			●		●	●		●	●	●												0.327	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197		
Medium Roughing	433-GS																						0.323	1/2	3/16	3/64	13/64	0.005~0.026	0.039~0.197		
WNMG-HA	331-HA								●		●										●		0.244	3/8	3/16	1/64	5/32	0.002~0.012	0.031~0.098	MWLNR/L	B112
	332-HA										●										●		0.240	3/8	3/16	1/32	5/32	0.004~0.016	0.031~0.098	PWLNR/L	B130
	431-HA		●			●			●		●										●		0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.138	WWLNR/L	B103
	432-HA						●		●		●										●		0.327	1/2	3/16	1/32	13/64	0.004~0.016	0.031~0.138		
Medium to finishing	433-HA																						0.323	1/2	3/16	3/64	13/64	0.005~0.022	0.031~0.138		
WNMG-HC	331-HC																						0.244	3/8	3/16	1/64	5/32	0.002~0.012	0.031~0.157	MWLNR/L	B112
	431-HC																						0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.031~0.157	PWLNR/L	B130
Medium to finishing	432-HC				●			●															0.327	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157	WWLNR/L	B103
WNMG-HR	332-HR																						0.240	3/8	3/16	1/32	5/32	0.008~0.016	0.039~0.217	MWLNR/L	B112
	333-HR																						0.236	3/8	3/16	3/64	5/32	0.010~0.020	0.043~0.217	PWLNR/L	B130
	432-HR	●			●																		0.327	1/2	3/16	1/32	13/64	0.008~0.020	0.039~0.276	WWLNR/L	B103
	433-HR	●			●																		0.323	1/2	3/16	3/64	13/64	0.010~0.026	0.051~0.276		
Roughing	434-HR																						0.319	1/2	3/16	1/16	13/64	0.013~0.028	0.071~0.276		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

WN○○

Trigon **80° Negative**



Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

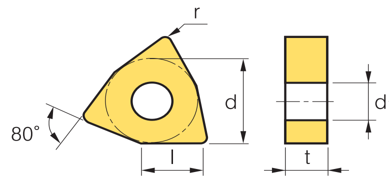
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated											Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC3020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
WNMG-HS	331-HS								●	●													0.244	3/8	3/16	1/64	5/32	0.002~0.008	0.039~0.098	MWLNR/L **B112**	
	332-HS						●		●	●	●												0.240	3/8	3/16	1/32	5/32	0.004~0.008	0.039~0.098	PWLNR/L **B130**	
	333-HS										●												0.236	3/8	3/16	3/64	5/32	0.004~0.012	0.039~0.138	WWLNR/L **B103**	
	431-HS						●		●		●												0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.039~0.177		
	432-HS					●	●		●	●	●												0.327	1/2	3/16	1/32	13/64	0.004~0.016	0.039~0.177		
	433-HS						●				●												0.323	1/2	3/16	3/64	13/64	0.005~0.022	0.039~0.177		
Medium																															
WNMG-LW	332-LW	●																					0.240	3/8	3/16	1/32	3/20	0.006~0.024	0.020~0.138	MWLNR/L **B112**	
	333-LW																						0.236	3/8	3/16	3/64	3/20	0.008~0.028	0.031~0.138	PWLNR/L **B130**	
	432-LW	●						●															0.327	1/2	3/16	1/32	13/64	0.006~0.024	0.039~0.197	WWLNR/L **B103**	
	433-LW	●											●										0.323	1/2	3/16	3/64	13/64	0.008~0.028	0.039~0.236		
Wiper Medium																															
WNMG-VL	331-VL																						0.244	3/8	3/16	1/64	5/32	0.002~0.010	0.008~0.059	MWLNR/L **B112**	
	431-VL			●																			0.331	1/2	3/16	1/64	13/64	0.002~0.010	0.004~0.040	PWLNR/L **B130**	
	432-VL	●		●				●															0.327	1/2	3/16	1/32	13/64	0.004~0.014	0.008~0.060	WWLNR/L **B103**	
Finishing(Mild steel)																															
WNMG-VB	431-VB	●		●				●	●														0.331	1/2	3/16	1/64	13/64	0.004~0.014	0.012~0.059	MWLNR/L **B112**	
	432-VB	●		●				●															0.327	1/2	3/16	1/32	13/64	0.006~0.018	0.020~0.079	PWLNR/L **B130**	
Finishing																														WWLNR/L **B103**	
WNMG-VC	431-VC																						0.331	1/2	3/16	1/64	13/64	0.006~0.016	0.006~0.157	MWLNR/L **B112**	
	432-VC			●																			0.327	1/2	3/16	1/32	13/64	0.006~0.018	0.006~0.177	PWLNR/L **B130**	
					●			●																						WWLNR/L **B103**	
Medium to finishing																															
WNMG-VF	331-VF	●						●								●							0.240	3/8	3/16	1/64	3/20	0.003~0.012	0.020~0.059	MWLNR/L **B112**	
	332-VF	●		●																			0.240	3/8	3/16	1/32	3/20	0.004~0.016	0.020~0.059	PWLNR/L **B130**	
	431-VF	●	●					●															0.331	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	WWLNR/L **B103**	
	432-VF			●				●															0.327	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059		
Finishing																															
WNMG-VG	331-VG																						0.244	3/8	3/16	1/64	5/32	0.003~0.012	0.020~0.059	MWLNR/L **B112**	
	332-VG																						0.240	3/8	3/16	1/32	5/32	0.004~0.016	0.020~0.059	PWLNR/L **B130**	
	431-VG															●							0.331	1/2	3/16	1/64	13/64	0.003~0.012	0.020~0.059	WWLNR/L **B103**	
	432-VG																						0.327	1/2	3/16	1/32	13/64	0.004~0.016	0.020~0.059		
Finishing																															

Cutting edge geometry **A31 ~ A34** | Recommended chip breaker **B04 ~ B11** | Code system **B16 ~ B17** | S.P : **Special** | ● : Stock item

WN○○

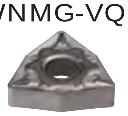
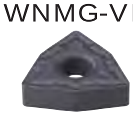
Trigon **80° Negative**



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	✱	◐								◐		
Cast iron	K							◐					●	◐	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐	✱											
Hardened steel	H																					

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

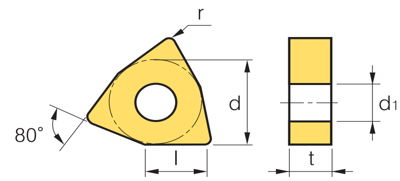
Inserts	Designation	Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
WNMG-VM	330.5-VM																						0.255	3/8	3/16	1/128	5/32	0.002~0.012	0.035~0.138	MWLNR/L	B112
	331-VM	●		●	●			●															0.244	3/8	3/16	1/64	5/32	0.004~0.018	0.039~0.138	PWLNR/L	B130
	332-VM	●	●	●	●			●		●				●									0.240	3/8	3/16	1/32	5/32	0.004~0.020	0.039~0.157	WWLNR/L	B103
	333-VM																						0.236	3/8	3/16	3/64	5/32	0.005~0.024	0.051~0.157		
	431-VM		●	●				●			●			●									0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.035~0.197		
	432-VM	●	●	●	●			●	●	●	●	●		●									0.327	1/2	3/16	1/32	13/64	0.004~0.020	0.039~0.197		
Medium	433-VM		●	●	●			●		●				●									0.323	1/2	3/16	3/64	13/64	0.004~0.020	0.039~0.197		
WNMG-VQ	331-VQ															●							0.244	3/8	3/16	1/64	5/32	0.002~0.012	0.020~0.157	MWLNR/L	B112
	332-VQ																						0.240	3/8	3/16	1/32	5/32	0.003~0.012	0.031~0.157	PWLNR/L	B130
	431-VQ														●	●							0.331	1/2	3/16	1/64	13/64	0.002~0.012	0.020~0.157	WWLNR/L	B103
Medium to finishing	432-VQ																						0.327	1/2	3/16	1/32	13/64	0.003~0.016	0.031~0.157		
WNMG-VW	431-VW																						0.331	1/2	3/16	1/64	13/64	0.004~0.012	0.020~0.118	MWLNR/L	B112
 Finishing(Wiper)	432-VW																						0.327	1/2	3/16	1/32	13/64	0.006~0.020	0.020~0.157	PWLNR/L	B130
																														WWLNR/L	B103
WNMG-VK	431-VK													●									0.331	1/2	3/16	1/64	13/64	0.006~0.197	0.031~0.236	MWLNR/L	B112
	432-VK												●	●									0.327	1/2	3/16	1/32	13/64	0.008~0.197	0.039~0.276	PWLNR/L	B130
	433-VK												●	●									0.323	1/2	3/16	3/64	13/64	0.010~0.197	0.051~0.276	WWLNR/L	B103
Medium Roughing	434-VK																						0.319	1/2	3/16	3/64	13/64	0.010~0.236	0.071~0.236		
WNMG-VP2	431-VP2			●					●	●	●												0.331	1/2	3/16	1/64	13/64	0.004~0.018	0.020~0.197	MWLNR/L	B112
	432-VP2			●					●	●	●												0.327	1/2	3/16	1/32	13/64	0.005~0.020	0.020~0.197	PWLNR/L	B130
Medium to finishing	433-VP2																						0.323	1/2	3/16	3/64	13/64	0.002~0.012	0.004~0.118	WWLNR/L	B103
WNMG-VP3	431-VP3										●												0.331	1/2	3/16	1/64	13/64	0.004~0.018	0.020~0.197	MWLNR/L	B112
	432-VP3								●	●	●												0.327	1/2	3/16	1/32	13/64	0.005~0.020	0.020~0.197	PWLNR/L	B130
Medium	433-VP3								●	●													0.323	1/2	3/16	3/64	13/64	0.002~0.012	0.004~0.118	WWLNR/L	B103
WNMM-B25	542-B25				●																		0.394	5/8	1/4	1/32	1/4	0.012~0.031	0.118~0.315	MWLNR/L	B112
	643-B25																						0.472	3/4	1/4	3/64	5/16	0.016~0.035	0.157~0.394	PWLNR/L	B130
Medium Roughing																														WWLNR/L	B103

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

WN○○

Trigon 80° Negative



Workpiece			NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
	Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
	Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
	Cast iron	K							◐				●	◐	⊕	●						●	◐
	Non-ferrous metal	N																					
	Heat resistant alloy, Titanium alloy	S							◐	●	◐												
	Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition			
WNMX-SH New  Medium	431R-SH																						0.331	1/2	3/16	1/64	13/64	0.006~0.012	0.039~0.157	MWLNR/L	B112
	432R-SH																						0.327	1/2	3/16	1/32	13/64	0.006~0.020	0.059~0.197	PWLNR/L	B130
	431L-SH																						0.331	1/2	3/16	1/64	13/64	0.006~0.012	0.039~0.157	WWLNR/L	B103
	432L-SH																						0.327	1/2	3/16	1/32	13/64	0.006~0.020	0.059~0.197		

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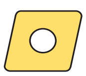
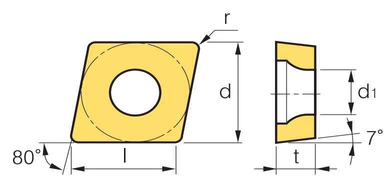


Rhombic 80° Positive

Relief Angle : 7°

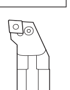


Workpiece			NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
	Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
	Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
	Cast iron	K							◐				●	◐	⊕	●						●	◐
	Non-ferrous metal	N																					
	Heat resistant alloy, Titanium alloy	S							◐	●	◐												
	Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition			
CCET  Finishing	1.210.05R																						0.142	9/64	7/128	S.P	5/64	0.001~0.002	0.004~0.012	SCLCR/L	B141
	1.210R																						0.138	9/64	7/128	1/256	5/64	0.001~0.002	0.004~0.012		
	1.210.5R																						0.130	9/64	7/128	1/128	5/64	0.001~0.002	0.004~0.012		
	1.211R																						0.122	9/64	7/128	1/64	5/64	0.001~0.002	0.004~0.012		
	1.510.05R																						0.169	11/64	9/128	S.P	3/32	0.001~0.004	0.004~0.020		
	1.510R																						0.165	11/64	9/128	1/256	3/32	0.001~0.004	0.004~0.020		
	1.510.5R																						0.161	11/64	9/128	1/128	3/32	0.001~0.004	0.004~0.020		
	1.511R																						0.154	11/64	9/128	1/64	3/32	0.001~0.004	0.004~0.020		
	1.210.05L																						0.142	9/64	7/128	S.P	5/64	0.001~0.002	0.004~0.012		
	1.210L																						0.138	9/64	7/128	1/256	5/64	0.001~0.002	0.004~0.012		
	1.210.5L									●				●	●					●			0.130	9/64	7/128	1/128	5/64	0.001~0.002	0.004~0.012		
	1.211L																						0.122	9/64	7/128	1/64	5/64	0.001~0.002	0.004~0.012		
	1.510.05L																						0.169	11/64	9/128	S.P	3/32	0.001~0.004	0.004~0.020		
	1.510L																						0.165	11/64	9/128	1/256	3/32	0.001~0.004	0.004~0.020		
	1.510.5L									●				●	●					●			0.161	11/64	9/128	1/128	3/32	0.001~0.004	0.004~0.020		
	1.511L																						0.154	11/64	9/128	1/64	3/32	0.001~0.004	0.004~0.020		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item



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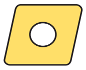
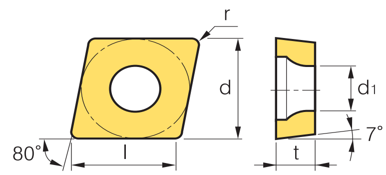


Rhombic 80° Positive

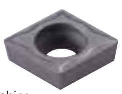
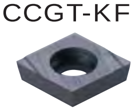
Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	⊕	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types

- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

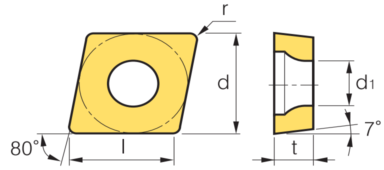
Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10	Dimensions (inch): l	d	t	r	d1	Cutting Condition: fn (ipr)	ap (inch)	Available tool holders: Designation	Page
CCGT-C05 	21.50.5-C05																						0.244	1/4	3/32	1/128	7/64	0.002~0.004	0.002~0.067	SCACR/L	B113
	21.51-C05																						0.236	1/4	3/32	1/64	7/64	0.003~0.007	0.004~0.067	SCLCR/L	B113
	32.51-C05																						0.362	3/8	5/32	1/64	11/64	0.004~0.009	0.004~0.079		
	32.52-C05																						0.346	3/8	5/32	1/32	11/64	0.003~0.012	0.008~0.079		
	431-C05																						0.488	1/2	3/16	1/64	7/32	0.003~0.011	0.004~0.106		
Finishing	432-C05																						0.472	1/2	3/16	1/32	7/32	0.003~0.012	0.008~0.106		
CCGT-HFP 	21.50.5-HFP																						0.244	6.35	3/32	1/128	7/64	0.001~0.002	0.002~0.047	SCACR/L	B113
	21.51-HFP									●													0.236	6.35	3/32	1/64	7/64	0.002~0.005	0.004~0.047	SCLCR/L	B113
	21.52-HFP																						0.220	6.35	3/32	1/32	7/64	0.002~0.005	0.005~0.055		
	32.50.5-HFP																						0.370	9.525	5/32	1/12	11/64	0.002~0.006	0.003~0.059		
	32.51-HFP				●					●	●												0.362	9.525	5/32	1/64	11/64	0.002~0.007	0.004~0.059		
Finishing	32.52-HFP									●													0.346	9.525	5/32	1/32	11/64	0.003~0.010	0.008~0.059		
	431-HFP																						0.488	12.7	3/16	1/64	7/32	0.002~0.008	0.004~0.079		
	432-HFP																						0.472	12.7	3/16	1/32	7/32	0.004~0.010	0.008~0.079		
CCGT-KF 	21.5R-KF																						0.256	1/4	3/32	S.P	7/64	~0.002	0.002~0.051	SCACR/L	B113
	21.50R-KF																						0.256	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059	SCLCR/L	B113
	21.50.5R-KF																						0.256	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.067		
	32.5R-KF																						0.382	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50R-KF																						0.382	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5R-KF																						0.382	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
	21.5L-KF																						0.256	1/4	3/32	S.P	7/64	~0.002	0.002~0.051		
	21.50L-KF																						0.256	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059		
Finishing	21.50.5L-KF																						0.256	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.067		
	32.5L-KF																						0.382	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50L-KF																						0.382	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5L-KF																						0.382	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
CCGT-KM 	21.5R-KM																						0.256	1/4	3/32	S.P	7/64	~0.002	0.002~0.051	SCACR/L	B113
	21.50R-KM																						0.256	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059	SCLCR/L	B113
	21.50.5R-KM										●												0.256	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.067		
	32.5R-KM																						0.382	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50R-KM																						0.382	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5R-KM																						0.382	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
	21.5L-KM																						0.256	1/4	3/32	S.P	7/64	~0.002	0.002~0.051		
Medium	21.50L-KM																						0.256	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059		
	21.50.5L-KM																						0.256	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.067		
	32.5L-KM																						0.382	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50L-KM																						0.382	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5L-KM																						0.382	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

CC○○

Rhombic 80° Positive

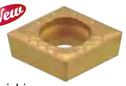
Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	H01	G10
Steel	P	●	◐	◐	⊕			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	⊕	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types

- ● Continuous cutting
- ◐ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	Coated														Cermet			Coated		Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
CCGT-VP1	21.503-VP1								●	●													0.252	1/4	3/32	1/256	7/64	0.002~0.003	0.002~0.039	SCACR/L	B113
New 	21.50.5-VP1								●	●													0.244	1/4	3/32	1/128	7/64	0.001~0.004	0.003~0.059	SCLCR/L	B113
	21.51-VP1			●					●	●													0.236	1/4	3/32	1/64	7/64	0.002~0.005	0.004~0.059		
	32.503-VP1								●	●													0.378	3/8	5/32	1/256	11/64	0.001~0.005	0.002~0.039		
	32.51-VP1								●	●													0.362	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059		
Finishing	32.52-VP1			●					●	●													0.346	3/8	5/32	1/64	11/64	0.002~0.008	0.004~0.059		
CCMT-C25	21.50.5-C25			●	●																		0.244	1/4	3/32	1/128	7/64	0.001~0.005	0.016~0.079	SCACR/L	B113
	21.51-C25	●	●	●	●			●			●	●		●				●					0.236	1/4	3/32	1/64	7/64	0.002~0.006	0.024~0.091	SCLCR/L	B113
	21.52-C25			●	●									●									0.220	1/4	3/32	1/32	7/64	0.003~0.008	0.031~0.091		
	2.522-C25			●																			0.283	5/16	1/8	1/32	9/64	0.003~0.010	0.031~0.091		
	32.51-C25	●	●	●	●	●		●	●	●	●	●		●		●		●					0.362	3/8	5/32	1/64	11/64	0.003~0.010	0.031~0.118		
	32.52-C25	●	●	●	●	●		●		●	●	●		●				●					0.346	3/8	5/32	1/32	11/64	0.004~0.012	0.039~0.118		
	431-C25			●	●			●			●			●									0.488	1/2	5/32	1/64	7/32	0.004~0.013	0.031~0.118		
Medium	432-C25	●	●	●	●			●			●			●									0.472	1/2	3/16	1/32	7/32	0.005~0.014	0.047~0.138		
	433-C25																						0.457	1/2	3/16	3/64	7/32	0.006~0.016	0.055~0.138		
CCMT-HFP	21.50.5-HFP																						0.244	1/4	3/32	1/128	7/64	0.001~0.002	0.003~0.047	SCACR/L	B113
	21.51-HFP																						0.236	1/4	3/32	1/64	7/64	0.002~0.005	0.004~0.047	SCLCR/L	B113
	21.52-HFP																						0.220	1/4	3/32	1/32	7/64	0.002~0.005	0.004~0.055		
	32.50.5-HFP							●															0.370	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059		
	32.51-HFP				●																		0.362	3/8	5/32	1/64	11/64	0.002~0.007	0.004~0.059		
	32.52-HFP																						0.031	3/8	5/32	1/32	11/64	0.003~0.010	0.008~0.059		
Finishing	431-HFP																						0.094	1/2	3/16	1/64	7/32	0.003~0.009	0.004~0.079		
	432-HFP																						0.472	1/2	3/16	1/32	7/32	0.003~0.012	0.005~0.087		
CCMT-HMP	21.50.5-HMP	●		●		●			●			●											0.244	1/4	3/32	1/128	7/64	0.001~0.005	0.004~0.059	SCACR/L	B113
	21.51-HMP	●	●	●	●	●		●	●	●		●		●	●	●							0.236	1/4	3/32	1/64	7/64	0.002~0.007	0.008~0.094	SCLCR/L	B113
	21.52-HMP	●		●	●			●	●			●											0.220	1/4	3/32	1/32	7/64	0.003~0.009	0.016~0.094		
	32.50.5-HMP			●		●		●	●			●											0.370	3/8	5/32	1/128	11/64	0.003~0.009	0.004~0.079		
	32.51-HMP	●	●	●	●	●		●	●	●		●		●		●				●			0.362	3/8	5/32	1/64	11/64	0.003~0.009	0.012~0.118		
	32.52-HMP	●	●	●	●	●		●	●	●		●		●	●								0.346	3/8	5/32	1/64	11/64	0.004~0.012	0.020~0.118		
Medium to finishing	431-HMP			●	●	●				●		●		●	●								0.488	1/2	3/16	1/64	7/32	0.004~0.011	0.012~0.142		
	432-HMP	●	●	●	●			●		●		●		●	●								0.482	1/2	3/16	1/32	7/32	0.009~0.014	0.020~0.142		
	433-HMP																						0.457	1/2	3/16	3/64	7/32	0.006~0.017	0.028~0.142		
CCMT-VL	32.51-VL	●		●				●	●								●						0.370	3/8	5/32	1/64	11/64	0.002~0.004	0.004~0.040	SCACR/L	B113
New 	32.52-VL			●				●	●														0.362	3/8	5/32	1/32	11/64	0.003~0.006	0.004~0.040	SCLCR/L	B113
Finishing																															
CCMT-VF	21.50.5-VF	●		●					●	●				●		●							0.244	1/4	3/32	1/128	7/64	0.002~0.008	0.001~0.040	SCACR/L	B113
	21.51-VF	●		●					●	●							●						0.236	1/4	3/32	1/64	7/64	0.004~0.010	0.001~0.040	SCLCR/L	B113
	32.50.5-VF	●		●					●														0.370	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.060		
	32.51-VF	●		●					●	●				●		●	●						0.362	3/8	5/32	1/64	11/64	0.002~0.008	0.012~0.060		
Finishing	32.52-VF			●				●		●				●									0.346	3/8	5/32	1/32	11/64	0.004~0.010	0.012~0.060		
	431-VF	●		●										●									0.488	1/2	3/16	1/64	7/32	0.003~0.009	0.004~0.080		

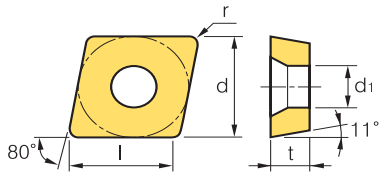
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

CP○○

Rhombic **80° Positive**

Relief Angle : 11°



Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

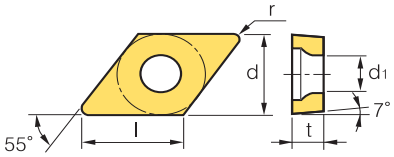
Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC3020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: ST30A	H01	G10	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
CPGT Finishing	2.5150.5														●								0.307	5/16	3/32	1/128	9/64	0.002~0.008	0.004~0.079	SCLPR/L	**B134**
	2.51.51														●	●							0.299	5/16	3/32	1/64	9/64	0.003~0.008	0.012~0.079		
	2.51.52																						0.283	5/16	3/32	1/32	9/64	0.004~0.010	0.020~0.079		
	320.5																						0.370	3/8	1/8	1/128	11/64	0.002~0.008	0.012~0.059		
	321														●	●							0.362	3/8	1/8	1/64	11/64	0.002~0.010	0.020~0.079		
	322																						0.346	3/8	1/8	1/32	11/64	0.003~0.012	0.292~0.098		
CPGT-C05 Finishing	2.51.51-C05			●																			0.299	5/16	3/32	1/64	9/64	0.001~0.006	0.020~0.067	SCLPR/L	**B134**
	2.51.52-C05																						0.283	5/16	3/32	1/32	9/64	0.002~0.007	0.020~0.067		
	321-C05			●																			0.362	3/8	1/8	1/64	11/64	0.001~0.008	0.028~0.079		
	322-C05																						0.346	3/8	1/8	1/32	11/64	0.002~0.008	0.028~0.079		
CPGT-HMP Medium to finishing	322-HMP																						0.346	3/8	1/8	1/32	11/64	0.002~0.008	0.028~0.079	SCLPR/L	**B134**
CPMT-VF Finishing	2.51.51-VF																						0.299	5/16	3/32	1/64	9/64	0.002~0.008	0.012~0.047	SCLPR/L	**B134**
	2.51.52-VF																						0.283	5/16	3/32	1/32	9/64	0.004~0.008	0.012~0.047		
	321-VF							●															0.362	3/8	1/8	1/64	11/64	0.002~0.008	0.012~0.059		
	322-VF							●															0.346	3/8	1/8	1/32	11/64	0.004~0.008	0.012~0.059		

Cutting edge geometry **A31 ~ A34** | Recommended chip breaker **B04 ~ B11** | Code system **B16 ~ B17** | S.P : **Special** | ● : Stock item

DC○○

Rhombic **55° Positive**

Relief Angle : 7°

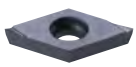


Workpiece

Steel	P
Stainless steel	M
Cast iron	K
Non-ferrous metal	N
Heat resistant alloy, Titanium alloy	S
Hardened steel	H

Machining types

- ● Continuous cutting
- ⬬ General cutting
- ✱ Interrupted cutting

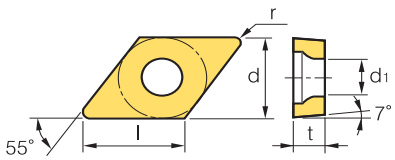
Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	Coated: CN20	CC105	CC115	Uncoated: A30	H01	G10	Dimensions (inch): l	d	t	r	d1	Cutting Condition: fn (ipr)	ap (inch)	Available tool holders: Designation	Page
DCGT-C05  Finishing	21.50.5-C05																						0.295	1/4	3/32	1/128	7/64	0.002~0.004	0.002~0.059	SDACR/L	B113
	21.51-C05																						0.287	1/4	3/32	1/64	7/64	0.002~0.007	0.003~0.059	SDJCR/L	B114
	32.50.5-C05																						0.449	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079	SDNCN	B114
	32.51-C05																●						0.441	3/8	5/32	1/64	11/64	0.002~0.009	0.004~0.079	SDQCR/L	B135
	32.52-C05																						0.425	3/8	5/32	1/32	11/64	0.003~0.012	0.008~0.079	SDUCR/L	B135
																														SDZCR/L	B136
DCGT-HFP  Finishing	21.50.5-HFP																						0.295	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.039	SDACR/L	B113
	21.51-HFP																						0.287	1/4	3/32	1/64	7/64	0.002~0.005	0.003~0.039	SDJCR/L	B114
	21.52-HFP																						0.268	1/4	3/32	1/32	7/64	0.002~0.005	0.004~0.039	SDNCN	B114
	32.50-HFP																						0.453	3/8	5/32	1/256	11/64	0.001~0.005	0.002~0.039	SDQCR/L	B135
	32.50.5-HFP																●						0.449	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059	SDUCR/L	B135
	32.51-HFP									●													0.441	3/8	5/32	1/64	11/64	0.002~0.008	0.004~0.059	SDZCR/L	B136
	32.52-HFP	●								●													0.425	3/8	5/32	1/32	11/64	0.003~0.010	0.008~0.059		
DCGT-VP1 New  Finishing	21.503-VP1								●	●													0.303	1/4	3/32	1/256	7/64	0.001~0.002	0.002~0.039	SDACR/L	B113
	21.50.5-VP1								●	●													0.295	1/4	3/32	1/128	7/64	0.001~0.004	0.003~0.059	SDJCR/L	B114
	21.51-VP1			●					●	●													0.287	1/4	3/32	1/64	7/64	0.002~0.005	0.004~0.059	SDNCN	B114
	32.503-VP1								●	●													0.457	3/8	5/32	1/256	11/64	0.001~0.005	0.002~0.039		
	32.51-VP1								●	●													0.449	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059		
	32.52-VP1								●	●													0.441	3/8	5/32	1/64	11/64	0.002~0.008	0.004~0.059		
DCGT-KF  Finishing	21.5R-KF																						0.307	1/4	3/32	S.P	7/64	~0.002	0.002~0.051	SDJCR/L	B114
	21.50R-KF										●												0.307	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059	SDNCN	B114
	21.50.5R-KF																						0.307	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.059		
	32.5R-KF																						0.457	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50R-KF										●												0.457	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5R-KF																						0.457	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
	21.5L-KF																						0.307	1/4	3/32	S.P	7/64	~0.002	0.002~0.051		
	21.50L-KF																						0.307	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059		
	21.50.5L-KF																						0.307	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.059		
	32.5L-KF																						0.457	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50L-KF																						0.457	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5L-KF																						0.457	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
DCGT-KM  Medium to finishing	21.5R-KM																						0.307	1/4	3/32	S.P	7/64	~0.002	0.002~0.051	SDJCR/L	B114
	21.50R-KM																						0.307	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059	SDNCN	B114
	21.50.5R-KM																						0.307	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.059		
	32.5R-KM																						0.457	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50R-KM																						0.457	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5R-KM																						0.457	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		
	21.5L-KR																						0.307	1/4	3/32	S.P	7/64	~0.002	0.002~0.051		
	21.50L-KF																						0.307	1/4	3/32	1/256	7/64	0.001~0.003	0.002~0.059		
	21.50.5L-KF																						0.307	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.059		
	32.5L-KF																						0.457	3/8	5/32	S.P	11/64	0.001~0.003	0.002~0.059		
	32.50L-KF																						0.457	3/8	5/32	1/256	11/64	0.001~0.004	0.002~0.067		
	32.50.5L-KF																						0.457	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.079		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

DC○○

Rhombic **55° Positive**

Relief Angle : 7°



Workpiece

Steel	P
Stainless steel	M
Cast iron	K
Non-ferrous metal	N
Heat resistant alloy, Titanium alloy	S
Hardened steel	H

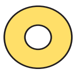
Machining types

- ● Continuous cutting
- General cutting
- Interrupted cutting

Inserts	Designation	Coated													Cermet		Coated		Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
DCMT-C25	21.50.5-C25										●	●				●	●						0.295	1/4	3/32	1/128	7/64	0.001~0.006	0.012~0.079	SDACR/L	B113
	21.51-C25			●	●						●	●					●						0.287	1/4	3/32	1/64	7/64	0.002~0.008	0.020~0.098	SDJCR/L	B114
	21.52-C25			●	●						●												0.268	1/4	3/32	1/32	7/64	0.002~0.010	0.031~0.098	SDNCN	B114
	32.50.5-C25																●						0.445	3/8	5/32	1/128	11/64	0.002~0.010	0.020~0.098	SDQCR/L	B135
	32.51-C25	●	●	●	●	●		●			●	●		●		●	●	●					0.441	3/8	5/32	1/64	11/64	0.003~0.012	0.031~0.118	SDUCR/L	B135
	32.52-C25	●	●	●	●	●		●			●	●		●	●		●	●					0.425	3/8	5/32	1/32	11/64	0.004~0.012	0.039~0.118	SDZCR/L	B136
Medium																															
DCMT-HFP	21.50.5-HFP							●															0.295	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.039	SDACR/L	B113
	21.51-HFP																						0.287	1/4	3/32	1/64	7/64	0.002~0.005	0.003~0.039	SDJCR/L	B114
	21.52-HFP																						0.268	1/4	3/32	1/32	7/64	0.002~0.005	0.004~0.039	SDNCN	B114
	32.50-HFP																						0.453	3/8	5/32	1/256	11/64	0.001~0.005	0.002~0.039	SDQCR/L	B135
	32.50.5-HFP							●															0.449	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059	SDUCR/L	B135
	32.51-HFP								●														0.441	3/8	5/32	1/64	11/64	0.002~0.008	0.004~0.059	SDZCR/L	B136
	32.52-HFP																						0.425	3/8	5/32	1/32	11/64	0.003~0.010	0.008~0.059		
Finishing																															
DCMT-HMP	21.50.5-HMP			●	●							●											0.295	1/4	3/32	1/128	7/64	0.001~0.005	0.004~0.059	SDACR/L	B113
	21.51-HMP	●	●	●	●	●		●	●	●		●		●			●						0.287	1/4	3/32	1/64	7/64	0.002~0.007	0.008~0.091	SDJCR/L	B114
	21.52-HMP		●	●	●			●															0.268	1/4	3/32	1/32	7/64	0.003~0.009	0.016~0.091	SDNCN	B114
	32.50.5-HMP			●	●			●	●			●											0.449	3/8	5/32	1/128	11/64	0.002~0.009	0.004~0.079	SDQCR/L	B135
	32.51-HMP	●	●	●	●	●		●	●	●		●		●	●	●	●			●			0.441	3/8	5/32	1/64	11/64	0.003~0.009	0.012~0.118	SDUCR/L	B135
	32.52-HMP	●	●	●	●			●	●	●		●		●			●						0.425	3/8	5/32	1/32	11/64	0.004~0.012	0.020~0.118	SDZCR/L	B136
Medium to finishing																															
DCMT-VL	32.51-VL	●		●				●	●								●						0.441	3/8	5/32	1/64	11/64	0.002~0.004	0.004~0.039	SDACR/L	B113
	32.52-VL	●		●				●	●								●						0.425	3/8	5/32	1/32	11/64	0.003~0.006	0.004~0.039	SDJCR/L	B114
																														SDNCN	B114
																														SDQCR/L	B135
																														SDUCR/L	B135
																														SDZCR/L	B136
Finishing																															
DCMT-VF	21.50.5-VF	●		●					●														0.295	1/4	3/32	1/128	7/64	0.001~0.004	0.002~0.040	SDACR/L	B113
	21.51-VF	●		●					●	●				●		●	●						0.287	1/4	3/32	1/64	7/64	0.002~0.008	0.012~0.047	SDJCR/L	B114
	32.50.5-VF	●		●										●									0.445	3/8	5/32	1/128	11/64	0.002~0.006	0.003~0.059	SDNCN	B114
	32.51-VF			●					●	●						●	●						0.441	3/8	5/32	1/64	11/64	0.002~0.008	0.012~0.059	SDQCR/L	B135
	32.52-VF								●	●													0.425	3/8	5/32	1/32	11/64	0.004~0.010	0.012~0.059	SDUCR/L	B135
Finishing																														SDZCR/L	B136

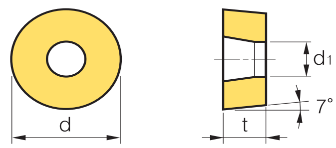
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

RC○○



Round R° Positive

Relief Angle : 7°

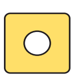


Workpiece		NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
Steel	P	●	◐	◐	✱	✱		◐							●	◐	◐	●	●	◐		
Stainless steel	M				◐		◐	◐	●	◐	◐											
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

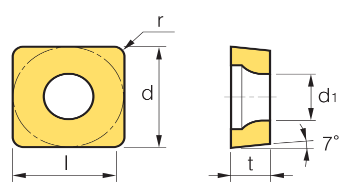
Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC500H	NC9020	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	d	t	d1	fn (ipr)	ap (inch)	Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)			Cutting Condition		Available tool holders	
RCMX  Medium	1003M0			●	●		●	●															0.394	1/8	9/64	0.010~0.020	0.059~0.157	PRDCN	**B97**
	1204M0			●	●			●					●										0.472	3/16	11/67	0.012~0.024	0.098~0.197	PRGCR/L	**B97**
	1606M0			●	●			●					●										0.630	1/4	13/64	0.016~0.028	0.118~0.276		
	2006M0	●		●	●	●							●										0.787	1/4	25/97	0.019~0.035	0.138~0.354		
	2507M0			●	●	●																	0.984	5/16	9/32	0.022~0.047	0.157~0.472		
	3209M0				●																		1.260	3/8	3/8	0.026~0.059	0.197~0.591		

SC○○



Square 90° Positive

Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●	◐		
Stainless steel	M				◐	◐	◐	◐	●	◐	◐											
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

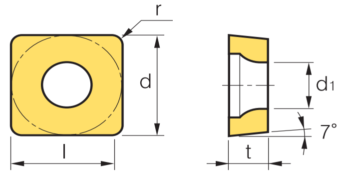
Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
SCGT-C05  Finishing	32.51-C05																						0.358	3/8	5/32	1/64	11/64	0.004~0.009	0.004~0.079	SSBCR/L	**B115**
	32.52-C05																						0.343	3/8	5/32	1/32	11/64	0.003~0.012	0.008~0.079	SSDCN	**B115**
	432-C05																						0.469	1/2	3/16	1/32	7/32	0.003~0.013	0.008~0.079	SSKCR/L	**B116, 150**
																														SSSCR/L	**B116**
SCGT-HFP  Finishing	32.51-HFP	●																					0.358	3/8	5/32	1/64	11/64	0.002~0.010	0.004~0.059	SSBCR/L SSDCN SSKCR/L SSSCR/L	**B115** **B115** **B116, 150** **B116**

SC○○

Square 90° Positive

Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	A30	H01	G10
Steel	P	●	⊖	⊖	⊕			⊖							●	⊖	⊖	●	●	⊖		
Stainless steel	M				⊖	⊖	⊖	⊖	●	⊖	⊖											
Cast iron	K							⊖				●	⊖	⊕	●						●	⊖
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							⊖	●	⊖												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ⊖ General cutting
- ⊕ Interrupted cutting

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	NC315K	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: A30	H01	G10
SCMT-C25 (Medium)	21.51-C25				●																	
	32.51-C25			●	●		●			●			●		●	●						
	32.52-C25	●	●	●	●					●			●		●	●						
	431-C25			●			●			●	●											
	432-C25	●	●	●	●					●	●		●			●						
SCMT-HFP (Finishing)	32.51-HFP	●																				
SCMT-HMP (Medium to finishing)	32.51-HMP		●	●	●				●		●			●	●	●						
	32.52-HMP	●	●	●	●		●		●		●			●								
	431-HMP																					
	432-HMP			●	●								●	●								
SCMT-VL New (Finishing)	09T304-VL	●		●			●	●								●						
	09T308-VL			●			●	●														
SCMT-VF (Finishing)	32.51-VF			●				●		●						●						



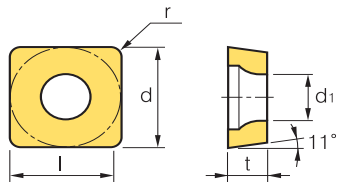

Inserts	Designation	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
SCMT-C25 (Medium)	21.51-C25	0.232	1/4	3/32	1/64	11/64	0.003~0.010	0.016~0.098	SSBCR/L	B115
	32.51-C25	0.358	3/8	5/32	1/64	11/64	0.003~0.010	0.024~0.118	SSDCN	B115
	32.52-C25	0.343	3/8	5/32	1/32	11/64	0.004~0.012	0.039~0.118	SSKCR/L	B116,150
	431-C25	0.484	1/2	3/16	1/64	7/32	0.004~0.012	0.031~0.150	SSSCR/L	B116
	432-C25	0.469	1/2	3/16	1/32	7/32	0.005~0.015	0.047~0.150		
SCMT-HFP (Finishing)	32.51-HFP	0.358	3/8	5/32	1/64	11/64	0.002~0.010	0.004~0.059	SSBCR/L	B115
									SSDCN	B115
									SSKCR/L	B116,150
									SSSCR/L	B116
SCMT-HMP (Medium to finishing)	32.51-HMP	0.358	3/8	5/32	1/64	11/64	0.003~0.009	0.012~0.118	SSBCR/L	B115
	32.52-HMP	0.343	3/8	5/32	1/32	11/64	0.004~0.012	0.020~0.118	SSDCN	B115
	431-HMP	0.484	1/2	3/16	1/64	7/32	0.004~0.011	0.012~0.142	SSKCR/L	B116,150
	432-HMP	0.469	1/2	3/16	1/32	7/32	0.005~0.014	0.024~0.142	SSSCR/L	B116
SCMT-VL (Finishing)	09T304-VL	0.358	3/8	5/32	1/64	11/64	0.002~0.004	0.004~0.039	SSBCR/L	B115
	09T308-VL	0.343	3/8	5/32	1/32	11/64	0.003~0.006	0.004~0.039	SSDCN	B115
									SSKCR/L	B116,150
									SSSCR/L	B116
SCMT-VF (Finishing)	32.51-VF	0.358	3/8	5/32	1/64	11/64	0.002~0.008	0.012~0.059	SSBCR/L	B115
									SSDCN	B115
									SSKCR/L	B116,150
									SSSCR/L	B116

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

SP○○

Square **90° Positive**
Relief Angle : 11°



Workpiece		
Steel	P	● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

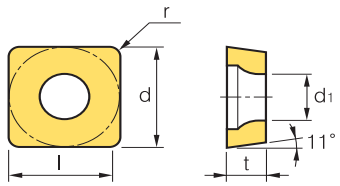
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated										Cermet		Coated		Uncoated				Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	PC6510	NC9025	NC5330	PC8110	PC5300	PC9030	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	ST30N	ST20	G10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
SPGA  Medium to finishing	21.51																						0.232	1/4	3/32	1/64	7/64	0.002~0.010	0.020~0.079	-	-
	322T													●	●								0.343	3/8	1/8	1/32	11/64	0.004~0.010	0.028~0.118		
	322T-Z (Z=Special Nega land)													●	●								0.343	3/8	1/8	1/32	9/64	0.004~0.010	0.028~0.118		
SPGN  Medium to finishing	2.51.50.5																						0.303	5/16	3/32	1/128	-	0.001~0.004	0.020~0.079	-	-
	2.51.53																						0.307	5/16	3/32	1/32	-	0.004~0.010	0.028~0.118		
	320.5																						0.366	3/8	1/8	1/128	-	0.001~0.004	0.020~0.118		
	321																						0.358	3/8	1/8	1/64	-	0.003~0.008	0.028~0.138		
	322					●																	0.343	3/8	1/8	1/32	-	0.004~0.010	0.028~0.138		
	420.5																						0.492	1/2	1/8	1/128	-	0.001~0.008	0.020~0.118		
	421																						0.484	1/2	1/8	1/64	-	0.003~0.008	0.039~0.197		
	422				●														●				0.469	1/2	1/8	1/32	-	0.004~0.010	0.039~0.197		
	423																					●	0.413	1/2	1/8	3/64	-	0.006~0.012	0.039~0.197		
	424																						0.398	1/2	1/8	1/16	-	0.007~0.013	0.039~0.197		
	430.5																						0.492	1/2	3/16	1/128	-	0.001~0.008	0.020~0.118		
	431																						0.484	1/2	3/16	1/64	-	0.003~0.008	0.039~0.197		
	432																					●	0.469	1/2	3/16	1/32	-	0.004~0.010	0.039~0.197		
	433																						0.464	1/2	3/16	3/64	-	0.006~0.012	0.039~0.197		
	434																						0.437	1/2	3/16	1/16	-	0.007~0.013	0.039~0.197		
	437.5																						0.382	1/2	3/16	15/128	-	0.008~0.024	0.079~0.197		
	4310																						0.343	1/2	3/16	5/32	-	0.010~0.028	0.118~0.197		
	531																						0.609	5/8	3/16	1/64	-	0.003~0.008	0.059~0.276		
	532																						0.591	5/8	3/16	1/64	-	0.004~0.010	0.059~0.276		
	533																						0.575	5/8	3/16	1/32	-	0.006~0.012	0.059~0.276		
	534																						0.559	5/8	3/16	3/64	-	0.007~0.013	0.059~0.276		
	435																						0.546	5/8	3/16	5/64	-	0.008~0.018	0.059~0.276		
	631																						0.734	3/4	3/16	1/64	-	0.003~0.008	0.059~0.354		
	632																					●	0.719	3/4	3/16	1/32	-	0.004~0.010	0.059~0.354		
	633																			●			0.701	3/4	3/16	3/64	-	0.006~0.018	0.059~0.354		
	634																						0.685	3/4	3/16	1/16	-	0.007~0.024	0.059~0.354		
	636																						0.657	3/4	3/16	3/32	-	0.010~0.028	0.098~0.354		
SPGR-F  Finishing	321-F																						0.358	3/8	1/8	1/64	-	0.004~0.010	0.012~0.079	CSDPN	**B104**
	421-F																						0.484	1/2	1/8	1/64	-	0.006~0.010	0.020~0.079	CSKPR/L	**B105**
SPGR-M  Medium	322-M																						0.343	3/8	1/8	1/32	-	0.004~0.016	0.039~0.138	CSDPN	**B104**
	422-M																						0.469	1/2	1/8	1/32	-	0.008~0.016	0.059~0.157	CSKPR/L	**B105**

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

SP○○

Square **90° Positive**
Relief Angle : 11°



Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

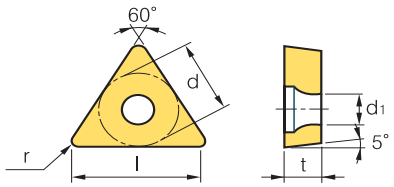
Machining types
● Continuous cutting
● General cutting
✱ Interrupted cutting

Inserts	Designation	Coated												Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
SPGT Medium to finishing	321R																						0.358	3/8	1/8	1/64	9/64	0.003~0.009	0.012~0.118	SSKPR/L	**B136**
	322R																						0.343	3/8	1/8	1/32	9/64	0.004~0.012	0.020~0.118		
	321L															●							0.358	3/8	1/8	1/64	9/64	0.003~0.009	0.012~0.118		
	322L															●							0.343	3/8	1/8	1/32	9/64	0.004~0.012	0.020~0.118		
SPGT-C05 Finishing	321-C05															●							0.358	3/8	1/8	1/64	11/64	0.004~0.009	0.004~0.059	SSKPR/L	**B136**
	322-C05																						0.343	3/8	1/8	1/32	11/64	0.003~0.012	0.020~0.079		
SPMT-VF Finishing	321-VF																						0.358	3/8	1/8	1/64	11/64	0.002~0.008	0.012~0.059	SSKPR/L	**B136**
	322-VF																						0.343	3/8	1/8	1/32	11/64	0.004~0.010	0.012~0.059		
SPMR-F Finishing	321-F																						0.358	3/8	1/8	1/64	-	0.002~0.008	0.012~0.079	CSDPN	**B104**
	421-F			●	●																		0.484	1/2	1/8	1/64	-	0.004~0.010	0.020~0.079	CSKPR/L	**B131**
SPMR-M Medium	322-M			●	●																		0.343	3/8	1/8	1/32	-	0.004~0.016	0.039~0.138	CSDPN	**B104**
	422-M			●	●																		0.469	1/2	1/8	1/32	-	0.004~0.016	0.059~0.157	CSKPR/L	**B131**
	423-M				●																		0.413	1/2	1/8	3/64	-	0.008~0.016	0.059~0.157		
SPUN Medium to finishing	421																						0.484	1/2	1/8	1/64	-	0.004~0.012	0.039~0.197		
	422			●																●		●	0.469	1/2	1/8	1/32	-	0.006~0.016	0.039~0.197		
	533																			●			0.575	5/8	3/16	3/64	-	0.008~0.020	0.039~0.197		
	633			●																●			0.701	3/4	3/16	3/64	-	0.008~0.020	0.059~0.276	-	-
	634																						0.687	3/4	3/16	1/16	-	0.010~0.024	0.079~0.276		
	845																						0.921	1	1/4	5/64	-	0.012~0.031	0.118~0.394		
	422SN																						0.469	1/2	1/8	1/32	-	0.006~0.016	0.039~0.197		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

TB○○

Triangular **60° Positive**
Relief Angle : 5°



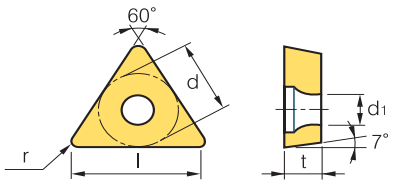
Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CC105	CC115	U20	H01	G10
Steel	P	●	◗	◗	✱			◗							●	◗	◗	●	●		
Stainless steel	M				◗	◗	◗	◗	●	◗	◗								◗		
Cast iron	K							◗				●	◗	✱	●					●	◗
Non-ferrous metal	N																				
Heat resistant alloy, Titanium alloy	S							◗	●	◗											
Hardened steel	H																				

Machining types
● Continuous cutting
◗ General cutting
✱ Interrupted cutting

Inserts	Designation	Coated													Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TBGT	520.5										●				●	●				●		0.252	5/32	1/16	1/128	11/128	0.002~0.008	0.004~0.051	STUBR	**B140**
	521															●						0.228	5/32	1/16	1/64	11/128	0.003~0.008	0.004~0.051		
Finishing																														

TC○○

Triangular **60° Positive**
Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CC105	CC115	ST30A	H01	G10
Steel	P	●	◗	◗	✱			◗							●	◗	◗	●	●	◗	
Stainless steel	M				◗	◗	◗	◗	●	◗	◗										
Cast iron	K							◗				●	◗	✱	●					●	◗
Non-ferrous metal	N																				
Heat resistant alloy, Titanium alloy	S							◗	●	◗											
Hardened steel	H																				

Machining types
● Continuous cutting
◗ General cutting
✱ Interrupted cutting

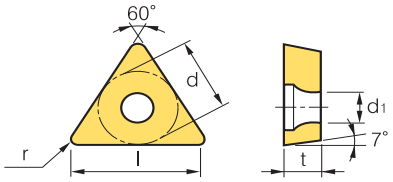
Inserts	Designation	Coated													Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TCGT-C05	731-C05																					0.339	7/32	3/32	1/64	13/128	0.002~0.008	0.004~0.067	STACR/L	**B116**
	21.51-C05																					0.394	1/4	3/32	1/64	7/64	0.002~0.008	0.024~0.098	STFCR/L	**B116**
	21.52-C05																					0.354	1/4	3/32	1/32	7/64	0.003~0.009	0.004~0.067	STGCR/L	**B117**
																													STTCR/L	**B117**
Finishing																														
TCGT-HFP	731-HFP																					0.338	7/32	3/32	1/64	13/128	0.002~0.007	0.005~0.059	STACR/L	**B116**
	21.50.5-HFP																					0.412	1/4	3/32	1/128	7/64	0.001~0.005	0.004~0.047	STFCR/L	**B116**
	21.51-HFP																					0.394	1/4	3/32	1/64	7/64	0.002~0.007	0.006~0.059	STGCR/L	**B117**
	32.51-HFP																					0.609	3/8	3/32	1/64	11/64	0.002~0.010	0.004~0.059	STTCR/L	**B117**
Finishing																														

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

TC○○

Triangular **60° Positive**
Relief Angle : 7°



Workpiece		
Steel	P	● ● ● ✱ ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-ferrous metal	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat resistant alloy, Titanium alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened steel	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

Machining types
● Continuous cutting
● General cutting
✱ Interrupted cutting

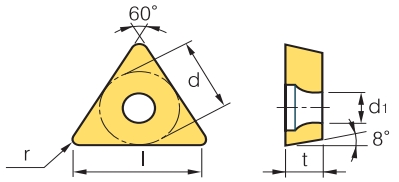
Inserts	Designation	Coated												Cermet		Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TCGT-KF	1.51.5R-KF																						0.321	3/16	3/32	S.P	3/32	~0.002	0.002~0.051	STACR/L	B116
	1.51.50R-KF																						0.314	3/16	3/32	1/256	3/32	0.001~0.003	0.002~0.059		
	1.51.50.5R-KF																						0.304	3/16	3/32	1/128	3/32	0.001~0.004	0.002~0.067		
	1.51.5L-KF																						0.321	3/16	3/32	S.P	3/32	~0.002	0.002~0.051		
	1.51.50L-KF																						0.314	3/16	3/32	1/256	3/32	0.001~0.003	0.002~0.059		
Finishing	1.51.50.5L-KF																						0.304	3/16	3/32	1/128	3/32	0.001~0.004	0.002~0.067		
TCMT-C25	731-C25	●		●	●			●						●									0.338	3/8	5/32	1/32	13/128	0.002~0.007	0.016~0.098	STACR/L	B116
	732-C25			●										●									0.339	7/32	3/32	1/64	13/128	0.003~0.010	0.031~0.098	STFCR/L	B116
	21.50.5-C25			●																			0.413	1/4	3/32	1/128	7/64	0.002~0.005	0.016~0.079	STGCR/L	B117
	21.51-C25	●		●	●						●			●			●	●					0.394	1/4	3/32	1/64	7/64	0.002~0.008	0.024~0.098	STTCR/L	B117
	21.52-C25			●	●			●			●	●		●									0.354	1/4	3/32	1/32	7/64	0.003~0.010	0.031~0.098	STWCR/L	B151
	32.51-C25	●	●	●	●			●			●	●		●		●		●					0.610	3/8	5/32	1/64	11/64	0.003~0.011	0.031~0.118		
Medium	32.52-C25	●	●	●	●						●	●		●		●	●						0.571	3/8	5/32	1/32	11/64	0.004~0.012	0.039~0.118		
TCMT-HFP	731-HFP																						0.339	7/32	3/32	1/64	13/128	0.002~0.007	0.004~0.059	STACR/L	B116
	21.50.5-HFP																						0.413	7/32	3/32	1/32	7/64	0.001~0.005	0.004~0.047	STFCR/L	B116
	21.51-HFP							●															0.394	1/4	3/32	1/128	7/64	0.002~0.007	0.004~0.059	STGCR/L	B117
	32.50.5-HFP																						0.610	3/8	5/32	1/64	11/64	0.001~0.005	0.004~0.059	STTCR/L	B117
Finishing	32.51-HFP																						0.610	3/8	5/32	1/32	11/64	0.003~0.010	0.008~0.059	STWCR/L	B151
TCMT-HMP	731-HMP																						0.338	7/32	3/32	1/64	13/128	0.002~0.007	0.008~0.091	STACR/L	B116
	732-HMP																						0.300	7/32	3/32	1/32	13/128	0.003~0.009	0.016~0.091	STFCR/L	B116
	21.50.5-HMP																						0.413	1/4	3/32	1/128	7/64	0.001~0.006	0.004~0.059	STGCR/L	B117
	21.51-HMP	●		●	●	●		●		●		●				●	●						0.394	1/4	3/32	1/64	7/64	0.002~0.007	0.008~0.098	STTCR/L	B117
	21.52-HMP	●		●	●			●		●		●											0.354	1/4	3/32	1/32	7/64	0.004~0.010	0.016~0.098	STWCR/L	B151
	32.50.5-HMP	●	●	●	●	●		●	●	●		●		●			●						0.610	3/8	5/32	1/64	11/64	0.003~0.009	0.012~0.118		
Medium to finishing	32.51-HMP	●	●	●	●	●		●		●		●		●	●								0.571	3/8	5/32	1/32	11/64	0.004~0.012	0.020~0.138		
TCMT-VF	21.50.5-VF																						0.412	1/4	3/32	1/128	7/64	0.001~0.005	0.002~0.067	STACR/L	B116
	21.51-VF								●	●							●						0.394	1/4	3/32	1/64	7/64	0.002~0.008	0.012~0.047	STFCR/L	B116
	21.52-VF								●	●													0.354	1/4	3/32	1/32	7/64	0.004~0.010	0.012~0.047	STGCR/L	B117
	32.50.5-VF	●		●				●	●	●				●			●						0.610	3/8	5/32	1/64	11/64	0.002~0.008	0.012~0.059	STTCR/L	B117
Finishing																														STWCR/L	B151
TCMT-VL	32.51-VL	●		●					●								●						0.610	3/8	5/32	1/64	11/64	0.002~0.008	0.012~0.059	STACR/L	B116
New	32.52-VL			●																			0.571	3/8	5/32	1/32	11/64	0.002~0.008	0.012~0.059	STFCR/L	B116
																														STGCR/L	B117
																														STTCR/L	B117
																														STWCR/L	B151
Finishing(Mild steel)																															

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

TO○○

Triangular **60° Positive**

Relief Angle : 8°



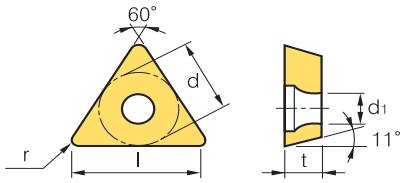
Workpiece		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	⬣ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Inserts	Designation	Coated												Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST10	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TOEH	520.5L																			●		●	0.252	5/32	1/16	1/128	11/128	0.002~0.007	0.004~0.059	FZ unit	-
	731L																			●		●	0.339	7/32	3/32	1/64	7/64	0.002~0.008	0.012~0.098		
	2.521L															●						●	0.516	10/31	15/128	1/64	5/32	0.002~0.010	0.012~0.098		
Medium to finishing																															

TP○○

Triangular **60° Positive**

Relief Angle : 11°

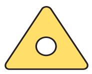


Workpiece		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	⬣ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Inserts	Designation	Coated												Cermet			Coated		Uncoated				Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST20	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TPGH	630.5L														●	●								0.304	3/16	3/32	1/128	3/32	0.001~0.005	0.002~0.067	-	-
	631L														●	●								0.283	3/16	3/32	1/64	3/32	0.001~0.006	0.003~0.067		
	230.5L																							0.413	1/4	3/32	1/128	9/64	0.002~0.006	0.002~0.079		
	231L																							0.414	1/4	3/32	1/64	9/64	0.003~0.008	0.003~0.118		
Finishing																																
TPGN	731																							0.338	7/32	3/32	1/64	-	0.003~0.008	0.028~0.079	-	-
	220.5																							0.413	1/4	1/8	1/128	-	0.002~0.006	0.020~0.079		
	221				●																●	●		0.394	1/4	1/8	1/64	-	0.003~0.008	0.028~0.118		
	222				●																	●		0.354	1/4	1/8	1/32	-	0.004~0.010	0.039~0.118		
	320.5																							0.630	3/8	1/8	1/128	-	0.002~0.007	0.039~0.197		
	321			●	●																●	●	●	0.610	3/8	1/8	1/64	-	0.003~0.008	0.039~0.197		
Medium to finishing	322			●	●												●			●		●	●	0.571	3/8	1/8	1/32	-	0.004~0.010	0.039~0.197		

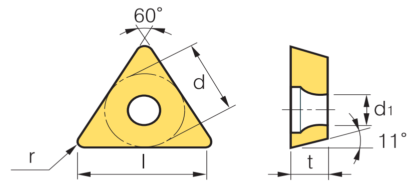
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

TP○○



Triangular **60° Positive**

Relief Angle : 11°



Workpiece			NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST20	ST30A	H01	G10
Workpiece	Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●	◐			
	Stainless steel	M				◐	◐	◐	◐	●	◐	◐												
	Cast iron	K							◐				●	◐	✱	●						●	◐	
	Non-ferrous metal	N																						
	Heat resistant alloy, Titanium alloy	S							◐	●	◐													
	Hardened steel	H																						

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated: NC3010	Coated: NC3120	Coated: NC3220	Coated: NC3030	Coated: NC9020	Coated: NC9025	Coated: NC5330	Coated: PC8110	Coated: PC5300	Coated: PC9030	Coated: NC6205	Coated: NC6210	Coated: NC315K	Cermet: CN1000	Cermet: CN2000	Cermet: CN20	Coated: CC105	Coated: CC115	Uncoated: ST20	Uncoated: ST30A	Uncoated: H01	Uncoated: G10	Dimensions (inch): l	d	t	r	d1	Cutting Condition: fn (ipr)	ap (inch)	Available tool holders: Designation	Page
TPGN  Medium to finishing	322.5																							0.527	3/8	1/8	5/128	-	0.004~0.010	0.039~0.197	-	-
	323				●																●			0.531	3/8	1/8	3/64	-	0.006~0.012	0.039~0.197		
	324				●																			0.492	3/8	1/8	1/16	-	0.006~0.012	0.039~0.197		
	331																							0.610	3/8	3/16	1/64	-	0.003~0.008	0.039~0.197		
	431				●																●		●	0.827	1/2	3/16	1/64	-	0.003~0.008	0.059~0.276		
	432				●																●			0.787	1/2	3/16	1/32	-	0.004~0.010	0.059~0.276		
	433				●																			0.748	1/2	3/16	3/64	-	0.006~0.012	0.059~0.276		
	437.5																						●	0.559	1/2	3/16	15/128	-	0.012~0.018	0.059~0.276		
	4310																							0.457	1/2	3/16	5/32	-	0.012~0.020	0.059~0.276		
	532																							1.000	5/8	3/16	1/32	-	0.006~0.010	0.118~0.315		
	542																							1.000	5/8	1/4	1/32	-	0.006~0.010	0.118~0.315		
TPGR-F  Finishing	220.5-F																							0.413	1/4	1/8	1/128	-	0.002~0.006	0.004~0.059	CTFPR/L	B105
	221-F																							0.394	1/4	1/8	1/64	-	0.002~0.008	0.012~0.098	CTGPR/L	B105
	321-F																							0.610	3/8	1/8	1/64	-	0.003~0.010	0.012~0.098		
TPGR-M  Medium	222-M																							0.354	1/4	1/8	1/32	-	0.005~0.012	0.039~0.118	CTFPR/L	B105
	322-M																							0.571	3/8	1/8	1/32	-	0.005~0.012	0.039~0.197	CTGPR/L	B105
TPGT  Medium to finishing	630.5R																							0.303	3/16	3/32	1/128	3/32	0.002~0.008	0.012~0.059	STFPR/L	B137
	220.5R																							0.413	1/4	1/8	1/128	9/64	0.002~0.008	0.012~0.059	STUPR/L	B140
	221R														●	●								0.394	1/4	1/8	1/64	9/64	0.002~0.008	0.020~0.079		
	222R																							0.354	1/4	1/8	1/32	9/64	0.003~0.010	0.020~0.079		
	331R															●								0.610	3/8	3/16	1/64	11/64	0.002~0.008	0.028~0.118		
	332R																							0.571	3/8	3/16	1/32	11/64	0.002~0.008	0.028~0.118		
	1.51.50.5L										●					●	●					●		0.303	3/16	3/32	1/128	3/32	0.002~0.008	0.012~0.059		
	220.5L																							0.413	1/4	1/8	1/128	9/64	0.002~0.008	0.012~0.059		
	221L														●	●	●							0.394	1/4	1/8	1/64	9/64	0.002~0.008	0.020~0.079		
	222L																							0.354	1/4	1/8	1/32	9/64	0.003~0.010	0.020~0.079		
	331L														●	●	●							0.610	3/8	3/16	1/64	11/64	0.002~0.008	0.028~0.118		
	332L																							0.571	3/8	3/16	1/32	11/64	0.002~0.008	0.028~0.118		
TPGT-C05  Finishing	221-C05															●								0.394	1/4	1/8	1/64	9/64	0.002~0.012	0.020~0.079	STFPR/L	B137
	331-C05																							0.610	3/8	3/16	1/64	11/64	0.002~0.012	0.031~0.079		
TPGT-HFP  Finishing	221-HFP																							0.394	1/4	1/8	1/64	9/64	0.002~0.010	0.008~0.059	STFPR/L	B137
	322-HFP																							0.571	3/8	1/8	1/32	11/64	0.002~0.010	0.012~0.098		

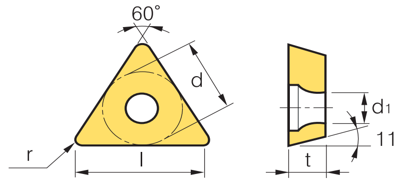
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

TP○○

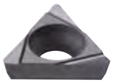
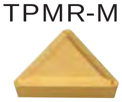
Triangular 60° Positive

Relief Angle : 11°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST20	ST30A	H01
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●	◐		
Stainless steel	M				◐	◐	◐	◐	●	◐	◐											
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated													Cermet			Coated		Uncoated				Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	ST20	ST30A	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
TPGX  Medium to finishing	730.5L																●							0.359	7/32	3/32	1/128	0.118	0.004~0.008	0.012~0.039	-	-
	731L																●							0.338	7/32	3/32	1/64	0.118	0.004~0.010	0.020~0.039		
	732L																							0.297	7/32	3/32	1/32	0.118	0.004~0.012	0.039~0.039		
	221L																●							0.392	1/4	1/8	1/64	0.138	0.004~0.010	0.020~0.047		
TPMR-F  Finishing	730.5-F																							0.358	7/32	3/32	1/128	-	0.002~0.006	0.004~0.039	CTFPR/L	B105
	731-F																							0.339	7/32	3/32	1/64	-	0.002~0.006	0.004~0.039	CTGPR/L	B105
	220.5-F																							0.413	1/4	1/8	1/128	-	0.002~0.006	0.004~0.059		
	221-F	●	●	●	●	●					●		●											0.394	1/4	1/8	1/64	-	0.002~0.008	0.012~0.059		
	222-F																							0.354	1/4	1/8	1/32	-	0.002~0.010	0.012~0.059		
	321-F	●	●	●	●	●		●	●		●													0.610	3/8	1/8	1/64	-	0.003~0.010	0.020~0.079		
	322-F																							0.571	3/8	1/8	1/32	-	0.003~0.010	0.020~0.118		
TPMR-M  Medium	221-M																							0.394	1/4	1/8	1/64	-	0.004~0.010	0.028~0.118	CTFPR/L	B105
	222-M			●	●																			0.354	1/4	1/8	1/32	-	0.005~0.012	0.039~0.118	CTGPR/L	B105
	321-M				●																			0.610	3/8	1/8	1/64	-	0.004~0.010	0.039~0.197		
	322-M	●	●	●	●	●																		0.571	3/8	1/8	1/32	-	0.005~0.012	0.039~0.197		
	323-M				●																			0.531	3/8	1/8	3/64	-	0.006~0.014	0.039~0.197		
	432-M			●																				0.787	1/2	3/16	1/32	-	0.005~0.012	0.059~0.276		
TPUN  Medium to finishing	732																							0.297	7/32	1/8	1/32	-	0.004~0.012	0.020~0.079		
	21.52																				●			0.354	1/4	3/32	1/32	-	0.006~0.016	0.039~0.118		
	221																				●			0.394	1/4	1/8	1/64	-	0.004~0.012	0.039~0.118		
	222																				●			0.354	1/4	1/8	1/32	-	0.006~0.016	0.039~0.118		
	321			●	●																●		●	0.610	3/8	1/8	1/64	-	0.004~0.012	0.039~0.197		
	322			●	●															●	●		●	0.571	3/8	1/8	1/32	-	0.006~0.016	0.039~0.197		
	323				●																●			0.531	3/8	1/8	3/64	-	0.008~0.020	0.059~0.197	-	-
	431																				●			0.827	1/2	3/16	1/64	-	0.004~0.012	0.059~0.276		
	432			●	●																●			0.787	1/2	3/16	1/32	-	0.006~0.016	0.059~0.276		
	433																				●			0.748	1/2	3/16	3/64	-	0.008~0.020	0.059~0.276		
	645																							1.094	3/4	1/4	5/64	-	0.012~0.028	0.118~0.394		
	322TN																							0.571	3/8	1/8	1/32	-	0.006~0.016	0.039~0.197		
	323TN																							0.531	3/8	1/8	3/64	-	0.008~0.020	0.059~0.197		
	433TN																							0.748	1/2	3/16	3/64	-	0.008~0.020	0.059~0.276		
TPMT-VF  Finishing	221-VF	●	●	●				●	●	●					●	●								0.394	1/4	1/8	1/64	9/64	0.002~0.008	0.012~0.059	STFPR/L	B137
	222-VF	●		●				●	●															0.354	1/4	1/8	1/32	9/64	0.004~0.010	0.012~0.059		
	331-VF																							0.610	3/8	3/16	1/64	11/64	0.002~0.008	0.012~0.079		
	332-VF																							0.571	3/8	3/16	1/32	11/64	0.004~0.010	0.012~0.079		

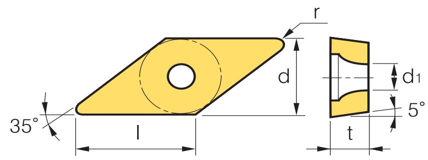
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

VB○○

Rhombic **35° Positive**

Relief Angle : 5°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◒	◒	✱			◒							●	◒	◒	●	●			
Stainless steel	M				◒	◒	◒	◒	●	◒	✱	◒								◒		
Cast iron	K							◒					●	◒	●						●	◒
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◒	●	◒	✱											
Hardened steel	H																					

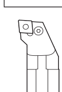
Machining types
- ● Continuous cutting
- ◒ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated: NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC5400	PC9030	NC6205	NC6210	Cermet: CN1000	CN2000	CN20	Coated: CC105	CC115	Uncoated: U20	H01	G10
VBGT  Medium to finishing	331																					
	332																					
VBGT-HFP  Finishing	220-HFP																					
	332-HFP																					
VBGT-KF  Finishing	22R-KF																					
	220R-KF																					
	220.5R-KF											●										
	22L-KF																					
	220L-KF																					
	220.5L-KF																					
VBGT-KM  Medium to finishing	22R-KM																					
	220R-KM																					
	220.5R-KM																					
	22L-KM																					
	220L-KM																					
	220.5L-KM																					
VBMT  Medium to finishing	331	●	●	●	●	●						●		●		●						
	332	●	●	●	●							●		●		●						
VBMT-VM  Medium	331-VM																					
	332-VM			●	●				●					●								
VBMT-HMP  Medium to finishing	21.51-HMP			●																		
	21.52-HMP																					
	221-HMP		●	●																		
	222-HMP		●	●																		
	331-HMP	●	●	●	●	●		●	●		●			●								
	332-HMP	●	●	●	●	●		●	●	●	●	●		●								
	333-HMP																					
VBMT-VF  Finishing	331-VF	●		●				●	●	●					●	●						
	332-VF									●					●	●						
VBMT-VL New  Finishing(Mild steel)	331-VL	●		●				●	●							●						
	332-VL			●				●	●													
	333-VL																					

Inserts	Designation	l	d	t	r	d1	fn (ipr)	ap (inch)	Available tool holders: Designation	Page
VBGT	331	0.614	3/8	1/8	1/64	11/64	0.003~0.008	0.020~0.059	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332	0.575	3/8	3/16	1/32	11/64	0.006~0.010	0.028~0.079		
VBGT-HFP	220-HFP	0.433	1/4	1/8	1/256	1/9	0.003~0.008	0.020~0.059	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332-HFP	0.551	3/8	3/16	1/32	11/64	0.006~0.010	0.028~0.079		
VBGT-KF	22R-KF	0.433	1/4	1/8	S.P	1/9	~0.002	0.002~0.051	SVJBR/L	B118
	220R-KF	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5R-KF	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
	22L-KF	0.433	1/4	1/8	S.P	7/64	~0.002	0.002~0.051		
	220L-KF	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5L-KF	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
VBGT-KM	22R-KM	0.433	1/4	1/8	S.P	7/64	~0.002	0.002~0.051	SVJBR/L	B118
	220R-KM	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5R-KM	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
	22L-KM	0.433	1/4	1/8	S.P	7/64	~0.002	0.002~0.051		
	220L-KM	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5L-KM	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
VBMT	331	0.614	3/8	3/16	1/64	11/64	0.003~0.008	0.020~0.059	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332	0.575	3/8	3/16	1/32	11/64	0.006~0.010	0.028~0.079		
VBMT-VM	331-VM	0.614	3/8	1/8	1/64	11/64	0.003~0.008	0.008~0.106	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332-VM	0.575	3/8	3/16	1/32	11/64	0.004~0.011	0.020~0.106		
VBMT-HMP	21.51-HMP	0.394	1/4	3/32	1/64	7/64	0.001~0.008	0.006~0.098	SVABR/L	B117
	21.52-HMP	0.354	1/4	3/32	1/32	7/64	0.001~0.010	0.006~0.098	SVHBR/L	B118
	221-HMP	0.394	1/4	1/8	1/64	9/64	0.001~0.008	0.006~0.106	SVJBR/L	B118
	222-HMP	0.354	1/4	1/8	1/32	9/64	0.002~0.010	0.016~0.106	SVVBN	B119
	331-HMP	0.614	3/8	3/16	1/64	11/64	0.003~0.008	0.008~0.106	SVQBR/L	B138
	332-HMP	0.575	3/8	3/16	1/32	11/64	0.004~0.011	0.020~0.106	SVUBR/L	B139
	333-HMP	0.531	3/8	3/16	3/64	11/64	0.004~0.013	0.020~0.106		
VBMT-VF	331-VF	0.614	3/8	1/8	1/64	11/64	0.002~0.008	0.012~0.040	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332-VF	0.575	3/8	3/16	1/32	11/64	0.004~0.010	0.012~0.040		
VBMT-VL	331-VL	0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.012~0.059	SVABR/L SVHBR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	B117 B118 B118 B119 B138 B139
	332-VL	0.575	3/8	3/16	1/32	11/64	0.004~0.008	0.012~0.059		
	333-VL	0.531	3/8	3/16	3/64	11/64	0.004~0.010	0.012~0.059		

Dimensions (inch)

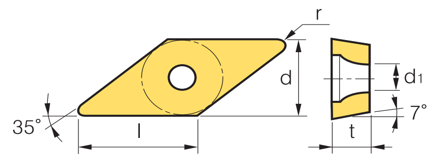
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item



VC○○

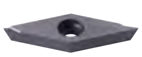
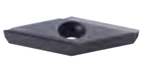
Rhombic **35° Positive**

Relief Angle : 7°



Workpiece		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Steel	P	●	◒	◒	⊗			◒							●	◒	◒	●	●				
Stainless steel	M				◒	◒	◒	◒	●	◒	◒									◒			
Cast iron	K							◒				●	◒	⊗	●							●	◒
Non-ferrous metal	N																						
Heat resistant alloy, Titanium alloy	S							◒	●	◒													
Hardened steel	H																						

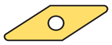
Machining types
- ● Continuous cutting
- ◒ General cutting
- ⊗ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
		Coated													Cermet			Coated		Uncoated		
VCGT-HFP  Finishing	220.5-HFP																					
	221-HFP																					
	222-HFP																					
	331-HFP		●	●					●													
	332-HFP		●	●					●													
VCGT-VP1 New  Finishing	110301-VP1								●	●												
	110302-VP1								●	●												
	110304-VP1			●					●	●												
VCGT-KF  Finishing	22R-KF																					
	220R-KF																					
	220.5R-KF										●											
	22L-KF																					
	220L-KF																					
	220.5L-KF																					
VCGT-KM  Finishing	22R-KM																					
	220R-KM																					
	220.5R-KM										●											
	22L-KM																					
	220L-KM																					
	220.5L-KM																					
VCMT-HFP  Finishing	220.5-HFP																					
	221-HFP																					
	222-HFP																					
	331-HFP			●																		
	332-HFP																					
VCMT-VF  Finishing	1.51.50.5-VF	●																				
	1.51.51-VF							●														
	221-VF	●		●																		
	331-VF	●		●				●	●							●						
VCMT-HMP  Medium to finishing	331-HMP	●	●	●	●	●			●		●											
	332-HMP		●	●	●	●			●		●											

Inserts	Designation	Dimensions (inch) l	d	t	r	d1	Cutting Condition fn (ipr)	ap (inch)	Available tool holders Designation	Page
VCGT-HFP	220.5-HFP	0.413	1/4	1/8	1/128	9/64	0.001~0.007	0.004~0.039	SVJCR/L	B118,138
	221-HFP	0.394	1/4	1/8	1/64	9/64	0.001~0.007	0.006~0.047		B155
	222-HFP	0.354	1/4	1/8	1/32	9/64	0.002~0.009	0.008~0.047	SVVCN	B119
	331-HFP	0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.006~0.059	SVQCR/L	B138
	332-HFP	0.575	3/8	3/16	1/32	11/64	0.002~0.010	0.008~0.059	SVUCR/L	B134
VCGT-VP1	110301-VP1	0.433	1/4	1/8	1/256	7/64	0.001~0.006	0.002~0.006	SVJCR/L	B118,138
	110302-VP1	0.433	1/4	1/8	1/128	7/64	0.001~0.007	0.004~0.039		B155
	110304-VP1	0.433	1/4	1/8	1/64	7/64	0.001~0.007	0.006~0.047	SVVCN	B119
VCGT-KF	22R-KF	0.433	1/4	1/8	S.P	7/64	0.001 ~0.002	0.002~0.051	SVJCR/L	B118,138
	220R-KF	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		B155
	220.5R-KF	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
	22L-KF	0.433	1/4	1/8	S.P	7/64	0.001~0.002	0.002~0.051		
	220L-KF	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5L-KF	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
VCGT-KM	22R-KM	0.433	1/4	1/8	S.P	7/64	0.001~0.002	0.002~0.051	SVJCR/L	B118,138
	220R-KM	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		B155
	220.5R-KM	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
	22L-KM	0.433	1/4	1/8	S.P	7/64	0.001~0.002	0.002~0.051		
	220L-KM	0.433	1/4	1/8	1/256	7/64	0.001~0.003	0.002~0.059		
	220.5L-KM	0.433	1/4	1/8	1/128	7/64	0.001~0.005	0.002~0.067		
VCMT-HFP	220.5-HFP	0.413	1/4	1/8	1/128	9/64	0.001~0.007	0.004~0.039	SVJCR/L	B118,138
	221-HFP	0.394	1/4	1/8	1/64	9/64	0.001~0.007	0.006~0.047		B155
	222-HFP	0.354	1/4	1/8	1/32	9/64	0.002~0.009	0.008~0.047	SVVCN	B119
	331-HFP	0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.006~0.059	SVQCR/L	B138
	332-HFP	0.575	3/8	3/16	1/32	11/64	0.002~0.010	0.008~0.059	SVUCR/L	B134
VCMT-VF	1.51.50.5-VF	0.310	3/16	3/32	1/128	3/32	0.002~0.008	0.012~0.039	SVJCR/L	B118,138
	1.51.51-VF	0.310	3/16	3/32	1/128	3/32	0.004~0.010	0.012~0.039		B155
	221-VF	0.394	1/4	1/8	1/64	9/64	0.001~0.007	0.006~0.047	SVVCN	B119
	331-VF	0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.006~0.060	SVQCR/L	B138
									SVUCR/L	B134
VCMT-HMP	331-HMP	0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.012~0.106	SVJCR/L	B118,138
	332-HMP	0.563	3/8	3/16	1/32	11/64	0.004~0.014	0.020~0.138		B155
									SVVCN	B119
									SVQCR/L	B138
									SVUCR/L	B134

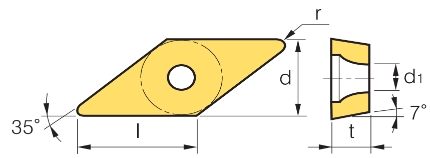
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

VC○○



Rhombic **35° Positive**

Relief Angle : 7°

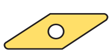


Workpiece																							
Steel	P	●	◒	◒	✠			◒							●	◒	◒	●	●				
Stainless steel	M				◒	◒	◒	◒	●	◒	◒									◒			
Cast iron	K							◒				●	◒	✠	●							●	◒
Non-ferrous metal	N																						
Heat resistant alloy, Titanium alloy	S							◒	●	◒													
Hardened steel	H																						

Machining types
- ● Continuous cutting
- ◒ General cutting
- ✠ Interrupted cutting

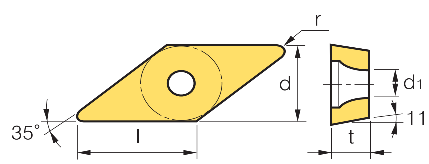
Inserts	Designation	Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
VCMT-VM  Medium	331-VM			●																			0.614	3/8	3/16	1/64	11/64	0.004~0.010	0.012~0.102	SVJCR/L	B118
	332-VM			●					●														0.563	3/8	3/16	1/32	11/64	0.005~0.013	0.024~0.102	SVVCN	B119
																														SVQCR/L	B138
																														SVUCR/L	B139
VCMT-VL New  Finishing(Mild steel)	331-VL	●																					0.614	3/8	3/16	1/64	11/64	0.002~0.008	0.012~0.059	SVJCR/L	B118
	332-VL			●					●														0.575	3/8	3/16	1/32	11/64	0.002~0.008	0.012~0.059	SVVCN	B119
	333-VL																						0.531	3/8	3/16	3/64	11/64	0.004~0.010	0.012~0.059	SVQCR/L	B138
																														SVUCR/L	B139

VP○○



Rhombic **35° Positive**

Relief Angle : 11°



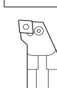
Workpiece																							
Steel	P	●	◒	◒	✠			◒							●	◒	◒	●	●				
Stainless steel	M				◒	◒	◒	◒	●	◒	◒									◒			
Cast iron	K							◒				●	◒	✠	●							●	◒
Non-ferrous metal	N																						
Heat resistant alloy, Titanium alloy	S							◒	●	◒													
Hardened steel	H																						

Machining types
- ● Continuous cutting
- ◒ General cutting
- ✠ Interrupted cutting

Inserts	Designation	Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
VPGT-VP1 New  Finishing	2203-VP1								●	●													0.433	1/4	1/8	1/256	7/64	0.001~0.006	0.002~0.006	SVABR/L	B117
	220.5-VP1								●	●													0.433	1/4	1/8	1/128	7/64	0.001~0.007	0.004~0.039	SVJBR/L	B118
	221-VP1								●	●													0.433	1/4	1/8	1/64	7/64	0.001~0.007	0.006~0.047	SVVBN	B119

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

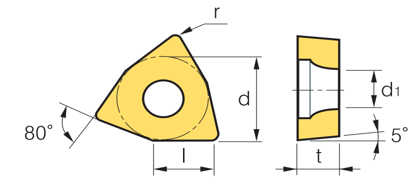
● : Stock item



WB○○

Trigon 80° Positive

Relief Angle : 5°

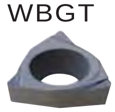


Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
WBGT	520.5R																						0.102	5/32	1/16	1/128	11/128		~0.002	0.004~0.012	SWUBR/L	**B140**
	631R																						0.118	3/16	3/32	1/64	3/32		~0.004	0.004~0.020		
	520.5L										●				●	●					●		0.102	5/32	1/16	1/128	11/128		~0.003	0.004~0.016		
	630.5L															●							0.122	3/16	3/32	1/128	3/32		~0.003	0.004~0.016		
	631L																						0.118	3/16	3/32	1/64	3/32		~0.004	0.004~0.020		

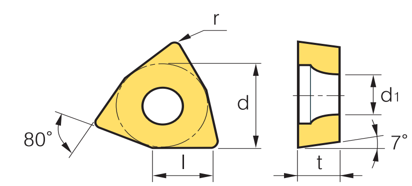


Medium to finishing

WC○○

Trigon 80° Positive

Relief Angle : 7°



Workpiece		NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10
Steel	P	●	◐	◐	✱			◐							●	◐	◐	●	●			
Stainless steel	M				◐	◐	◐	◐	●	◐	◐									◐		
Cast iron	K							◐				●	◐	✱	●						●	◐
Non-ferrous metal	N																					
Heat resistant alloy, Titanium alloy	S							◐	●	◐												
Hardened steel	H																					

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NC3010	NC3120	NC3220	NC3030	NC9020	NC9025	NC5330	PC8110	PC5300	PC9030	NC6205	NC6210	NC315K	CN1000	CN2000	CN20	CC105	CC115	U20	H01	G10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
		Coated													Cermet			Coated		Uncoated			Dimensions (inch)					Cutting Condition		Available tool holders	
WCGT-C05	432-C05																						0.327	1/2	3/16	1/32	0.217	0.003~0.012	0.008~0.106	SWACR/L SWLCR/L	**B119** **B139**

Medium to finishing

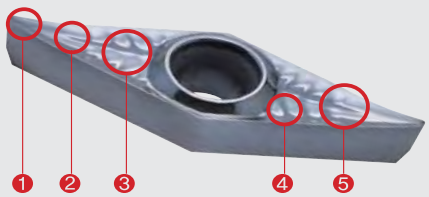
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special**

● : Stock item

Technical Information for Aluminum

AK special chip breaker for aluminum

▶ Unique and 3-dimensional rake angle controls chip breaking and chip flow ensuring longer tool life and reducing cutting load
▶ High rake angle at cutting edge part reduces cutting load to increase tool life.
▶ Buffed finish on top face controls chip flow reducing built-up edge



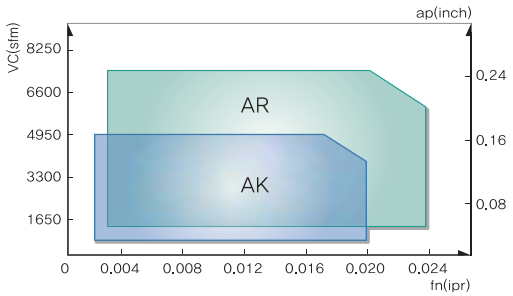
❶ High rake angle & tabby pattern chip pocket - Low cutting load
❷ Unique rake angle design - Effective chip breaking and good chip flow
❸ Unique and 3-dimensional top face - Longer tool life & Excellent surface roughness
❹ Tabby pattern & Sharp cutting edge - Distributing cutting load, long tool life
❺ Buffed on top face - Excellent machining, Reducing built-up edge, Excellent chip flow

AR special chip breaker for aluminum

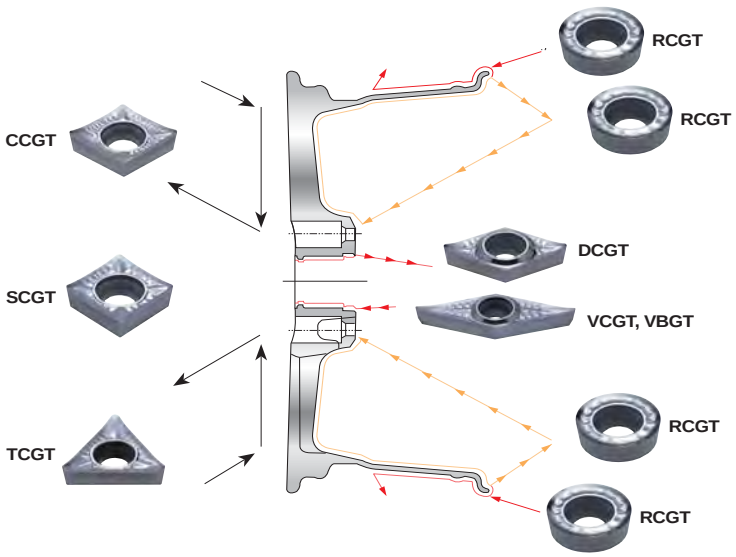
▶ AR chip breaker ensures reliability and good cutting performance at high feed, speed and interrupted machining

❶ Flat corner cutting edge improved productivity at high feed machining and ensures good surface roughness and reliability owing to strong cutting edge
❷ Specially buffed on top face controls chip flow reducing built-up edge
❸ KORLOY's own technology applied for cutting edge and corner shape controlling chip flow ensures longer tool life
❹ KORLOY special chip breaker design controls chip flow at high speed machining

AK and AR chip breaker specially developed for aluminum



	Recommendation range	Grades
AK	ap=0.004~0.20inch fn =0.001~0.020ipr	H01(Uncoated cemented carbides K10~K20) ND1000(Diamond coating)
AR	ap=0.004~0.20inch fn =0.001~0.020ipr	H01(Uncoated cemented carbides K10~K20) ND1000(Diamond coating) PD1000(DLC coating)



Features of H01

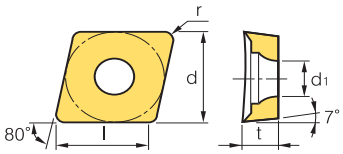
▶ Useful for aluminum and alloyed steel machining
▶ Buffed on top face reduced built-up edge
▶ 3-dimensional design reduced cutting load and shows good performance at high feed and speed machining

Workpiece		Hardness(HB)	kc(MPa)	vc(sfm)	fn(ipr)
Aluminum alloy(forged)	before heat treatment	50 ~ 70	500 ~ 600	3300~8250	0.004~0.024
	after heat treatment	90 ~ 110	700 ~ 900	990~3300	0.004~0.020
Aluminum alloy (cast)	before heat treatment	70 ~ 80	700 ~ 800	990~3300	0.004~0.024
	after heat treatment	80 ~ 100	800 ~ 950	660~1980	0.004~0.016
Copper alloy	-	90 ~ 110	700	820~1980	0.004~0.020
Non-ferrous metal, etc	-	100	1700	490~990	0.004~0.024

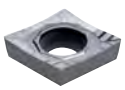
CC ○○

Rhombic **80° Positive**

Relief Angle : 7°



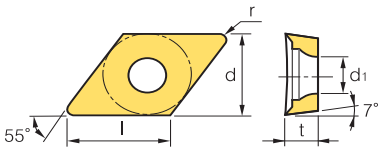
Workpiece		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	◗ General cutting
Cast iron	K	⧓ Interrupted cutting
Non-ferrous metal	N	◗ ◗ ● ◗ ⧓
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
CCGT-AK 	21.50.5-AK				●		0.244	1/4	3/32	1/128	7/64	0.001~0.005	0.002~0.118	SCLCR/L	**B134**
	21.51-AK				●		0.236	1/4	3/32	1/64	7/64	0.001~0.006	0.004~0.118		
	21.52-AK				●		0.220	1/4	3/32	1/32	7/64	0.001~0.008	0.004~0.157		
	32.50.5-AK				●		0.370	3/8	5/32	1/128	11/64	0.001~0.008	0.002~0.118		
	32.51-AK				●		0.362	3/8	5/32	1/64	11/64	0.001~0.012	0.004~0.197		
	32.52-AK				●		0.346	3/8	5/32	1/32	11/64	0.001~0.020	0.004~0.197		
	430.5-AK				●		0.496	1/2	3/16	1/128	7/32	0.001~0.012	0.002~0.157		
	431-AK				●	●	0.488	1/2	3/16	1/64	7/32	0.001~0.020	0.004~0.197		
	432-AK				●		0.472	1/2	3/16	1/32	7/32	0.002~0.031	0.004~0.217		
CCGT-AR 	21.50.5-AR				●		0.244	1/4	3/32	1/128	7/64	0.001~0.012	0.012~0.157	SCACR/L	**B134**
	21.51-AR						0.236	1/4	3/32	1/64	7/64	0.001~0.014	0.020~0.177		
	21.52-AR						0.220	1/4	3/32	1/32	7/64	0.002~0.020	0.020~0.177		
	32.50.5-AR				●		0.370	3/8	5/32	1/128	11/64	0.001~0.018	0.012~0.157		
	32.51-AR				●		0.362	3/8	5/32	1/64	11/64	0.002~0.020	0.020~0.177		
	32.52-AR				●		0.346	3/8	5/32	1/32	11/64	0.002~0.024	0.020~0.236		
	430.5-AR						0.496	1/2	3/16	1/128	7/32	0.002~0.020	0.012~0.197		
	431-AR				●		0.488	1/2	3/16	1/64	7/32	0.002~0.024	0.020~0.236		
	432-AR				●		0.472	1/2	3/16	1/32	7/32	0.002~0.026	0.020~0.236		
	433-AR						0.457	1/2	3/16	3/64	7/32	0.003~0.028	0.020~0.256		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

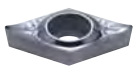
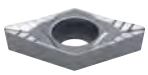
DC ○○

Rhombic **55° Positive**
Relief Angle : 7°



Workpiece							
Steel	P						
Stainless steel	M						
Cast iron	K						
Non-ferrous metal	N	◖	◖	●	◖	✱	
Heat resistant alloy, Titanium alloy	S						
Hardened steel	H						

Machining types
● Continuous cutting
◖ General cutting
✱ Interrupted cutting

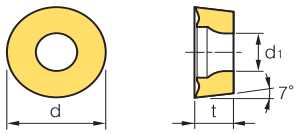
Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
DCGT-AK 	21.50.5-AK				●		0.295	1/4	3/32	1/128	7/64	0.001~0.008	0.002~0.118	SDACR/L	B113
	21.51-AK				●		0.287	1/4	3/32	1/64	7/64	0.001~0.012	0.004~0.157	SDJCR/L	B114
	21.52-AK				●		0.268	1/4	3/32	1/32	7/64	0.001~0.016	0.004~0.157	SDNCN	B114
	32.50.5-AK				●		0.449	3/8	5/32	1/128	11/64	0.001~0.012	0.002~0.157	SDQCR/L	B135
	32.51-AK			●	●		0.441	3/8	5/32	1/64	11/64	0.001~0.020	0.004~0.197	SDUCR/L	B135
	32.52-AK				●		0.425	3/8	5/32	1/32	11/64	0.001~0.020	0.004~0.197	SDZCR/L	B136
	32.53-AK				●		0.409	3/8	5/32	3/64	11/64	0.002~0.024	0.006~0.197		
DCGT-AR 	21.50.5-AR				●		0.295	1/4	3/32	1/128	7/64	0.001~0.012	0.012~0.157	SDACR/L	B113
	21.51-AR				●		0.287	1/4	3/32	1/64	7/64	0.001~0.016	0.020~0.197	SDJCR/L	B114
	21.52-AR				●		0.268	1/4	3/32	1/32	7/64	0.002~0.020	0.020~0.197	SDNCN	B114
	32.50.5-AR						0.449	3/8	5/32	1/128	11/64	0.001~0.018	0.012~0.236	SDQCR/L	B135
	32.51-AR				●		0.441	3/8	5/32	1/64	11/64	0.002~0.020	0.020~0.236	SDUCR/L	B135
	32.52-AR				●		0.425	3/8	5/32	1/32	11/64	0.002~0.024	0.020~0.236	SDZCR/L	B136
	32.53-AR				●		0.409	3/8	5/32	3/64	11/64	0.003~0.026	0.020~0.256		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

RC ○○

Round **Positive**

Relief Angle : 7°



Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		◓ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N	◓ ◓ ● ◓ ✱	
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

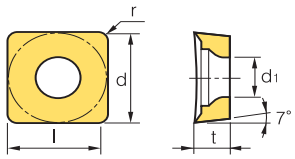
Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
RCGT-AK 	0602M0-AK				●		-	0.236	3/32	-	11/128	0.002~0.008	0.020~0.079	SRDCN	**B114**
	0803M0-AK				●		-	0.315	1/8	-	9/64	0.002~0.010	0.020~0.098	SRGCR/L	**B115**
	1003M0-AK				●		-	0.394	1/8	-	5/32	0.004~0.012	0.039~0.118		
	10T3M0-AK						-	0.394	5/32	-	11/64	0.004~0.012	0.039~0.118		
	1204M0-AK				●		-	0.472	3/16	-	11/64	0.004~0.014	0.039~0.138		
RCGT-AR 	0602M0-AR						-	0.236	3/32	-	11/128	0.002~0.008	0.020~0.079	SRDCN	**B114**
	0803M0-AR						-	0.315	1/8	-	9/64	0.002~0.010	0.020~0.098	SRGCR/L	**B115**
	1003M0-AR				●		-	0.394	1/8	-	5/32	0.004~0.012	0.039~0.118		
	10T3M0-AR						-	0.394	5/32	-	11/64	0.004~0.012	0.039~0.118		
	1204M0-AR						-	0.472	3/16	-	11/64	0.004~0.014	0.039~0.138		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

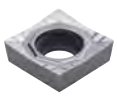
SC ○○

Square **90° Positive**

Relief Angle : 7°



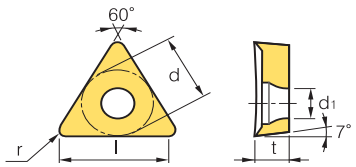
Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		◓ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N	◓ ◓ ● ◓ ✱	
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d1	fn (ipr)	ap (inch)	Designation	Page
SCGT-AK 	32.51-AK						0.366	0.375	5/32	1/128	11/64	0.001~0.012	0.004~0.157	SSBCR/L SSDCN SSKCR/L SSSCR/L	**B115** **B115** **B116** **B116**
	32.52-AK				●		0.358	0.375	5/32	1/64	11/64	0.002~0.016	0.004~0.197		
	431-AK				●		0.343	0.375	5/32	1/32	11/64	0.001~0.016	0.004~0.197		
	432-AK				●		0.484	0.500	3/16	1/64	7/32	0.001~0.020	0.004~0.197		
	434-AK				●		0.469	0.500	3/16	1/32	7/32	0.002~0.024	0.006~0.217		
SCGT-AR 	32.51-AR						0.358	0.375	5/32	1/64	11/64	0.001~0.016	0.020~0.197	SSBCR/L SSDCN SSKCR/L SSSCR/L	**B115** **B115** **B116** **B116**
	32.52-AR				●		0.343	0.375	5/32	1/32	11/64	0.002~0.020	0.020~0.236		
	431-AR						0.484	0.500	3/16	1/64	7/32	0.002~0.020	0.020~0.256		
	432-AR				●		0.469	0.500	3/16	1/32	7/32	0.002~0.024	0.020~0.256		
	434-AR						0.437	0.500	3/16	1/16	7/32	0.002~0.024	0.020~0.276		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

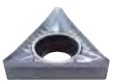
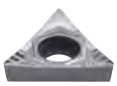
TC ○○

Triangular **60° Positive**
Relief Angle : 7°



Workpiece							
Steel	P						
Stainless steel	M						
Cast iron	K						
Non-ferrous metal	N	◓	◓	●	◓	✱	
Heat resistant alloy, Titanium alloy	S						
Hardened steel	H						

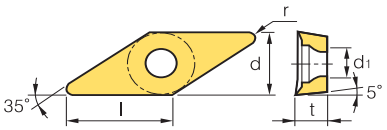
Machining types
● Continuous cutting
◓ General cutting
✱ Interrupted cutting

Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
TCGT-AK 	730.5-AK				●		0.358	7/32	3/32	1/128	13/128	0.000~0.005	0.002~0.118	STACR/L STFCR/L STFCR/L STGCR/L STTCR/L	**B116** **B116** **B137** **B117** **B117**
	731-AK				●		0.339	7/32	3/32	1/64	13/128	0.001~0.006	0.004~0.157		
	21.50.5-AK				●		0.413	1/4	3/32	1/128	7/64	0.001~0.008	0.002~0.157		
	21.51-AK				●		0.394	1/4	3/32	1/64	7/64	0.001~0.012	0.004~0.157		
	21.52-AK				●		0.354	1/4	3/32	1/32	7/64	0.001~0.016	0.004~0.197		
	32.50.5-AK				●		0.591	3/8	5/32	1/128	11/64	0.001~0.012	0.002~0.197		
	32.51-AK				●		0.610	3/8	5/32	1/64	11/64	0.001~0.016	0.004~0.217		
	32.52-AK				●		0.571	3/8	5/32	1/32	11/64	0.001~0.020	0.004~0.217		
	32.53-AK				●		0.531	3/8	5/32	3/64	11/64	0.002~0.024	0.006~0.217		
	32.54-AK				●		0.492	3/8	5/32	1/16	11/64	0.002~0.031	0.006~0.217		
	32.56.3-AK						0.394	3/8	5/32	13/128	11/64	0.002~0.035	0.008~0.276		
TCGT-AR 	730.5-AR						0.358	7/32	3/32	1/128	13/128	0.001~0.007	0.012~0.118	STACR/L STFCR/L STFCR/L STGCR/L STTCR/L	**B116** **B116** **B137** **B117** **B117**
	731-AR				●		0.339	7/32	3/32	1/64	13/128	0.001~0.010	0.012~0.197		
	21.50.5-AR						0.413	1/4	3/32	1/128	7/64	0.001~0.012	0.012~0.157		
	21.51-AR				●		0.394	1/4	3/32	1/64	7/64	0.001~0.016	0.012~0.197		
	21.52-AR						0.354	1/4	3/32	1/32	7/64	0.002~0.018	0.020~0.236		
	32.50.5-AR				●		0.591	3/8	5/32	1/128	11/64	0.001~0.018	0.012~0.197		
	32.51-AR				●		0.610	3/8	5/32	1/64	11/64	0.002~0.020	0.020~0.236		
	32.52-AR				●		0.571	3/8	5/32	1/32	11/64	0.002~0.024	0.020~0.236		
	32.53-AR						0.531	3/8	5/32	3/64	11/64	0.002~0.026	0.020~0.236		
	32.54-AR						0.492	3/8	5/32	1/16	11/64	0.003~0.028	0.020~0.256		
	32.56.3-AR						0.394	3/8	5/32	13/128	11/64	0.004~0.039	0.031~0.276		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

VB ○○

Rhombic **35° Positive**
Relief Angle : 5°



Workpiece							
Steel	P						
Stainless steel	M						
Cast iron	K						
Non-ferrous metal	N	●	●	●	●	✱	
Heat resistant alloy, Titanium alloy	S						
Hardened steel	H						

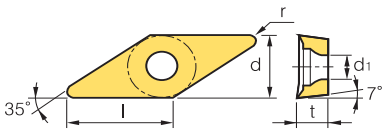
Machining types
● Continuous cutting
● General cutting
✱ Interrupted cutting

Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
VBGT-AK 	220.5-AK				●		0.413	1/4	1/8	1/128	7/64	0.001~0.006	0.002~0.118	SVABR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	**B117** **B118** **B119** **B138** **B139**
	221-AK				●		0.394	1/4	1/8	1/64	7/64	0.001~0.006	0.004~0.157		
	222-AK						0.354	1/4	1/8	1/32	7/64	0.001~0.007	0.004~0.197		
	330.5-AK						0.634	3/8	3/16	1/128	11/64	0.001~0.012	0.002~0.157		
	331-AK				●		0.614	3/8	3/16	1/64	11/64	0.001~0.016	0.004~0.197		
	332-AK				●		0.575	3/8	3/16	1/32	11/64	0.001~0.020	0.004~0.197		
	333-AK						0.535	3/8	3/16	3/64	11/64	0.002~0.024	0.004~0.217		
VBGT-AR 	220.5-AR						0.413	1/4	1/8	1/128	7/64	0.001~0.014	0.012~0.118	SVABR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	**B117** **B118** **B119** **B138** **B139**
	221-AR						0.394	1/4	1/8	1/64	7/64	0.001~0.018	0.012~0.157		
	222-AR						0.354	1/4	1/8	1/32	7/64	0.001~0.020	0.020~0.236		
	330.5-AR						0.634	3/8	3/16	1/128	11/64	0.002~0.018	0.012~0.197		
	331-AR				●		0.614	3/8	3/16	1/64	11/64	0.002~0.020	0.020~0.236		
	332-AR				●		0.575	3/8	3/16	1/32	11/64	0.002~0.024	0.020~0.236		
	333-AR						0.535	3/8	3/16	3/64	11/64	0.002~0.028	0.020~0.256		

Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

VC○○

Rhombic **35° Positive**
Relief Angle : 7°

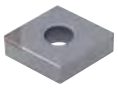
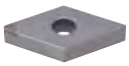
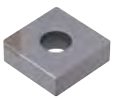
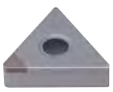
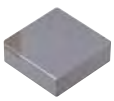
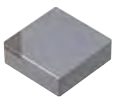
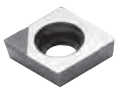
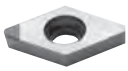


Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		◓ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N	◓ ◓ ● ◓ ✱	
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

Inserts	Designation	Coated			Uncoated		Dimensions (inch)					Cutting Condition		Available tool holders	
		PC205K	PC8110	PD1000	H01	H10	l	d	t	r	d_1	fn (ipr)	ap (inch)	Designation	Page
VCGT-AK 	220-AK						0.402	1/4	1/8	1/256	7/64	0.001~0.006	0.002~0.118	SVJCR/L SVVCN SVQCR/L SVUCR/L	**B118** **B119** **B138** **B139**
	220.5-AK				●		0.413	1/4	1/8	1/128	7/64	0.001~0.008	0.002~0.118		
	221-AK				●		0.394	1/4	1/8	1/64	7/64	0.001~0.010	0.004~0.157		
	222-AK				●		0.354	1/4	1/8	1/32	7/64	0.001~0.012	0.004~0.197		
	2.520.5-AK				●		0.413	5/16	1/8	1/128	9/64	0.001~0.014	0.004~0.197		
	2.521-AK				●		0.394	5/16	1/8	1/64	9/64	0.001~0.014	0.004~0.197		
	2.522-AK						0.354	5/16	1/8	1/32	9/64	0.002~0.016	0.004~0.197		
	330.5-AK				●		0.634	3/8	3/16	1/128	11/64	0.001~0.012	0.002~0.197		
	331-AK			●	●		0.614	3/8	3/16	1/64	11/64	0.001~0.016	0.004~0.197		
	332-AK				●		0.551	3/8	3/16	1/32	11/64	0.001~0.020	0.004~0.197		
	333-AK				●		0.535	3/8	3/16	3/64	11/64	0.001~0.020	0.004~0.197		
	43.54-AK						0.709	1/2	7/32	1/16	7/32	0.001~0.024	0.004~0.276		
	43.56.3-AK						0.614	1/2	7/32	13/128	7/32	0.002~0.028	0.004~0.276		
	43.57.5-AK				●		0.563	1/2	7/32	15/128	7/32	0.003~0.039	0.004~0.276		
VCGT-AR 	220-AR						0.402	1/4	1/8	1/256	7/64	0.001~0.008	0.004~0.118	SVJCR/L SVVCN SVQCR/L SVUCR/L	**B118** **B119** **B138** **B139**
	220.5-AR						0.413	1/4	1/8	1/128	7/64	0.001~0.010	0.012~0.118		
	221-AR				●		0.394	1/4	1/8	1/64	7/64	0.001~0.014	0.012~0.157		
	222-AR						0.354	1/4	1/8	1/32	7/64	0.002~0.018	0.020~0.236		
	2.520.5-AR						0.413	5/16	1/8	1/128	9/64	0.001~0.016	0.020~0.118		
	2.521-AR				●		0.394	5/16	1/8	1/64	9/64	0.001~0.018	0.020~0.157		
	2.522-AR						0.354	5/16	1/8	1/32	9/64	0.002~0.020	0.020~0.197		
	330.5-AR				●		0.634	3/8	3/16	1/128	11/64	0.001~0.016	0.012~0.197		
	331-AR				●		0.614	3/8	3/16	1/64	11/64	0.002~0.020	0.020~0.236		
	332-AR				●		0.551	3/8	3/16	1/32	11/64	0.002~0.024	0.020~0.236		
	333-AR				●		0.535	3/8	3/16	3/64	11/64	0.002~0.026	0.020~0.256		
	43.54-AR						0.709	1/2	7/32	1/16	7/32	0.004~0.026	0.031~0.256		
	43.56.3-AR				●		0.614	1/2	7/32	13/128	7/32	0.004~0.028	0.031~0.276		
	43.57.5-AR						0.563	1/2	7/32	15/128	7/32	0.005~0.030	0.039~0.276		

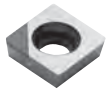
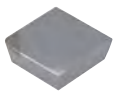
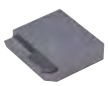
Cutting edge geometry **A31 ~ A34** Recommended chip breaker **B04 ~ B11** Code system **B16 ~ B17** S.P : **Special** ● : Stock item

cBN Regrinding (Negative / Positive)

Inserts		Designation		Grades								Dimensions (inch)				Available tool holders	
				KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
CN○○ 80° Nega		CNMA	431				●					1/2	3/16	1/64	13/64	DCBNR/L MCKNR/L DCLNR/L MCLNR/L PCBNR/L MCMNN PCLNR/L	B89 B106 B89 B106 B94 B106 B95
			431W									1/2	3/16	1/64	13/64		
			432				●					1/2	3/16	1/32	13/64		
			432W									1/2	3/16	1/32	13/64		
			433									1/2	3/16	3/64	13/64		
			433W									1/2	3/16	3/64	13/64		
DN○○ 55° Nega		DNMA	431				●					1/2	3/16	1/64	13/64	DDJNR/L MDJNR/L MDNNN MDQNR/L MDUNR/L PDJNR/L PDNNR/L PDSNR/L PDUNR/L	B90 B107 B107 B108 B132 B95 B96 B127 B129
			432				●					1/2	3/16	1/32	13/64		
			433									1/2	3/16	3/64	13/64		
SN○○ 90° Nega		SNMA	431									1/2	3/16	1/64	13/64	DSBNR/L MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L	B90 B108 B108 B109 B109 B110 B98 B98 B99
			432									1/2	3/16	1/32	13/64		
			433									1/2	3/16	3/64	13/64		
TN○○ 60° Nega		TNMA	331									3/8	3/16	1/64	5/32	MTENNS MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100 B100 B101 B102 B102 B102
			332									3/8	3/16	1/32	5/32		
			333									3/8	3/16	3/64	5/32		
			431									1/2	3/16	1/64	13/64		
			432									1/2	3/16	1/32	13/64		
			433									1/2	3/16	3/64	13/64		
VN○○ 35° Nega		VNMA	331									3/8	3/16	1/64	5/32	MVJNR/L MVQNR/L MVUNR/L MVVNN	B111 B112 B133 B112
			332				●					3/8	3/16	1/32	5/32		
			333									3/8	3/16	3/64	5/32		
CN○○ 80° Nega		CNGN	321									3/8	1/8	1/64	-	CCLNR/L	B120
			322									3/8	1/8	1/32	-		
			323									3/8	1/8	3/64	-		
			331									1/2	3/16	1/64	-		
			332									1/2	3/16	1/32	-		
			333									1/2	3/16	3/64	-		
SN○○ 90° Nega		SNGN	321									3/8	1/8	1/64	-	CSDNN CSKNR/L	B120 B121
			322									3/8	1/8	1/32	-		
			323									3/8	1/8	3/64	-		
			431									1/2	3/16	1/64	-		
			432									1/2	3/16	1/32	-		
			433									1/2	3/16	3/64	-		
TN○○ 60° Nega		TNGN	331									3/8	3/16	1/64	-	CTFNR/L CTGNR/L	B121 B121
			332									3/8	3/16	1/32	-		
			333									3/8	3/16	3/64	-		
CC○○ CP○○ 80° Posi	 (CCMW)	CCMW	32.51-VF									3/8	5/32	1/64	11/64	SCACR/L SCLCR/L	B113 B113
			32.52-VF									3/8	5/32	1/64	11/64		
		CPGB	2.51.51									1/4	3/32	1/64	5/32		
			2.51.52									1/4	3/32	1/32	5/32		
			2.521									3/8	5/32	1/64	7/64		
			2.522									3/8	5/32	1/32	7/64		
			2.523									3/8	5/32	3/64	7/64		
		CPGW	2.51.51									1/4	3/32	1/64	5/32		
			2.51.52									1/4	3/32	1/64	5/32		
DC○○ 55° Posi		DCMW	21.51									1/4	3/32	1/64	7/64	SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	B113 B114 B114 B135 B135 B136
			21.52									1/4	3/32	1/32	7/64		
			21.53									1/4	3/32	3/64	7/64		
			32.51									3/8	5/32	1/64	11/64		
			32.52									3/8	5/32	1/32	11/64		
			32.53									3/8	5/32	3/64	11/64		

● : Stock item

cBN Regrinding (Negative / Positive)

Inserts		Designation		Grades								Dimensions (inch)				Available tool holders	
				KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
SC○○ 90° Posi		SCMW	32.51									3/8	5/32	1/64	11/64	SSBCR/L	B115
			32.52									3/8	5/32	1/32	11/64	SSDCN	B115
			32.53									3/8	5/32	3/64	11/64	SSKCR/L	B116
																SSSCR/L	B116
TC○○ 60° Posi		TCGW	21.51									1/4	3/32	1/64	11/64	STACR/L	B116
			21.52									1/4	3/32	1/32	11/64	STFCR/L	B116
			32.51									3/8	5/32	1/64	7/64	STFPR/L	B144
			32.52									3/8	5/32	1/32	7/64	STGCR/L	B117
			32.53									3/8	5/32	3/64	7/64	STTCR/L	B117
VB○○ VC○○ 35° Posi		VBMW	21.51									1/4	3/32	1/64	7/64	SVABR/L	B117
			2152									1/4	3/32	1/32	7/64	SVHBR/L	B118
			221									1/4	1/8	1/64	9/64	SVJBR/L	B118
			222									1/4	1/8	1/32	9/64	SVQBR/L	B138
			331				●					3/8	3/16	1/64	11/64	SVUBR/L	B139
			332									3/8	3/16	1/32	11/64		
			333									3/8	3/16	3/64	11/64		
		VCMW	331									3/8	3/16	1/64	11/64	SVJCR	B118
			332									1/4	3/16	1/32	11/64	SVVCN	B119
			333									1/4	3/16	3/64	11/64		
SP○○ 90° Posi		SPGN	321									3/8	1/8	1/64		CSDPN	B104
			322									3/8	1/8	1/32		CSKPR/L	B105
			323									3/8	1/8	3/64			
			431									1/2	3/16	1/64			
			423									1/2	3/16	1/32			
			433									1/2	3/16	3/64			
TB○○ TP○○ 60° Posi	 TBGN	TBGN	1.210.5B									5/32	1/16	1/128	-	STUBR/L	B140
			1.211B									5/32	1/16	1/64	-		
			1.212B									5/32	1/16	1/32	-		
		TPGN	221									1/4	1/8	1/64	-	CTFPR/L	B105
			222									1/4	1/8	1/32	-	CTGPR/L	B105
			223									1/4	1/8	3/64	-		
			331									3/8	1/8	1/64	-		
			332									3/8	1/8	1/32	-		
			333									3/8	1/8	3/64	-		
RN○○ Nega		RNGN	120400-B									1/2	0.252	-	-	CRDNN	B120
																CRGNR/L	B120
RB○○ RC○○ RT○○ Posi	  	RBG	08-B									0.031	0.255	-	-		
			10-B									0.393	0.354	-	-		
			12-B									0.472	0.433	-	-		
			16-B									0.629	0.511	-	-		
			20-B									0.787	0.590	-	-		
			26-B									1.023	0.590	-	-		
		RCGA	0906M0									0.354	0.251	-	-		
		RTGN	0508M0									0.196	0.295	-	-		
			0608M0									0.236	0.295	-	-		
			0711MO									0.275	0.433	-	-		
			0811MO									0.314	0.433	-	-		
			0914MO									0.354	0.433	-	-		
			1014MO									0.393	0.551	-	-		
			1214MO									0.472	0.551	-	-		
Milling Insert		SNEN	1504ADTR									-	0.187	-	-		
			1504ADTL									-	0.187	-	-		
			1504DTR-W									-	0.187	-	-		
			1504DTL-W									-	0.187	-	-		

● : Stock item

cBN Grooving and Threading

Inserts		Designation	Grades			Dimensions (mm)					Available tool holders	
			KB420	KB320	KB335	Edge Thickness	Edge length	Nose R	Tool length	Tool Thickness	Designation	Page
BN○○		BNGNT 0200L				2.0	4.0	0.2	25	6.0		
		0200R				2.0	4.0	0.2	25	6.0		
		0250L				2.5	4.0	0.2	25	6.0		
		0250R				2.5	4.0	0.2	25	6.0		
		0300L				3.0	5.0	0.4	25	6.0		
		0300R				3.0	5.0	0.4	25	6.0		
		0400L				4.0	6.0	0.4	26	6.0		
		0400R				4.0	6.0	0.4	26	6.0		
		0500L				5.0	6.0	0.4	26	6.0		
		0500R				5.0	6.0	0.4	26	6.0		
		0600L				6.0	7.0	0.4	27	6.0		
		0600R				6.0	7.0	0.4	27	6.0		
		BNTT 1020L				Pitch 1.0~2.0		0.13	25	2.0		
		1020R				Pitch 1.0~2.0		0.13	25	2.0		
		1530L				Pitch 1.5~3.0		0.13	25	2.0		
		1530R				Pitch 1.5~3.0		0.13	25	2.0		

M This is metric size. We can also provide in inch type

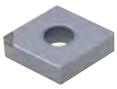
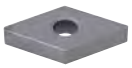
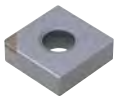
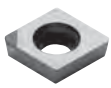
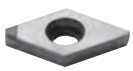
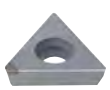
cBN Mini Boring bar

Inserts		Designation	Grades	Min. boring dia.	Dimensions (mm)				Available tool holders	
			KB350		Tool length	Diameter	Width	Nose R	Designation	Page
BN○○ R		BNBB 03R		3.5	60	3.5	2.4	0.2		
		035R		4.0	60	3.5	2.9	0.2		
		04R		4.5	60	4.0	3.4	0.2		
		045R		5.0	60	4.5	3.9	0.2		
		05R		5.5	80	5.0	4.4	0.2		
		055R		6.0	80	5.5	4.9	0.2		
		06R		6.5	80	6.0	5.4	0.2		
		065R		7.0	80	6.5	5.9	0.2		
		07R		7.5	100	7.0	6.4	0.2		
		075R		8.0	100	7.5	6.9	0.2		
		08R		8.5	100	8.0	7.4	0.2		

● : Stock item

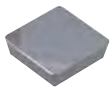
M This is metric size. We can also provide in inch type

cBN One-Use Type (Negative / Positive)

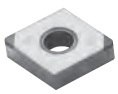
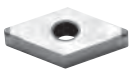
Inserts		Designation	Grades								Dimensions (inch)				Available tool holders	
			KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
CN○○ 80° Nega		NU-CNMA 431				●					1/2	3/16	1/64	13/64	DCBNR/L, DCLNR/L, MCKNR/L, MCLNR/L, MCMNN, PCBNR/L, PCLNR/L	B 89 B 89 B106 B106 B106 B 94 B 95
		432				●					1/2	3/16	1/32	13/64		
		433									1/2	3/16	3/64	13/64		
DN○○ 55° Nega		NU-DNMA 431									1/2	3/16	1/64	13/64	DDJNR/L MDJNR/L MDNNN MDQNR/L MDUNR/L PDJNR/L PDNNR/L PDSNR/L PDUNR/L	B 90 B107 B107 B108 B132 B 95 B 96 B128 B129
		432									1/2	3/16	1/32	13/64		
		433									1/2	3/16	3/64	13/64		
SN○○ 90° Nega		NU-SNMA 431									1/2	3/16	1/64	13/64	DSBNR/L MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L	B90 B108 B108 B109 B109 B110 B98 B98 B99
		432									1/2	3/16	1/32	13/64		
		433									1/2	3/16	3/64	13/64		
TN○○ 60° Nega		NU-TNMA 331									3/8	3/16	1/64	5/32	MTENN MTFNR/L MTGNR/L MTJNR/L PTFNR/ PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100 B100 B101 B102 B102 B102
		332									3/8	3/16	1/32	5/32		
		333									3/8	3/16	3/64	5/32		
VN○○ 35° Nega		NU-VNMA 331									3/8	3/16	1/64	5/32	MVJNR/L MVQNR/L MVUNR/L MVVNN	B111 B112 B133 B112
		332									3/8	3/16	1/32	5/32		
		333									3/8	3/16	3/64	5/32		
CC○○ CP○○ 80° Posi		NU-CCMW 21.50.5									1/4	3/32	1/128	7/64	SCACR/L SCLCR/L	B113 B113
		21.51									1/4	3/32	1/64	7/64		
		21.52									1/4	3/32	1/32	7/64		
		32.50.5									3/8	5/32	1/128	11/64		
		32.51									3/8	5/32	1/64	11/64		
		32.52									3/8	5/32	1/32	11/64		
		NU-CPMB 2.51.51									5/16	3/32	1/64	5/32	SCLPR/L	B142
		2.51.52									5/16	3/32	1/32	5/32		
		321									3/8	1/8	1/64	11/64		
		322									3/8	1/8	1/32	11/64		
DC○○ 55° Posi		NU-DCMW 21.50.5									1/4	3/32	1/128	7/64	SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	B113 B114 B135 B135 B135 B136
		21.51									1/4	3/32	1/64	7/64		
		21.52									1/4	3/32	1/32	7/64		
		32.50.5									3/8	5/32	1/128	11/64		
		32.51									3/8	5/32	1/64	11/64		
		32.52									3/8	5/32	1/32	11/64		
TC○○ TP○○ 60° Posi		NU-TCGW 731									7/32	3/32	1/64	7/64	STACR/L STFCR/L STFPR/L STGCR/L STTCR/L	B116 B116 B144 B117 B117
		732									7/32	3/32	1/32	7/64		
		21.50.5									1/4	3/32	1/128	3/32		
		21.51									1/4	3/32	1/64	3/32		
		21.52									1/4	3/32	1/32	3/32		
		32.51									3/8	5/32	1/64	11/64		
		32.52									3/8	5/32	1/32	11/64		
		NU-TPGW 630.5									3/16	3/32	1/128	3/32	STFPR/L STWPR/L STUPR/L	B137 B137 B145
		631									3/16	3/32	1/64	3/32		
		632									3/16	3/32	1/32	3/32		
		731									7/32	3/32	1/64	7/64		
		732									7/32	3/32	1/32	7/64		
		220.5									1/4	1/8	1/128	7/64		
		221									1/4	1/8	1/64	7/64		
		222									1/4	1/8	1/32	7/64		
		331									3/8	3/16	1/64	5/32		
		332									3/8	3/16	1/32	5/32		

● : Stock item

CBN One-Use Type (Positive)

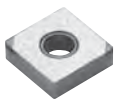
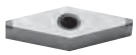
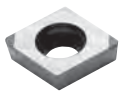
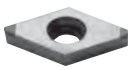
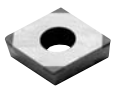
Inserts		Designation	Grades								Dimensions (inch)				Available tool holders	
			KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
VB○○ VC○○ 35° Posi		NU-VBMW 21.50.5									1/4	3/32	1/128	3/32	SVABR/L SVHBR/L SVJBR/L SVQBR/L SVUBR/L	B117 B118 B118 B138 B139
		21.51									1/4	3/32	1/64	3/32		
		220.5									1/4	1/8	1/128	7/64		
		221									1/4	1/8	1/64	7/64		
		222									1/4	1/8	1/32	7/64		
		330.5									3/8	3/16	1/128	11/64		
		331									3/8	3/16	1/64	11/64		
		332									3/8	3/16	1/32	11/64		
		NU-VCMW 221									1/4	1/8	1/64	7/64	SVJCR SVVCN	B118 B119
		222									1/4	1/8	1/32	7/64		
		331									3/8	3/16	1/64	11/64		
		332									3/8	3/16	1/32	11/64		
		333									3/8	3/16	3/64	11/64		
SP○○ 90° Posi		NU-SPGN 321									3/8	1/8	1/64	-	CSDPN CSKPR/L	B104 B105
		322									3/8	1/8	1/32	-		
		421									1/2	1/8	1/64	-		
		422									1/2	1/8	1/32	-		
		431									1/2	3/16	1/64	-		
		432									1/2	3/16	1/32	-		
TP○○ 60° Posi		NU-TPGN 221									1/4	1/8	1/64	-	CTFPR/L CTGPR/L	B105 B105
		222									1/4	1/8	1/32	-		
		321									3/8	1/8	1/64	-		
		322									3/8	1/8	1/32	-		

CBN Multi-Corner Type (Negative / Positive)

Inserts		Designation	Uncoated								Coated		Dimensions (inch)				Available tool holders	
			KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	DNC250	DNC280	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
CN○○ 80° Nega		2NU-CNGA 431											1/2	3/16	1/64	13/64	DCBNR/L DCLNR/L MCKNR/ MCLNR/L MCMNN PCBNR/L PCLNR/L	B 89 B 89 B106 B106 B106 B 94 B 95
		431W											1/2	3/16	1/64	13/64		
		432											1/2	3/16	1/32	13/64		
		432W											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
		433W											1/2	3/16	3/64	13/64		
		4NU-CNGA 431											1/2	3/16	1/64	13/64		
		431W											1/2	3/16	1/64	13/64		
		432											1/2	3/16	1/32	13/64		
		432W											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
		433W											1/2	3/16	3/64	13/64		
DN○○ 55° Nega		2NU-DNGA 431											1/2	3/16	1/64	13/64	DDJNR/ MDJNR/L MDNNN MDQNR/L MDUNR/L PDJNR/L PDNNR/L PDSNR/L PDUNR/L	B 90 B107 B107 B108 B132 B 95 B 96 B128 B129
		432											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
		4NU-DNGA 431											1/2	3/16	1/64	13/64		
		432											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		

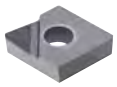
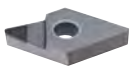
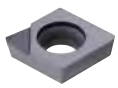
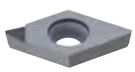
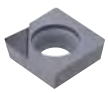
● : Stock item

cBN Multi-Corner Type (Negative / Positive)

Inserts		Designation	Uncoated								Coated		Dimensions (inch)				Available tool holders	
			KB410	KB420	KB425	KB320	KB210	KB335	KB350	KB370	DNC250	DNC280	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
SN○○ 90° Nega		2NU-SNGA 431											1/2	3/16	1/64	13/64	DSBNR/L MSBNR/L MSDNN MSKNR/L MSRNR/L MSSNR/L PSBNR/L PSDNN PSKNR/L	B90 B108 B108 B109 B109 B110 B98 B98 B99
		432											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
		4NU-SNGA 431											1/2	3/16	1/64	13/64		
		432											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
		8NU-SNGA 431											1/2	3/16	1/64	13/64		
		432											1/2	3/16	1/32	13/64		
		433											1/2	3/16	3/64	13/64		
TN○○ 60° Nega		3NU-TNGA 331											3/8	3/16	1/64	5/32	MTENN MTFNR/L MTGNR/ MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100 B100 B101 B102 B102 B102
		332											3/8	3/16	1/32	5/32		
		333											3/8	3/16	3/64	5/32		
		6NU-TNGA 331											3/8	3/16	1/64	5/32		
		332											3/8	3/16	1/32	5/32		
		333											3/8	3/16	3/64	5/32		
VN○○ 35° Nega		2NU-VNGA 331											3/8	3/16	1/64	5/32	MVJNR/L MVQNR/L MVUNR/L MVVNN	B111 B112 B133 B112
		332											3/8	3/16	1/32	5/32		
		333											3/8	3/16	3/64	5/32		
		4NU-VNGA 331											3/8	3/16	1/64	5/32		
		332											3/8	3/16	1/32	5/32		
		333											3/8	3/16	3/64	5/32		
CC○○ 80° Posi		2NU-CCMW 21.51											1/4	3/32	1/64	7/64	SCACR/L SCLCR/L	B113 B113
		2NU-CCGW 21.51W											1/4	3/32	1/64	7/64		
		2NU-CCMW 21.52											1/4	3/32	1/32	7/64		
		2NU-CCGW 21.52 W											1/4	3/32	1/32	7/64		
		32.51											3/8	5/32	1/64	5/32		
		32.51W											3/8	5/32	1/64	5/32		
		32.52W											3/8	5/32	1/32	5/32		
		32.52W											3/8	5/32	1/32	5/32		
		32.53											3/8	5/32	3/64	5/32		
		32.53W											3/8	5/32	3/64	5/32		
DC○○ 55° Posi		2NU-DCGW 32.51											3/8	5/32	1/128	11/64	SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	B113 B114 B135 B135 B136
		32.52											3/8	5/32	1/64	11/64		
		32.53											3/8	5/32	1/32	11/64		
SC○○ 90° Posi		4NU-SCGW 32.51											3/8	5/32	1/128	11/64	SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	B113 B114 B135 B135 B136
		32.52											3/8	5/32	1/64	11/64		
		32.53											3/8	5/32	1/32	11/64		
TP○○ 60° Posi		3NU-TPGN 221											1/4	1/8	1/64	-	CTFPR/L CTGPR/L	B105 B105
		222											1/4	1/8	1/32	-		
		331											3/8	3/16	1/64	-		
		332											3/8	3/16	1/32	-		
		3NU-TPGB 221											1/4	1/8	1/64	3/32		
		222											1/4	1/8	1/32	3/32		
		3NU-TPGW 331											3/8	3/16	1/64	5/32		
		332											3/8	3/16	1/32	5/32		
VB○○ 35° Posi		2NU-VBGW 221											1/4	1/8	1/64	7/64	SVABR/L SVHBR/L SVJBR/L SVQBR/L SVUBR/L	B117 B118 B118 B138 B139
		222											1/4	1/8	1/32	7/64		
		331											3/8	3/16	1/64	11/64		
		332											3/8	3/16	1/32	11/64		

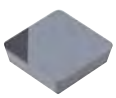
● : Stock item

PCD Insert (Negative / Positive)

Inserts		Designation		Grades DP90	Grades DP150	Grades DP200	Dimensions (inch) Inscribed circle	Thickness	Nose R	Hole size	Available tool holders Designation	Page
CN○○ 80° Nega	 (CNMX)	CNMM	431		●		1/2	3/16	1/64	13/64	DCBNR/L DCLNR/L MCKNR/L MCLNR/L MCMNN PCBNR/L PCLNR/L	B 89 B 89 B106 B106 B106 B 94 B 95
			432				1/2	3/16	1/32	13/64		
			433				1/2	3/16	3/64	13/64		
		CNMX	431				1/2	3/16	1/64	13/64		
			432				1/2	3/16	1/32	13/64		
			433				1/2	3/16	3/64	13/64		
DN○○ 55° Nega	 (CNMX)	DNMM	431				1/2	3/16	1/64	13/64	DDJNR/L MDJNR/L MDNNN MDQNR/L MDUNR/L PDJNR/L PDNNR/L PDSNR/L PDUNR/L	B90 B107 B107 B108 B132 B95 B96 B128 B129
			432				1/2	3/16	1/32	13/64		
			433				1/2	3/16	3/64	13/64		
		DNMX	431				1/2	3/16	1/64	13/64		
			432				1/2	3/16	1/32	13/64		
			433				1/2	3/16	3/64	13/64		
TN○○ 60° Nega		TNMX	331				3/8	3/16	1/64	5/32	MTENNS MTFNR/L MTGNR/L MTJNR/L PTFNR/L PTGNR/L PTTNR/L WTENN WTJNR/L WTXNR/L	B110 B110 B111 B111 B100 B100 B101 B102 B102 B102
			332				3/8	3/16	1/32	5/32		
			333				3/8	3/16	3/64	5/32		
VN○○ 35° Nega		VNMX	431				3/8	3/16	1/64	5/32	MVJNR/L MVQNR/L MVUNR/L MVVNN	B111 B112 B133 B112
			432				3/8	3/16	1/32	5/32		
			433				3/8	3/16	3/64	5/32		
CC○○ CP○○ 80° Posi		CCMT	21.50.5		●		1/4	3/32	1/128	7/64	SCACR/L SCLCR/L	B113 B113
			21.51		●		1/4	3/32	1/64	7/64		
			21.52				1/4	3/32	1/32	7/64		
			32.51		●		3/8	5/32	1/64	11/64		
			32.52		●		3/8	5/32	1/32	11/64		
			32.53				3/8	5/32	3/64	11/64		
		CPMT	2.51.51				5/16	3/32	1/64	5/32		
			2.51.52				5/16	3/32	1/32	5/32		
			2.51.53				5/16	3/32	3/64	5/32		
			321				3/8	1/8	1/64	11/64		
			322				3/8	1/8	1/32	11/64		
			323				3/8	1/8	3/64	11/64		
DC○○ 55° Posi		DCMT	21.50.5		●		1/4	3/32	1/128	7/64	SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	B113 B114 B135 B135 B136
			21.51				1/4	3/32	1/64	7/64		
			21.52				1/4	3/32	1/32	7/64		
			32.50.5				3/8	5/32	1/128	11/64		
			32.51				3/8	5/32	1/64	11/64		
			32.52		●		3/8	5/32	1/32	11/64		
SC○○ SP○○ 90° Posi	 (SCMT)	SCMT	32.51				3/8	5/32	1/64	11/64	SSBCR/L SSDCN SSKCR/L SSSCR/L	B115 B115 B116 B116
			32.52				3/8	5/32	1/32	11/64		
			32.53				3/8	5/32	3/64	11/64		
		SPGT	32.50.5				3/8	5/32	1/128	11/64		
			32.51				3/8	5/32	1/64	11/64		
			32.52				3/8	5/32	1/32	11/64		

● : Stock item

PCD Insert (Negative / Positive)

Inserts		Designation		Grades			Dimensions (inch)				Available tool holders	
				DP90	DP150	DP200	Inscribed circle	Thickness	Nose R	Hole size	Designation	Page
TB ○○ TC ○○ TP ○○ 60° Posi	 (TBGN)	TBGW	520.5				5/32	1/16	1/128	7/64	STUBR/L	**B140**
			521				5/32	1/16	1/64	7/64		
		TCMT	730				7/32	3/32	1/256	3/32	STACR/L STFCR/L STFPR/L STGCR/L STTCR/L	**B116** **B116** **B144** **B117** **B117**
			730.5				7/32	3/32	1/128	3/32		
			731				7/32	3/32	1/64	3/32		
			230				1/4	3/32	1/256	7/64		
			230.5				1/4	3/32	1/128	7/64		
			231				1/4	3/32	1/64	7/64		
		TPGB	631				3/16	3/32	1/64	3/32		
			632				3/16	3/32	1/32	3/32		
			731				7/32	3/32	1/64	7/64		
			732				7/32	3/32	1/32	7/64		
			221				1/4	1/8	1/64	7/64		
			222				1/4	1/8	1/32	7/64		
		TPGW	630.5				3/16	3/32	1/128	3/32		
			631				3/16	3/32	1/64	3/32		
			220.5				1/4	1/8	1/128	7/64		
			221				1/4	1/8	1/64	7/64		
			222				1/4	1/8	1/32	7/64		
			331				3/8	3/16	1/64	5/32		
			332				3/8	3/16	1/32	5/32		
		TPGT	220.5				1/4	1/8	1/128	7/64		
			221				1/4	1/8	1/64	7/64		
VB ○○ VC ○○ 35° Posi	 (VCMT)	VBMT	220.5				1/4	1/8	1/128	7/64	SVABR/L SVHBR/L SVJBR/L SVQBR/L SVUBR/L	**B117** **B118** **B92** **B138** **B139**
			221				1/4	1/8	1/64	7/64		
			222				1/4	1/8	1/32	7/64		
			330.5				3/8	3/16	1/128	11/64		
			331				3/8	3/16	1/64	11/64		
			332				3/8	3/16	1/32	11/64		
			333				3/8	3/16	3/64	11/64		
		VCMT	220.5				1/4	1/8	1/128	7/64	SVJCR SVVCN	**B118** **B119**
			221				1/4	1/8	1/64	7/64		
			222				1/4	1/8	1/32	7/64		
			331				3/8	3/16	1/64	11/64		
			332				3/8	3/16	1/32	11/64		
			333				3/8	3/16	3/64	11/64		
TP ○○ 60° Posi		TPGN	731				7/32	3/32	1/64	-	CTFPR/L CTGPR/L	**B105** **B105**
			732				7/32	3/32	1/32	-		
			220.5				1/4	1/8	1/128	-		
			221				1/4	1/8	1/64	-		
			222				1/4	1/8	1/32	-		
			320.5				3/8	1/8	1/128	-		
			321				3/8	1/8	1/64	-		
			322				3/8	1/8	1/32	-		
SP ○○ 90° Posi		SPGN	321				3/8	1/8	1/64	-	CSDPN CSKPR/L	**B104** **B105**
			322				3/8	1/8	1/32	-		
			421				1/2	1/8	1/64	-		
			422				1/2	1/8	1/32	-		

● : Stock item