

HOW TO READ THE STANDARD OF TURNING INSERTS

● How this section page is organized

- ① Organized according to turning insert shape. (Refer to the index on the next page.)
- ② Inserts are arranged in order of :
 - Negative inserts (with hole→without hole)
 - Positive inserts (with hole→without hole)
- ③ Breakers are arranged in order of :
 - Finish Cutting→Light Cutting→Medium Cutting
 - Rough Cutting→Heavy Cutting

● Graph of chip control by work material

Shows recommended chip breakers and chip control range according to work material and cutting application. Graphs are colored according to cutting applications (Finish→Light→Medium→Rough→Heavy) and contain recommended breakers for each application.

Finish Cutting : — Light Cutting : — Medium Cutting : —
 Rough Cutting : — Heavy Cutting : —

GRADE APPLICATION RECOMMENDED FOR EACH WORK MATERIAL
 cutting conditions suitable for each type of work material is shown as a general guide to select the grade.
 ● : Stable Cutting ○ : General Cutting ✖ : Unstable Cutting

SHAPE & ANGLE MARK
INDICATION OF NEGATIVE/ POSITIVE TYPE

PRODUCT SECTION
TITLE OF PRODUCT ACCORDING TO THE INSERT TYPE

TURNING INSERTS [NEGATIVE]
80° CN TYPE INSERTS WITH HOLE
 CNMG 4 3 0.5 FP

CHIP CONTROL RANGE FOR WORK MATERIALS

WORKING MATERIALS

Workpiece Material	Shape	Order Number	(ISO) Number	RE (mm)	Coated	Stocked	Grade
P Steel	FP	CNMG430.FP	CNMG120403.FP	0.02	●	●	●
		CNMG432.FP	CNMG120402.FP	0.04	●	●	●
		CNMG433.FP	CNMG120401.FP	0.07	●	●	●
M Stainless Steel	FM	CNMG432.FM	CNMG120403.FM	0.02	●	●	●
		CNMG433.FM	CNMG120402.FM	0.04	●	●	●
		CNMG434.FM	CNMG120401.FM	0.07	●	●	●
K Cast Iron	FK	CNMG432.FK	CNMG120403.FK	0.02	●	●	●
		CNMG433.FK	CNMG120402.FK	0.04	●	●	●
		CNMG434.FK	CNMG120401.FK	0.07	●	●	●
N Non-ferrous Metal	FN	CNMG432.FN	CNMG120403.FN	0.02	●	●	●
		CNMG433.FN	CNMG120402.FN	0.04	●	●	●
		CNMG434.FN	CNMG120401.FN	0.07	●	●	●
S Heat-resistant Alloy, Titanium Alloy	FS	CNMG432.FS	CNMG120403.FS	0.02	●	●	●
		CNMG433.FS	CNMG120402.FS	0.04	●	●	●
		CNMG434.FS	CNMG120401.FS	0.07	●	●	●
W	WS	CNMG432.WS	CNMG120403.WS	0.02	●	●	●
		CNMG433.WS	CNMG120402.WS	0.04	●	●	●
		CNMG434.WS	CNMG120401.WS	0.07	●	●	●

● USA Stock ✖ : Stocked in Japan
 ○ : Stocked in one case

STOCK STATUS
INSERT GRADES

INSERT NUMBER

CHIP BREAKERS
 A440
 A450
 A460
 A470
 A480
 A490
 A500
 A510
 A520
 A530
 A540
 A550
 A560
 A570
 A580
 A590
 A600

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A440
GRADES > A450
IDENTIFICATION > A502

LEGEND FOR STOCK STATUS MARK
 is shown on the left hand page of each double-page spread.

CUTTING APPLICATION
 is shown in order of: Finish→Light→Medium→Rough→Heavy.

PHOTO OF INSERT
INDICATION OF CHIPBREAKER
 indicates the designation for a chipbreaker.

PAGE REFERENCE
 ·CHIP BREAKERS
 ·GRADES
 ·TECHNICAL DATA
 indicates reference pages, on the right hand page of each double-page spread.

INSERT CORNER RADIUS (RE)

● To Order : Please specify insert number and grade.

TURNING TOOLS

INSERT STANDARDS INSERT GRADES

IDENTIFICATION	A002
HOLE GEOMETRY	A004
PRECISION BREAKER STANDARD	A008
TOOL NAVI	A013
OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING ...	A014
PRECISION BREAKER SYSTEM	A030
WIPER INSERT.....	A032
GRADES FOR TURNING	A034
TURNING APPLICATION RANGE	A035
COATED CARBIDE (CVD)	A038
COATED CARBIDE (PVD)	A040
CERMET	A041
COATED CERMET	A042
CEMENTED CARBIDE	A043
MICRO-GRAIN CEMENTED CARBIDE	A044
CLASSIFICATION.....	A046
RECOMMENDED CUTTING CONDITIONS	A080

STANDARD OF INSERTS

NEGATIVE INSERTS WITH HOLE

CN○○TYPE...RHOMBIC 80°	A106
DN○○TYPE...RHOMBIC 55°	A114
RN○○TYPE...ROUND	A122
SN○○TYPE...SQUARE 90°	A123
TN○○TYPE...TRIANGULAR 60°	A130
VN○○TYPE...RHOMBIC 35°	A138
WN○○TYPE...TRIGON 80°	A142

NEGATIVE INSERTS WITHOUT HOLE

KN○○TYPE...PARALLELOGRAM 55°... ..	A148
CN○○TYPE...RHOMBIC 80°	A149
SN○○TYPE...SQUARE 90°	A150
TN○○TYPE...TRIANGULAR 60°	A151

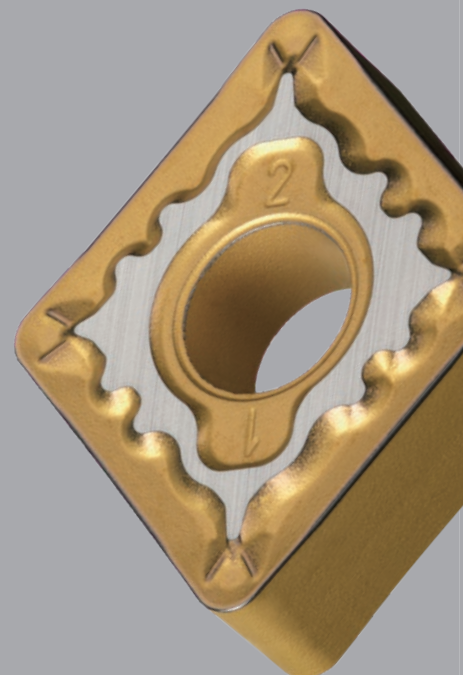
POSITIVE INSERTS WITH HOLE

CC○○TYPE...RHOMBIC 80°	A152
CP○○TYPE...RHOMBIC 80°	A162
DC○○TYPE...RHOMBIC 55°	A164
DE○○TYPE...RHOMBIC 55°	A172
RC○○TYPE...ROUND	A173

SC○○TYPE...SQUARE 90°	A174
SP○○TYPE...SQUARE 90°	A176
TC○○TYPE...TRIANGULAR 60°	A177
TE○○TYPE...TRIANGULAR 60°	A181
TP○○TYPE...TRIANGULAR 60°	A182
VB○○TYPE...RHOMBIC 35°	A186
VC○○TYPE...RHOMBIC 35°	A190
VD○○TYPE...RHOMBIC 35°	A193
VP○○TYPE...RHOMBIC 35°	A194
WB○○TYPE...TRIGON 80°	A195
WC○○TYPE...TRIGON 80°	A196
WP○○TYPE...TRIGON 80°	A198
XC○○TYPE...RHOMBIC 25°	A199

POSITIVE INSERTS WITHOUT HOLE

RTG TYPE.....	A200
SP○○TYPE...SQUARE 90°	A201
TC○○TYPE...TRIANGULAR 60°	A202
TP○○TYPE...TRIANGULAR 60°	A203



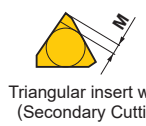
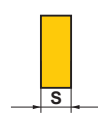
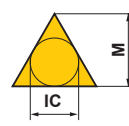
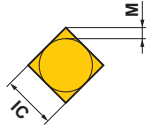
A001

IDENTIFICATION

TURNING INSERTS

A

Symbol	Insert Shape	
H	Hexagonal	
O	Octagonal	
P	Pentagonal	
S	Square	
T	Triangular	
C	Rhombic 80°	
D	Rhombic 55°	
E	Rhombic 75°	
F	Rhombic 50°	
M	Rhombic 86°	
V	Rhombic 35°	
W	Trigon	
L	Rectangular	
A	Parallelogram 85°	
B	Parallelogram 82°	
K	Parallelogram 55°	
R	Round	
X	Special	



Triangular insert with a facet (Secondary Cutting Edge)

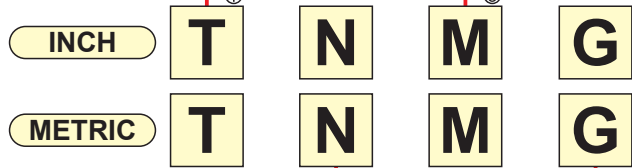
③ Symbol for Tolerance Class

Symbol	Tolerance of Nose Height M (inch)	Tolerance of Inscribed Circle IC (inch)	Tolerance of Thickness S (inch)	Detail of M Class Insert Tolerance						
				● Tolerance of Nose Height M (inch)						
				I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
A	±.0002	±.001	±.001	.250	±.003	±.003	±.003	±.004	±.0063	-
F	±.0002	±.0005	±.001	.375	±.003	±.003	±.003	±.004	±.0063	-
C	±.0005	±.001	±.001	.500	±.005	±.005	±.005	±.006	-	-
H	±.0005	±.0005	±.001	.625	±.006	±.006	±.006	±.007	-	-
E	±.001	±.001	±.001	.750	±.006	±.006	±.006	±.007	-	-
G	±.001	±.001	±.005	1.000	-	±.007	-	-	-	-
J	±.002	±.002	±.005	1.250	-	±.008	-	-	-	-
K*	±.0005	±.002 - ±.006	±.001	● Tolerance of Inscribed Circle IC (inch)						
L*	±.001	±.002 - ±.006	±.001	I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
M*	±.003 - ±.007	±.002 - ±.006	±.005	.250	±.002	±.002	±.002	±.002	±.002	-
N*	±.003 - ±.007	±.002 - ±.006	±.001	.375	±.002	±.002	±.002	±.002	±.002	±.002
U*	±.005 - ±.015	±.003 - ±.01	±.005	.500	±.003	±.003	±.003	±.003	-	±.003
				.625	±.004	±.004	±.004	±.004	-	±.004
				.750	±.004	±.004	±.004	±.004	-	±.004
				1.000	-	±.005	-	-	-	±.005
				1.250	-	±.006	-	-	-	±.006

*As a rule, the sides of these inserts are as sintered. Tolerance differs with insert size. For the accuracy of class M, refer to the table on the right.

① Symbol for Insert Shape

③ Symbol for Tolerance Class



② Symbol for Relief Angle

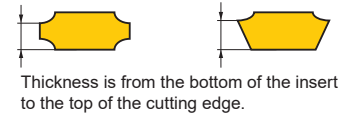
Symbol	Relief Angle	
A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	
O	Other Relief Angle	
Major Relief Angle		

④ Symbol for Chipbreaker and Clamping System

Inch			Metric									
Figure	I.C. .250" and over	I.C. under .250"	Symbol	Hole	Hole Configuration	Chip Breaker	Figure	Symbol	Hole	Hole Configuration	Chip Breaker	Figure
	A	D	W	With Hole	Cylindrical Hole + One Countersink (40-60°)	No		A	With Hole	Cylindrical Hole	No	
	M	P	T	With Hole	Cylindrical Hole + One Countersink (40-60°)	One Sided		M	With Hole	Cylindrical Hole	One Sided	
	G	K	Q	With Hole	Cylindrical Hole + Double Countersink (40-60°)	No		G	With Hole	Cylindrical Hole	Double Sided	
	N	E	U	With Hole	Cylindrical Hole + One Countersink (70-90°)	Double Sided		N	Without Hole	-	No	
	R	S	B	With Hole	Cylindrical Hole + One Countersink (70-90°)	No		R	Without Hole	-	One Sided	
	F	L	H	With Hole	Cylindrical Hole + Double Countersink (70-90°)	One Sided		F	Without Hole	-	Double Sided	
	X	X	C	With Hole	Cylindrical Hole + Double Countersink (70-90°)	No		X	-	-	-	
			J	With Hole	Cylindrical Hole + Double Countersink (70-90°)	Double Sided						
Special Design												

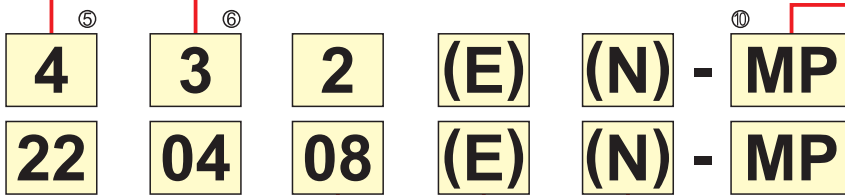
Inch		Diameter of Inscribed Circle (inch)	Metric						
I.C. .250" and over	I.C. under .250"		R	W	V	D	C	S	T
	1.2	.156		02		04	03	03	06
	1.5	.187		L3		08	05	04	08
	1.8	.219		03	09	06	05	05	09
2		.250		04	11	07	06	06	11
2.5		.313		05	13	09	08	07	13
3		.375	09	06	16	11	09	09	16
4		.500	12	08	22	15	12	12	22
5		.625		10		19	16	15	27
6		.750	19	13		23	19	19	33
7		.875				27	22	22	38
8		1.000	25			31	25	25	44
10		1.250	31			38	32	31	54
		6.00mm	06						
		8.00mm	08						
		10.00mm	10						
		12.00mm	12						
		16.00mm	16						
		20.00mm	20						
		25.00mm	25						
		32.00mm	32						

⑤ Symbol for Insert Size



Inch		Thickness (inch)	Metric
I.C. .250" and over	I.C. under .250"		
-	0.9	.055	S1
-	1	.063	01
-	1.1	.070	T0
-	1.2	.078	T1
-	1.5	.094	02
-	1.8	.109	T2
2	-	.125	03
2.5	-	.156	T3
3	-	.187	04
3.5	-	.219	05
4	-	.25	06
5	-	.313	07
6	-	.375	09

⑥ Symbol for Insert Thickness



⑩ Symbol for Chip Breaker

LP	MP	RP
LM	MM	RM
LK	MK	RK
LS	MS	RS
MA	SW	MW

⑦ Symbol for Insert Corner Configuration

Inch	Corner Radius (inch)	Metric
V0	Sharp Nose	00
V3	.0012	V3
V5	.002	V5
0.2	.004	01
0.5	.008	02
1	.016	04
2	.031	08
3	.047	12
4	.063	16
5	.079	20
6	.094	24
7	.110	28
8	.126	32
00	Round Insert	M0

⑧ Symbol for Cutting Edge Condition

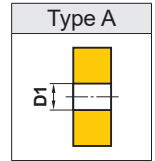
Figure	Cutting Edge	Symbol
	Sharp Cutting Edges	F
	Round Cutting Edges	E
	Chamfered Cutting Edges	T
	Chamfered and Rounded Cutting Edges	S
-	(-) Corner R tolerance	M

Mitsubishi Materials omit the honing symbol.

⑨ Symbol for Cutting Direction

Figure	Hand	Symbol
	Right	R
	Left	L
	Neutral	N

HOLE GEOMETRY

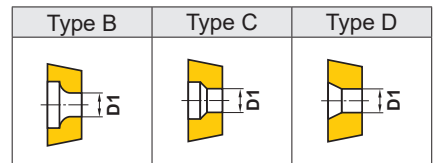


A

TURNING INSERTS

NEGATIVE

Insert Number		(ISO) Number		Dimension (inch)		Hole Type
				D1		
CNGA CNGG CNMA CNMG CNMM CNMP	32 [○]	CNGA CNGG CNMA CNMG CNMM CNMP	0903 ^{○○}	.150	A	
	32.5 [○]		09T3 ^{○○}	.150	A	
	33 [○]		0904 ^{○○}	.150	A	
	43 [○]		1204 ^{○○}	.203	A	
	54 [○]		1606 ^{○○}	.250	A	
	64 [○]		1906 ^{○○}	.312	A	
	86 [○]		2509 ^{○○}	.359	A	
DNGA DNMG DNMA DNMM DNMX	33 [○]	DNGA DNMG DNMA DNMM DNMX	1104 ^{○○}	.150	A	
	43 [○]		1504 ^{○○}	.203	A	
	44 [○]		1506 ^{○○}	.203	A	
SNGA SNGG SNMA SNMG SNMM	32 [○]	SNGA SNGG SNMA SNMG SNMM	0903 ^{○○}	.150	A	
	43 [○]		1204 ^{○○}	.203	A	
	54 [○]		1506 ^{○○}	.250	A	
	64 [○]		1906 ^{○○}	.312	A	
	85 [○]		2507 ^{○○}	.359	A	
	86 [○]		2509 ^{○○}	.359	A	
TNGA TNGG TNMA TNMG TNMM TNMX	22 [○]	TNGA TNGG TNMA TNMG TNMM TNMX	1103 ^{○○}	.089	A	
	32 [○]		1603 ^{○○}	.150	A	
	33 [○]		1604 ^{○○}	.150	A	
	43 [○]		2204 ^{○○}	.203	A	
	54 [○]		2706 ^{○○}	.250	A	
	66 [○]		3309 ^{○○}	.312	A	
VNGA VNGG VNGM VNMG VNMM	33 [○]	VNGA VNGG VNGM VNMG VNMM	1604 ^{○○}	.150	A	
WNMA WNMG	32 [○]	WNMA WNMG	0603 ^{○○}	.150	A	
	32.5 [○]		06T3 ^{○○}	.150	A	
	33 [○]		0604 ^{○○}	.150	A	
	43 [○]		0804 ^{○○}	.203	A	
	54 [○]		1006 ^{○○}	.250	A	
RNMG	43	RNMG	120400	.203	A	



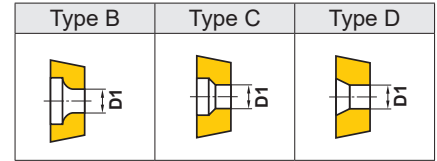
POSITIVE

Insert Number		(ISO) Number		Dimension (inch)	Hole Type
				D1	
CCET CCGT CCGW	21.5	CCET CCGT CCGW	0602	.110	B
	32.5		09T3	.173	B
	43		1204	.217	B
CCGH CCMH	21.5	CCGH CCMH	0602	.110	B
CCGT	03S1	CCGT	03S1	.079	B
	04T0		04T0	.094	B
CCMT	21.5	CCMT	0602	.110	B
	2.52		0803	.134	B
	32.5		09T3	.173	B
	43		1204	.217	B
CCMW	21.5	CCMW	0602	.110	B
	32.5		09T3	.173	B
	43		1204	.217	B
CPGT	2.51.5	CPGT	0802	.134	B
	32		0903	.173	B
CPMH	2.51.5	CPMH	0802	.138	D
	32		0903	.177	D
CPMT	21.5	CPMT	0602	.110	B
	32.5		09T3	.173	B
CPMX	2.51.5	CPMX	0802	.138	D
	32		0903	.181	D
DCET DCGT DCGW	21.5	DCET DCGT DCGW	0702	.110	B
	32.5		11T3	.173	B
DCMT DCMW	21.5	DCMT DCMW	0702	.110	B
	32.5		11T3	.173	B
	43		1504	.217	B
DEGX	43	DEGX	1504	.201	C
RCMX	1003M0	RCMX	1003M0	.142	D
	1204M0		1204M0	.165	D
	1606M0		1606M0	.205	D
	2006M0		2006M0	.256	D
	2507M0		2507M0	.283	D
	3209M0		3209M0	.374	D

A

TURNING INSERTS

HOLE GEOMETRY

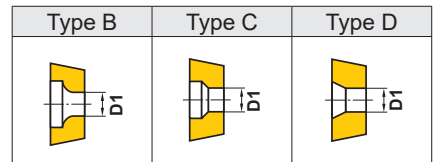


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TURNING INSERTS

POSITIVE

Insert Number		(ISO) Number		Dimension (inch)	Hole Type
				D1	
RCMX	1606M0- \odot	RCMX	1606M0- \odot	.205	D
	2006M0- \odot		2006M0- \odot	.256	D
	2507M0- \odot		2507M0- \odot	.283	D
	3209M0- \odot		3209M0- \odot	.374	D
RCGT RCMT	0602M0	RCGT RCMT	0602M0	.110	B
	0803M0		0803M0	.134	B
	10T3M0		10T3M0	.173	B
SCMT SCMW	32.5 \odot	SCMT SCMW	09T3 \odot	.173	B
	43 \odot		1204 \odot	.217	B
SPGX	32 \odot	SPGX	0903 \odot	.189	C
	42 \odot		1203 \odot	.232	C
SPMT	32 \odot	SPMT	0903 \odot	.173	B
	42 \odot		1203 \odot	.217	B
SPMW	32 \odot	SPMW	0903 \odot	.181	B
	42 \odot		1203 \odot	.224	B
TCGT	1.21 \odot	TCGT	0601 \odot	.091	B
	21.5 \odot		1102 \odot	.110	B
	32.5 \odot		16T3 \odot	.173	B
TCMT	1.51.5 \odot	TCMT	0802 \odot	.091	B
	1.81.5 \odot		0902 \odot	.098	B
	21.5 \odot		1102 \odot	.110	B
	2.52 \odot		1303 \odot	.134	B
	32.5 \odot		16T3 \odot	.173	B
TCMW	21.5 \odot	TCMW	1102 \odot	.110	B
	2.52 \odot		1303 \odot	.134	B
	32.5 \odot		16T3 \odot	.173	B
TEGX	32 \odot	TEGX	1603 \odot	.169	D
TPGH	1.51.5 \odot	TPGH	0802 \odot	.094	D
	1.81.5 \odot		0902 \odot	.114	D
	22 \odot		1103 \odot	.134	D
	32 \odot		1603 \odot	.173	D
TPGX	1.51.5 \odot	TPGX	0802 \odot	.098	C
	1.81.5 \odot		0902 \odot	.118	C
	22 \odot		1103 \odot	.138	C
	32 \odot		1603 \odot	.189	D



POSITIVE

Insert Number		(ISO) Number		Dimension (inch)	Hole Type
				d1	
TPMH	1.51.5 \odot	TPMH	0802$\odot\odot$	.098	D
	1.81.5 \odot		0902$\odot\odot$	.114	D
	22 \odot		1103$\odot\odot$	.134	D
	32 \odot		1603$\odot\odot$	.173	B
TPMT	1.81.5 \odot	TPMT	0902$\odot\odot$	.098	B
	21.5 \odot		1102$\odot\odot$	.110	B
	32.5 \odot		16T3$\odot\odot$	.173	B
TPMX	1.81.5 \odot L	TPMX	0902 $\odot\odot$ L	.126	C
	22 \odot L		1103 $\odot\odot$ L	.146	C
	22 \odot		1103$\odot\odot$	.138	C
VBET	22 \odot	VBET	1103$\odot\odot$	.115	B
VBGT	22 \odot	VBGT	1103$\odot\odot$	.115	B
	33 \odot		1604$\odot\odot$	.178	B
VBMT	22 \odot	VBMT	1103$\odot\odot$	.115	B
	33 \odot		1604$\odot\odot$	.173	B
VCGT	1.51.5 \odot	VCGT	0802$\odot\odot$	.097	B
	22 \odot		1103$\odot\odot$	.115	B
	2.520 \odot		1303$\odot\odot$	.134	B
	33 \odot		1604$\odot\odot$	.173	B
VCMT	1.51.5 \odot	VCMT	0802$\odot\odot$	.097	B
	22 \odot		1103$\odot\odot$	.110	B
	33 \odot		1604$\odot\odot$	.173	B
VCMW	22 \odot	VCMW	1103$\odot\odot$	.110	B
	33 \odot		1604$\odot\odot$	.173	B
VDGX	32 \odot	VDGX	1603$\odot\odot$	.177	D
WBGT	1.21 $\odot\odot$	WBGT	0201$\odot\odot$	.091	B
	1.51.5 $\odot\odot$		L302$\odot\odot$	.091	B
WCGT	1.21 $\odot\odot$	WCGT	0201$\odot\odot$	.091	B
	1.51.5 $\odot\odot$		L302$\odot\odot$	.091	B
	21.5 \odot		0402$\odot\odot$	.110	B
	32.5 \odot		06T3$\odot\odot$	.173	B
WCMT	1.21 $\odot\odot$	WCMT	0201$\odot\odot$	.091	B
	1.51.5 $\odot\odot$		L302$\odot\odot$	.091	B
	21.5 $\odot\odot$		0402$\odot\odot$	.110	B
	32.5 $\odot\odot$		06T3$\odot\odot$	.173	B
WPGT WPMT	21.5 \odot	WPGT WPMT	0402$\odot\odot$	.110	B
	32 \odot		0603$\odot\odot$	.173	B
XCMT	22 \odot	XCMT	1503$\odot\odot$	.110	B

A

TURNING INSERTS

PRECISION BREAKER STANDARD




STANDARD FOR LEFT AND RIGHT HAND INSERTS

● NEGATIVE INSERTS

Unit : inch

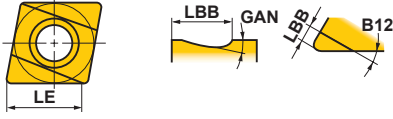

A

TURNING INSERTS

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	DNGG431R/L	DNGG150404R/L	.110	.587	15°	—
	DNGG432R/L	DNGG150408R/L	.110	.563	15°	—
	DNGG441R/L	DNGG150604R/L	.110	.587	15°	—
	DNGG442R/L	DNGG150608R/L	.110	.563	15°	—
 <p>Right hand insert shown.</p>	SNGG321R/L	SNGG090304R/L	.071	.063	15°	—
	SNGG322R/L	SNGG090308R/L	.071	.063	15°	—
	SNGG431R/L	SNGG120404R/L	.091	.146	15°	—
	SNGG432R/L	SNGG120408R/L	.091	.146	15°	—
 <p>Right hand insert shown.</p>	TNGG220.5R/L	TNGG110302R/L	.051	.126	15°	—
	TNGG221R/L	TNGG110304R/L	.051	.118	15°	—
	TNGG222R/L	TNGG110308R/L	.051	.106	15°	—
	TNGG321R/L	TNGG160304R/L	.091	.213	15°	—
	TNGG330.5R/L	TNGG160402R/L	.051	.343	15°	—
	TNGG331R/L	TNGG160404R/L	.091	.213	15°	—
	TNGG332R/L	TNGG160408R/L	.091	.201	15°	—
	TNGG431R/L	TNGG220404R/L	.110	.370	15°	—
TNGG432R/L	TNGG220408R/L	.110	.358	15°	—	


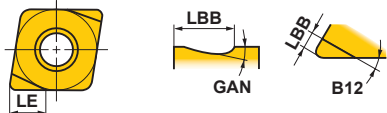
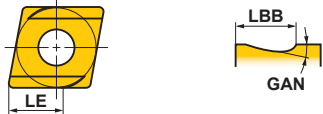
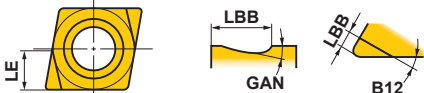
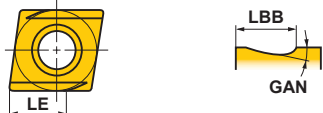
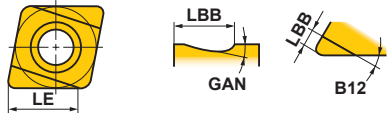
● POSITIVE INSERTS

Unit : inch

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	CCET21.5V3R/LSR	CCET0602V3R/L-SR	.087	.252	30°	20°
	CCET21.50.2R/LSR	CCET060201R/L-SR	.087	.248	30°	20°
	CCET21.50.5R/LSR	CCET060202R/L-SR	.087	.244	30°	20°
	CCET21.51R/LSR	CCET060204R/L-SR	.087	.236	30°	20°
	CCET32.5V3R/LSR	CCET09T3V3R/L-SR	.126	.378	30°	20°
	CCET32.50.2R/LSR	CCET09T301R/L-SR	.126	.374	30°	20°
	CCET32.50.5R/LSR	CCET09T302R/L-SR	.126	.370	30°	20°
	CCET32.51R/LSR	CCET09T304R/L-SR	.126	.362	30°	20°
 <p>Right hand insert shown.</p>	CCET21.5V0R/LSN	CCET060200R/L-SN	.039	.252	20°	—
	CCET21.5V3R/LSN	CCET0602V3R/L-SN	.039	.252	20°	—
	CCET21.50.2R/LSN	CCET060201R/L-SN	.039	.248	20°	—
	CCET21.50.5R/LSN	CCET060202R/L-SN	.039	.244	20°	—
	CCET21.51R/LSN	CCET060204R/L-SN	.039	.236	20°	—
	CCET32.5V0R/LSN	CCET09T300R/L-SN	.059	.378	20°	—
	CCET32.5V3R/LSN	CCET09T3V3R/L-SN	.059	.378	20°	—
	CCET32.50.2R/LSN	CCET09T301R/L-SN	.059	.374	20°	—
	CCET32.50.5R/LSN	CCET09T302R/L-SN	.059	.370	20°	—
	CCET32.51R/LSN	CCET09T304R/L-SN	.059	.362	20°	—

● POSITIVE INSERTS

Unit : inch

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	CCET21.5V3R/LWSN	CCET0602V3R/LW-SN	.039	.252	20°	—
	CCET32.5V3R/LWSN	CCET09T3V3R/LW-SN	.059	.378	20°	—
 <p>Right hand insert shown.</p>	CCGH21.50.5(M)R/LF	CCGH060202(M)R/L-F	.047	.142	15°	20°
	CCGH21.51(M)R/LF	CCGH060204(M)R/L-F	.055	.173	15°	20°
 <p>Right hand insert shown.</p>	CCGT21.5V3RSN	CCGT0602V3R-SN	.039	.118	20°	—
	CCGT21.50.2(M)R/LSN	CCGT060201(M)R/L-SN	.039	.118	20°	—
	CCGT21.50.5(M)R/LSN	CCGT060202(M)R/L-SN	.039	.118	20°	—
	CCGT32.5V3R/LSN	CCGT09T3V3R/L-SN	.059	.197	20°	—
	CCGT32.50.2(M)R/LSN	CCGT09T301(M)R/L-SN	.059	.197	20°	—
	CCGT32.50.5(M)R/LSN	CCGT09T302(M)R/L-SN	.059	.197	20°	—
	CCGT32.51(M)R/LSN	CCGT09T304(M)R/L-SN	.059	.197	20°	—
 <p>Left hand insert only.</p>	CCGT03S1V3L-F	CCGT03S1V3L-F	.031	.055	17°	35°
	CCGT03S101(M)R/L-F	CCGT03S101(M)R/L-F	.031	.055	17°	35°
	CCGT03S102(M)R/L-F	CCGT03S102(M)R/L-F	.031	.059	17°	35°
	CCGT03S104(M)R/L-F	CCGT03S104(M)R/L-F	.031	.063	17°	35°
	CCGT04T0V3L-F	CCGT04T0V3L-F	.039	.067	17°	35°
	CCGT04T001(M)R/L-F	CCGT04T001(M)R/L-F	.039	.071	17°	35°
	CCGT04T002(M)R/L-F	CCGT04T002(M)R/L-F	.039	.071	17°	35°
	CCGT04T004(M)R/L-F	CCGT04T004(M)R/L-F	.039	.079	17°	35°
 <p>Right hand insert shown.</p>	CCGT21.5V3R/LSS	CCGT0602V3R/L-SS	.039	.118	14°	—
	CCGT21.50.2(M)R/LSS	CCGT060201(M)R/L-SS	.039	.118	14°	—
	CCGT21.50.5(M)R/LSS	CCGT060202(M)R/L-SS	.039	.118	14°	—
	CCGT32.5V3R/LSS	CCGT09T3V3R/L-SS	.039	.197	14°	—
	CCGT32.50.2(M)R/LSS	CCGT09T301(M)R/L-SS	.039	.197	14°	—
	CCGT32.50.5(M)R/LSS	CCGT09T302(M)R/L-SS	.039	.197	14°	—
	CCGT32.51MR/L-SS	CCGT09T304MR/L-SS	.039	.197	14°	—
 <p>Right hand insert shown.</p>	CPTG2.51.51R/LF	CPTG080204R/L-F	.071	.217	15°	20°
	CPTG320.5R/LF	CPTG090302R/L-F	.071	.213	15°	20°
	CPTG321R/LF	CPTG090304R/L-F	.071	.217	15°	20°

PRECISION BREAKER STANDARD

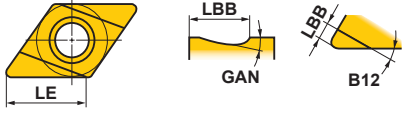





STANDARD FOR LEFT AND RIGHT HAND INSERTS

● POSITIVE INSERTS

Unit : inch


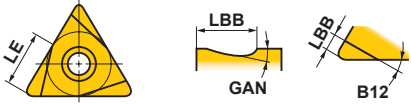

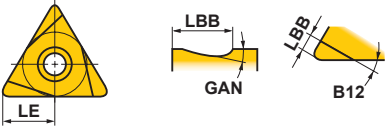
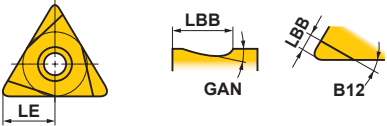
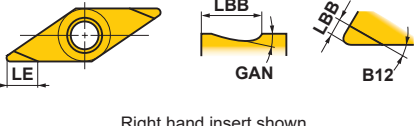
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TURNING INSERTS

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	DCET21.5V3R/LSR	DCET0702V3R/L-SR	.098	.303	30°	20°
	DCET21.50.2R/LSR	DCET070201R/L-SR	.098	.299	30°	20°
	DCET21.50.5R/LSR	DCET070202R/L-SR	.098	.291	30°	20°
	DCET21.51R/LSR	DCET070204R/L-SR	.098	.280	30°	20°
	DCET32.5V3R/LSR	DCET11T3V3R/L-SR	.146	.457	30°	20°
	DCET32.50.2R/LSR	DCET11T301R/L-SR	.146	.449	30°	20°
	DCET32.50.5R/LSR	DCET11T302R/L-SR	.146	.445	30°	20°
	DCET32.51R/LSR	DCET11T304R/L-SR	.146	.433	30°	20°
	 <p>Right hand insert shown.</p>	DCET21.5V0R/LSN	DCET070200R/L-SN	.039	.303	20°
DCET21.5V3R/LSN		DCET0702V3R/L-SN	.039	.303	20°	—
DCET21.50.2R/LSN		DCET070201R/L-SN	.039	.299	20°	—
DCET21.50.5R/LSN		DCET070202R/L-SN	.039	.291	20°	—
DCET21.51R/LSN		DCET070204R/L-SN	.039	.280	20°	—
DCET32.5V0R/LSN		DCET11T300R/L-SN	.059	.457	20°	—
DCET32.5V3R/LSN		DCET11T3V3R/L-SN	.059	.457	20°	—
DCET32.50.2R/LSN		DCET11T301R/L-SN	.059	.449	20°	—
DCET32.50.5R/LSN		DCET11T302R/L-SN	.059	.445	20°	—
DCET32.51R/LSN	DCET11T304R/L-SN	.059	.433	20°	—	
 <p>Right hand insert shown.</p>	DCET21.5V3R/LWSN	DCET0702V3R/LW-SN	.039	.303	20°	—
	DCET32.5V3R/LWSN	DCET11T3V3R/LW-SN	.059	.457	20°	—
 <p>Right hand insert shown.</p>	DCGT21.5V3RSN	DCGT0702V3R-SN	.039	.138	20°	—
	DCGT21.50.2(M)R/LSN	DCGT070201(M)R/L-SN	.039	.138	20°	—
	DCGT21.50.5(M)R/LSN	DCGT070202(M)R/L-SN	.039	.138	20°	—
	DCGT32.5V3R/LSN	DCGT11T3V3R/L-SN	.059	.256	20°	—
	DCGT32.50.2(M)R/LSN	DCGT11T301(M)R/L-SN	.059	.256	20°	—
	DCGT32.50.5(M)R/LSN	DCGT11T302(M)R/L-SN	.059	.256	20°	—
	DCGT32.51(M)R/LSN	DCGT11T304(M)R/L-SN	.059	.256	20°	—
 <p>Right hand insert shown.</p>	DCGT21.50.5R/LF	DCGT070202R/L-F	.039	.118	17°	20°
	DCGT21.51R/LF	DCGT070204R/L-F	.039	.126	17°	20°
	DCGT32.50.5R/LF	DCGT11T302R/L-F	.039	.118	14°	20°
	DCGT32.51R/LF	DCGT11T304R/L-F	.039	.126	14°	20°
 <p>Right hand insert shown.</p>	DCGT21.5V3R/LSS	DCGT0702V3R/L-SS	.039	.138	14°	—
	DCGT21.50.2R/LSS	DCGT070201R/L-SS	.039	.138	14°	—
	DCGT21.50.5(M)R/LSS	DCGT070202(M)R/L-SS	.039	.138	14°	—
	DCGT32.5V3RSS	DCGT11T3V3R-SS	.039	.256	14°	—
	DCGT32.50.2(M)R/LSS	DCGT11T301(M)R/L-SS	.039	.256	14°	—
	DCGT32.50.5(M)R/LSS	DCGT11T302(M)R/L-SS	.039	.256	14°	—
	DCGT32.51MR/LSS	DCGT11T304MR/L-SS	.039	.256	14°	—

● POSITIVE INSERTS

Unit : inch

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	DEGX430.5R/L	DEGX150402R/L	.110	.598	20°	—
	DEGX431R/L	DEGX150404R/L	.110	.587	20°	—
	DEGX432R/L	DEGX150408R/L	.110	.576	20°	—
 <p>Left hand insert only.</p>	TCGT1.21V3LF	TCGT0601V3L-F	.039	.114	14°	20°
	TCGT1.210.2LF	TCGT060101L-F	.039	.118	14°	20°
	TCGT1.210.5R/LF	TCGT060102R/L-F	.039	.118	14°	20°
	TCGT1.211R/LF	TCGT060104R/L-F	.039	.126	14°	20°
 <p>Right hand insert shown.</p>	TEGX320.5R/L	TEGX160302R/L	.079	.236	20°	—
	TEGX321R/L	TEGX160304R/L	.079	.236	20°	—
 <p>Right hand insert shown.</p>	TPGH1.51.50.5R/LFS	TPGH080202R/L-FS	.035	.106	15°	20°
	TPGH1.51.51R/LFS	TPGH080204R/L-FS	.035	.114	15°	20°
	TPGH1.81.50.5R/LFS	TPGH090202R/L-FS	.039	.118	15°	20°
	TPGH1.81.51R/LFS	TPGH090204R/L-FS	.039	.126	15°	20°
	TPGH220.5R/LFS	TPGH110302R/L-FS	.055	.165	15°	20°
	TPGH221R/LFS	TPGH110304R/L-FS	.055	.173	15°	20°
	TPGH321R/LFS	TPGH160304R/L-FS	.079	.240	14°	20°
	TPGH322R/LFS	TPGH160308R/L-FS	.079	.256	14°	20°
 <p>Right hand insert shown.</p>	TPGX1.51.50.5R/L	TPGX080202R/L	.051	.154	10°	20°
	TPGX1.51.51R/L	TPGX080204R/L	.051	.161	10°	20°
	TPGX1.81.50.5R/L	TPGX090202R/L	.063	.189	10°	20°
	TPGX1.81.51R/L	TPGX090204R/L	.063	.197	10°	20°
	TPGX1.81.52R/L	TPGX090208R/L	.055	.185	10°	20°
	TPGX220.5L	TPGX110302L	.071	.213	10°	20°
	TPGX221R/L	TPGX110304R/L	.071	.217	10°	20°
	TPGX222R/L	TPGX110308R/L	.071	.232	10°	20°
 <p>Right hand insert shown.</p>	VCGT1.51.50.5R/LF	VCGT080202R/L-F	.031	.098	13°	20°
	VCGT1.51.51R/LF	VCGT080204R/L-F	.031	.102	13°	20°

A
TURNING INSERTS

PRECISION BREAKER STANDARD

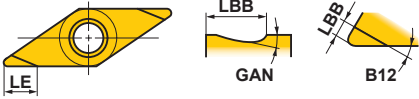
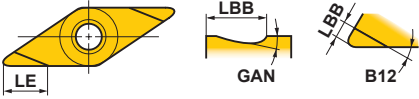
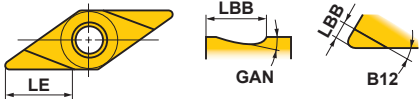


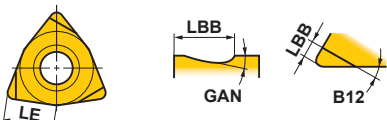
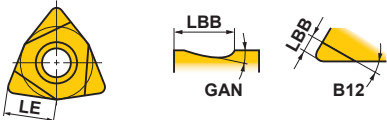
STANDARD FOR LEFT AND RIGHT HAND INSERTS

● POSITIVE INSERTS

Unit : inch

A

TURNING INSERTS

Geometry	Insert Number	(ISO) Number	LBB	LE	GAN	B12
 <p>Right hand insert shown.</p>	VDGX320.5R/L	VDGX160302R/L	.079	.236	25°	20°
	VDGX321R/L	VDGX160304R/L	.079	.240	25°	20°
 <p>Right hand insert shown.</p>	VBGT220.5R/LF	VBGT110302R/L-F	.039	.118	13°	20°
	VBGT221R/LF	VBGT110304R/L-F	.039	.126	13°	20°
	VBGT330.5R/LF	VBGT160402R/L-F	.059	.177	13°	20°
	VBGT331R/LF	VBGT160404R/L-F	.059	.185	13°	20°
 <p>Right hand insert shown.</p>	VBET22V3R/LSR	VBET1103V3R/L-SR	.098	.287	30°	20°
	VBET220.2R/LSR	VBET110301R/L-SR	.098	.287	30°	20°
	VBET220.5R/LSR	VBET110302R/L-SR	.098	.291	30°	20°
	VBET221R/LSR	VBET110304R/L-SR	.098	.299	30°	20°
 <p>Right hand insert shown.</p>	VBET22V0R/LSN	VBET110300R/L-SN	.039	.433	20°	—
	VBET22V3R/LSN	VBET1103V3R/L-SN	.039	.433	20°	—
	VBET220.2R/LSN	VBET110301R/L-SN	.039	.425	20°	—
	VBET220.5R/LSN	VBET110302R/L-SN	.039	.413	20°	—
	VBET221R/LSN	VBET110304R/L-SN	.039	.433	20°	—
 <p>Right hand insert shown.</p>	VBET22V3R/LWSN	VBET1103V3R/LW-SN	.039	.433	20°	—
 <p>Left hand insert shown.</p>	WBG1.21V3LF	WBG1.21V3L-F	.039	.079	13°	30°
	WBG1.210.2LF	WBG1.2101L-F	.039	.079	13°	30°
	WBG1.210.5LF	WBG1.2101L-F	.039	.083	13°	30°
	WBG1.211LF	WBG1.2101L-F	.039	.087	13°	30°
	WBG1.51.5V3LF	WBG1.51.5V3L-F	.039	.079	13°	30°
	WBG1.51.50.2LF	WBG1.51.502L-F	.039	.079	13°	30°
	WBG1.51.50.5R/LF	WBG1.51.502R/L-F	.039	.083	13°	30°
	WBG1.51.51R/LF	WBG1.51.51R/L-F	.039	.087	13°	30°
 <p>Right hand insert shown.</p>	WCG1.210.5R/L	WCG1.2101R/L	.039	.083	15°	30°
	WCG1.211R/L	WCG1.2101R/L	.039	.087	15°	30°
	WCG1.51.50.5L	WCG1.51.502L	.039	.083	15°	30°
	WCG1.51.51L	WCG1.51.51L	.039	.087	15°	30°

TOOL NAVI

OUTLINE

TOOL NAVI supports our customers with information and supplies suitable cutting conditions for each work material by selecting optimal indexable insert together with the optional tool.

LABEL INDICATION



- *1. The above is an example. There may be inserts recommended for multiple work materials.
- *2. Please contact us for recommended cutting conditions using coefficient values other than the above.

① Work materials

- P** : Steel (Material reference : Carbon steel, alloy steel 180HB)
- M** : Stainless steel (Material reference : Austenitic stainless steel 180HB)
- K** : Cast iron (Material reference : Gray cast iron, ductile cast iron 180HB)
- N** : Aluminum alloy, Non-ferrous metal
- S** : Material reference : Titanium alloy 320HB, Ni, Co-based alloy 400HB
- H** : Hardened steel 60HRC

② Cutting speed standards

Work Material	Tool Life		Work Material	Hardness
	Life	Performance		
P	90min.	15min.	Carbon steel, alloy steel	180HB
M	90min.	15min.	Stainless steel	180HB
K	90min.	15min.	Cast iron	180HB
S	25min.	5min.	Titanium alloy	320HB
			Ni, Co-based alloy	400HB
H	80min.	10min.	Hardened steel	60HRC

- *3. N : Life based on each grade. For stable conditions choose the performance cutting speed and for unstable choose the tool life feed rate.
- *4. The tool life is based on the following (VB wear). Some materials include elements other than this.

PMKS...VB=0.3 mm
H...VB=0.1 mm

③ Feed rate

Minimum and maximum feed rate settings are based on the chip control range of the chip breaker.

TOOL LIFE

Cutting speed has a large affect on tool life. **TOOL NAVI** is based on Taylor's equation (relationship $vc \times T_n = C$ between tool grade, cutting conditions, and tool life). Therefore, performance speed and tool life is found for each work material. When the customer requires different tool life, obtain coefficient values of the grade you use from the charts below. Multiply the coefficient values by the cutting speed to calculate the new cutting speed.

● P Grade (Steel) cutting speed coefficient values.

Grade \ Tool life	15min	30min	45min	60min	90min
MC6115	1.00	0.82	0.72	0.67	0.59
MC6125	1.00	0.83	0.75	0.69	0.62
MP3025	1.00	0.85	0.77	0.72	0.65
NX2525	1.00	0.87	0.80	0.76	0.70

● K Grade (Cast Iron) cutting speed coefficient values.

Grade \ Tool life	15min	30min	45min	60min	90min
MC5115	1.00	0.79	0.69	0.62	0.54
MC5125	1.00	0.76	0.65	0.58	0.50

(ex.) Medium cutting of steel
The 1st recommendation : MC6125
Indexable inserts : CNMG432MA
Recommended cutting speed : $vc = 1280$ SFM
(Tool life : 15min.)



Tool life required by the customer : 30min.
 $1280 \times 0.83 = 1062$ SFM

● M Grade (Stainless Steel) cutting speed coefficient values.

Grade \ Tool life	15min	30min	45min	60min	90min
MC7015	1.00	0.83	0.75	0.70	0.63
MC7025	1.00	0.90	0.84	0.80	0.75
MP7035	1.00	0.84	0.76	0.71	0.62
US735	1.00	0.78	0.68	0.61	0.53

HARDNESS OF WORKPIECE

Hardness of the work material also affects tool life. Mitsubishi's **TOOL NAVI** suggests cutting speed variations when hardness of the work material differs. Obtain the suitable coefficient value for each work material from the chart below. Multiply the coefficient value by the recommended cutting speed of the grade you use to calculate the new cutting speed.

Work Material	(Hardness of work material)												
	Soft	120HB	140HB	160HB	180HB	200HB	220HB	240HB	260HB	280HB	300HB	320HB	Hard
P		1.34	1.19	1.08	1.00	0.92	0.85	0.80	0.75	0.71	0.68	0.64	0.61
M		1.41	1.23	1.10	1.00	0.91	0.85	0.78	0.72	0.68	0.64	0.61	0.58
K		1.27	1.19	1.09	1.00	0.97	0.91	0.88	0.85	0.81	0.78	0.75	0.72

A

TURNING INSERTS

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

● Selection of optimum inserts for turning

The following diagrams show for each work material, the optimal combination of suitable grades and chip breakers for each application area in turning.

TURNING INSERTS

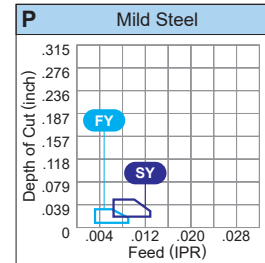
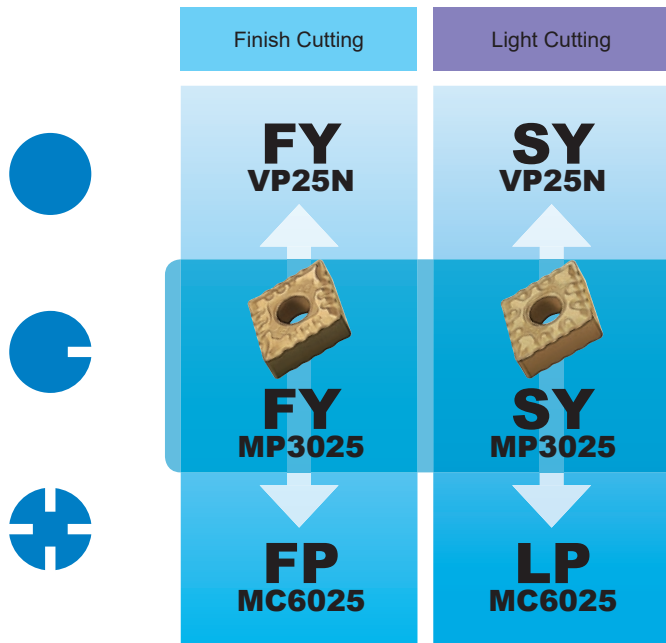
A

CUTTING CONDITIONS

- Stable Cutting
Continuous Cutting
Constant Depth of Cut
Pre-Machined
Securely Clamped Component
- General Cutting
- Unstable Cutting
Heavy Interrupted Cutting
Irregular Depth of Cut
Low Clamping Rigidity

CUTTING AREA

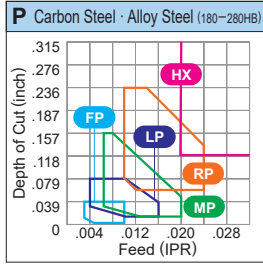
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting
- H** Heavy Cutting



P Mild Steel (EX. : ASTM A283, AISI 1010)
NEGATIVE INSERTS

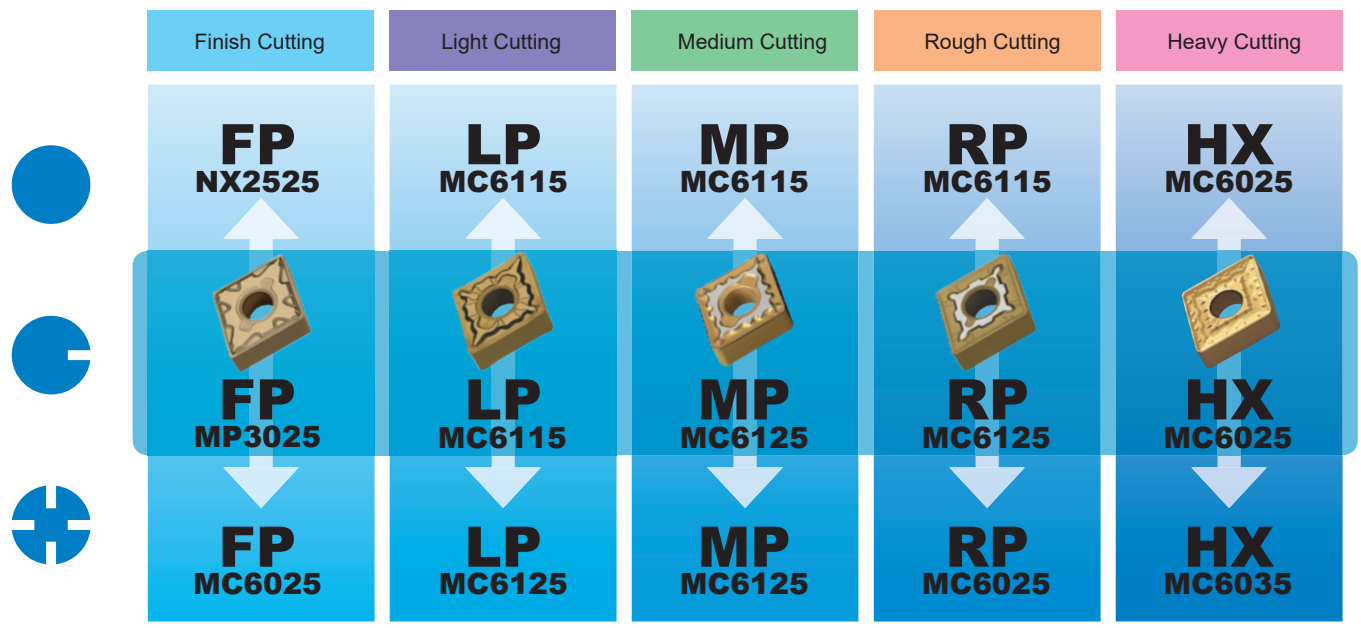
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
● Stable Cutting	F	FY	VP25N	935—1475	.004—.009	.008—.031
	L	SY	VP25N	850—1345	.006—.013	.020—.047
● General Cutting	F	FY	MP3025	900—1395	.004—.009	.008—.031
	L	SY	MP3025	835—1260	.006—.013	.020—.047
● Unstable Cutting	F	FY	MC6025	1030—1670	.003—.010	.004—.040
	L	SY	MC6025	935—1580	.004—.016	.012—.079



- Stable Cutting
- General Cutting
- Unstable Cutting

- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting
- H** Heavy Cutting



P Carbon Steel · Alloy Steel (EX. : AISI 1045, AISI 4140)
NEGATIVE INSERTS

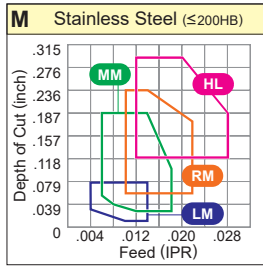
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
	F	FP	NX2525	690-985	.003-.010	.004-.039
	L	LP	MC6115	820-1575	.004-.016	.012-.079
	M	MP	MC6115	755-1445	.006-.020	.012-.157
	R	RP	MC6115	705-1360	.010-.024	.059-.236
	H	HX	MC6025	540-870	.020-.050	.119-.434
	F	FP	MP3025	705-1080	.003-.010	.004-.039
	L	LP	MC6115	820-1575	.004-.016	.012-.079
	M	MP	MC6125	820-1280	.006-.020	.012-.157
	R	RP	MC6125	770-1215	.010-.024	.059-.236
	H	HX	MC6025	540-870	.020-.050	.119-.434
	F	FP	MC6025	755-1230	.004-.010	.004-.040
	L	LP	MC6125	900-1395	.004-.016	.012-.079
	M	MP	MC6125	820-1280	.006-.020	.012-.157
	R	RP	MC6025	605-970	.010-.024	.060-.237
	H	HX	MC6035	460-655	.020-.050	.119-.434

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

A

TURNING INSERTS



- Stable Cutting
- General Cutting
- Unstable Cutting

- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting
- H** Heavy Cutting

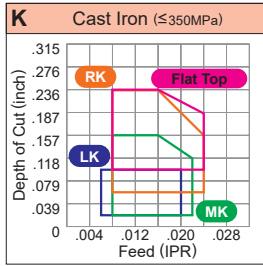
	Light Cutting	Medium Cutting	Rough Cutting	Heavy Cutting
	LM MC7015	MM MC7015	RM MC7015	HL US735
	LM MC7025	MM MC7025	RM MC7025	HL US735
	LM MP7035	MM MP7035	RM MP7035	HL US735

M Stainless Steel (EX. : AISI 304, AISI 316)

NEGATIVE INSERTS

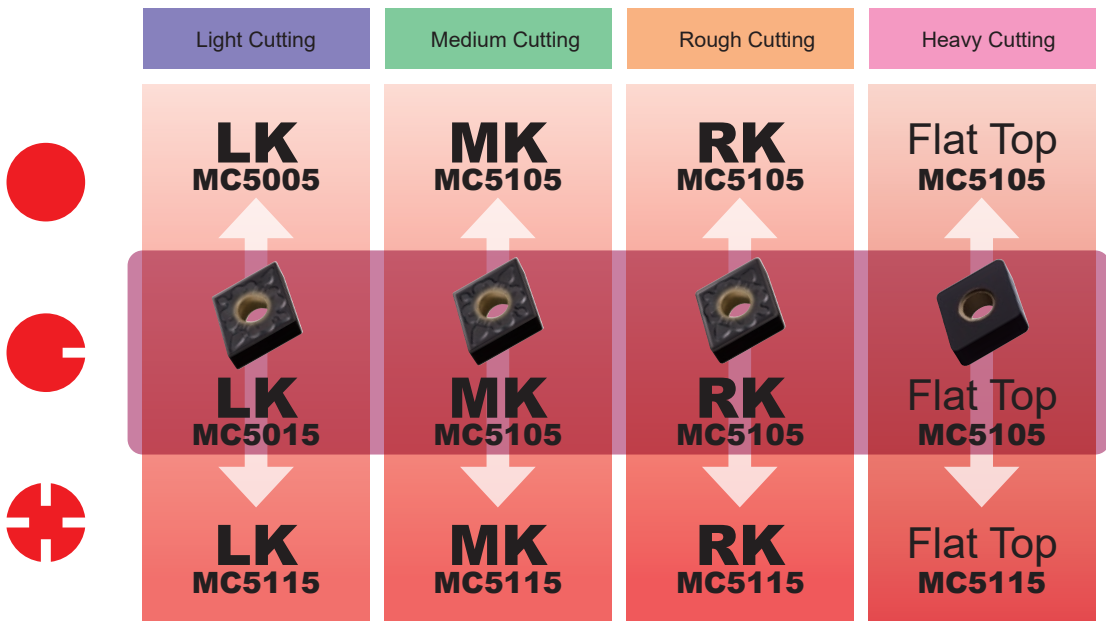
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
	L	LM	MC7015	590-935	.004-.014	.012-.079
	M	MM	MC7015	540-850	.006-.018	.028-.197
	R	RM	MC7015	510-805	.010-.022	.059-.236
	H	HL	US735	245-460	.012-.028	.118-.295
	L	LM	MC7025	540-720	.004-.014	.012-.079
	M	MM	MC7025	490-655	.006-.018	.028-.197
	R	RM	MC7025	460-620	.010-.022	.059-.236
	H	HL	US735	245-460	.012-.028	.118-.295
	L	LM	MP7035	310-510	.004-.014	.012-.079
	M	MM	MP7035	295-475	.006-.018	.028-.197
	R	RM	MP7035	280-440	.010-.022	.059-.236
	H	HL	US735	245-460	.012-.028	.118-.295



- Stable Cutting
- General Cutting
- Unstable Cutting

- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting
- H** Heavy Cutting



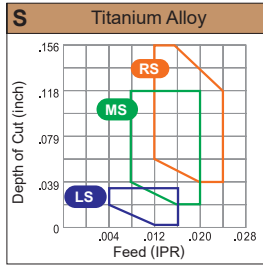
K Cast Iron • Ductile Cast Iron (EX. : AISI No 45 B)
NEGATIVE INSERTS

vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
	L	LK	MC5005	755—1200	.004— .016	.012— .079
	M	MK	MC5105	690—2100	.008— .022	.020— .157
	R	RK	MC5105	640—1985	.008— .024	.059— .236
	H	Flat Top	MC5105	640—1985	.008— .024	.098— .236
	L	LK	MC5015	670—1100	.004— .016	.012— .079
	M	MK	MC5105	690—2100	.008— .022	.020— .157
	R	RK	MC5105	640—1985	.008— .024	.059— .236
	H	Flat Top	MC5105	640—1985	.008— .024	.098— .236
	L	LK	MC5115	670—1260	.004— .020	.020— .098
	M	MK	MC5115	620—1150	.008— .022	.020— .157
	R	RK	MC5115	590—1080	.008— .024	.059— .236
	H	Flat Top	MC5115	590—1080	.008— .024	.098— .236

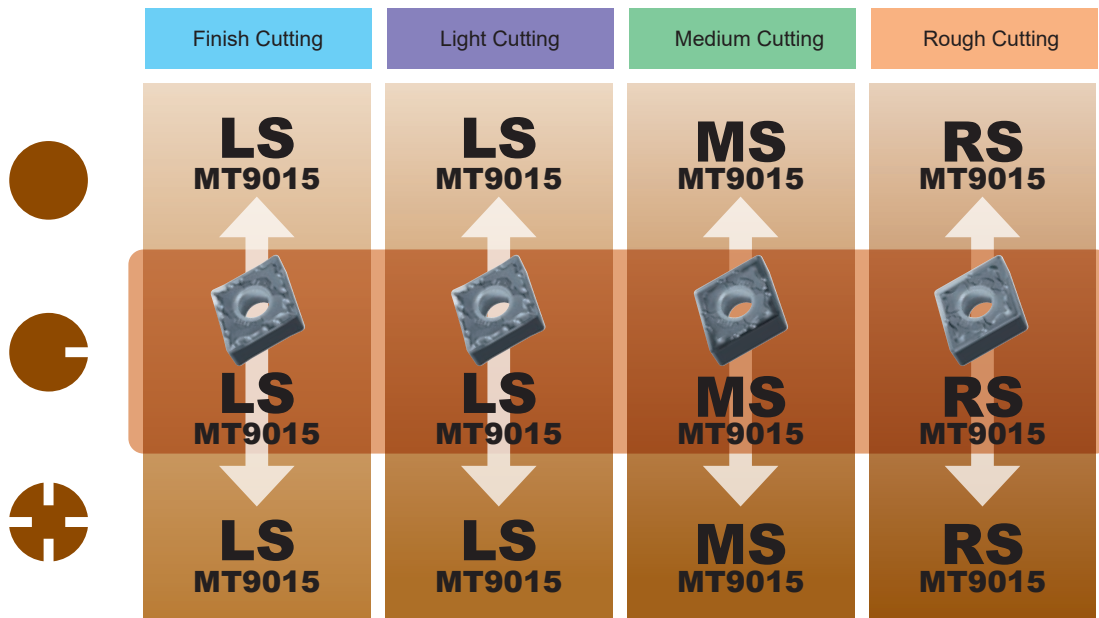
OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

TURNING INSERTS



- Stable Cutting
- General Cutting
- Unstable Cutting

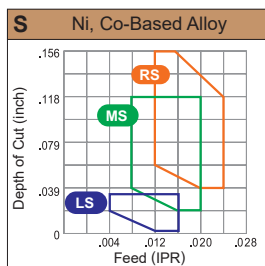
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting



S Titanium Alloy (EX. : Ti-6Al-4V)
NEGATIVE INSERTS

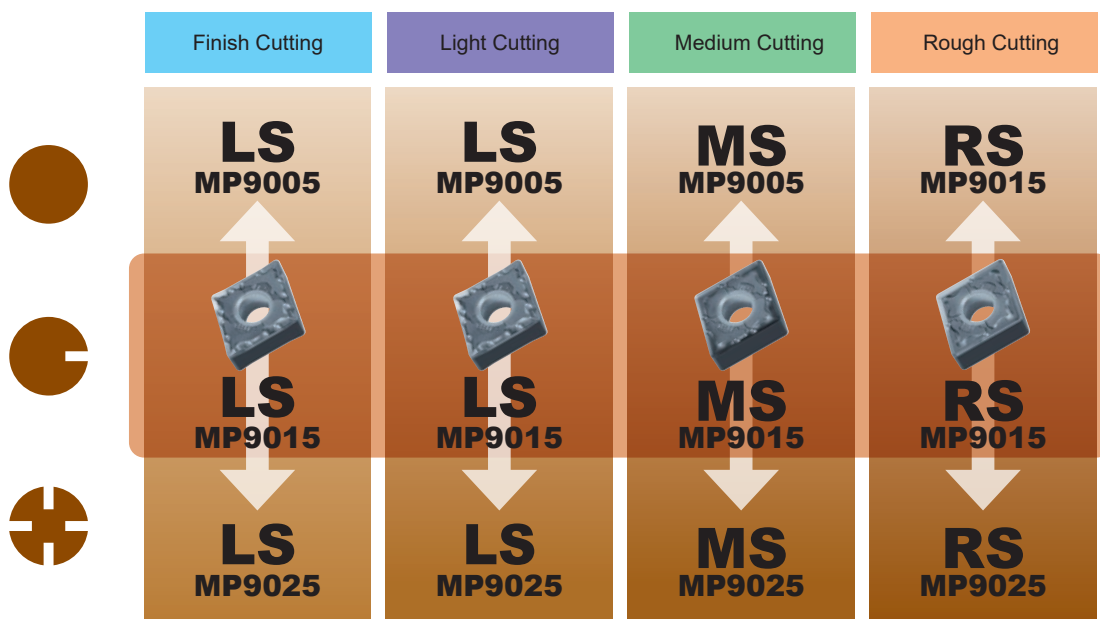
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
	F	LS	MT9015	130-280	.004-.010	.008-.031
	L	LS	MT9015	130-280	.004-.010	.008-.031
	M	MS	MT9015	130-260	.006-.012	.020-.118
	R	RS	MT9015	115-245	.008-.014	.039-.157
	F	LS	MT9015	130-280	.004-.010	.008-.031
	L	LS	MT9015	130-280	.004-.010	.008-.031
	M	MS	MT9015	130-260	.006-.012	.020-.118
	R	RS	MT9015	115-245	.008-.014	.039-.157
	F	LS	MT9015	130-280	.004-.010	.008-.031
	L	LS	MT9015	130-280	.004-.010	.008-.031
	M	MS	MT9015	130-260	.006-.012	.020-.118
	R	RS	MT9015	115-245	.008-.014	.039-.157



- Stable Cutting
- General Cutting
- Unstable Cutting

- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting
- R** Rough Cutting



S Ni, Co-Based Alloy (EX. : Inconel718)
NEGATIVE INSERTS

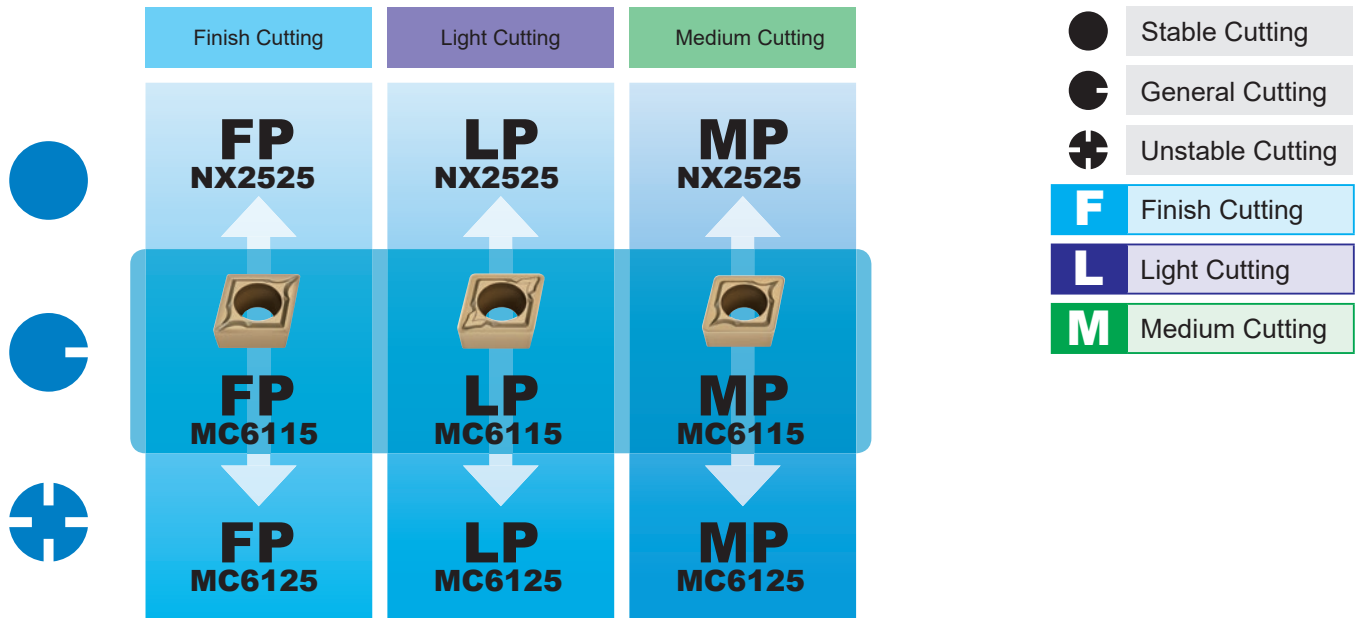
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	LS	MP9005	180-360	.004-.010	.008-.031
	L	LS	MP9005	180-360	.004-.010	.008-.031
	M	MS	MP9005	165-330	.006-.012	.020-.118
	R	RS	MP9015	115-245	.008-.014	.039-.157
General Cutting	F	LS	MP9015	130-280	.004-.010	.008-.031
	L	LS	MP9015	130-280	.004-.010	.008-.031
	M	MS	MP9015	130-260	.006-.012	.020-.118
	R	RS	MP9015	115-245	.008-.014	.039-.157
Unstable Cutting	F	LS	MP9025	100-150	.004-.010	.008-.031
	L	LS	MP9025	100-150	.004-.010	.008-.031
	M	MS	MP9025	100-150	.006-.012	.020-.118
	R	RS	MP9025	80-130	.008-.014	.039-.157

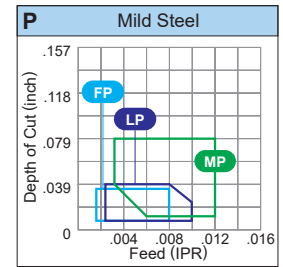
OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

A

TURNING INSERTS



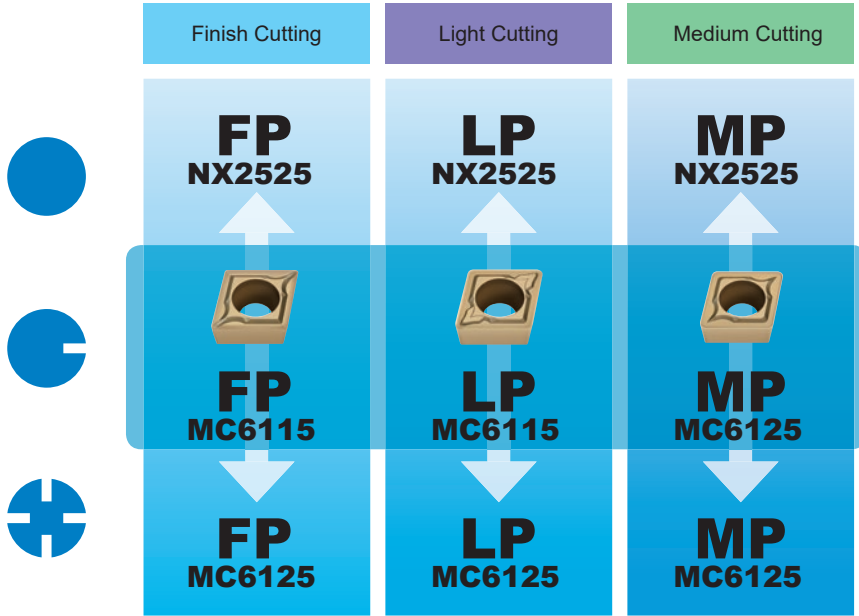
- Stable Cutting
- General Cutting
- Unstable Cutting
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting



P Mild Steel (EX. : ASTM A283, AISI 1010)
7° POSITIVE INSERTS WITH HOLE

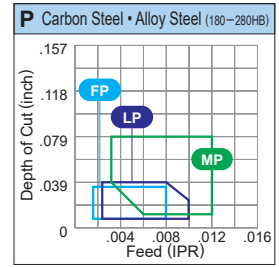
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	FP	NX2525	740–1050	.002–.008	.008–.035
	L	LP	NX2525	740–1050	.002–.010	.008–.039
	M	MP	NX2525	605–885	.003–.012	.012–.079
General Cutting	F	FP	MC6115	970–1870	.002–.008	.008–.035
	L	LP	MC6115	970–1870	.002–.010	.008–.039
	M	MP	MC6115	805–1560	.003–.012	.012–.079
Unstable Cutting	F	FP	MC6125	1050–1655	.002–.008	.008–.035
	L	LP	MC6125	1050–1655	.002–.010	.008–.039
	M	MP	MC6125	885–1380	.003–.012	.012–.079



- Stable Cutting
- General Cutting
- Unstable Cutting
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting

TURNING INSERTS **A**



P Carbon Steel • Alloy Steel (EX. : AISI 1045, AISI 4140)
7° POSITIVE INSERTS WITH HOLE

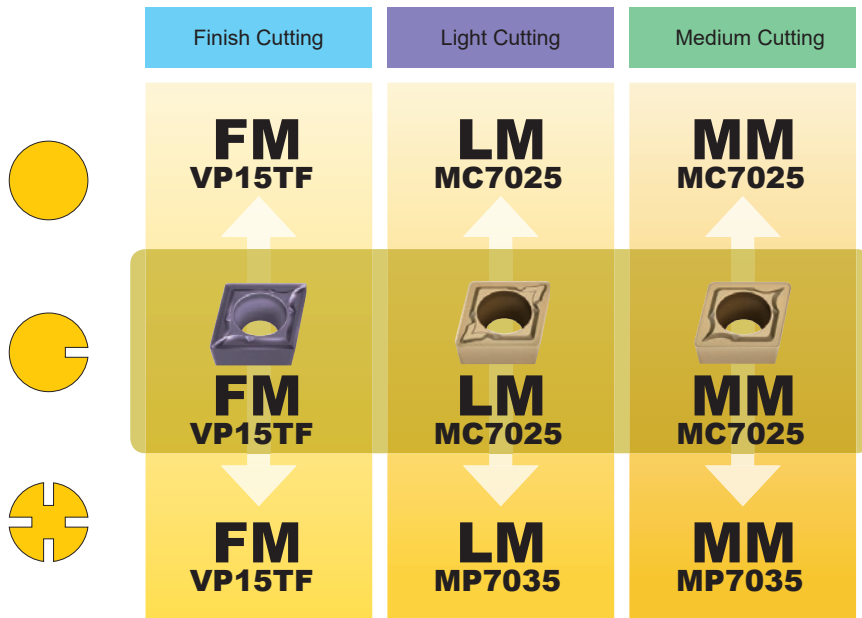
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	FP	NX2525	540-785	.002-.008	.008-.035
	L	LP	NX2525	540-785	.002-.010	.008-.039
	M	MP	NX2525	460-655	.003-.012	.012-.079
General Cutting	F	FP	MC6115	720-1380	.002-.008	.008-.035
	L	LP	MC6115	720-1380	.002-.010	.008-.039
	M	MP	MC6125	655-1015	.003-.012	.012-.079
Unstable Cutting	F	FP	MC6125	785-1215	.002-.008	.008-.035
	L	LP	MC6125	785-1215	.002-.010	.008-.039
	M	MP	MC6125	655-1015	.003-.012	.012-.079

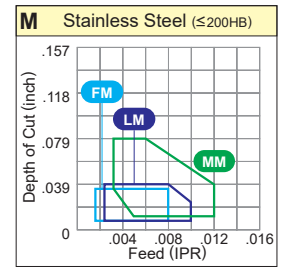
OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

A

TURNING INSERTS



- Stable Cutting
- General Cutting
- Unstable Cutting
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting



M Stainless Steel (EX. : AISI 304, AISI 316)

7° POSITIVE INSERTS WITH HOLE

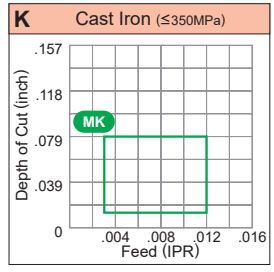
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
	F	FM	VP15TF	245—410	.002— .008	.008— .035
	L	LM	MC7025	460—620	.002— .010	.008— .039
	M	MM	MC7025	395—525	.003— .012	.012— .079
	F	FM	VP15TF	245—410	.002— .008	.008— .035
	L	LM	MC7025	460—620	.002— .010	.008— .039
	M	MM	MC7025	395—525	.003— .012	.012— .079
	F	FM	VP15TF	245—410	.002— .008	.008— .035
	L	LM	MP7035	280—440	.002— .010	.008— .039
	M	MM	MP7035	230—375	.003— .012	.012— .079



- Stable Cutting
- General Cutting
- Unstable Cutting
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting

TURNING INSERTS **A**



K Cast Iron • Ductile Cast Iron (EX. : AISI No 45 B)
7° POSITIVE INSERTS WITH HOLE

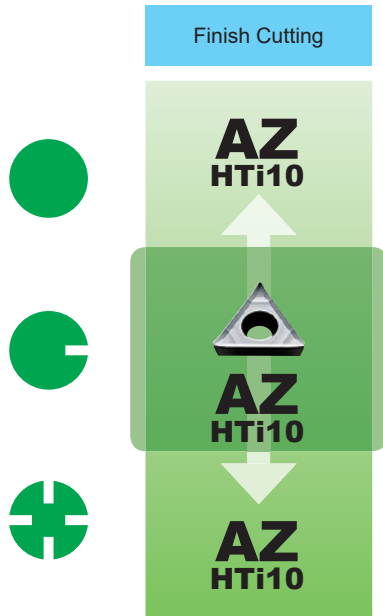
vc : Cutting speed
f : Feed
ap : Depth of cut.





	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	MK	MC5005	540—870	.004— .012	.012— .079
	L	MK	MC5005	540—870	.004— .012	.012— .079
	M	MK, Flat Top	MC5005	540—870	.004— .012	.012— .079
General Cutting	F	MK	MC5015	490—745	.004— .012	.012— .079
	L	MK	MC5015	490—745	.004— .012	.012— .079
	M	MK, Flat Top	MC5015	490—745	.004— .012	.012— .079
Unstable Cutting	F	MK	MC5115	590—1100	.002— .010	.008— .039
	L	MK	MC5115	590—1100	.002— .010	.008— .039
	M	MK, Flat Top	MC5115	490—920	.003— .012	.012— .079

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

A




TURNING INSERTS

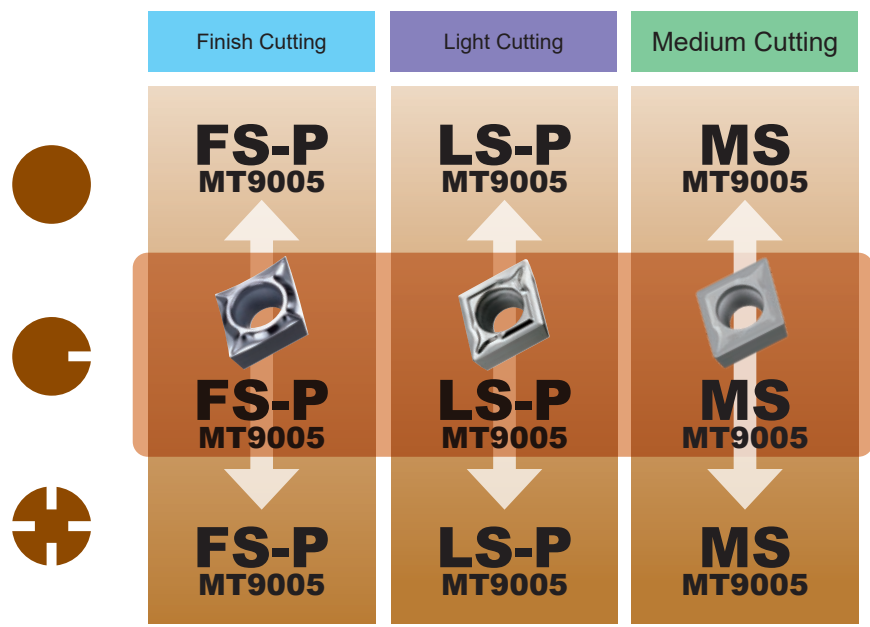


-  Stable Cutting
-  General Cutting
-  Unstable Cutting
-  Finish Cutting

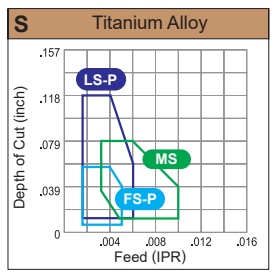
N Aluminum Alloy (EX. : A6061, A7075)
7° POSITIVE INSERTS WITH HOLE

vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
 Stable Cutting	F	AZ	HTi10	985—2295	.004—.016	.008—.118
 General Cutting	F	AZ	HTi10	985—2295	.004—.016	.008—.118
 Unstable Cutting	F	AZ	HTi10	985—2295	.004—.016	.008—.118



- Stable Cutting
- General Cutting
- Unstable Cutting
- F** Finish Cutting
- L** Light Cutting
- M** Medium Cutting



vc : Cutting speed
 f : Feed
 ap : Depth of cut.

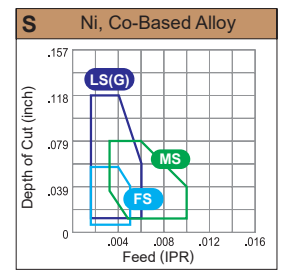
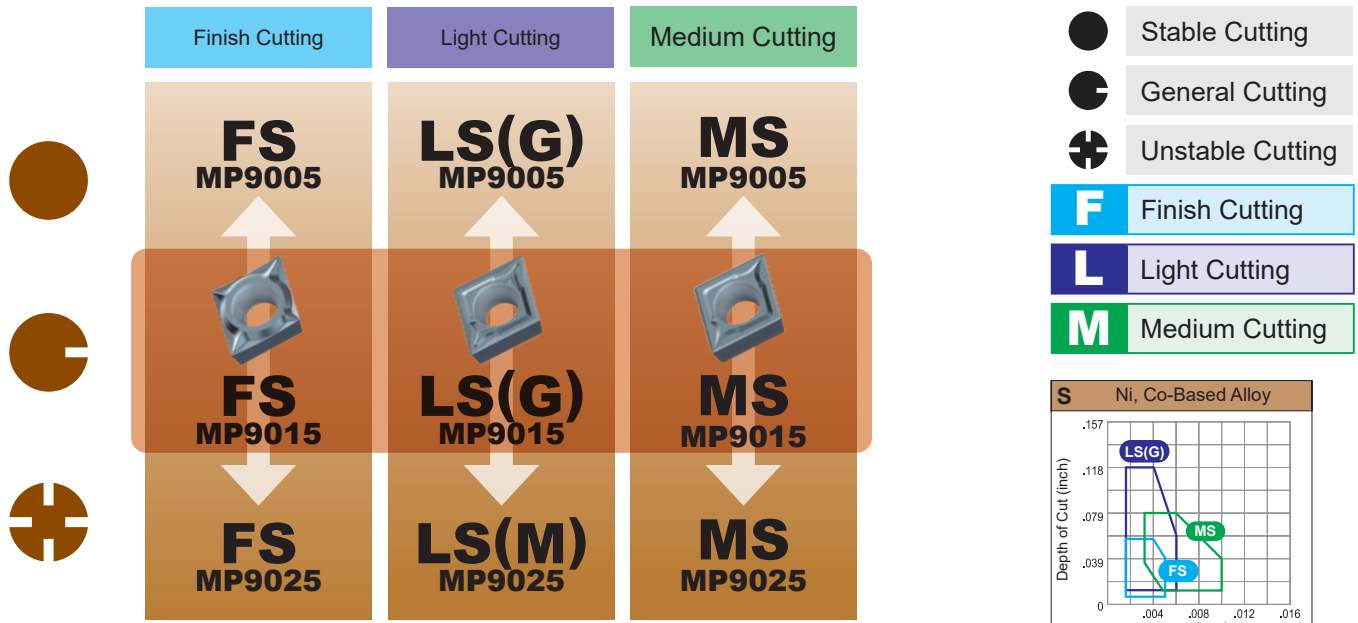
S Titanium Alloy (EX. : Ti-6Al-4V)
 7° POSITIVE INSERTS WITH HOLE

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	FS-P	MT9005	130–260	.002–.005	.008–.055
	L	LS-P	MT9005	130–260	.002–.006	.012–.118
	M	MS	MT9005	115–210	.003–.010	.012–.079
General Cutting	F	FS-P	MT9005	130–260	.002–.005	.008–.055
	L	LS-P	MT9005	130–260	.002–.006	.012–.118
	M	MS	MT9005	115–210	.003–.010	.012–.079
Unstable Cutting	F	FS-P	MT9005	130–260	.002–.005	.008–.055
	L	LS-P	MT9005	130–260	.002–.006	.012–.118
	M	MS	MT9005	115–210	.003–.010	.012–.079

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

TURNING INSERTS

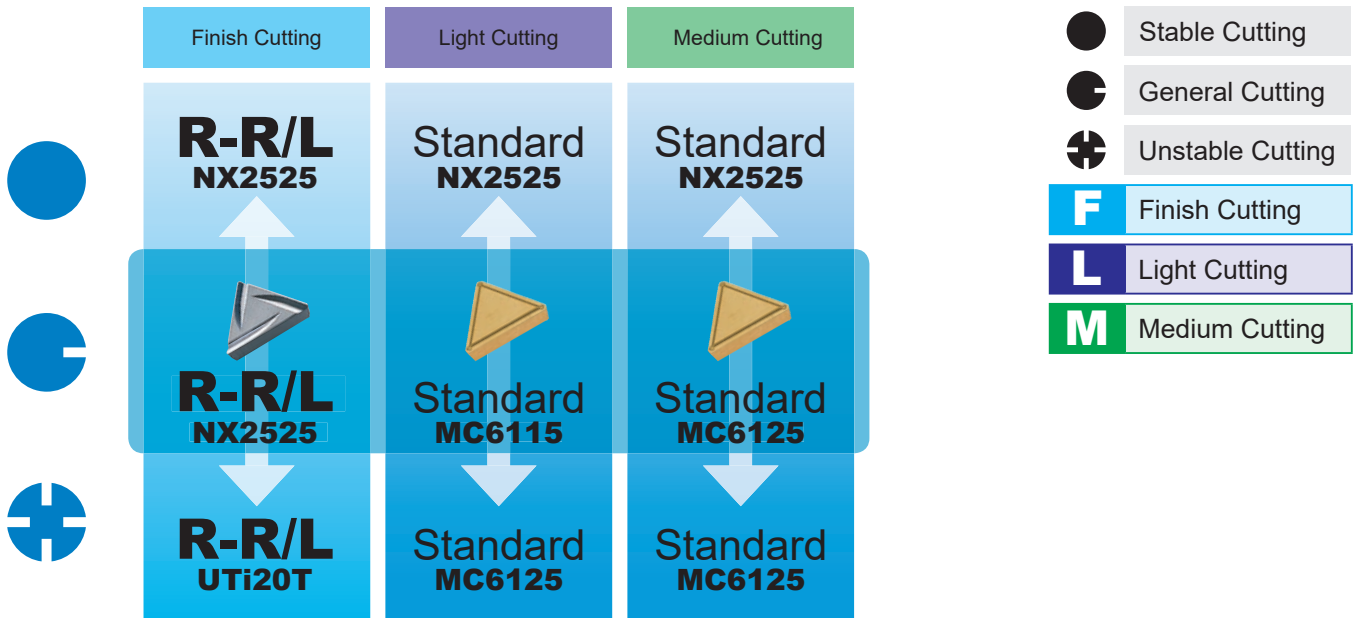
A



S Ni, Co-Based Alloy (EX. : Inconel718)
7° POSITIVE INSERTS WITH HOLE

vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	FS	MP9005	150–310	.002–.005	.008–.055
	L	LS(G)	MP9005	150–310	.002–.006	.012–.118
	M	MS	MP9005	130–260	.003–.010	.012–.079
General Cutting	F	FS	MP9015	115–245	.002–.005	.008–.055
	L	LS(G)	MP9015	115–245	.002–.006	.012–.118
	M	MS	MP9015	100–195	.003–.010	.012–.079
Unstable Cutting	F	FS	MP9025	80–130	.002–.005	.008–.055
	L	LS(M)	MP9025	80–130	.002–.008	.008–.039
	M	MS	MP9025	65–115	.003–.010	.012–.079



P Mild Steel (EX. : AISI ASTM A283, AISI 1010)
11° POSITIVE INSERTS WITHOUT HOLE

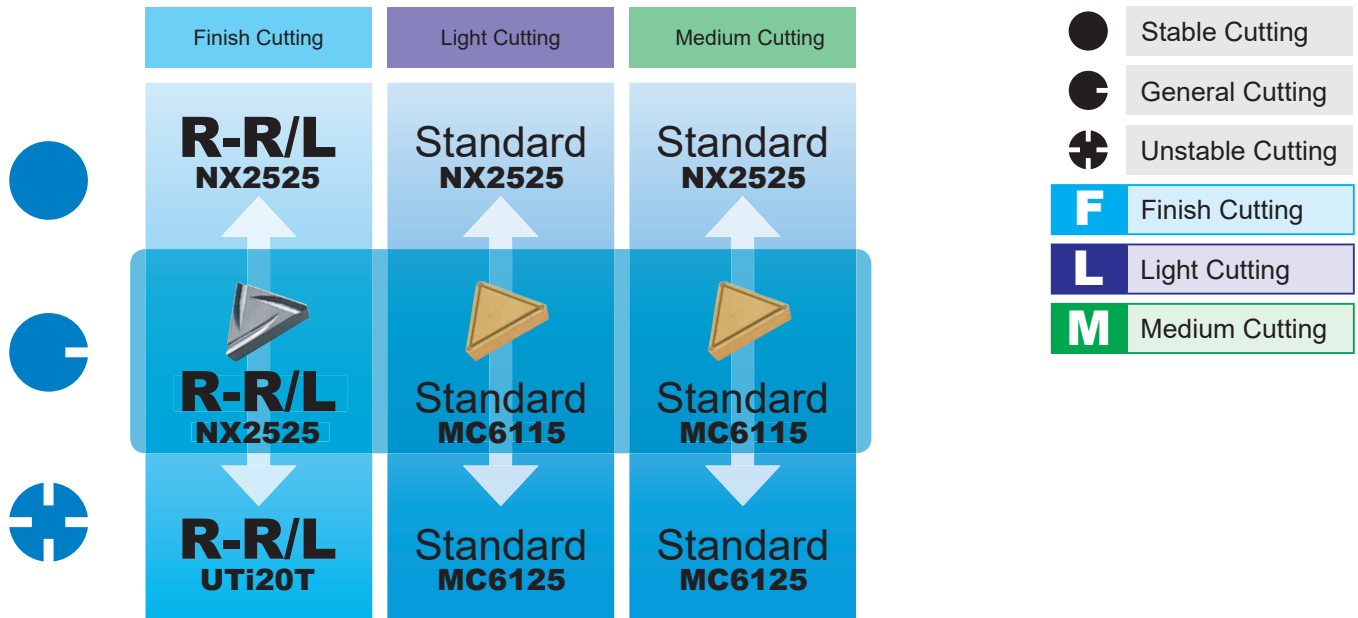
vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	R-R/L	NX2525	740–1050	.002–.010	.012–.059
	L	Standard	NX2525	605–885	.003–.012	.012–.079
	M	Standard	NX2525	605–885	.003–.012	.012–.079
General Cutting	F	R-R/L	NX2525	740–1050	.002–.010	.012–.059
	L	Standard	MC6115	805–1560	.003–.012	.012–.079
	M	Standard	MC6125	885–1380	.003–.012	.012–.079
Unstable Cutting	F	R-R/L	UTi20T	375–540	.002–.010	.012–.059
	L	Standard	MC6125	885–1380	.003–.012	.012–.079
	M	Standard	MC6125	885–1380	.003–.012	.012–.079

OPTIMUM GRADES AND CHIP BREAKERS FOR EXTERNAL TURNING

A

TURNING INSERTS



vc : Cutting speed
f : Feed
ap : Depth of cut.

P Carbon Steel • Alloy Steel (EX. : AISI 1045, AISI 4140)
11° POSITIVE INSERTS WITHOUT HOLE

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	R-R/L	NX2525	540-785	.002-.010	.012-.059
	L	Standard	NX2525	460-655	.003-.012	.012-.079
	M	Standard	NX2525	460-655	.003-.012	.012-.079
General Cutting	F	R-R/L	NX2525	540-785	.002-.010	.012-.059
	L	Standard	MC6115	590-1150	.003-.012	.012-.079
	M	Standard	MC6115	590-1150	.003-.012	.012-.079
Unstable Cutting	F	R-R/L	UTi20T	280-395	.002-.010	.012-.059
	L	Standard	MC6125	655-1015	.003-.012	.012-.079
	M	Standard	MC6125	655-1015	.003-.012	.012-.079



TURNING INSERTS
A

K Cast Iron • Ductile Cast Iron (EX. : AISI No 45 B)
11° POSITIVE INSERTS WITHOUT HOLE

vc : Cutting speed
f : Feed
ap : Depth of cut.

	Cutting Area	Chip Breaker	Grade	1st Recommendation		
				vc (SFM)	f (IPR)	ap (inch)
Stable Cutting	F	R-R/L	NX2525	475–655	.002–.010	.012–.059
	L	Flat Top	MC5105	540–1670	.003–.012	.012–.079
	M	Flat Top	MC5105	540–1670	.003–.012	.012–.079
General Cutting	F	R-R/L	NX2525	475–655	.002–.010	.012–.059
	L	Flat Top	UC5115	425–785	.004–.012	.012–.079
	M	Flat Top	UC5115	425–785	.004–.012	.012–.079
Unstable Cutting	F	R-R/L	UTi20T	230–345	.002–.010	.012–.059
	L	Flat Top	VP15TF	375–525	.004–.012	.012–.079
	M	Flat Top	VP15TF	375–525	.004–.012	.012–.079

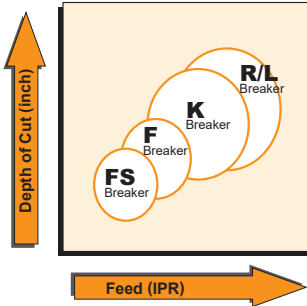
PRECISION BREAKER SYSTEM

ANGULAR AND PARALLEL CHIP BREAKERS (NEGATIVE INSERTS)

■ CHIP CONTROL RANGE

TURNING INSERTS

A

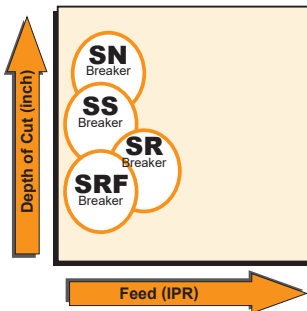


■ FEATURES OF CHIP BREAKER

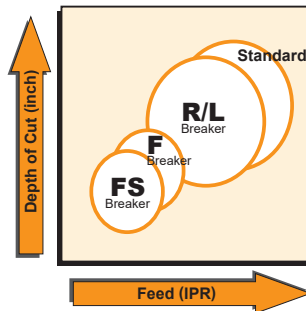
Breaker	Features	DNGG Type	SNGG Type	TNGG Type	VNGG Type
FS	<ul style="list-style-type: none"> For precision finishing. Small width lead breaker for good chip control. Sharp cutting edge gives a good surface finish. 	—	—		—
F	<ul style="list-style-type: none"> For finish cutting. Lead breaker controls chip flow. Sharp cutting edge gives a good surface finish. 	—	—		—
K	<ul style="list-style-type: none"> Parallel breaker for light cutting. Excellent chip control for low to medium feed rates. 	—	—		—
R/L	<ul style="list-style-type: none"> Parallel breaker for medium cutting. Good chip control for medium feed rates. 				

ANGULAR AND PARALLEL CHIP BREAKERS (POSITIVE INSERTS)

■ For turning small, high precision parts



■ For general turning



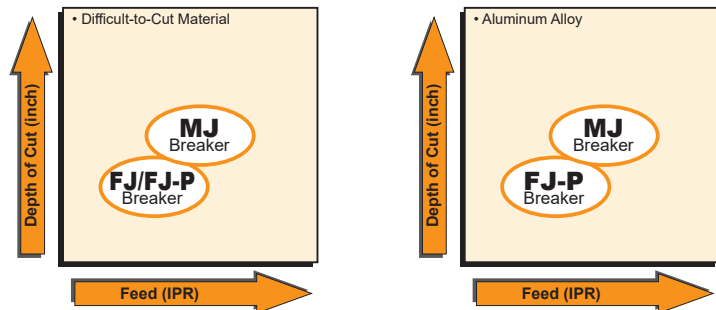
■ FEATURES OF CHIP BREAKER

Breaker	Features	CCET Type	CCGT Type	DCET Type	DCGT Type	VBET Type
SRF	<ul style="list-style-type: none"> The wide lead breaker for medium cutting is suitable for automatic lathe machining. The insert design for low resistance controls chip flow. 	—	—	—		
SR	<ul style="list-style-type: none"> The wide lead breaker for medium cutting is suitable for automatic lathe machining. The insert design for low resistance controls chip flow. 		—		—	
SS	<ul style="list-style-type: none"> The parallel breaker for light cutting is suitable for automatic lathe machining. Excellent chip control at low feed rates. 	—		—		—
SN	<ul style="list-style-type: none"> The parallel breaker for general purpose is suitable for automatic lathe machining. Excellent chip control for low to medium feed rates. 					

Breaker	Features	CCG/CCGT Type	CPGT Type	DCGT Type	TPGH Type	TCGT Type	VBGT/VCGT Type	WBGT Type	WCGT Type	WPGT Type
FS	<ul style="list-style-type: none"> For precision finishing. Small width lead breaker for excellent chip control. Sharp cutting edge gives a good surface finish. 	—	—	—		—	—	—	—	
F	<ul style="list-style-type: none"> For finish cutting. Lead breaker controls chip flow. Sharp cutting edge gives a good surface finish. 				—				—	—
R/L	<ul style="list-style-type: none"> Lead breaker for light cutting. Good chip control for low to medium feed rates. 	—	—	—	—	—	—	—		—
Standard	<ul style="list-style-type: none"> For light cutting. Good chip control for low to medium feed rates. 	—		—	—	—	—	—	—	—

3D MOLDED CHIP BREAKERS (NEGATIVE INSERTS)

■ CHIP CONTROL RANGE

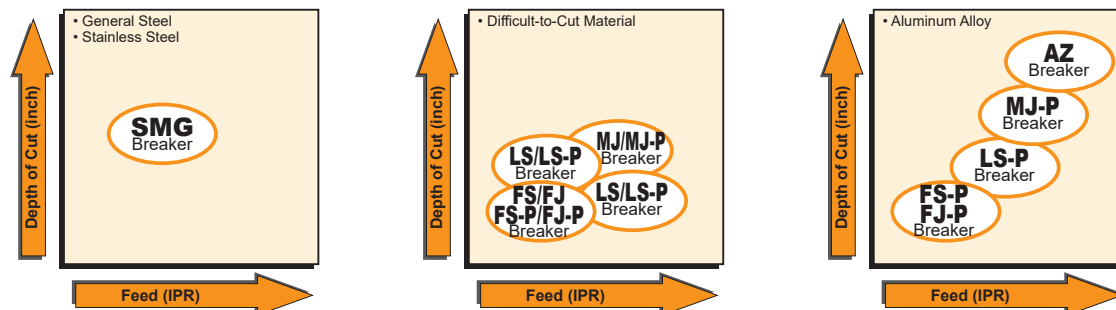


■ FEATURES OF CHIP BREAKER

Breaker	Features	CNGG Type	DNGG/DNGM Type	VNGG/VNGM Type
FJ	<ul style="list-style-type: none"> ● Ideal for heat-resistant alloy. ● The sharp edge produces good cutting surface. 			
FJ-P	<ul style="list-style-type: none"> ● Ideal for aluminum and copper. ● The sharp edge produces excellent surface finishes. 		—	—
MJ	<ul style="list-style-type: none"> ● Ideal for heat-resistant alloy and titanium alloy. ● The sharp edge produces excellent surface finishes. 			

3D MOLDED CHIP BREAKERS (POSITIVE INSERTS)

■ CHIP CONTROL RANGE



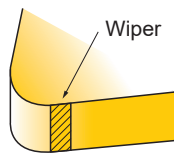
■ FEATURES OF CHIP BREAKER

Breaker	Features	CCGT Type	DCGT Type	TCGT Type	VCGT Type	WCGT/RCGT Type
FS	<ul style="list-style-type: none"> ● Ideal for heat-resistant alloys, titanium alloys, and cobalt chrome alloys. ● Sharp cutting edges provide excellent surface precision and finish. 			—	—	—
FS-P	<ul style="list-style-type: none"> ● Ideal for titanium alloys and copper alloys. ● Sharp cutting edges provide excellent surface precision and finish. 			—	—	—
FJ	<ul style="list-style-type: none"> ● The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. ● The large rake angle highly suitable for finishing difficult-to-cut materials. 			—	—	—
FJ-P	<ul style="list-style-type: none"> ● Ideal for aluminum and copper. ● The sharp edge produces excellent surface finishes. 				—	
LS	<ul style="list-style-type: none"> ● Ideal for heat-resistant alloy and titanium alloy and cobalt chrome alloy. ● Breaker protrusion suitable for depth of cut area achieves a wide range of chip control. 			—		—
LS-P	<ul style="list-style-type: none"> ● Ideal for aluminum and copper. ● The polished insert face prevents built up edge. 			—		—
MJ	<ul style="list-style-type: none"> ● The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. ● Large rake angle highly suitable for finish- light cutting difficult-to-cut materials. 				—	
MJ-P	<ul style="list-style-type: none"> ● Ideal for aluminum and copper. ● The sharp edge produces excellent surface finishes. 				—	
SMG	<ul style="list-style-type: none"> ● For medium cutting. ● 3D molded chipbreaker provides good chip control.Breaker geometry appropriate for copying and back turning. 			—	—	—
AZ	<ul style="list-style-type: none"> ● The high rake angle and 3D curved cutting edge provides sharpness at the cutting point. ● Additionally the 3D shape of the rake face enables excellent chip control. 					

WIPER INSERT

What is a Wiper Insert?

- The wiper insert is designed with a wiper edge that is situated where the straight edge meets the corner radius.
- In comparison to conventional breakers, the surface finish does not deteriorate even if the feed rate is doubled.
- Machining at high feed rates improves cutting efficiency.



● Improving Surface Finish

Under the same machining conditions as conventional breakers, but with the feed rate increased, the surface finish of the work material can be improved.

● Improving Efficiency

High feed rates not only shortened machining times but also make it possible to combine roughing and finishing operations.

● Increased Tool Life

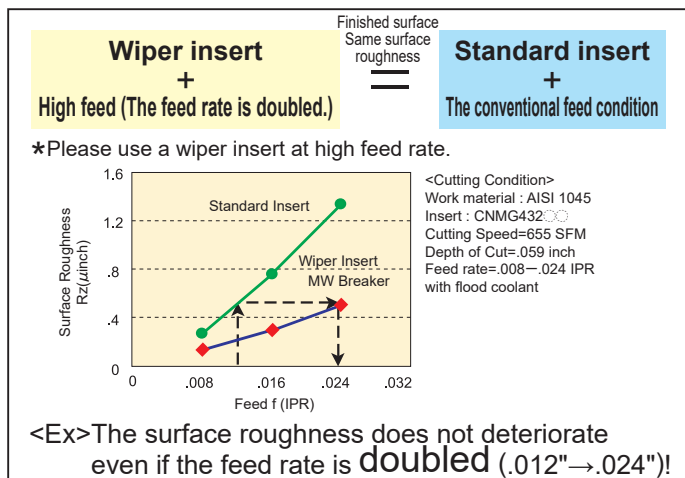
When a change to high feed conditions, the time required to cut one component is decreased, thus more parts can be machined with each insert. In addition, the high feed rate prevents rubbing, therefore, delaying the progression of wear and increasing the tool life of the insert.

● Improving Chip Control

Under high feed conditions, the chips generated become thicker and are more easily broken, thus, chip control is improved.

A

TURNING INSERTS



■ A wiper insert + machining at high feed rate

- Reduced machining time (per work material)
- Increased number of work material (per definitive time period)
- Improving chip control

■ A wiper insert + machining at conventional feed rate

- Eliminating the finishing step by roughing and finishing together (Separate roughing and finishing steps → Single-step machining)

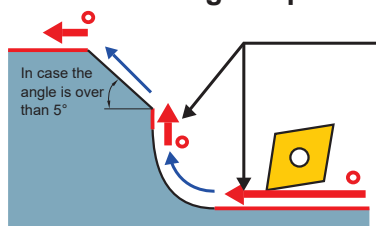
- Reducing cycle times
- Increased productivity
- Avoiding Line-Stoppage

<The Realization of Reduced Costs!!>

■ The estimate of finished surface roughness when using a wiper insert

The effects of wiper inserts on external machining, boring and facing.

*The surface roughness when machining at corner R or taper angle over 5°, is the same as machining with standard inserts.



$$Rz(W) = Rz \times 0.5$$

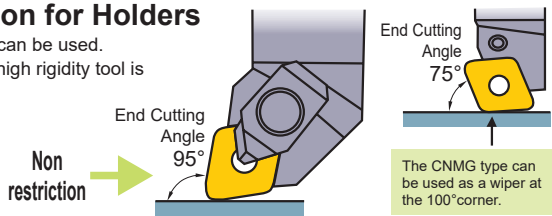
Rz(W) = Finished surface roughness when using a wiper insert.
Rz : Finished surface roughness from conventional conditions. (When using a standard insert)

— Effective uses of a wiper insert
— Non effective uses of a wiper insert

■ Special attention is not necessary when using CNMG • WNMG • CCMT types

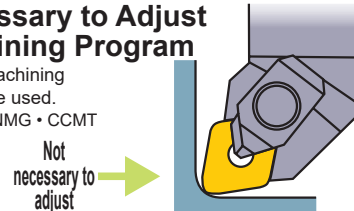
● No Restriction for Holders

A standard holders can be used. (★A double clamp, high rigidity tool is recommended.)



● Not Necessary to Adjust the Machining Program

Conventional machining programs can be used. (The CNMG • WNMG • CCMT types are based on the ISO/ANSI.)

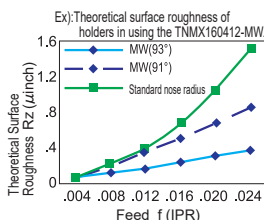
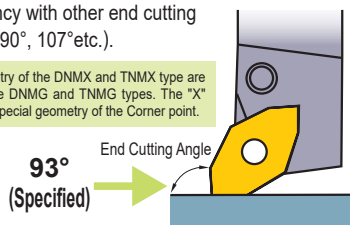


■ Special attention is necessary when using the DNMX • TNMX types due to the special top face geometry

● Restriction for Holders

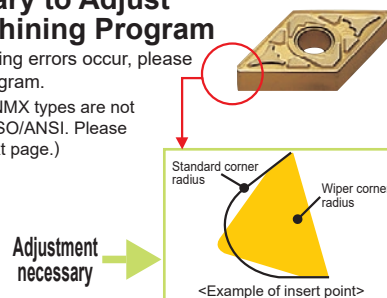
Use a holder with end cutting angle 93° for improving wiper efficiency. A holder with end cutting angle 91° can improve wiper efficiency (see the following figure), however, there is no wiper efficiency with other end cutting angles (60°, 90°, 107° etc.).

The hole geometry of the DNMX and TNMX type are the same as the DNMG and TNMG types. The "X" represents the special geometry of the Corner point.



● Necessary to Adjust the Machining Program

When machining errors occur, please adjust the program. (The DNMX•TNMX types are not based on the ISO/ANSI. Please refer to the next page.)

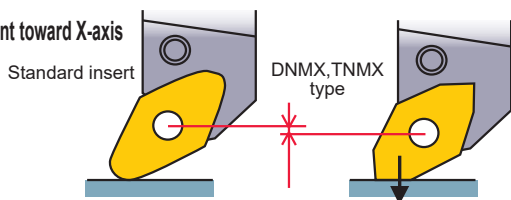


■ Adjustment of machining programs for DNMX • TNMX types

Basic Process) Adjusting Toward X-axis and Z-axis

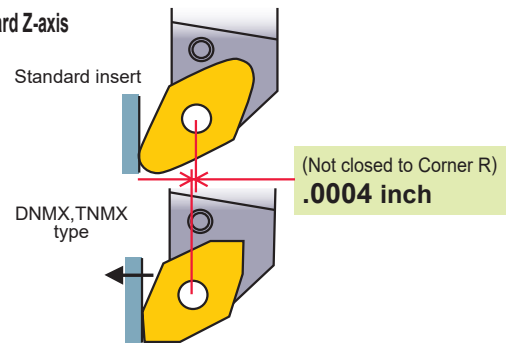
Adjusting the differential between a standard insert and Z-axis / X-axis.

Adjustment toward X-axis



Corner radius .016", .031" : **.0016 inch**
 Corner radius .047" : **.0020 inch**

Adjustment toward Z-axis

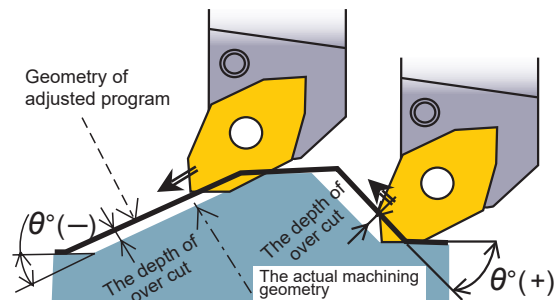


A) Adjusting a Taper

*Necessary to maintain a correct taper.

Adjust the relief angle toward the normal line.

Note1) Adjust the angle toward the normal line in the case where the adjustment number is minus ($\theta = 60^\circ - 70^\circ$) and is not machined completely.



Classification

Nose Radius	Taper Angle θ°															
	-25~-15	-10	-5	0	5	10	15	20-35	40	45	50	55	60-65	70	75-85	90
.047	.0016	.0012	.0004	0	.0008	.0012	.0016	.0020	.0016	.0016	.0008	.0004	-.0004	0	.0004	0
.031	.0012	.0008	.0004	0	.0004	.0008	.0012	.0016	.0012	.0012	.0008	0	-.0004	0	.0004	0
.016	.0008	.0004	.0004	0	.0004	.0004	.0008	.0008	.0008	.0004	.0004	0	-.0004	-.0004	0	0

Values \rightarrow + numbers: adjustment of relief angle, - numbers: adjustment of plunge in angle (inch)

B) Adjusting a Corner R

*Necessary to maintain a correct corner radius.

Adjust the work diameter same as the taper to prevent over-cut.

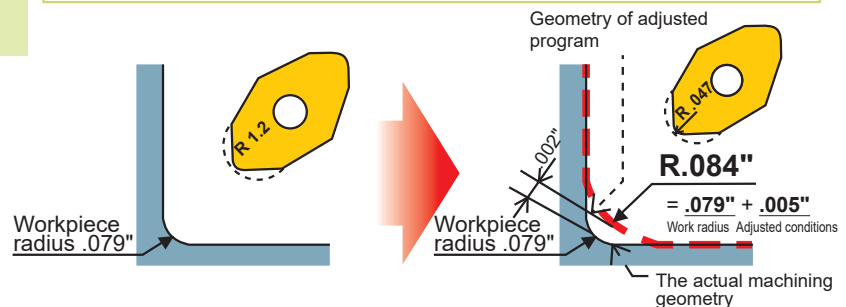
The value of adjustment to work R = Work R + the adjustment value

*No adjusting the corner radius in this case.

The corner radius of the insert The adjustment amount on the workpiece radius.

Corner Radius .016" \rightarrow Work Radius **+.0020"**
 Corner Radius .031" \rightarrow Work Radius **+.0043"**
 Corner Radius .047" \rightarrow Work Radius **+.0055"**

Ex) : In case of machining R .079" when using a corner R .047" type insert.



In correcting corner radius:

It is not necessary to adjust the machining program, however, machining errors can occur within max. $\pm .0012"$ due to correcting by an approximate number.

The Easy-to-correct Method

Corner Radius Correction

Input the correction number of each corner radius.

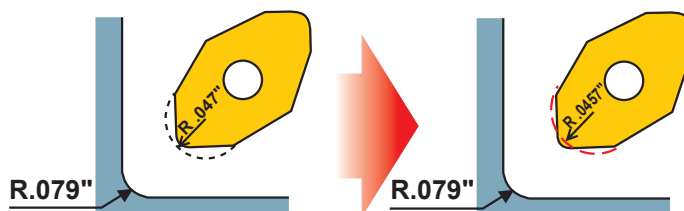
The value of corrected corner radius = approximation

*No adjustment required in machining program.

The corner radius of a insert The value of corrected corner radius = approximation

Corner Radius .016" \rightarrow **R.0142"**
 Corner Radius .031" \rightarrow **R.0299"**
 Corner Radius .047" \rightarrow **R.0457"**

Ex): In the case of machining a corner with a radius R .079" when using an insert with a corner radius R .047".



Others) The value of correction is same for both DNMX and TNMX. Discriminate them by the size of corner radius.

GRADES FOR TURNING

INDEXABLE INSERT GRADES FOR TURNING

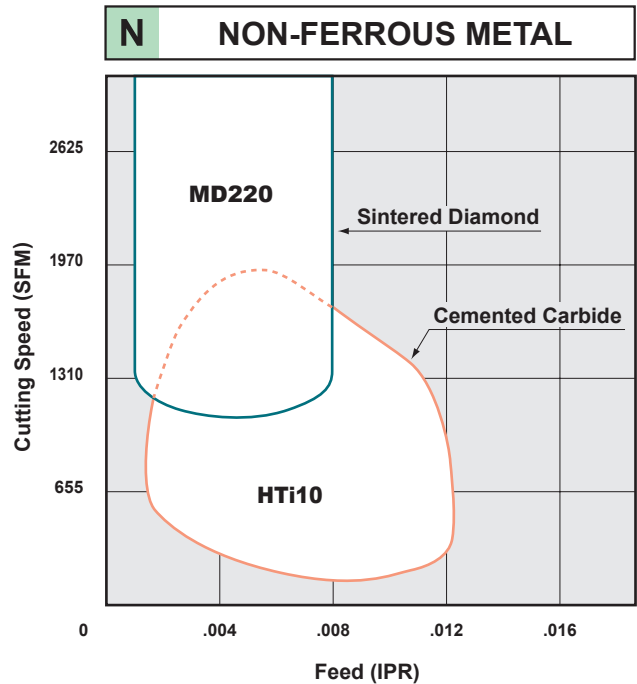
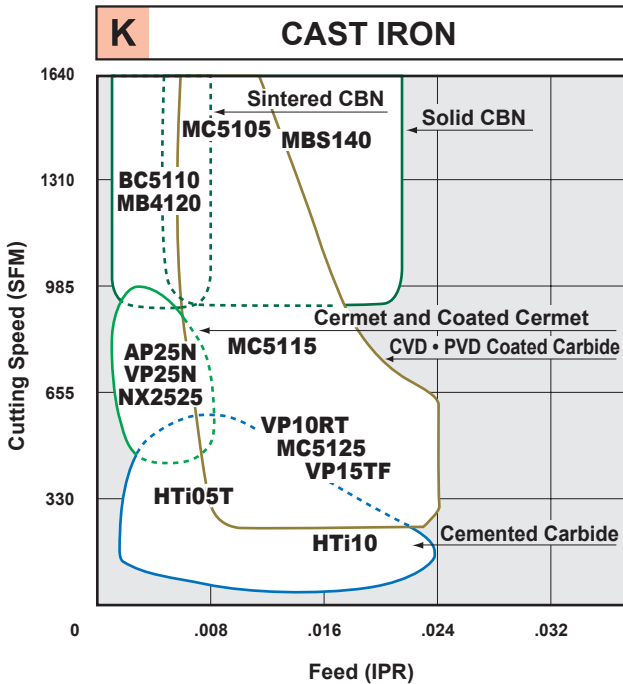
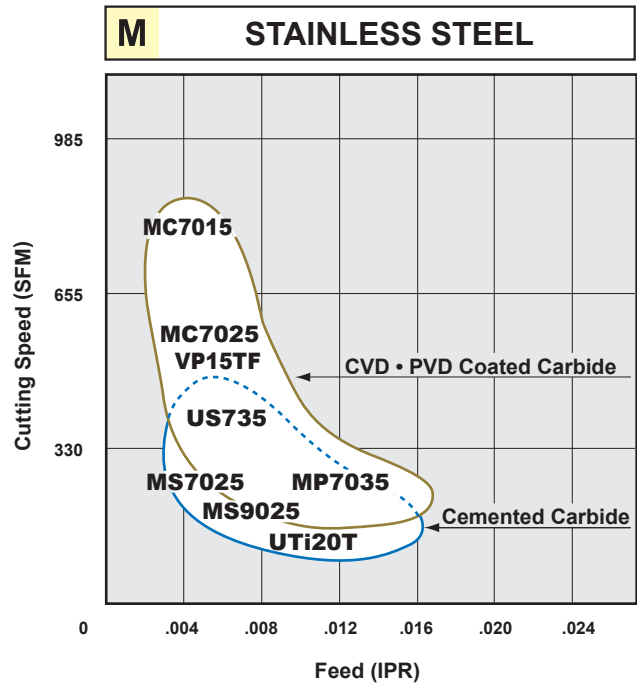
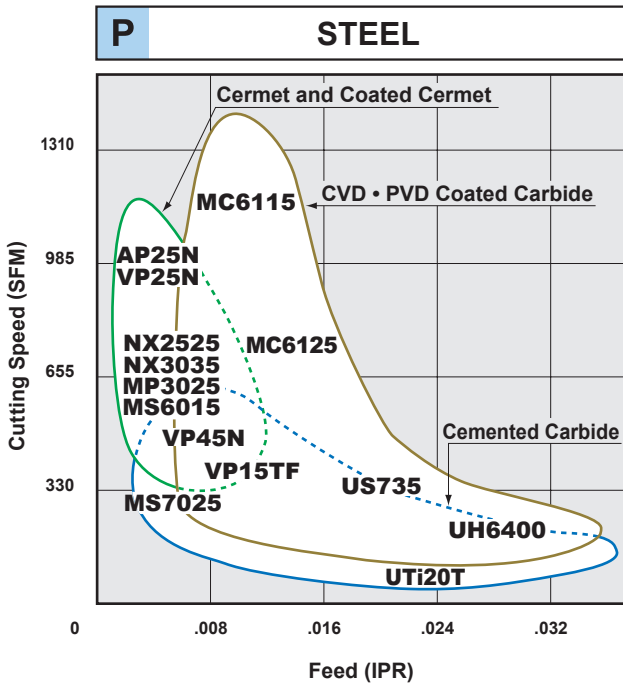
TURNING INSERTS

ISO	Coated Carbide		Cermets	Coated Cermets	Cemented Carbide	Coated CBN	CBN	PCD (Sintered Diamond)
	CVD	PVD						
Steel P	Continuous	MC6115 NEW, MY5015, MC6125 NEW, VP10RT, VP10MF, MS6015, MS7025 NEW, VP15TF, VP20MF, VP20RT	NX2525, NX3035	AP25N, VP25N, MP3025, VP45N	UTi20T			
	Interrupted	MC6035, UH6400						
Stainless Steel M	Continuous	MC7015, VP10RT, VP10MF, MS7025 NEW, MS9025 NEW, VP15TF, VP20MF, VP20RT	NX2525	AP25N, VP25N	UTi20T			
	Interrupted	US735, MP7035						
Cast Iron K	Continuous	MC5105 NEW, MC5005, MC5115 NEW, MC5015, MY5015, MH515, MC5125 NEW, VP10RT, VP15TF, VP20RT	NX2525	AP25N, VP25N	HTi05T, HTi10, UTi20T	BC5110 NEW	MB4120, MBS140	
	Interrupted							
Non-Ferrous Metal N	Continuous				HTi10		MD220	
Heat Resistant Alloy • Ti Alloy S	Continuous	US905, MP9005, VP05RT, MP9015, VP10RT, MP9025, VP15TF, VP20RT, MS9025 NEW		MT9005, RT9005, MT9015, RT9010				
	Interrupted							
Hardened Steel H	10					BC8105, BC8110, BC8210 NEW, BC8120, BC8220 NEW, BC8130	MB8110, MB8120, MB8130	
	20							
	30							

TURNING APPLICATION RANGE

A

TURNING INSERTS

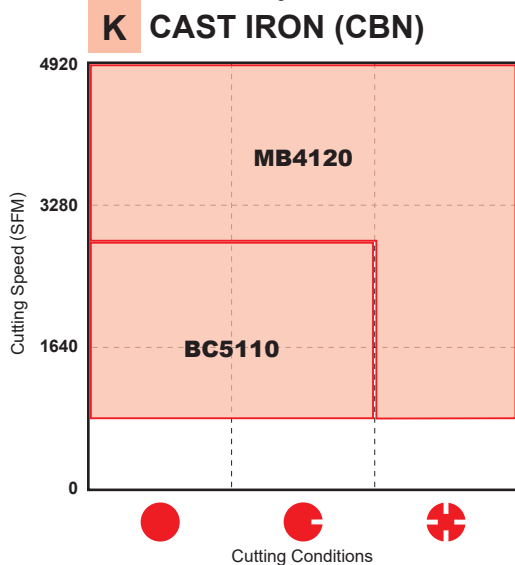
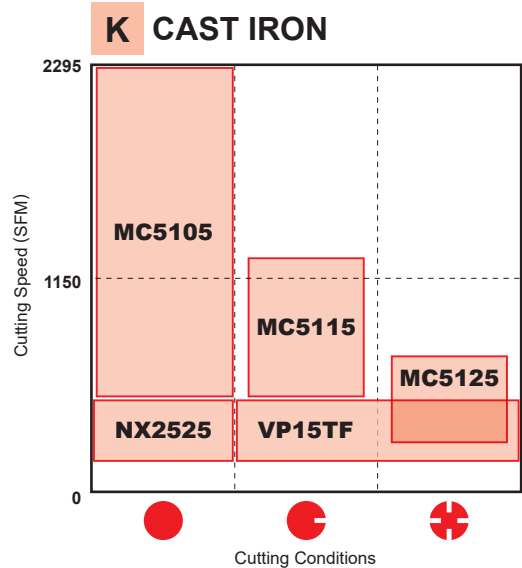
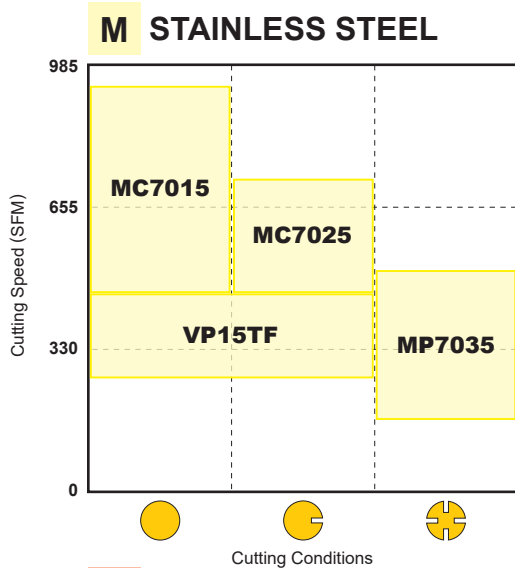
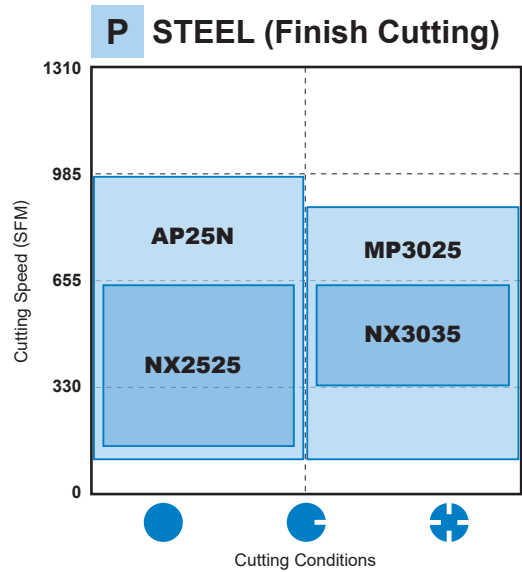
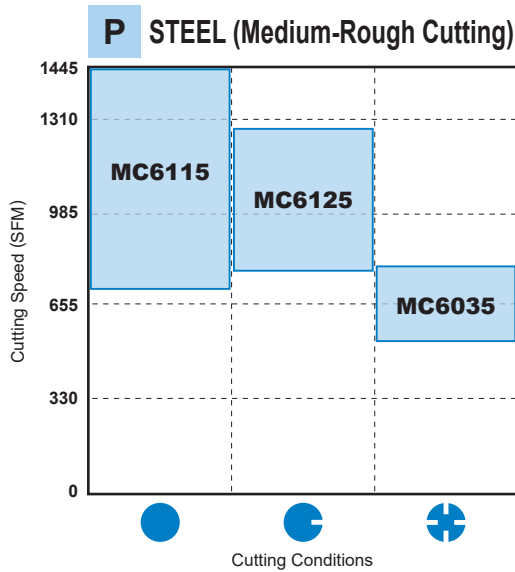


TURNING APPLICATION RANGE

● Recommendation of the insert grade based on cutting speed and conditions for each work material.

A

TURNING INSERTS



CUTTING CONDITIONS



Stable Cutting

Continuous Cutting
Constant Depth of Cut
Pre-Machined
Securely Clamped Component

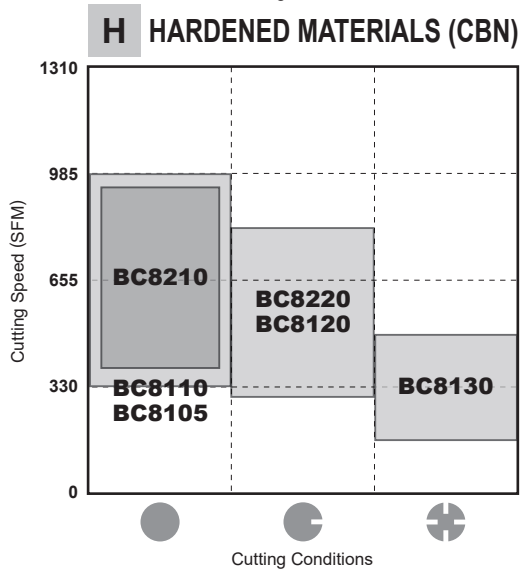
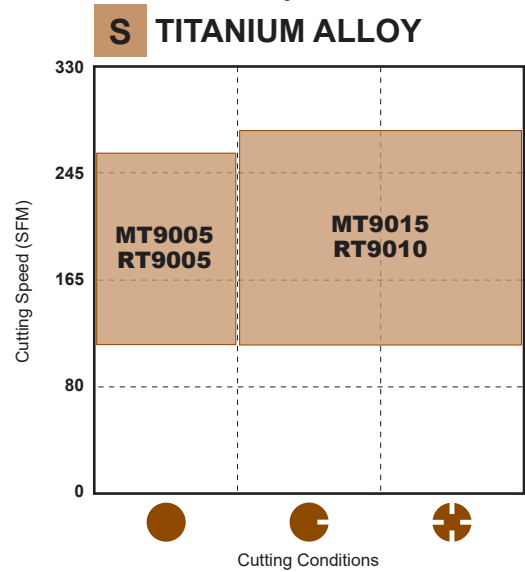
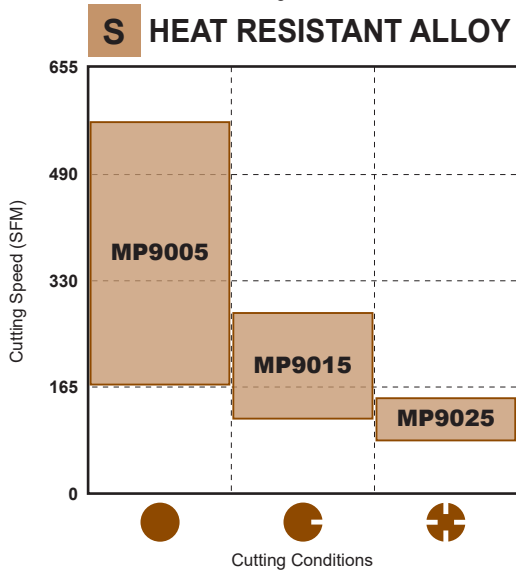
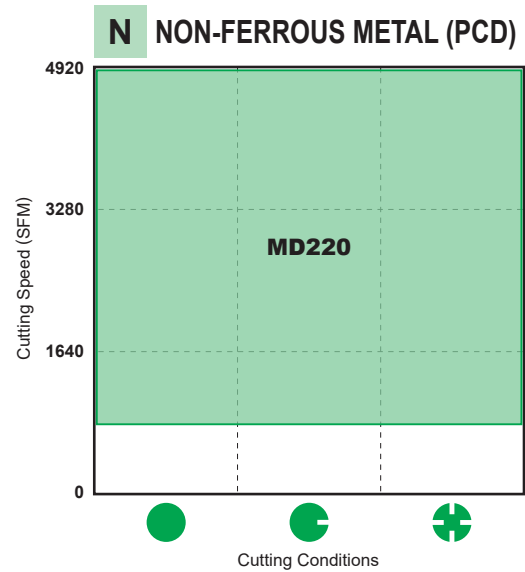
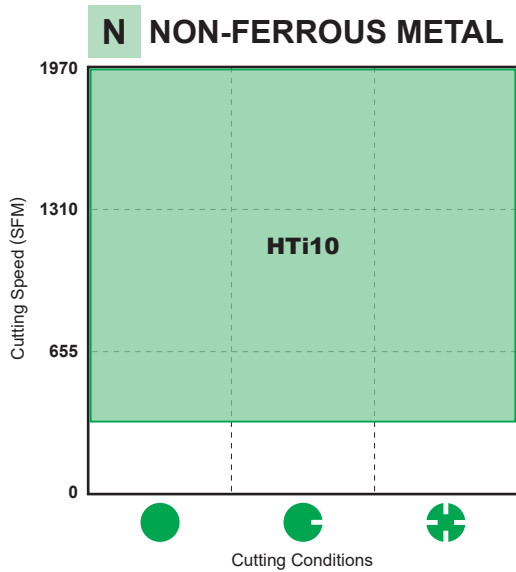


Unstable Cutting

Heavy Interrupted Cutting
Irregular Depth of Cut
Low Clamping Rigidity



General Cutting



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TURNING INSERTS

COATED CARBIDE (CVD)

- Special tough fibrous structure improves wear and fracture resistance.
- It covers a wide application range and thus reduces the number of tools required.

TURNING INSERTS

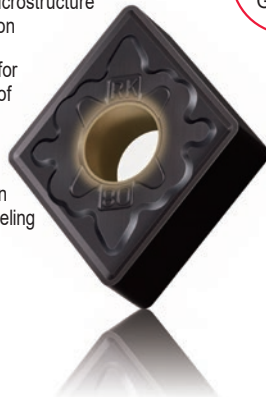
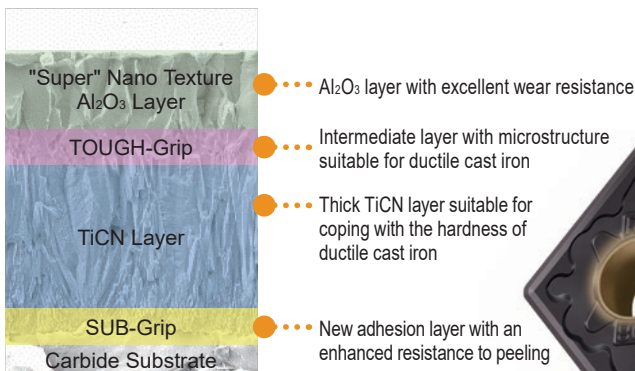
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SELECTION STANDARD

TURNING

Work Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	Continuous Cutting	NEW MC6115	1115 (705 – 1575)	P ↑ Continuous 10 20 30 40 ↓ Interrupted	
		NEW MC6125	1080 (690 – 1525)		
	Interrupted Cutting	MC6035	490 (260 – 665)		
		UH6400			
M Stainless Steel	Continuous Cutting	MC7015	720 (510 – 935)	M ↑ Continuous 10 20 30 40 ↓ Interrupted	
	Continuous and Interrupted Cutting	MC7025	590 (460 – 720)		
		US735	425 (245 – 605)		
K Cast Iron Ductile Cast Iron	Continuous Cutting	NEW MC5105	1418 (540 – 2295)	K ↑ Continuous 10 20 30 ↓ Interrupted	
		NEW MC5115	875 (490 – 1260)		
	Interrupted Cutting	NEW MC5125	490 (260 – 720)		
S Heat Resistant Alloy	Continuous and Interrupted Cutting	US905	70 (45 – 95)	S ↕ 5 ↑ Continuous ↓ Interrupted	

MC5115



Tough and Sub Grip Layers for Ductile Cast Iron Grades

The extra strength of the adhesion between the coating layers (1.3 times stronger) suppresses peeling during machining of ductile cast iron.

Adhesion is 1.3 Times* Greater!

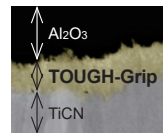


MC5115

*Compared with a conventional Mitsubishi product.

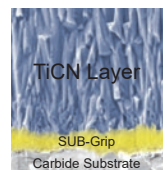
TOUGH-Grip

The interface between the layers is controlled at the nano level, allowing the TOUGH-Grip layer extremely high levels of adhesion to prevent delamination.



SUB-Grip

By increasing the degree of adhesion between the carbide substrate and the coating layer, a coating layer has been developed that is resistant to peeling even during strong intermittent machining.



By Image

GRADE CHARACTERISTICS

Workpiece Material	Grade	Substrate	Coating Layer	
		Hardness (HRA)	Composition	Thickness
P Steel	NEW MC6115	90.8	Accumulated TiCN-Al ₂ O ₃ -Ti Compound	Thick
	NEW MC6125	90.0	Accumulated TiCN-Al ₂ O ₃ -Ti Compound	Thick
	UH6400	89.5	Accumulated TiCN-Al ₂ O ₃ -Ti Compound	Thick
M Stainless Steel	MC7015	90.7	TiCN-Al ₂ O ₃ -TiN	Thin
	US7020	90.5	TiCN-Al ₂ O ₃ -TiN	Thin
	MC7025	89.4	TiCN-Al ₂ O ₃ -TiN	Thin
	US735	89.0	Ti Compound	Thin
K Cast Iron Ductile Cast Iron	NEW MC5105	91.0	TiCN-Al ₂ O ₃	Thick
	NEW MC5115	91.0	TiCN-Al ₂ O ₃	Thick
	NEW MC5125	91.0	TiCN-Al ₂ O ₃	Thick
	Heat Resistant Cast Steel	MH515	91.0	TiCN-Al ₂ O ₃	Thick
S Heat Resistant Alloy	US905	92.2	TiCN-Al ₂ O ₃ -TiN	Thin

Note 1) Hardness shows representative value of the substrate.

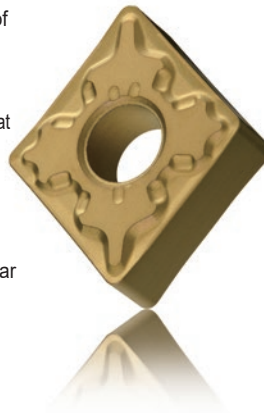
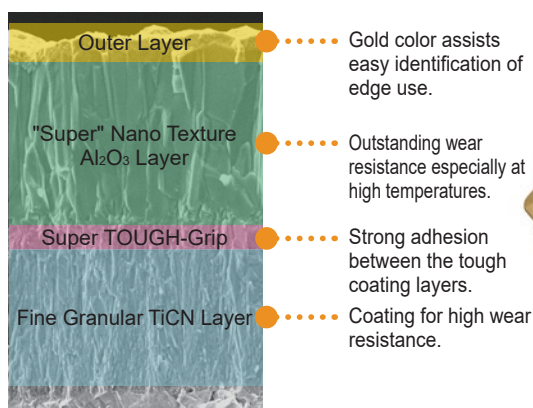
Super Nano Texture Technology

The standard Nano Texture Technology has been improved and developed to be an industry leading standard for crystal growth of Al₂O₃ coatings. This Super Nano Texture Technology increases tool life and wear resistance due to the fine, dense crystal growth process.

Super TOUGH-Grip

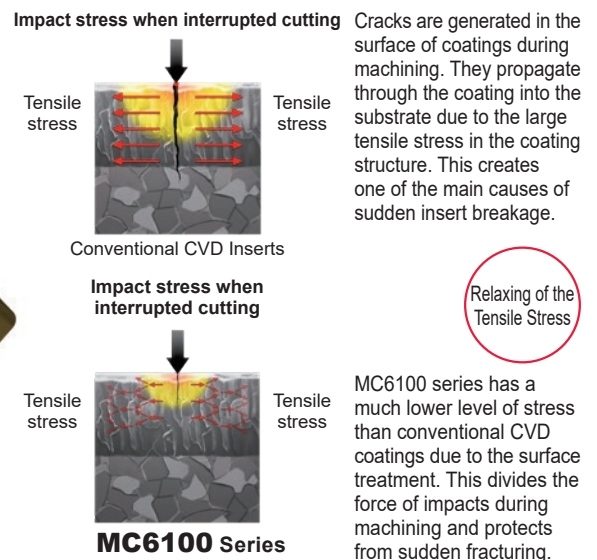
The Super TOUGH-Grip layer has finer crystal grains that enhance the strength of the adhesion between the coating layers.

MC6115



Reducing the effect of severe fracturing

Cracks that occur during unstable machining are prevented due to the relaxing of the tensile stress in the coating. MC6100 series has an 80% reduction in coating tensile stress compared to conventional CVD inserts.



COATED CARBIDE (PVD)

- PVD coating prolongs tool life under the same cutting conditions compared to uncoated carbide.
- Coating of tools with sharp edges is possible without softening or changing the edge quality of the substrate.

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TURNING INSERTS

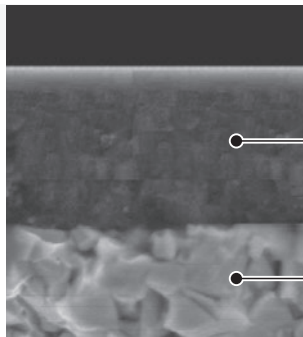
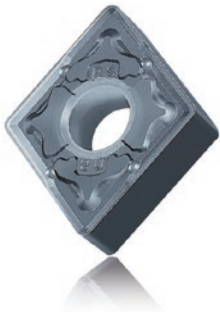
SELECTION STANDARD

TURNING

Work Material	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	VP10RT	395 (330 – 490)	P Continuous ↑ 10 20 30 40 ↓ Interrupted	VP10RT, MS6015, MS7025, VP15TF
	VP15TF	330 (165 – 490)		
M Stainless Steel	VP10RT	395 (330 – 490)	M Continuous ↑ 10 20 30 40 ↓ Interrupted	VP10RT, MS7025, MS9025, VP15TF, MP7035
	VP15TF	330 (260 – 440)		
	MP7035	395 (280 – 510)		
K Cast Iron	VP10RT	395 (330 – 490)	K Continuous ↑ 10 20 30 ↓ Interrupted	VP10RT, VP15TF
	VP15TF	395 (330 – 490)		
S Heat Resistant Alloy	MP9005	260 (165 – 360)	S Continuous ↑ 10 20 30 ↓ Interrupted	MP9005, VP05RT, MP9015, VP10RT, MP9025, MS9025, VP15TF
	MP9015	195 (115 – 280)		
	MP9025	100 (80 – 150)		

ISO Turning Inserts for Difficult to Cut Materials

MP9005/MP9015/MP9025



High Al-(Al,Ti)N single layer coating

Special carbide substrate

ISO Grade	Grade	Concept	Application
S01	MP9005	Top-quality grade focusing on wear resistance	Heat Resistant Alloy Finish-Medium Cutting
S10	MP9015	First recommendation for general applications	Heat Resistant Alloy Medium-Rough Cutting
S30	MP9025	Prevents severe damage for increased stability	Heat Resistant Alloy Interrupted • Light-Rough Cutting

CERMET

- The optimized alloy structure and special alloy binder improves both wear and fracture resistance.
- It covers a wide application range and reduces the number of tools required.
- NX3035 for wet cutting.
- NX2525 for dry cutting.

SELECTION STANDARD

TURNING

Work Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	Continuous Cutting	NX2525	755 (575 – 985)	P ↑ Continuous 10 20 ↓ Interrupted	
	Interrupted Cutting	NX3035	720 (560 – 935)		
M Stainless Steel	Continuous Cutting	NX2525	330 (210 – 440)	M ↑ Continuous 10 20 ↓ Interrupted	
K Cast Iron Ductile Cast Iron	Finishing	NX2525	560 (425 – 690)	K ↑ Continuous 10 20 ↓ Interrupted	

GRADE CHARACTERISTICS

Grade	Hardness (HRA)
NX2525	92.2
NX3035	91.5

Note 1) Hardness shows representative value of the substrate.

COATED CERMET

● Coated cermet (PVD coating) has superior wear and fracture resistance, and therefore provides a stable cutting performance.

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TURNING INSERTS

SELECTION STANDARD

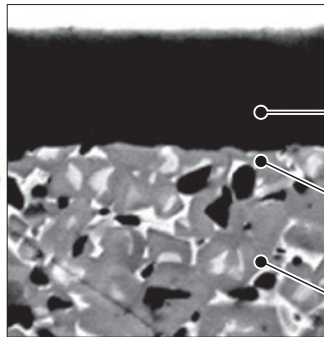
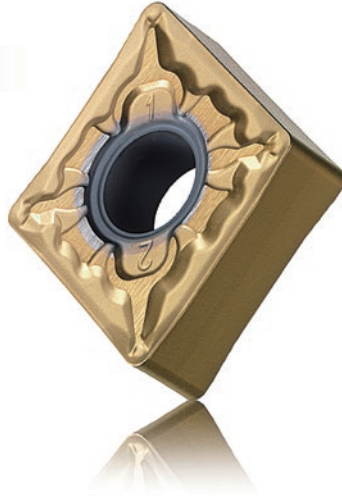
TURNING

Work Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	Continuous Cutting	VP25N AP25N	885 (655 – 1130)	P ↑ Continuous 10 20 30 ↓ Interrupted	
	Interrupted Cutting	MP3025	820 (590 – 1080)		
K Cast Iron Ductile Cast Iron	Finishing	VP25N AP25N	620 (510 – 740)	K ↑ Continuous 10 20 ↓ Interrupted	

Effective for production of small parts.

MP3025

MP3025 provides improved adhesion for coating layer due to the newly-developed special substrate. Uniform flank wear allows prolonged machining that maintains excellent surface finish.



Ti-compound PVD coating provides excellent wear and welding resistance.

Substrate surface provides excellent adhesion strength for coating layer.

Substrate with superior fracture resistance and thermal shock resistance.

CEMENTED CARBIDE

- UTi grades are available for steel and cast iron. HTi grades are available for non-ferrous and non-metal materials and are also suitable for cast iron.

SELECTION STANDARD

TURNING

Work Material	Recommended Grade	Recommended Cutting Speed (SFM)	ISO	Application Range
P Steel	UTi20T	360 (295 – 425)	Continuous ↑ 10	
			↓ 20 30 Interrupted	
M Stainless Steel	UTi20T	330 (260 – 375)	Continuous ↑ 10	
			↓ 20 30 Interrupted	
K Cast Iron	HTi05T	395 (260 – 540)	Continuous ↑ 10	
	HTi10	330 (245 – 440)		
	UTi20T	260 (195 – 360)			↓ 20 30 Interrupted
N Non-Ferrous Metal	HTi10	1640 (985 – 2295)	Continuous ↑ 10	
S Heat Resistant Alloy Ti Alloy	MT9005 RT9005	165 (115 – 260)	Continuous ↑ 10	
	MT9015 RT9010	195 (115 – 280)		

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TURNING INSERTS

MAIN COMPONENT AND APPLICATION

ISO	Main Component	Characteristics	Work Material
	WC-TiC-TaC-Co	Heat / deformation resistance.	Carbon steel, alloy steel, stainless steel and cast iron
	WC-Co	High rigidity and wear resistance.	Cast iron, non-ferrous metals, and non-metal
	WC-Co	High heat resistance and wear resistance.	Heat resistant alloy, Ti alloy

GRADE CHARACTERISTICS

ISO	Grade	Hardness (HRA)
	UTi20T	90.5
	HTi05T	92.5
	HTi10	92.0
	MT9005/RT9005	92.2
	MT9015/RT9010	92.0

Note 1) Hardness shows representative value of the substrate.

MICRO-GRAIN CEMENTED CARBIDE

- Compared to general cemented carbide, micro-grain alloy has higher wear resistance and higher toughness.

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TURNING INSERTS

SELECTION STANDARD

Cutting Tool	Recommended Grade	Work Material
Turning Inserts Milling Inserts Carbide Drills	TF15	Steel Cast Iron

GRADE CHARACTERISTICS

Grade	Grade Characteristics *		ISO	Wear Resistance	Fracture Resistance	Corrosion Resistance
	Hardness (HRA)	T.R.S (Gpa)				
TF15	91.0	4.0	K20	◎	○	◎

* After HIP

Note 1) Hardness shows representative value of the substrate.

Memo


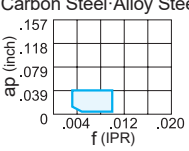

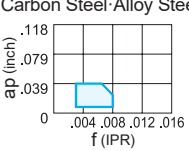

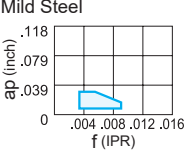

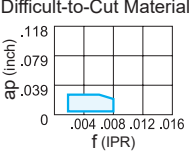

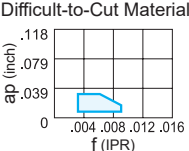

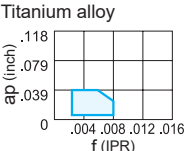

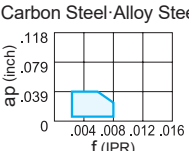

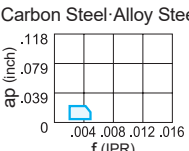

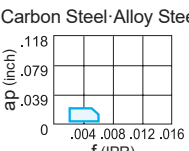
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CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

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TURNING INSERTS

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	M Class	FP 	First recommendation for finishing carbon steel and alloy steel Controls chip clogging during high-feed cutting and prevents chips of soft workpiece materials from running onto their surfaces. Large rake angle suppress chatter vibration and deformation in machining of low rigidity workpiece material.	Carbon Steel-Alloy Steel 	Corner 20° Flank 20° CNMG432FP
		FH 	First recommendation for finishing carbon steel and alloy steel Stable chip control even at small depths of cut.	Carbon Steel-Alloy Steel 	Corner 12° Flank 12° CNMG432FH
		FS 	Alternative chip breaker for finishing mild steel Stable chip control even at small depths of cut. Sharp edge gives best performance.	Mild Steel 	Corner 16° Flank 8° CNMG432FS
	G Class	NEW FS 	Recommendation for finishing difficult-to-cut materials Excellent chip breaking even at very small depths of cut. The large rake angle and precision grade enables excellent sharpness.	Difficult-to-Cut Materials 	Corner .009" Flank .017" CNGG432FS
		FY 	First recommendation for finishing mild steel Effectively controls adhesive chips. Suitable for mild steel finishing.	Difficult-to-Cut Materials 	Corner 15° Flank .008" CNMG432FY
	G Class	FJ 	Alternative breaker for finishing difficult-to-cut materials Ideal for heat resistant alloys and titanium alloys. The sharp edge produces good cutting surface. The curved edge allows smooth chip discharge.	Titanium alloy 	Corner 14° Flank 9° CNGG431FJ
		FJ-P 	Recommendation for finishing titanium alloy Double sided chipbreaker. Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Carbon Steel-Alloy Steel 	Corner 14° Flank 9° CNGG431FJ-P
		R/L FS 	Chip breaker for precise finishing A narrow lead chip breaker for good chip control. The sharp edge produces a good surface finish.	Carbon Steel-Alloy Steel 	Flank 14° TNGG331RFS
		R/L F 	Chip breaker for finishing Lead chip breaker controls chip flow. The sharp edge produces a good surface finish.	Carbon Steel-Alloy Steel 	Flank 14° TNGG331RF


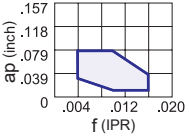
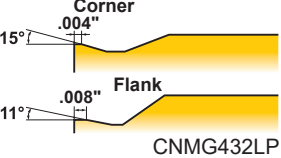

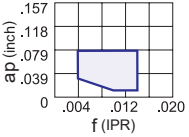
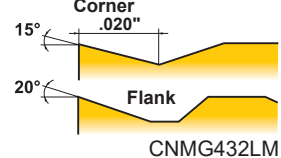

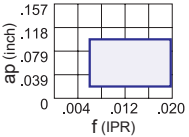
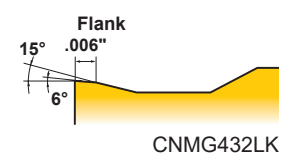

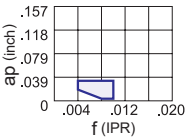
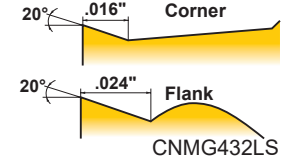

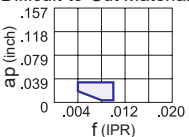
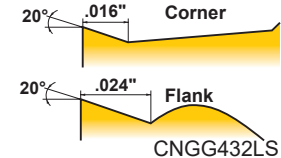

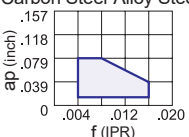
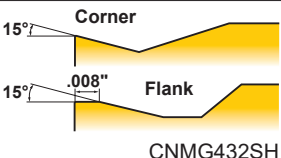

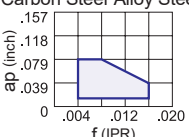
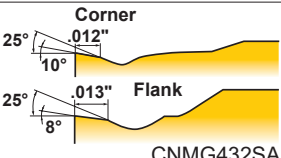

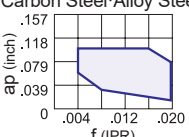
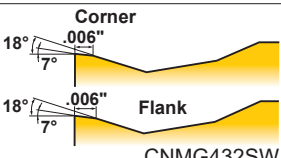

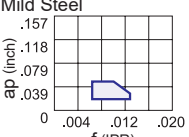
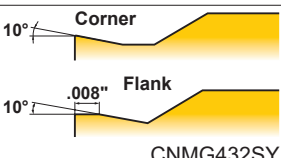
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	CNMG_FH  ↻ A106	DNMG_FH  ↻ A114	SNMG_FH  ↻ A123	TNMG_FH  ↻ A130	VNMG_FH  ↻ A138	WNMG_FH  ↻ A142	
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	NEW CNGG_FS  ↻ A106	NEW DNGG_FS  ↻ A114		NEW TNGG_FS  ↻ A130	NEW VNGG_FS  ↻ A138		
	CNMG_FY  ↻ A106	DNMG_FY  ↻ A114		TNMG_FY  ↻ A130		WNMG_FY  ↻ A142	
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	CNGG_FJ-P  ↻ A107						
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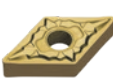


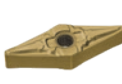


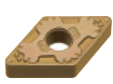





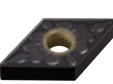


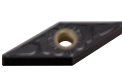


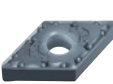

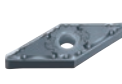


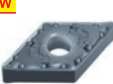



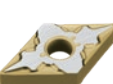


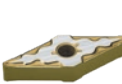


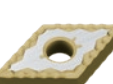





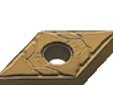







CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
M Class	LP 	First recommendation for light cutting of carbon steel and alloy steel Stable chip control at light cutting range. The curved edge allows smooth chip discharge.	Carbon Steel-Alloy Steel 	 Corner .004" Flank .008" CNMG432LP
	LM 	First recommendation for light cutting of stainless steel Stable chip control at light cutting range. Breaker with high rake angle provides excellent burr control.	Stainless Steel 	 Corner .020" Flank CNMG432LM
	LK 	First recommendation for light cutting of cast iron Narrow positive land provides low cutting resistance and excellent finish.	Cast Iron 	 Flank .006" 6° CNMG432LK
	LS 	First recommendation for light cutting of difficult-to-cut materials Alternative chip breaker for light cutting of stainless steel Enhanced chip disposal for depths of cut smaller than the corner R.	Difficult-to-Cut Materials 	 Corner .016" Flank .024" CNMG432LS
	NEW LS 	Recommendation for light cutting of difficult-to-cut materials Enhanced chip disposal for depths of cut smaller than the corner R. Precision grade with excellent sharpness.	Difficult-to-Cut Materials 	 Corner .016" Flank .024" CNGG432LS
M Class	SH 	Alternative chip breaker for light cutting of carbon steel and alloy steel Can be used at low depths of cut and high feed rates. The curved edge allows smooth chip discharge. Recommended for workpieces in the 160–250HB range.	Carbon Steel-Alloy Steel 	 Corner .008" Flank CNMG432SH
	SA 	Alternative chip breaker for light cutting of carbon steel and alloy steel Superior chip control at small depths of cut. Covers copying and back turning with wavy edge. Recommended for workpieces in the 200–300HB range.	Carbon Steel-Alloy Steel 	 Corner .012" Flank .013" CNMG432SA
	SW 	Wiper insert for light cutting of carbon steel, alloy steel, stainless steel and cast iron In comparison to conventional chip breakers, the surface finish is maintained even if the feed per revolution is doubled. Wiper design for increased productivity and improved surface finish.	Carbon Steel-Alloy Steel 	 Corner .006" Flank .006" CNMG432SW
	SY 	First recommendation for light cutting of mild steel Effectively controls adhesive chips. Suitable for mild steel light cutting.	Mild Steel 	 Corner .008" Flank CNMG432SY



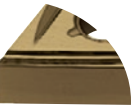
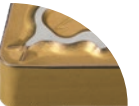

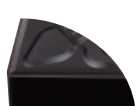



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	CNMG_LK  ↻ A107	DNMG_LK  ↻ A115	SNMG_LK  ↻ A124	TNMG_LK  ↻ A131	VNMG_LK  ↻ A139	WNMG_LK  ↻ A143	
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	NEW CNGG_LS  ↻ A107	NEW DNGG_LS  ↻ A115		NEW TNGG_LS  ↻ A131	NEW VNGG_LS  ↻ A139		
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	CNMG_SY  ↻ A108	DNMG_SY  ↻ A116	SNMG_SY  ↻ A124	TNMG_SY  ↻ A132		WNMG_SY  ↻ A143	

CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting M Class	MJ 	Alternative chip breaker for light cutting of difficult-to-cut materials Ideal for heat resistant alloys and titanium alloys. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge. Excellent notch wear resistance for light to medium cutting.	Difficult-to-Cut Materials ap (inch) vs f (IPR) graph 13° Corner 9° Flank CNMG432MJ
	MJ 	Alternative chip breaker for light cutting of difficult-to-cut materials Double-sided chip breaker, Single sided chip breaker (D type, V type). The sharp edge produces a good surface finish. Ideal for heat resistant alloys and titanium alloys. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials ap (inch) vs f (IPR) graph 13° Corner 9° Flank CNGG432MJ
	R/L-K 	Chip breaker for Light cutting Parallel chip breaker. Excellent chip control at low to medium feed rates.	Carbon Steel-Alloy Steel ap (inch) vs f (IPR) graph 14° Flank .010" TNGG331RK
Medium Cutting M Class	MP 	First recommendation for medium cutting of carbon steel and alloy steel Suitable for medium to light cutting. Breaker geometry appropriate for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance.	Carbon Steel-Alloy Steel ap (inch) vs f (IPR) graph 15° Corner 11° Flank .006" .008" CNMG432MP
	MM 	First recommendation for medium cutting of stainless steel Optimised land geometry by simulation analysis technology controls the plastic deformation of the corner and achieves the long tool life.	Stainless Steel ap (inch) vs f (IPR) graph 6° Corner 10° Flank .012" .012" CNMG432MM
	MK 	First recommendation for medium cutting of cast iron Optimum balance between sharpness and high edge strength for general use.	Cast Iron ap (inch) vs f (IPR) graph 15° Flank 3° .010" CNMG432MK
	MS 	First recommendation for medium cutting of difficult-to-cut materials, Alternative chip breaker for medium cutting of stainless steel. A large two-step rake corner creates chips without squeezing and entangled shapes. Applicable to MP9005, MP9015, MP9025, MT9015	Difficult-to-Cut Materials ap (inch) vs f (IPR) graph 25° Corner 15° Flank .020" .020" CNMG432MS
	MS 	Alternative chip breaker for medium cutting of stainless steel and difficult-to-cut materials The sharp edge gives best performance. Flat top breaker shape offers high edge strength. Applicable to grades other than MP9005, MP9015, MP9025, MT9015	Stainless Steel ap (inch) vs f (IPR) graph 25° Corner 15° Flank .020" .020" CNMG432MS
GM 	Alternative chip breaker for light to medium cutting of stainless steel Alternative chip breaker of main chip breaker LM and MM. Excellent notch wear resistance for light to medium cutting.	Stainless Steel ap (inch) vs f (IPR) graph 25° Corner 15° Flank .020" .020" CNMG432GM	


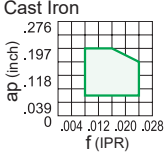
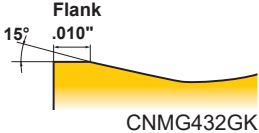

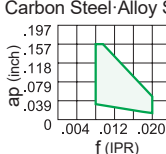
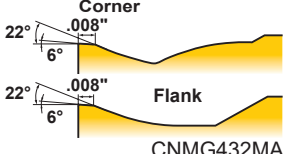

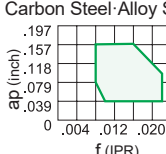
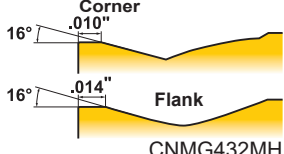

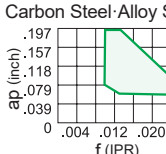
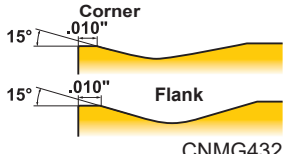

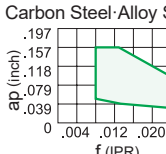
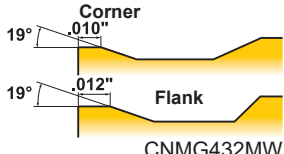

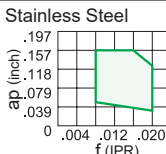
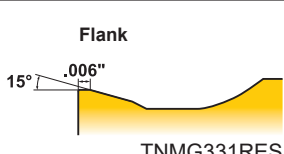

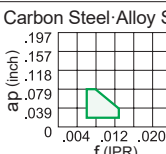
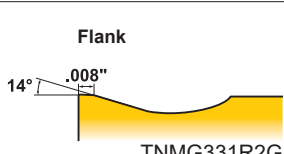

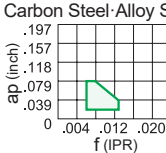
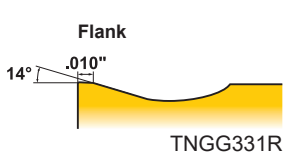
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				TNGG_R/L K  ↻ A132			
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CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

A

TURNING INSERTS

Application Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Medium Cutting M Class	GK 	Alternative chip breaker for medium cutting for cast iron Breakers are suitable for a wide range of applications. Maintenance of high stability by the flat-land.	Cast Iron 	 CNMG432GK
	MA 	Multi-assist chip breaker Ideal for general cutting applications. Positive land provides sharp cutting action.	Carbon Steel-Alloy Steel 	 CNMG432MA
	MH 	Alternative chip breaker for medium cutting of carbon steel and alloy steel Flat land offers high edge strength. Good chip control with suitable chip pocket.	Carbon Steel-Alloy Steel 	 CNMG432MH
	Standard 	Alternative chip breaker for medium cutting of carbon steel and alloy steel Flat land offers high edge strength. Flat top breaker shape offers high edge strength.	Carbon Steel-Alloy Steel 	 CNMG432
	MW 	Wiper insert for medium cutting carbon steel, alloy steel, stainless steel and cast iron The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	Carbon Steel-Alloy Steel 	 CNMG432MW
	R/L-ES 	Alternative chip breaker for medium cutting of stainless steel Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control.	Stainless Steel 	 TNMG331RES
	R/L-2G 	Alternative chip breaker for medium cutting of carbon steel and alloy steel Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control. Precision chip breaker.	Carbon Steel-Alloy Steel 	 TNMG331R2G
G Class	R/L 	Medium cutting Parallel chip breaker. Good chip control for medium feed rates.	Carbon Steel-Alloy Steel 	 TNGG331R


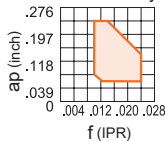
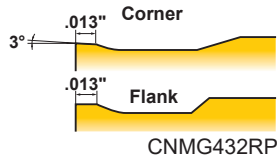

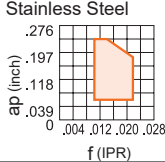
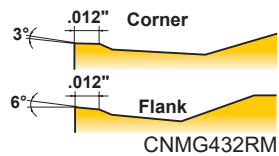

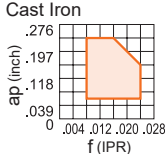
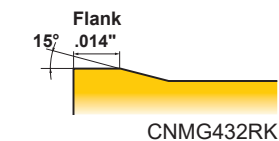

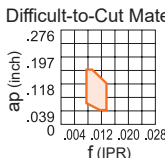
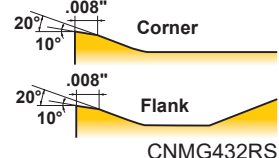

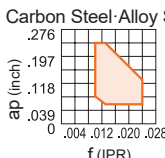
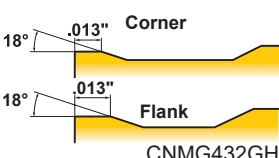

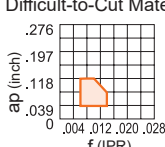
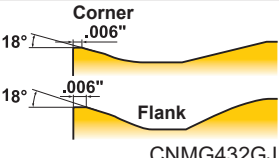

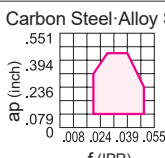
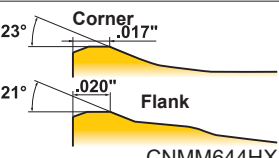

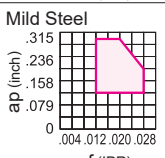
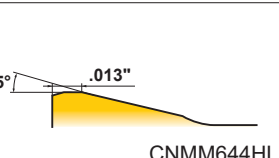

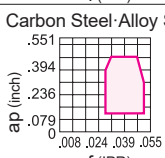
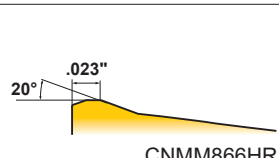
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	CNMG_MH  ↻ A110	DNMG_MH  ↻ A119	SNMG_MH  ↻ A126	TNMG_MH  ↻ A134	VNMG_MH  ↻ A141	WNMG_MH  ↻ A145	
	CNMG  ↻ A111	DNMG  ↻ A119	SNMG  ↻ A127	TNMG  ↻ A134	VNMG  ↻ A141	WNMG  ↻ A145	RNMG  ↻ A122
	CNMG_MW  ↻ A111	DNMX_MW  ↻ A119		TNMX_MW  ↻ A135		WNMG_MW  ↻ A146	
				TNMG_R/L ES  ↻ A135			
				TNMG_R/L 2G  ↻ A135			
		DNGG_R/L  ↻ A119	SNGG_R/L  ↻ A127	TNGG_R/L  ↻ A135	VNGG_R/L  ↻ A141		

CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

A

TURNING INSERTS

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Rough Cutting	M Class	RP 	First recommendation for rough cutting of carbon steel and alloy steel For interrupted cuts and removing scale. Good balance of cutting edge strength and low cutting resistance because of suitable rake angle.	Carbon Steel-Alloy Steel 	 .013" Corner .013" Flank 3° CNMG432RP
		RM 	First recommendation for rough cutting of stainless steel Excellent fracture resistance at interrupted cutting due to the optimum land angle and honing geometry.	Stainless Steel 	 .012" Corner .012" Flank 3° 6° CNMG432RM
		RK 	First recommendation for rough cutting of cast iron Seating surface and wide land 3 or more times that of conventional products and provides high cutting stability for interrupted machining and scale removal.	Cast Iron 	 Flank 15° .014" CNMG432RK
		RS 	First recommendation for rough cutting of difficult-to-cut materials Alternative chip breaker for rough cutting of stainless steels Positive land increases welding resistance and suppresses chip welding and abrasion at low speed cutting.	Difficult-to-Cut Materials 	 .008" Corner .008" Flank 20° 10° 20° 10° CNMG432RS
		GH 	Alternative chip breaker for rough cutting of carbon steel, alloy steel and cast iron For interrupted cuts and removing scale. A combination of wide land and a large chip pocket allows high feed rates.	Carbon Steel-Alloy Steel 	 .013" Corner .013" Flank 18° 18° CNMG432GH
		GJ 	Alternative chip breaker for rough cutting of difficult-to-cut materials Excellent balance of edge sharpness and strength. Edge geometry with high face wear resistance.	Difficult-to-Cut Materials 	 .006" Corner .006" Flank 18° 18° CNMG432GJ
Heavy Cutting	M Class	HX 	First recommendation for heavy cutting of carbon steel and alloy steel Covers the medium range of the heavy cutting region. Owing to the straight edge and chamfer, it gives a balance of sharpness and strength. Variable land and a wavy chip breaker for good chip control.	Carbon Steel-Alloy Steel 	 .017" Corner .020" Flank 23° 21° CNMM644HX
		HL 	First recommendation for heavy cutting of stainless steel Alternative chip breaker for heavy cutting of carbon steel and alloy steel Low resistance due to narrow flat land. Achieves high chip breaking ability.	Mild Steel 	 .013" 15° CNMM644HL
		HR 	Alternative chip breaker for heavy cutting of carbon steel and alloy steel High cutting edge strength. Excellent chip discharge even with high feed and high depth of cut.	Carbon Steel-Alloy Steel 	 .023" 20° CNMM866HR


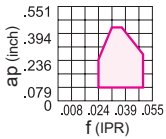
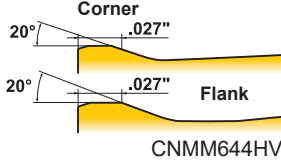

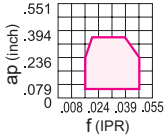
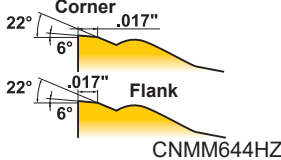

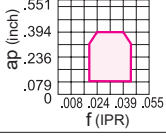
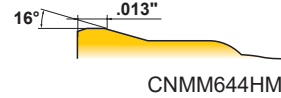

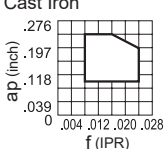


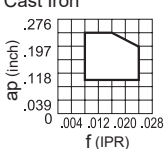

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
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	CNMG_RM  ↻ A111	DNMG_RM  ↻ A119	SNMG_RM  ↻ A127	TNMG_RM  ↻ A136		WNMG_RM  ↻ A146	
	CNMG_RK  ↻ A111	DNMG_RK  ↻ A120	SNMG_RK  ↻ A127	TNMG_RK  ↻ A136		WNMG_RK  ↻ A146	
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	CNMG_GH  ↻ A112	DNMG_GH  ↻ A120	SNMG_GH  ↻ A128	TNMG_GH  ↻ A137		WNMG_GH  ↻ A147	
	CNMG_GJ  ↻ A112	DNMG_GJ  ↻ A120				WNMG_GJ  ↻ A147	
	CNMM_HX  ↻ A112		SNMM_HX  ↻ A128				
	CNMM_HL  ↻ A113	DNMM_HL  ↻ A120	SNMM_HL  ↻ A128	TNMM_HL  ↻ A137			
	CNMM_HR  ↻ A113		SNMM_HR  ↻ A129				















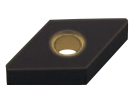





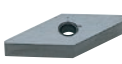
CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Heavy Cutting	M Class	HV 	Alternative chip breaker for heavy cutting of carbon steel and alloy steel Covers the upper end of the heavy cutting region. Wide land and large chamfer offer high edge strength. A wide chip breaker prevents chip jamming.	Carbon Steel-Alloy Steel  
		HZ 	Alternative chip breaker for heavy cutting of carbon steel and alloy steel Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	Mild Steel  
		HM 	Alternative chip breaker for heavy cutting of carbon steel and alloy steel and stainless steel Flat land provides outstanding balance between cutting edge strength and sharpness.	Mild Steel  
For Cast Iron	M Class	Flat Top 	First recommendation for heavy cutting of cast iron Flat Top. Most effective for unstable machining due to its high edge strength.	Cast Iron  
	G Class	Flat Top 	For heavy cutting of cast iron Flat Top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron  

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
	CNMM_HV  ↻ A113		SNMM_HV  ↻ A129				
	CNMM_HZ  ↻ A113	DNMM_HZ  ↻ A121	SNMM_HZ  ↻ A129	TNMM_HZ  ↻ A137			
	CNMM_HM  ↻ A113		SNMM_HM  ↻ A129				
	CNMA  ↻ A113	DNMA  ↻ A121	SNMA  ↻ A129	TNMA  ↻ A137	VNMA  ↻ A141	WNMA  ↻ A147	
		DNGA  ↻ A121	SNGA  ↻ A129	TNGA  ↻ A137	VNGA  ↻ A141		

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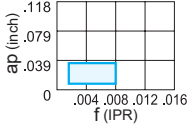
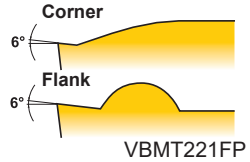

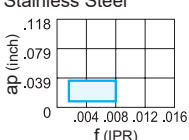
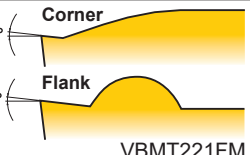

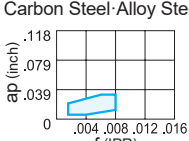
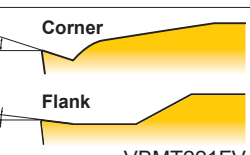
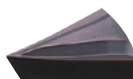
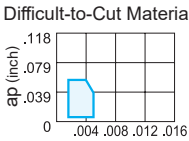
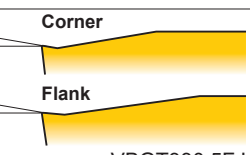

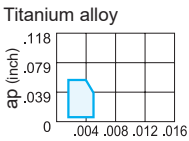
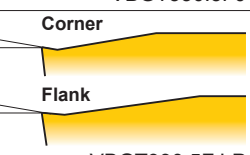

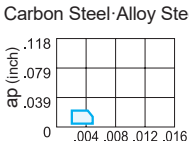
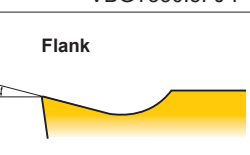

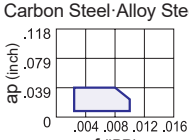
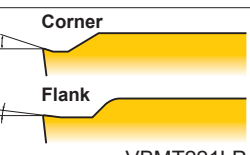

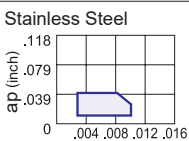
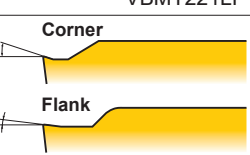

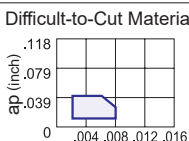
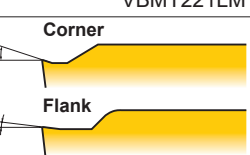
TURNING INSERTS

CLASSIFICATION

5° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry	
Finish Cutting	M Class	FP 	First recommendation for finishing carbon steel, alloy steel and mild steel Breaker protrusion at the corner tip controls chips even at small depths of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel-Alloy Steel 	 VBMT221FP	
		FM 	First recommendation for finishing stainless steel Breaker protrusion at the corner tip controls chips even at small depths of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Stainless Steel 	 VBMT221FM	
		FV 	Alternative chip breaker for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	Carbon Steel-Alloy Steel 	 VBMT221FV	
	G Class	FJ 	Finishing difficult-to-cut materials The curved cutting edges support changes in cutting depth, smooth chip discharge and disposal. The high rake angle is highly suitable for finishing difficult-to-cut materials.	Difficult-to-Cut Materials 	 VBGT330.5FJ	
		FJ-P 	Finishing titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	 VBGT330.5FJ-P	
		R/L F 	Finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel-Alloy Steel 	 VBGT221RF	
	Light Cutting	M Class	LP 	First recommendation for light cutting of carbon steel, alloy steel and mild steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	Carbon Steel-Alloy Steel 	 VBMT221LP
			LM 	First recommendation for light cutting of stainless steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	Stainless Steel 	 VBMT221LM
			LS 	First recommendation for light cutting of difficult-to-cut materials Prevents welding of the insert and controls white turbidity of the surface finish.	Difficult-to-Cut Materials 	 VBMT221LS

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
					VBMT_FP  ↻ A186		
					VBMT_FM  ↻ A186		
					VBMT_FV  ↻ A186		
					VBGT_FJ  ↻ A186		
					VBGT_FJ-P  ↻ A186		
					VBGT_R/L F  ↻ A187	WBGT_R/L F  ↻ A195	
					VBMT_LP  ↻ A187		
					VBMT_LM  ↻ A187		
					VBMT_LS  ↻ A187		

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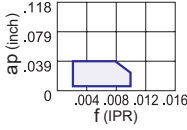

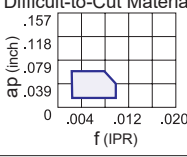

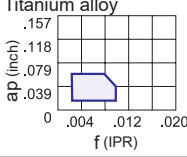

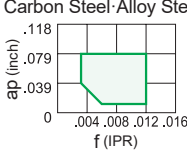

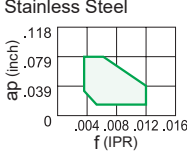

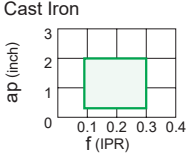

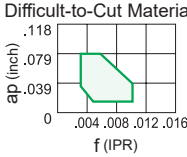

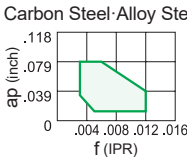

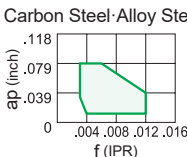
TURNING INSERTS

















CLASSIFICATION

5° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting M Class	SV 	Alternative chip breaker for carbon steel, alloy steel and stainless steel Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	Carbon Steel-Alloy Steel  18° Corner 8° Flank VBMT221SV
	MJ 	Light cutting of difficult-to-cut materials Ideal for heat-resistant alloy and titanium alloy The curved cutting edges support changes in cutting depth, smooth chip discharge and disposal. The high rake angle is highly suitable for finish-light cutting difficult-to-cut materials.	Difficult-to-Cut Materials  13° Corner 9° Flank VBGT331MJ
	MJ-P 	Light cutting for titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy  13° Corner 9° Flank VBGT331MJ-P
Medium Cutting M Class	MP 	First recommendation for medium cutting of carbon steel, alloy steel and mild steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Carbon Steel-Alloy Steel  18° .004" Corner 18° .004" Flank VBMT331MP
	MM 	First recommendation for medium cutting of stainless steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Stainless Steel  18° .004" Corner 18° .004" Flank VBMT331MM
	MK 	First recommendation for medium cutting of cast iron Optimum balance between sharpness and high edge strength for general use.	Cast Iron  18° Flank 0.1 VBMT331MK
	MS 	First recommendation for medium cutting of difficult-to-cut materials A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Difficult-to-Cut Materials  18° .004" Corner 18° .004" Flank VBMT331MS
	Standard 	Alternative chip breaker for medium cutting of carbon steel, alloy steel and stainless steel Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.	Carbon Steel-Alloy Steel  18° .004" Corner 18° .004" Flank VBMT331
	MV 	Alternative chip breaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert with a large rake angle achieves sharp cutting edge performance. The double breakers and round-shaped dots in the rake face achieve a wide range of chip discharge.	Carbon Steel-Alloy Steel  18° .004" Corner 10° 18° .004" Flank 10° VBMT331MV

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
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					VBGT_MJ  A187		
					VBGT_MJ-P  A187		
					VBMT_MP  A188		
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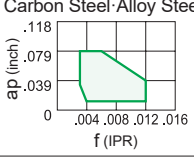
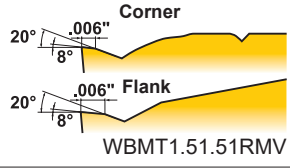
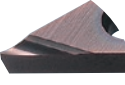
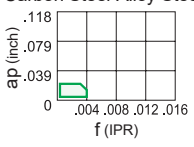
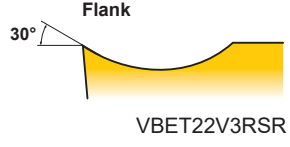

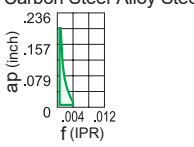
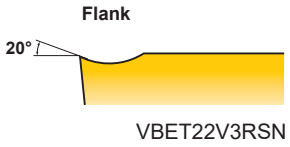

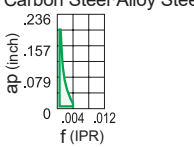
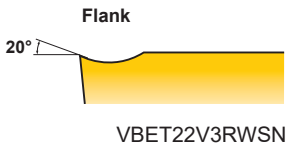

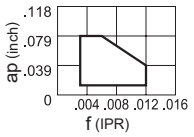
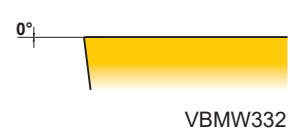
TURNING INSERTS













CLASSIFICATION

5° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M Class	R/L-MV 	Alternative chip breaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert with a large rake angle achieves sharp cutting edge performance. The double breakers and round-shaped dots in the rake face achieve a wide range of chip discharge.	Carbon Steel-Alloy Steel   WBMT1.51.51RMV
	E Class	R/L SR 	Chip breaker for medium cutting of automatic lathe machining A wide lead chip breaker. Insert designed for low resistance chip control.	Carbon Steel-Alloy Steel   VBET22V3RSR
		R/L SN 	Chip breaker for medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control for low to medium feed rates.	Carbon Steel-Alloy Steel   VBET22V3RSN
		R/LW SN 	Chip breaker for medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control for low to medium feed rates. The wiper produces good cutting surface.	Carbon Steel-Alloy Steel   VBET22V3RWSN
For Cast Iron	M Class	Flat Top 	Chip breaker for Heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron   VBMW332

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
						WBMT_R/L MV  ↻ A195	
					VBET_R/L SR  ↻ A189		
					VBET_R/L SN  ↻ A189		
					VBET_R/LW SN  ↻ A189		
					VBMW  ↻ A189		

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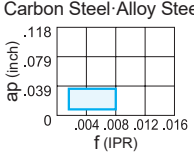
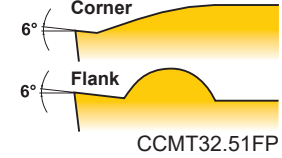

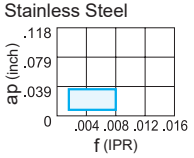
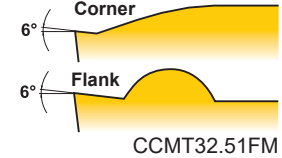

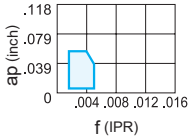
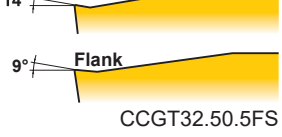

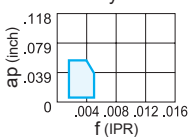
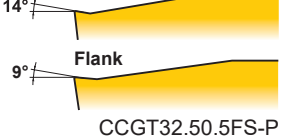

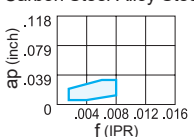
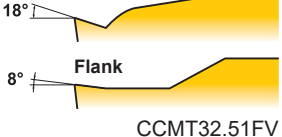

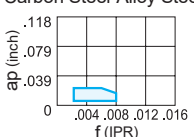
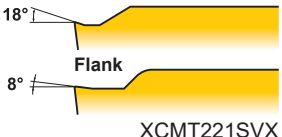
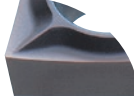
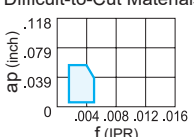


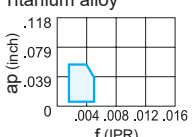
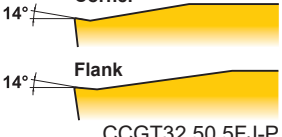
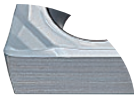
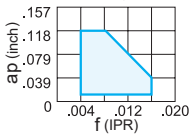
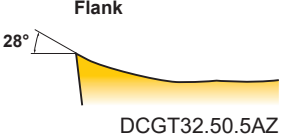
TURNING INSERTS

CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	M Class	FP 	First recommendation for finishing carbon steel, alloy steel and mild steel Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel-Alloy Steel 	 CCMT32.51FP
		FM 	First recommendation for finishing stainless steel Breaker protrusion at the corner tip controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Stainless Steel 	 CCMT32.51FM
	G Class	FS 	First recommendation for finishing difficult-to-cut materials Ideal for heat resistant alloys, titanium alloy and Cobalt chromium alloys. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials 	 CCGT32.50.5FS
		FS-P 	First recommendation for finishing titanium alloys Ideal for titanium alloys and Copper alloys. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge. Lapping of the top surface gives a mirror finish for improved welding resistance.	Titanium alloy 	 CCGT32.50.5FS-P
	M Class	FV 	Alternative chip breaker for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	Carbon Steel-Alloy Steel 	 CCMT32.51FV
		SVX 	Alternative chip breaker for light cutting of carbon steel and alloy steel Chip control is improved by having a chip breaker geometry suitable for copying.	Carbon Steel-Alloy Steel 	 XCMT221SVX
	G Class	FJ 	Alternative chip breaker for finishing difficult-to-cut materials Ideal for heat resistant alloys and titanium alloys. The sharp edge produces a good surface finish. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials 	 CCGT32.50.5FJ
		FJ-P 	Finishing titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	 CCGT32.50.5FJ-P
		AZ 	Chip breaker for for aluminium alloy The high rake angle and 3D curved cutting edge provides sharpness at the cutting point. Additionally the 3D shape of the rake face enables excellent chip control. Lapping of the top surface gives a mirror finish for improved welding resistance.	Aluminum Alloy 	 DCGT32.50.5AZ


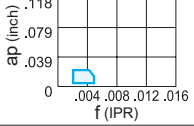

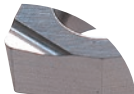
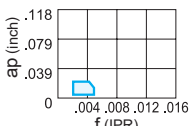

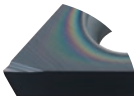
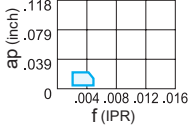


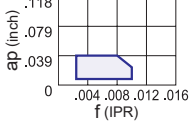


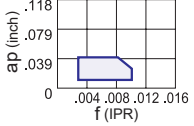


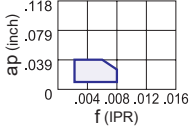


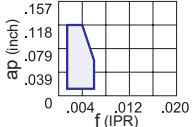


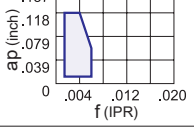
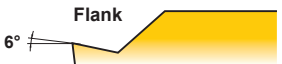

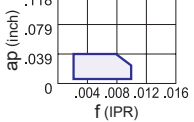

	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round
								
	CCMT_FP  ↻ A152	DCMT_FP  ↻ A164	SCMT_FP  ↻ A174	TCMT_FP  ↻ A177	VCMT_FP  ↻ A190			
	CCMT_FM  ↻ A152	DCMT_FM  ↻ A164	SCMT_FM  ↻ A174	TCMT_FM  ↻ A177	VCMT_FM  ↻ A190			
	CCGT_FS  ↻ A152	DCGT_FS  ↻ A164						
	CCGT_FS-P  ↻ A152	DCGT_FS-P  ↻ A164						
	CCMT_FV  ↻ A152	DCMT_FV  ↻ A164	SCMT_FV  ↻ A174	TCMT_FV  ↻ A177	VCMT_FV  ↻ A190			
							XCMT_SVX  ↻ A199	
	CCGT_FJ  ↻ A153	DCGT_FJ  ↻ A165						
	CCGT_FJ-P  ↻ A153	DCGT_FJ-P  ↻ A165		TCGT_FJ-P  ↻ A177		WCGT_FJ-P  ↻ A196		
	CCGT_AZ  ↻ A153	DCGT_AZ  ↻ A165		TCGT_AZ  ↻ A177	VCGT_AZ  ↻ A190			RCGT-AZ  ↻ A173

CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	G Class	R/L-F 	Chip breaker for finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel-Alloy Steel 	Flank 17°  CCGT03S102L-F
		R/L 	Chip breaker for finishing Lead chip breaker. Excellent chip control at low feed rates.	Carbon Steel-Alloy Steel 	Flank 15°  WCGT1.211R
		NEW R-SRF 	Chip breaker for finishing Lead chip breaker controls chip flow. The sharp edge produces a good surface finish.	Carbon Steel • Alloy Steel, Stainless Steel, Difficult-to-Cut Materials 	Flank 15°  DCGT32.50.2MRSRF
Light Cutting	M Class	LP 	First recommendation for light cutting of carbon steel, alloy steel and mild steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	Carbon Steel-Alloy Steel 	Corner 18° Flank 8°  CCMT32.52LP
		LM 	First recommendation for light cutting of stainless steel Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Breaker protrusion suitable for depth of cut area achieves a wide range of chip control.	Stainless Steel 	Corner 18° Flank 8°  CCMT32.52LM
	G Class	LS 	First recommendation for light cutting of difficult-to-cut materials Prevents welding of the insert and controls cloudy surface of the surface finish.	Difficult-to-Cut Materials 	Corner 18° Flank 8°  CCMT32.52LS
		LS 	First recommendation for light cutting of difficult-to-cut materials Ideal for heat resistant alloys, titanium alloys and Cobalt chromium alloys. Parallel cutting edge. Achieves stable chip control in a wide range of areas from low to medium depths of cut.	Difficult-to-Cut Materials 	Corner 12° Flank 6°  CCGT32.51MLS
		LS-P 	First recommendation for light cutting of titanium alloys Ideal for titanium alloys and Copper alloys. Parallel cutting edge. Achieves stable chip control in a wide range of areas from low to medium depths of cut. Lapping of the top surface gives a mirror finish for improved welding resistance.	Titanium alloy 	Corner 12° Flank 6°  CCGT32.51MLS-P
M Class	SV 	Alternative chip breaker for light cutting of carbon steel, alloy steel, mild steel and stainless steel Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	Carbon Steel-Alloy Steel 	Corner 18° Flank 8°  CCMH21.51SV	









	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°	Rhombic 25°	Round
								
	CCGT_R/L F CCGH_R/L F  ↻ A153, A154	DCGT_R/L F  ↻ A165		TCGT_R/L F  ↻ A178	VCGT_R/L F  ↻ A190			
						WCGT_R/L  ↻ A196		
		DCGT_R SRF <small>NEW</small>  ↻ A165						
	CCMT_LP  ↻ A154	DCMT_LP  ↻ A165	SCMT_LP  ↻ A174	TCMT_LP  ↻ A178	VCMT_LP  ↻ A191			
	CCMT_LM  ↻ A154	DCMT_LM  ↻ A165	SCMT_LM  ↻ A174	TCMT_LM  ↻ A178	VCMT_LM  ↻ A191			
	CCMT_LS  ↻ A154	DCMT_LS  ↻ A166		TCMT_LS  ↻ A178	VCMT_LS  ↻ A191			
	CCGT_LS  ↻ A154	DCGT_LS  ↻ A166			VCGT_LS  ↻ A191			
	CCGT_LS-P  ↻ A155	DCGT_LS-P  ↻ A166			VCGT_LS-P  ↻ A191			
	CCMH_SV  ↻ A155	DCMT_SV  ↻ A167			VCMT_SV  ↻ A191			

CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Light Cutting M Class	SW 	Wiper insert for light cutting of carbon steel, alloy steel, mild steel and stainless steel In comparison to conventional chip breakers, the surface finish is maintained even if the feed per revolution is doubled. Positive land improves sharpness.	Carbon Steel-Alloy Steel ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016	Corner .005" 20° 12° Flank .005" 16° 8° CCMT32.51SW
	R/L-SS 	Chip breaker for light cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low feed rates.	Carbon Steel-Alloy Steel ap (inch) .236 .157 .079 0 f (IPR) .004 .012	Flank 14° CCGT32.50.5RSS
	MJ 	Light cutting of difficult-to-cut materials Ideal for heat-resistant alloy and titanium alloy The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. The high rake angle is highly suitable for finish- light cutting difficult-to-cut materials.	Difficult-to-Cut Materials ap (inch) .157 .118 .079 .039 0 f (IPR) .004 .012 .020	Corner 13° Flank 9° CCGT21.51MJ
	MJ-P 	Light cutting for titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy ap (inch) .157 .118 .079 .039 0 f (IPR) .004 .012 .020	Corner 13° Flank 9° CCGT21.51MJP
Medium Cutting M Class	MP 	First recommendation for medium cutting of carbon steel, alloy steel and mild steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Carbon Steel-Alloy Steel ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016	Corner .004" 18° Flank .004" 18° CCMT32.52MP
	MM 	First recommendation for medium cutting of stainless steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Stainless Steel ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016	Corner .004" 18° Flank .004" 18° CCMT32.52MM
	MK 	First recommendation for medium cutting of cast iron Optimum balance between sharpness and high edge strength for general use.	Cast Iron ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016	Flank .004" 18° CCMT32.52MK
	MS 	First recommendation for medium cutting of difficult-to-cut materials A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.	Difficult-to-Cut Materials ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016	Corner .004" 18° Flank .004" 18° CCMT32.52MS


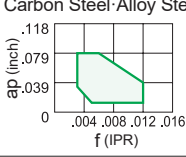
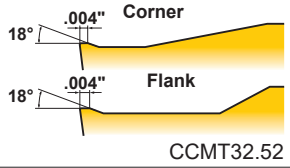

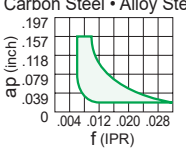
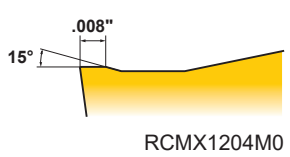

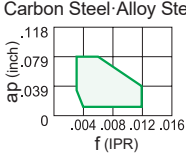
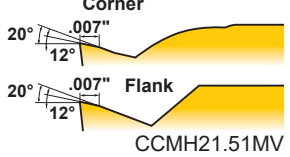

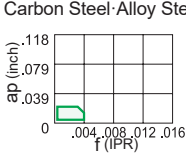
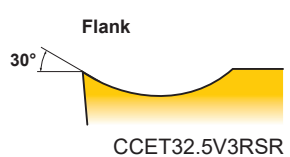
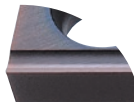
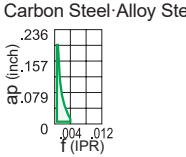
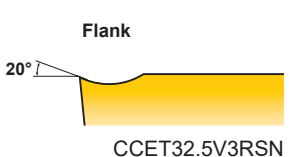
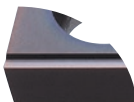
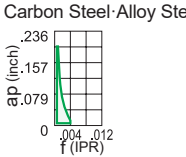
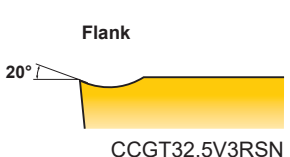
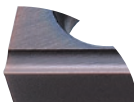
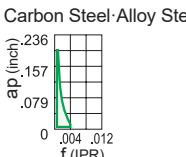
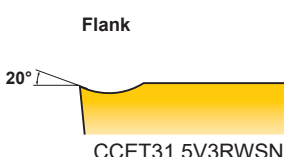
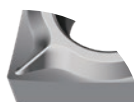
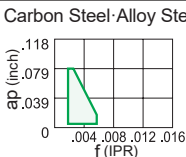
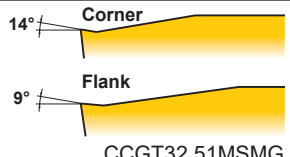
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	CCGT_R/L SS  ↻ A156	DCGT_R/L SS  ↻ A167						
	CCGT_MJ  ↻ A155	DCGT_MJ  ↻ A166		TCGT_MJ  ↻ A179		WCGT_MJ  ↻ A196		
	CCGT_MJ-P  ↻ A155	DCGT_MJ-P  ↻ A166		TCGT_MJ-P  ↻ A179		WCGT_MJ-P  ↻ A196		
	CCMT_MP  ↻ A157	DCMT_MP  ↻ A167	SCMT_MP  ↻ A174	TCMT_MP  ↻ A179	VCMT_MP  ↻ A191	WCGT_MP  ↻ A197		
	CCMT_MM  ↻ A157	DCMT_MM  ↻ A167	SCMT_MM  ↻ A175	TCMT_MM  ↻ A179	VCMT_MM  ↻ A192			
	CCMT_MK  ↻ A157	DCMT_MK  ↻ A168	SCMT_MK  ↻ A175	TCMT_MK  ↻ A179	VCMT_MK  ↻ A192			
	CCMT_MS  ↻ A157	DCMT_MS  ↻ A168	SCMT_MS  ↻ A175	TCMT_MS  ↻ A179	VCMT_MS  ↻ A192			






























CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M Class	<p>Standard</p>  <p>Alternative chip breaker for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCMT32.52</p>
		<p>MV</p>  <p>Alternative chip breaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive insert and the large rake angle achieve sharp cutting edge performance. The double breakers and round shape in the rake face achieve a wide range of chip discharge.</p>	<p>Carbon Steel • Alloy Steel</p>   <p>RCMX1204M0</p>
		<p>MW</p>  <p>Wiper insert for medium cutting of carbon steel, alloy steel, mild steel and stainless steel The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCMT32.52MW</p>
	E Class	<p>R/L SR</p>  <p>Chip breaker for medium cutting of automatic lathe machining A wide lead chip breaker. Insert designed for low resistance chip control.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCET32.5V3RSR</p>
		<p>R/L SN</p>  <p>Chip breaker for medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCET32.5V3RSN</p>
	G Class	<p>R/L SN</p>  <p>Chip breaker for medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates. Suitable for precise machining with E class tolerance.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCGT32.5V3RSN</p>
	E Class	<p>R/LW SN</p>  <p>Chip breaker for medium cutting of automatic lathe machining A parallel chip breaker. Excellent chip control at low to medium feed rates. The wiper produces a good surface finish.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCET31.5V3RWSN</p>
	G Class	<p>SNG</p>  <p>Chip breaker for medium cutting of automatic lathe machining 3D molded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.</p>	<p>Carbon Steel-Alloy Steel</p>   <p>CCGT32.51MSMG</p>


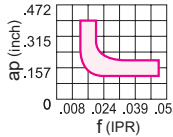
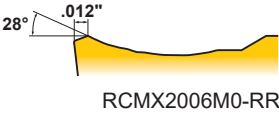

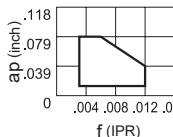
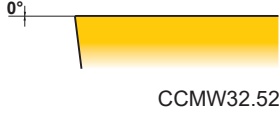

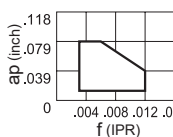
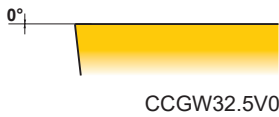
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							RCMX  ↻ A173
	CCMH_MV  ↻ A158	DCMT_MV  ↻ A168			VCMT_MV  ↻ A192		
	CCMT_MW  ↻ A158						
	CCET_R/L SR  ↻ A159	DCET_R/L SR  ↻ A169					
	CCET_R/L SN  ↻ A160	DCET_R/L SN  ↻ A170					
	CCGT_R/L SN  ↻ A159	DCGT_R/L SN  ↻ A169					
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CLASSIFICATION


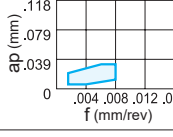
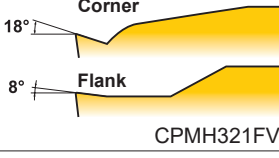
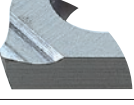
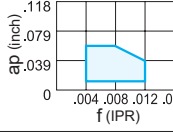
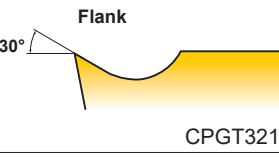

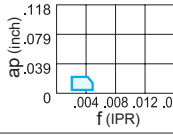
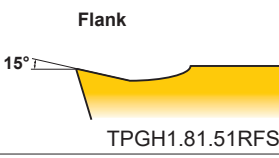

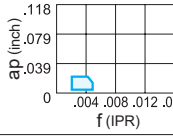
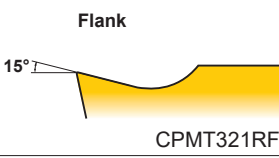

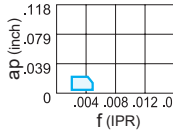
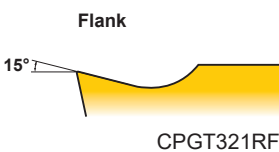
7° POSITIVE INSERTS WITH HOLE










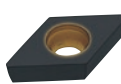

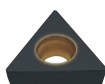


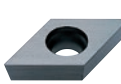

TURNING INSERTS










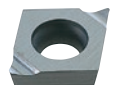
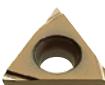
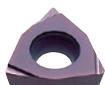

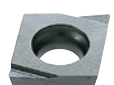
A

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Heavy Cutting	M Class	RR 	Chip breaker for heavy cutting of carbon steel and alloy steel A wide groove chip breaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut.	Carbon Steel-Alloy Steel  .472 .315 .157 0 .008 .024 .039 .055 f (IPR)	 28° .012" RCMX2006M0-RR
		Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 0° CCMW32.52
For Cast Iron	G Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 0° CCGW32.5V0

11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Finish Cutting	M Class	FV 	First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (mm/rev)	 18° Corner 8° Flank CPMH321FV
		Standard 	Chip breaker for finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates.	Aluminum Alloy  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 30° Flank CPGT321
	G Class	R/L FS 	Chip breaker for finishing carbon steel, alloy steel, stainless steel, cast iron and aluminium alloy Small wide lead chip breaker. Sharp cutting edge gives a good surface finish.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 15° Flank TPGH1.81.51RFS
		R/L F 	Chip breaker for finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 15° Flank CPMT321RF
		R/L F 	Chip breaker for finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (IPR)	 15° Flank CPGT321RF

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
							RCMX_RR  ↻ A173
	CCMW  ↻ A161	DCMW  ↻ A171	SCMW  ↻ A175	TCMW  ↻ A180	VCMW  ↻ A192		
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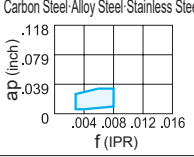
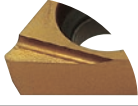
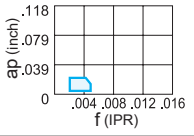
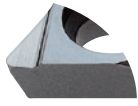
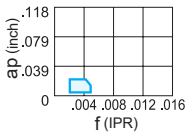

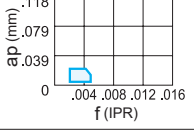

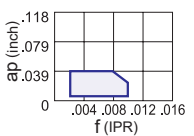

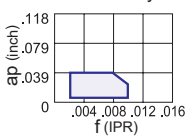

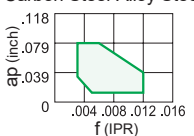

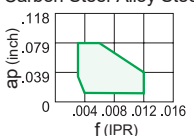

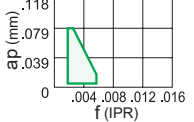
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	CPGT  ↻ A162						
				TPGH_R/L FS  ↻ A182		WPGT_R/L FS  ↻ A198	
	CPMH_R/L F  ↻ A162						
	CPGT_R/L F  ↻ A162						

CLASSIFICATION

11° POSITIVE INSERTS WITH HOLE

TURNING INSERTS

A

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	M Class	SQ 	Finishing carbon steel, alloy steel and stainless steel For small depth of cut and low feed.	Carbon Steel·Alloy Steel·Stainless Steel 	Corner 6° Flank 6° CPMT32.51SQ
	G Class	R/L 	Chip breaker for finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel·Alloy Steel 	Flank 10° TPGX1.81.51R
	M Class	L 	Chip breaker for finishing Lead chip breaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel·Alloy Steel 	Flank 10° TPMX1.81.51L
	E Class	SRF 	Chip breaker for finishing Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel·Alloy Steel 	Flank 15° VPET1.51.50.2RSRF
Light Cutting	M Class	NEW LP 	First recommendation for light cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	Carbon Steel·Alloy Steel 	Corner 18° Flank 8° CPMH32.51SV
	M Class	SV 	First recommendation for light cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm.	Carbon Steel·Alloy Steel 	Corner 18° Flank 8° CPMH32.51SV
Medium Cutting	M Class	Standard 	Alternative chip breaker for medium cutting of carbon steel, alloy steel and stainless steel Standard, general purpose chip breaker.	Carbon Steel·Alloy Steel 	Corner 10° Flank 10° CPMX321
	M Class	MV 	First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron A positive insert and large rake angle achieves sharp cutting edge performance. Double breakers in the rake face achieve a wide range of chip discharge.	Carbon Steel·Alloy Steel 	Corner 20° 8° Flank 20° 8° CPMH321MV
	G Class	SMG 	Chip breaker for medium cutting of automatic lathe machining 3D molded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	Carbon Steel·Alloy Steel 	Corner 11° Flank 11° VPGT1.51.50.2MSMG




	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
	CPMT_SQ  ↻ A162			TPMT_SQ  ↻ A183			
				TPGX_R/L  ↻ A183			
				TPMX_L  ↻ A183			
					VPET_R/L SRF  ↻ A194		
	NEW CPMH_LP  ↻ A163			NEW TPMH_LP  ↻ A183			
	CPMH_SV  ↻ A163			TPMH_SV  ↻ A184			
	NEW CPMX CPMH  ↻ A163		SPMT  ↻ A176	TPMX  ↻ A184			
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CLASSIFICATION

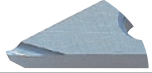
TURNING INSERTS

A

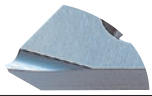
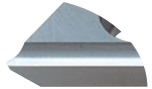
11° POSITIVE INSERTS WITH HOLE













Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting M Class	MQ 	Medium cutting of carbon steel, alloy steel and stainless steel Can be used under a wide range of cutting conditions.	Copper ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016 20° Corner .006" 20° .006" Flank 6° CPMT32.51MQ
For Cast Iron M Class	Flat Top 	Chip breaker for Heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength.	Cast Iron ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016 0° SPMW432
For Cast Iron G Class	Flat Top 	Chip breaker for Heavy cutting of cast iron Flat top. Most effective for unstable machining due to its high edge strength. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016 0° SPGX432









15° POSITIVE INSERTS WITH HOLE








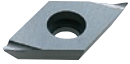
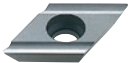

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminum Alloy G Class	R/L 	Chip breaker for aluminium alloy cutting Lead chip breaker. Sharp cutting edge gives a good surface finish.	Aluminum Alloy ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016 25° Flank VDGX320.5R

20° POSITIVE INSERTS WITH HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminum Alloy G Class	R/L F 	Chip breaker for aluminium alloy cutting Lead chip breaker. Sharp cutting edge gives a good surface finish.	Aluminum Alloy ap (inch) .118 .079 .039 0 f (IPR) .004 .008 .012 .016 20° Flank DEGX431RF
For Aluminum Alloy G Class	R/L 	Chip breaker for aluminium alloy cutting A parallel chip breaker. Sharp cutting edge gives a good surface finish. Good chip control for medium feed rates.	Aluminum Alloy ap (inch) .157 .118 .079 .039 0 f (IPR) .004 .012 .020 25° Flank DEGX431R

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
	CPMT_MQ  ↻ A163			TPMT_MQ  ↻ A184			
			SPMW  ↻ A176				
			SPGX  ↻ A176	TPGX  ↻ A185			

	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
					VDGX_R/L  ↻ A193		




	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 	Round 
		DEGX_R/L F  ↻ A172					
		DEGX_R/L  ↻ A172		TEGX_R/L  ↻ A181			

CLASSIFICATION

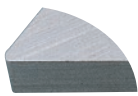
NEGATIVE INSERTS WITHOUT HOLE

TURNING INSERTS





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Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting M Class	M1 	Medium cutting of carbon steel and alloy steel Single sided chipbreaker. Can be used for copying. An angled chipbreaker for controlling chip flow. (M1)	Carbon Steel-Alloy Steel ap (inch) .276 .197 .118 .039 f (IPR) .004 .012 .020 .028 Flank 12° .012" KNUX160405RM1
For Cast Iron M Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping.	Cast Iron ap (inch) .276 .197 .118 .039 f (IPR) .004 .012 .020 .028 0° SNMN432
For Cast Iron G Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron ap (inch) .276 .197 .118 .039 f (IPR) .004 .012 .020 .028 0° SNGN432


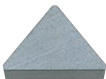
7° POSITIVE INSERTS WITHOUT HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron G Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron ap (inch) .118 .079 .039 f (IPR) .004 .008 .012 .016 0° TCGN1.81.51












11° POSITIVE INSERTS WITHOUT HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting G Class	R/L 	Chip breaker for finishing A parallel chip breaker. Good chip control for low to medium feed rates.	Carbon Steel-Alloy Steel ap (inch) .118 .079 .039 f (IPR) .004 .008 .012 .016 Flank 15° SPGR321R
Light to Medium Cutting M Class	Standard 	Chip breaker for light to medium cutting of carbon steel, alloy steel and stainless steel Standard, general purpose chip breaker.	Carbon Steel-Alloy Steel ap (inch) .118 .079 .039 f (IPR) .004 .008 .012 .016 Corner 0° Flank 0° SPMR322
For Cast Iron M Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping.	Cast Iron ap (inch) .118 .079 .039 f (IPR) .004 .008 .012 .016 0° SPMN322
For Cast Iron G Class	Flat Top 	Chip breaker for heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping. Can be used on workpieces requiring close tolerances due to G class insert tolerance.	Cast Iron ap (inch) .118 .079 .039 f (IPR) .004 .008 .012 .016 0° SPGN322

	Rhombic 80° 	Square 90° 	Triangular 60° 	Parallelogram 55° 
				KNUX_M1  ↻ A148
	CNMN  ↻ A149	SNMN  ↻ A150	TNMN  ↻ A151	
		SNG  ↻ A150	TNG  ↻ A151	

	Triangular 60° 
	TCGN  ↻ A202

SPECIAL PURPOSE INSERTS

	Square 90° 	Triangular 60° 	Application Tolerance	Tool Holder Type	Inserts	
	SPGR_R  ↻ A201	TPGR_R/L  ↻ A203	Special G Class	TL Type	RTG  ↻ A200	
	SPMR  ↻ A201	TPMR  ↻ A203				
	SPMN  ↻ A201	TPMN  ↻ A203				
	SPG  ↻ A201	TPG  ↻ A204				

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
P									
Mild Steel (ANSI ASTM A283, AISI 1010)	≤180HB	●	F	1	FY	VP25N	935-1475	.004-.009	.008-.031
		●	F	2	FY	NX2525	885-1260	.004-.009	.008-.031
		●	F	3	FS	NX2525	885-1260	.004-.009	.008-.028
		●	L	1	SY	VP25N	850-1345	.006-.013	.020-.047
		●	L	2	SY	NX2525	805-1150	.006-.013	.020-.047
		●	F	1	FY	MP3025	900-1395	.004-.009	.008-.031
		●	F	2	FY	NX3035	850-1215	.004-.009	.008-.031
		●	F	3	FS	NX2525	885-1260	.004-.009	.008-.028
		●	L	1	SY	MP3025	835-1260	.006-.013	.020-.047
		●	L	2	SY	NX3035	785-1115	.006-.013	.020-.047
		⊕	F	1	FY	MC6125	1260-1985	.004-.009	.008-.031
		⊕	L	1	SY	MC6125	1150-1805	.006-.013	.020-.047
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	FP	NX2525	690-985	.003-.010	.004-.039
		●	F	2	FH	AP25N	720-1130	.003-.008	.008-.039
		●	F	3	FH	NX2525	690-985	.003-.008	.008-.039
		●	F	4	R/L-F	MP3025	705-1080	.002-.006	.004-.020
		●	L	1	LP	MC6115	820-1575	.004-.016	.012-.079
		●	L	2	LP	MC6125	900-1395	.004-.016	.012-.079
		●	L	3	SH	MC6115	820-1575	.004-.016	.012-.079
		●	M	1	MP	MC6115	755-1445	.006-.020	.012-.157
		●	M	2	MP	MC6125	820-1280	.006-.020	.012-.157
		●	M	3	MP	MP3025	590-900	.006-.020	.012-.157
		●	R	1	RP	MC6115	705-1360	.010-.024	.059-.236
		●	R	2	RP	MC6125	770-1215	.010-.024	.059-.236
		●	R	3	GH	MC6115	705-1360	.010-.024	.059-.236

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	H	1	HX	MC6125	690–1080	.020–.050	.118–.039
		●	F	1	FP	MP3025	705–1080	.003–.010	.004–.039
		●	F	2	FH	MP3025	705–1080	.003–.008	.008–.039
		●	F	3	FH	NX3035	655–935	.003–.008	.008–.039
		●	L	1	LP	MC6115	820–1575	.004–.016	.012–.079
		●	L	2	LP	MC6125	900–1395	.004–.016	.012–.079
		●	L	3	SH	MC6115	820–1575	.004–.016	.012–.079
		●	L	4	SH	MC6125	900–1395	.004–.016	.012–.079
		●	M	1	MP	MC6125	820–1280	.006–.020	.012–.157
		●	M	2	MP	MC6115	755–1445	.006–.020	.012–.157
		●	M	3	MA	MC6125	820–1280	.008–.020	.012–.157
		●	M	4	MA	MC6115	755–1445	.008–.020	.012–.157
		●	R	1	RP	MC6125	770–1215	.010–.024	.059–.236
		●	R	2	RP	MC6115	705–1360	.010–.024	.059–.236
		●	R	3	GH	MC6125	770–1215	.010–.024	.059–.236
		●	H	2	HX	MC6125	690–1080	.020–.050	.118–.039
		⊕	F	1	FP	MC6125	985–1525	.003–.010	.004–.039
		⊕	L	1	LP	MC6125	900–1395	.004–.016	.012–.079
		⊕	L	2	SH	MC6125	900–1395	.004–.016	.012–.079
		⊕	M	1	MP	MC6125	820–1280	.006–.020	.012–.157
		⊕	M	2	MA	MC6125	820–1280	.008–.020	.012–.157
		⊕	R	1	RP	MC6035	525–740	.010–.024	.059–.236
		⊕	R	2	GH	MC6125	770–1215	.010–.024	.059–.236
		⊕	H	1	HX	MC6035	460–655	.020–.050	.118–.433
		⊕	H	2	HX	UH6400	460–640	.020–.050	.118–.039
		⊕	H	3	HV	UH6400	375–525	.023–.050	.157–.079

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TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Austenitic Stainless Steel (AISI 304, AISI 316)	≤200HB	●	L	1	LM	MC7015	590-935	.004-.014	.012-.079
		●	L	2	SH	US735	310-605	.004-.016	.012-.079
		●	L	3	SH	NX2525	210-440	.004-.016	.012-.079
		●	M	1	MM	MC7015	540-850	.006-.018	.028-.197
		●	M	2	GM	MC7015	540-850	.006-.020	.020-.157
		●	R	1	RM	MC7015	510-805	.010-.022	.059-.236
		●	H	1	HL	US735	245-460	.012-.028	.118-.295
		●	H	2	HL	US735	245-460	.012-.028	.118-.295
		●	L	1	LM	MC7025	540-720	.004-.014	.012-.079
		●	L	2	SH	US735	310-605	.004-.016	.012-.079
		●	M	1	MM	MC7025	490-655	.006-.018	.028-.197
		●	M	2	GM	MC7025	490-655	.006-.020	.020-.157
		●	M	3	MA	MC7025	490-655	.008-.020	.012-.157
		●	M	4	MS	US735	295-560	.006-.020	.020-.157
		●	M	5	MA	US735	295-560	.008-.020	.012-.157
		●	R	1	RM	MC7025	460-620	.010-.022	.059-.236
		●	R	2	GH	US735	280-525	.010-.024	.059-.236
		●	H	1	HL	US735	245-460	.012-.028	.118-.295
		●	H	2	HM	US735	245-460	.020-.043	.079-.394
		⊕	L	1	LM	MP7035	310-510	.004-.014	.012-.079
		⊕	L	2	SH	US735	310-605	.004-.016	.012-.079
		⊕	M	1	MM	MP7035	295-475	.006-.018	.028-.197
		⊕	M	2	GM	MP7035	295-475	.006-.020	.020-.157
		⊕	M	3	MA	MP7035	295-475	.008-.020	.012-.157
		⊕	M	4	MS	US735	295-560	.006-.020	.020-.157
		⊕	M	5	MS	VP15TF	260-440	.006-.020	.020-.157
		⊕	R	1	RM	MP7035	280-440	.010-.022	.059-.236
		⊕	R	2	GH	US735	280-525	.010-.024	.059-.236
		⊕	H	1	HL	US735	245-460	.012-.028	.118-.295
		⊕	H	2	HM	US735	245-460	.020-.043	.079-.394

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Austenitic Stainless Steel (AISI 304LN, AISI 316LN)	>200HB	●	L	1	LM	MC7015	490—785	.004—.014	.012—.079
		●	L	2	SH	US735	260—510	.004—.016	.012—.079
		●	L	3	SH	NX2525	180—375	.004—.016	.012—.079
		●	M	1	MM	MC7015	440—705	.006—.018	.028—.197
		●	M	2	GM	MC7015	440—705	.006—.020	.020—.157
		●	R	1	RM	MC7015	425—670	.010—.022	.059—.236
		●	H	1	HL	US735	195—395	.012—.028	.118—.295
		●	H	2	HM	US735	195—395	.020—.043	.079—.394
		●	L	1	LM	MC7025	440—590	.004—.014	.012—.079
		●	L	2	SH	US735	260—510	.004—.016	.012—.079
		●	M	1	MM	MC7025	410—540	.006—.018	.028—.197
		●	M	2	GM	MC7025	410—540	.006—.020	.020—.157
		●	M	3	MA	MC7025	410—540	.008—.020	.012—.157
		●	M	4	MS	US735	245—460	.006—.020	.020—.157
		●	M	5	MA	US735	245—460	.008—.020	.012—.157
		●	R	1	RM	MC7025	375—510	.010—.022	.059—.236
		●	R	2	GH	US735	230—440	.010—.024	.059—.236
		●	H	1	HL	US735	195—395	.012—.028	.118—.295
		●	H	2	HM	US735	195—395	.020—.043	.079—.394
		⊕	L	1	LM	MP7035	260—425	.004—.014	.012—.079
		⊕	L	2	SH	US735	260—510	.004—.016	.012—.079
		⊕	M	1	MM	MP7035	245—395	.006—.018	.028—.197
		⊕	M	2	GM	MP7035	245—395	.006—.020	.020—.157
		⊕	M	3	MA	MP7035	245—395	.008—.020	.012—.157
		⊕	M	4	MS	US735	245—460	.006—.020	.020—.157
		⊕	M	5	MS	VP15TF	210—360	.006—.020	.020—.157
		⊕	R	1	RM	MP7035	230—375	.010—.022	.059—.236
		⊕	R	2	GH	US735	230—440	.010—.024	.059—.236
		⊕	H	1	HL	US735	195—395	.012—.028	.118—.295
		⊕	H	2	HM	US735	195—395	.020—.043	.079—.394

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TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Two-phase Stainless Steel (AISI 329)	≤280HB	●	L	1	LM	MC7015	395—620	.004—.014	.012—.079
		●	L	2	SH	US735	210—410	.004—.016	.012—.079
		●	L	3	SH	NX2525	130—295	.004—.016	.012—.079
		●	M	1	MM	MC7015	360—575	.006—.018	.028—.197
		●	M	2	GM	MC7015	360—575	.006—.020	.020—.157
		●	R	1	RM	MC7015	345—540	.010—.022	.059—.236
		●	H	1	HL	US735	165—310	.012—.028	.118—.295
		●	H	2	HM	US735	165—310	.020—.043	.079—.394
		●	L	1	LM	MC7025	360—475	.004—.014	.012—.079
		●	L	2	SH	US735	210—410	.004—.016	.012—.079
		●	M	1	MM	MC7025	330—440	.006—.018	.028—.197
		●	M	2	GM	MC7025	330—440	.006—.020	.020—.157
		●	M	3	MA	MC7025	330—440	.008—.020	.012—.157
		●	M	4	MS	US735	195—375	.006—.020	.020—.157
		●	M	5	MA	US735	195—375	.008—.020	.012—.157
		●	R	1	RM	MC7025	310—410	.010—.022	.059—.236
		●	R	2	GH	US735	180—345	.010—.024	.059—.236
		●	H	1	HL	US735	165—310	.012—.028	.118—.295
		●	H	2	HM	US735	165—310	.020—.043	.079—.394
		⊕	L	1	LM	MP7035	210—345	.004—.014	.012—.079
		⊕	L	2	SH	US735	210—410	.004—.016	.012—.079
		⊕	M	1	MM	MP7035	195—310	.006—.018	.028—.197
		⊕	M	2	GM	MP7035	195—310	.006—.020	.020—.157
		⊕	M	3	MA	MP7035	195—310	.008—.020	.012—.157
		⊕	M	4	MS	US735	195—375	.006—.020	.020—.157
		⊕	M	5	MS	VP15TF	165—295	.006—.020	.020—.157
		⊕	R	1	RM	MP7035	180—295	.010—.022	.059—.236
		⊕	R	2	GH	US735	180—345	.010—.024	.059—.236
		⊕	H	1	HL	US735	165—310	.012—.028	.118—.295
		⊕	H	2	HM	US735	165—310	.020—.043	.079—.394

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TURNING INSERTS

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Ferritic and Martensitic Stainless Steel (AISI 410, AISI 430)	≤200HB	●	L	1	LM	MC7015	590—935	.004—.014	.012—.079
		●	L	2	SH	US735	310—605	.004—.016	.012—.079
		●	L	3	SH	NX2525	210—440	.004—.016	.012—.079
		●	M	1	MM	MC7015	540—850	.006—.018	.028—.197
		●	M	2	GM	MC7015	540—850	.006—.020	.020—.157
		●	R	1	RM	MC7015	510—805	.010—.022	.059—.236
		●	H	1	HL	US735	245—460	.012—.028	.118—.295
		●	H	2	HM	US735	245—460	.020—.043	.079—.394
		●	L	1	LM	MC7025	540—720	.004—.014	.012—.079
		●	L	2	SH	US735	310—605	.004—.016	.012—.079
		●	M	1	MM	MC7025	490—655	.006—.018	.028—.197
		●	M	2	GM	MC7025	490—655	.006—.020	.020—.157
		●	M	3	MA	MC7025	490—655	.008—.020	.012—.157
		●	M	4	MA	US735	295—560	.008—.020	.012—.157
		●	M	5	MS	US735	295—560	.006—.020	.020—.157
		●	R	1	RM	MC7025	460—620	.010—.022	.059—.236
		●	R	2	GH	US735	280—525	.010—.024	.059—.236
		●	H	1	HL	US735	245—460	.012—.028	.118—.295
		●	H	2	HM	US735	245—460	.020—.043	.079—.394
		⊕	L	1	LM	MP7035	310—510	.004—.014	.012—.079
		⊕	L	2	SH	US735	310—605	.004—.016	.012—.079
		⊕	M	1	MM	MP7035	295—475	.006—.018	.028—.197
		⊕	M	2	GM	MP7035	295—475	.006—.020	.020—.157
		⊕	M	3	MA	MP7035	295—475	.008—.020	.012—.157
		⊕	M	4	MS	US735	295—560	.006—.020	.020—.157
		⊕	M	5	MS	VP15TF	260—440	.006—.020	.020—.157
		⊕	R	1	RM	MP7035	280—440	.010—.022	.059—.236
		⊕	R	2	GH	US735	280—525	.010—.024	.059—.236
		⊕	H	1	HL	US735	245—460	.012—.028	.118—.295
		⊕	H	2	HM	US735	245—460	.020—.043	.079—.394

A

TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Ferritic and Martensitic Stainless Steel (AISI 431, AISI 420)	>200HB	●	L	1	LM	MC7015	490-785	.004-.014	.012-.079
		●	L	2	SH	US735	260-510	.004-.016	.012-.079
		●	L	3	SH	NX2525	180-375	.004-.016	.012-.079
		●	M	1	MM	MC7015	440-705	.006-.018	.028-.197
		●	M	2	GM	MC7015	440-705	.006-.020	.020-.157
		●	R	1	RM	MC7015	425-670	.010-.022	.059-.236
		●	H	1	HL	US735	195-395	.012-.028	.118-.295
		●	H	2	HM	US735	195-395	.020-.043	.079-.394
		●	L	1	LM	MC7025	440-590	.004-.014	.012-.079
		●	L	2	SH	US735	260-510	.004-.016	.012-.079
		●	M	1	MM	MC7025	410-540	.006-.018	.028-.197
		●	M	2	MA	MC7025	410-540	.008-.020	.012-.157
		●	M	3	MA	US735	245-460	.008-.020	.012-.157
		●	M	4	MS	US735	245-460	.006-.020	.020-.157
		●	R	1	RM	MC7025	375-510	.010-.022	.059-.236
		●	R	2	GH	US735	230-440	.010-.024	.059-.236
		●	H	1	HL	US735	195-395	.012-.028	.118-.295
		●	H	2	HM	US735	195-395	.020-.043	.079-.394
		⊕	L	1	LM	MP7035	260-425	.004-.014	.012-.079
		⊕	L	2	SH	US735	260-510	.004-.016	.012-.079
		⊕	M	1	MM	MP7035	245-395	.006-.018	.028-.197
		⊕	M	2	GM	MP7035	245-395	.006-.020	.020-.157
		⊕	M	3	MA	MP7035	245-395	.008-.020	.012-.157
		⊕	M	4	MS	US735	245-460	.006-.020	.020-.157
		⊕	M	5	MS	VP15TF	210-360	.006-.020	.020-.157
		⊕	R	1	RM	MP7035	230-375	.010-.022	.059-.236
		⊕	R	2	GH	US735	230-440	.010-.024	.059-.236
		⊕	H	1	HL	US735	195-395	.012-.028	.118-.295
⊕	H	2	HM	US735	195-395	.020-.043	.079-.394		

A

TURNING INSERTS

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB	●	L	1	LM	MC7015	310–425	.004–.014	.012–.079
		●	L	2	LS(M)	MP9005	410–575	.004–.010	.008–.031
		●	L	3	SH	US735	180–330	.004–.016	.012–.079
		●	L	4	SH	NX2525	115–245	.004–.016	.012–.079
		●	M	1	MM	MC7015	295–395	.006–.018	.028–.197
		●	M	2	GM	MC7015	295–395	.006–.020	.020–.157
		●	M	3	MS	MP9005	375–525	.006–.012	.020–.118
		●	R	1	RM	MC7015	280–360	.010–.022	.059–.236
		●	H	1	HL	US735	130–260	.016–.039	.059–.315
		●	H	2	HM	US735	130–260	.020–.043	.079–.394
		●	L	1	LM	MC7025	280–360	.004–.014	.012–.079
		●	L	2	SH	US735	180–330	.004–.016	.012–.079
		●	L	3	LS(M)	MP9015	395–540	.004–.010	.008–.031
		●	M	1	MM	MC7025	260–330	.006–.018	.028–.197
		●	M	2	GM	MC7025	260–330	.006–.020	.020–.157
		●	M	3	MA	MC7025	260–330	.004–.012	.020–.118
		●	M	4	MS	US735	165–310	.006–.020	.020–.157
		●	M	5	MA	US735	165–310	.004–.012	.020–.118
		●	R	1	RM	MC7025	245–310	.010–.022	.059–.236
		●	R	2	GH	US735	150–295	.010–.024	.059–.236
		●	R	3	RS	MP9015	330–460	.008–.014	.039–.157
		●	H	1	HL	US735	130–260	.016–.039	.059–.315
		●	H	2	HM	US735	130–260	.020–.043	.079–.394
		⊕	L	1	LM	MP7035	180–280	.004–.014	.012–.079
		⊕	L	2	SH	US735	180–330	.004–.016	.012–.079
		⊕	L	3	LS(M)	MP9025	260–310	.004–.010	.008–.031
		⊕	M	1	MM	MP7035	165–260	.006–.018	.028–.197
		⊕	M	2	GM	MP7035	165–260	.006–.020	.020–.157
		⊕	M	3	MA	MP7035	165–260	.004–.012	.020–.118
		⊕	M	4	MS	US735	165–310	.006–.020	.020–.157
		⊕	M	5	MS	VP15TF	150–245	.006–.020	.020–.157
		⊕	R	1	RM	MP7035	150–245	.010–.022	.059–.236
⊕	R	2	GH	US735	150–295	.010–.024	.059–.236		
⊕	R	3	RS	MP9025	230–280	.008–.014	.039–.157		
⊕	H	1	HL	US735	130–260	.016–.039	.059–.315		
⊕	H	2	HM	US735	130–260	.020–.043	.079–.394		

A

TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

■ NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

TURNING INSERTS

A

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
K									
Gray Cast Iron (AISI No 45 B)	≤350MPa	●	L	1	LK	MC5105	755-2295	.004-.020	.020-.098
		●	L	2	LK	MC5115	670-1260	.004-.020	.020-.098
		●	L	3	MA	MC5105	690-2100	.008-.020	.012-.157
		●	L	4	MA	MC5115	620-1150	.008-.020	.012-.157
		●	M	1	MK	MC5105	690-2100	.008-.022	.020-.157
		●	M	2	MK	MC5115	620-1150	.008-.022	.020-.157
		●	M	3	GK	MC5105	690-2100	.008-.024	.059-.197
		●	M	4	GK	MC5115	620-1150	.008-.024	.059-.197
		●	R	1	RK	MC5105	640-1985	.008-.024	.059-.236
		●	R	2	RK	MC5115	590-1080	.008-.024	.059-.236
		●	R	3	Flat	MC5105	640-1985	.008-.024	.098-.236
		●	R	4	Flat	MC5115	590-1080	.008-.024	.098-.236
		●	H	1	Flat	MC5105	640-1985	.008-.024	.098-.236
		●	H	2	Flat	MC5115	590-1080	.008-.024	.098-.236
		●	L	1	LK	MC5105	755-2295	.004-.020	.020-.098
		●	L	2	LK	MC5115	670-1260	.004-.020	.020-.098
		●	L	3	MA	MC5105	690-2100	.008-.020	.012-.157
		●	L	4	MA	MC5115	620-1150	.008-.020	.012-.157
		●	M	1	MK	MC5105	690-2100	.008-.022	.020-.157
		●	M	2	MK	MC5115	620-1150	.008-.022	.020-.157
		●	M	3	GK	MC5105	690-2100	.008-.024	.059-.197
		●	M	4	GK	MC5115	620-1150	.008-.024	.059-.197
		●	R	1	RK	MC5105	640-1985	.008-.024	.059-.236
		●	R	2	RK	MC5115	590-1080	.008-.024	.059-.236
		●	R	3	Flat	MC5105	640-1985	.008-.024	.098-.236
		●	R	4	Flat	MC5115	590-1080	.008-.024	.098-.236
		●	H	1	Flat	MC5105	640-1985	.008-.024	.098-.236
		●	H	2	Flat	MC5115	590-1080	.008-.024	.098-.236
		⊕	L	1	LK	MC5115	670-1260	.004-.020	.020-.098
		⊕	L	2	LK	MC5125	360-720	.004-.020	.020-.098
		⊕	L	3	MA	MC5115	620-1150	.008-.020	.012-.157
		⊕	L	4	MA	MC5125	330-655	.008-.020	.012-.157
		⊕	M	1	MK	MC5115	620-1150	.008-.022	.020-.157
		⊕	M	2	MK	MC5125	330-655	.008-.022	.020-.157
		⊕	M	3	GK	MC5115	620-1150	.008-.024	.059-.197
		⊕	M	4	GK	MC5125	330-655	.008-.024	.059-.197
⊕	R	1	RK	MC5115	590-1080	.008-.024	.059-.236		
⊕	R	2	RK	MC5125	310-620	.008-.024	.059-.236		
⊕	R	3	Flat	MC5115	590-1080	.008-.024	.098-.236		
⊕	R	4	Flat	MC5125	310-620	.008-.024	.098-.236		
⊕	H	1	Flat	MC5115	590-1080	.008-.024	.098-.236		
⊕	H	2	Flat	MC5125	310-620	.008-.024	.098-.236		

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
K									
Ductile Cast Iron	≤450MPa	●	L	1	LK	MC5115	640–1200	.004–.020	.020–.098
		●	L	2	LK	MC5105	705–2180	.004–.020	.020–.098
		●	L	3	MA	MC5115	590–1080	.008–.020	.012–.157
		●	L	4	MA	MC5115	590–1080	.008–.020	.012–.157
		●	M	1	MK	MC5115	590–1080	.008–.022	.020–.157
		●	M	2	MK	MC5105	640–1985	.008–.022	.020–.157
		●	M	3	GK	MC5115	590–1080	.008–.024	.059–.197
		●	M	4	GK	MC5105	640–1985	.008–.024	.059–.197
		●	R	1	RK	MC5115	560–1030	.008–.024	.059–.236
		●	R	2	RK	MC5105	605–1885	.008–.024	.059–.236
		●	R	3	Flat	MC5115	560–1030	.008–.024	.098–.236
		●	R	4	Flat	MC5105	605–1885	.008–.024	.098–.236
		●	H	1	Flat	MC5115	560–1030	.008–.024	.098–.236
		●	L	1	LK	MC5115	640–1200	.004–.020	.020–.098
		●	L	2	MA	MC5115	590–1080	.008–.020	.012–.157
		●	M	1	MK	MC5115	590–1080	.008–.022	.020–.157
		●	M	2	GK	MC5115	590–1080	.008–.024	.059–.197
		●	R	1	RK	MC5115	560–1030	.008–.024	.059–.236
		●	R	2	Flat	MC5115	560–1030	.008–.024	.098–.236
		●	R	3	GH	MC5115	560–1030	.010–.024	.059–.236
		●	H	1	Flat	MC5115	560–1030	.008–.024	.098–.236
		⊕	L	1	LK	MC5125	330–670	.004–.020	.020–.098
		⊕	L	2	LK	MC5115	640–1200	.004–.020	.020–.098
		⊕	L	3	MA	MC5125	310–620	.008–.020	.012–.157
		⊕	L	4	MA	MC5115	590–1080	.008–.020	.012–.157
		⊕	M	1	MK	MC5125	310–620	.008–.022	.020–.157
		⊕	M	2	MK	MC5115	590–1080	.008–.022	.020–.157
		⊕	M	3	GK	MC5125	310–620	.008–.024	.059–.197
		⊕	M	4	GK	MC5115	590–1080	.008–.024	.059–.197
		⊕	R	1	RK	MC5125	295–590	.008–.024	.059–.236
	⊕	R	2	RK	MC5115	560–1030	.008–.024	.059–.236	
	⊕	R	3	Flat	MC5125	295–590	.008–.024	.098–.236	
	⊕	R	4	Flat	MC5115	560–1030	.008–.024	.098–.236	
	⊕	H	1	Flat	MC5125	295–590	.008–.024	.098–.236	
	⊕	H	2	Flat	MC5115	560–1030	.008–.024	.098–.236	
	●	≤800MPa	L	1	LK	MC5115	575–1065	.004–.020	.020–.098
	●		L	2	LK	MC5105	640–1950	.004–.020	.020–.098
	●		L	3	MA	MC5115	525–970	.008–.020	.012–.157
	●		L	4	MA	MC5105	575–1770	.008–.020	.012–.157
	●		M	1	MK	MC5115	525–970	.008–.022	.020–.157
	●		M	2	MK	MC5105	575–1770	.008–.022	.020–.157
	●		M	3	GK	MC5115	525–970	.008–.024	.059–.197
●	M		4	GK	MC5105	575–1770	.008–.024	.059–.197	

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TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
K									
Ductile Cast Iron	≤800MPa	●	R	1	RK	MC5115	490—920	.008—.024	.059—.236
		●	R	2	RK	MC5105	540—1690	.008—.024	.059—.236
		●	R	3	Flat	MC5115	490—920	.008—.024	.098—.236
		●	R	4	Flat	MC5105	540—1690	.008—.024	.098—.236
		●	H	1	Flat	MC5115	490—920	.008—.024	.098—.236
		●	H	2	Flat	MC5105	540—1690	.008—.024	.098—.236
		●	L	1	LK	MC5115	575—1065	.004—.020	.020—.098
		●	L	2	LK	MC5105	640—1950	.004—.020	.020—.098
		●	L	3	MA	MC5115	525—970	.008—.020	.012—.157
		●	L	4	MA	MC5105	575—1770	.008—.020	.012—.157
		●	M	1	MK	MC5115	525—970	.008—.022	.020—.157
		●	M	2	MK	MC5105	575—1770	.008—.022	.020—.157
		●	M	3	GK	MC5115	525—970	.008—.024	.059—.197
		●	M	4	GK	MC5105	575—1770	.008—.024	.059—.197
		●	R	1	RK	MC5115	490—920	.008—.024	.059—.236
		●	R	2	RK	MC5105	540—1690	.008—.024	.059—.236
		●	R	3	Flat	MC5115	490—920	.008—.024	.098—.236
		●	R	4	Flat	MC5105	540—1690	.008—.024	.098—.236
		●	H	1	Flat	MC5115	490—920	.008—.024	.098—.236
		●	H	2	Flat	MC5105	540—1690	.008—.024	.098—.236
		⊕	L	1	LK	MC5125	295—605	.004—.020	.020—.098
		⊕	L	2	LK	MC5115	575—1065	.004—.020	.020—.098
		⊕	L	3	MA	MC5125	280—560	.008—.020	.012—.157
		⊕	L	4	MA	MC5115	525—970	.008—.020	.012—.157
		⊕	M	1	MK	MC5125	280—560	.008—.022	.020—.157
		⊕	M	2	MK	MC5115	525—970	.008—.022	.020—.157
		⊕	M	3	GK	MC5125	280—560	.008—.024	.059—.197
		⊕	M	4	GK	MC5115	525—970	.008—.024	.059—.197
		⊕	R	1	RK	MC5125	260—525	.008—.024	.059—.236
		⊕	R	2	RK	MC5115	490—920	.008—.024	.059—.236
		⊕	R	3	Flat	MC5125	260—525	.008—.024	.098—.236
		⊕	R	4	Flat	MC5115	490—920	.008—.024	.098—.236
⊕	H	1	Flat	MC5125	260—525	.008—.024	.098—.236		
⊕	H	2	Flat	MC5115	490—920	.008—.024	.098—.236		

A

TURNING INSERTS

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
S									
Titanium Alloy (Ti-6Al-4V)	—	●	F	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		●	F	2	FJ	RT9010	150—310	.003—.008	.004—.039
		●	L	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		●	L	2	MJ(M)	RT9010	130—280	.003—.010	.016—.059
		●	M	1	MS	MT9015	130—260	.006—.012	.020—.118
		●	M	2	MS	RT9010	130—260	.006—.020	.020—.157
		●	R	1	RS	MT9015	115—245	.008—.014	.039—.157
		●	R	2	GJ	RT9010	115—245	.006—.014	.039—.118
		●	F	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		●	F	2	FJ	RT9010	150—310	.003—.008	.004—.039
		●	L	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		●	L	2	MJ(M)	RT9010	130—280	.003—.010	.016—.059
		●	L	3	MJ(G)	RT9010	130—280	.003—.010	.016—.059
		●	M	1	MS	MT9015	130—260	.006—.012	.020—.118
		●	M	2	MS	RT9010	130—260	.006—.020	.020—.157
		●	R	1	RS	MT9015	115—245	.008—.014	.039—.157
		●	R	2	GJ	RT9010	115—245	.006—.014	.039—.118
		⊕	F	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		⊕	F	2	FJ	RT9010	150—310	.003—.008	.004—.039
		⊕	L	1	LS(M)	MT9015	130—280	.004—.010	.008—.031
		⊕	L	2	MJ(M)	RT9010	130—280	.003—.010	.016—.059
		⊕	L	3	MJ(G)	RT9010	130—280	.003—.010	.016—.059
		⊕	M	1	MS	MT9015	130—260	.006—.012	.020—.118
		⊕	R	1	RS	MT9015	115—245	.008—.014	.039—.157
		⊕	R	2	GJ	RT9010	115—245	.006—.014	.039—.118

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TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
S									
Heat Resistant Alloy (Inconel718)	—	●	F	1	LS(M)	MP9005	180—360	.004—.010	.008—.031
		●	F	2	FJ	VP10RT	100—195	.003—.008	.004—.039
		●	L	1	LS(M)	MP9005	180—360	.004—.010	.008—.031
		●	L	2	MJ(M)	MP9005	180—360	.003—.010	.016—.059
		●	L	3	MJ(M)	VP05RT	100—210	.003—.010	.016—.059
		●	L	4	MJ(M)	US905	180—310	.003—.010	.016—.059
		●	M	1	MS	MP9005	165—330	.006—.012	.020—.118
		●	M	2	MS	VP05RT	100—195	.006—.020	.020—.157
		●	M	3	MS	US905	165—295	.006—.020	.020—.157
		●	R	1	RS	MP9015	115—245	.008—.014	.039—.157
		●	R	2	GJ	VP10RT	65—150	.006—.014	.039—.118
		●	R	3	GJ	US905	150—280	.006—.014	.039—.118
		●	F	1	LS(M)	MP9015	130—280	.004—.010	.008—.031
		●	F	2	FJ	VP10RT	100—195	.003—.008	.004—.039
		●	L	1	LS(M)	MP9015	130—280	.004—.010	.008—.031
		●	L	2	MJ(M)	MP9015	130—260	.003—.010	.016—.059
		●	L	3	MJ(M)	VP10RT	80—180	.003—.010	.016—.059
		●	M	1	MS	MP9015	130—260	.006—.012	.020—.118
		●	M	2	MA	MP9015	130—260	.004—.012	.020—.118
		●	M	3	MS	VP10RT	80—165	.006—.020	.020—.157
		●	R	1	RS	MP9015	115—245	.008—.014	.039—.157
		●	R	2	GJ	VP10RT	65—150	.006—.014	.039—.118
		⊕	F	1	LS(M)	MP9025	100—150	.004—.010	.008—.031
		⊕	F	2	FJ	VP15TF	65—130	.003—.008	.004—.039
		⊕	L	1	LS(M)	MP9025	100—150	.004—.010	.008—.031
		⊕	L	2	MJ(G)	VP15TF	65—115	.003—.010	.016—.059
		⊕	M	1	MS	MP9025	100—150	.006—.012	.020—.118
		⊕	M	2	MA	MP9025	100—150	.004—.012	.020—.118
		⊕	M	3	MS	VP15TF	65—115	.006—.020	.020—.157
		⊕	R	1	RS	MP9025	80—130	.008—.014	.039—.157
⊕	R	2	GJ	VP15TF	50—100	.006—.014	.039—.118		

A

TURNING INSERTS

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

7° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)			
P											
Mild Steel (AISI ASTM A283, AISI 1010)	≤180HB	●	F	1	FP	NX2525	740-1050	.002-.008	.008-.035		
		●	F	2	FV	NX2525	740-1050	.002-.008	.008-.035		
		●	F	3	R/L-F	MP3025	755-1165	.002-.005	.004-.020		
		●	L	1	LP	NX2525	740-1050	.002-.010	.008-.039		
		●	L	2	MV	MP3025	620-970	.003-.012	.012-.079		
		●	L	3	Std	MP3025	620-970	.003-.012	.012-.079		
		●	M	1	MP	NX2525	605-885	.003-.012	.012-.079		
		●	F	1	FP	MC6115	970-1870	.002-.008	.008-.035		
		●	F	2	FP	MP3025	755-1165	.002-.008	.008-.035		
		●	F	3	FV	MC6115	970-1870	.002-.008	.008-.035		
		●	F	4	FV	MP3025	755-1165	.002-.008	.008-.035		
		●	F	5	FV	NX3035	720-1015	.002-.008	.008-.035		
		●	L	1	LP	MC6115	970-1870	.002-.010	.008-.039		
		●	L	2	LP	MP3025	755-1165	.002-.010	.008-.039		
		●	L	3	SW	MC6115	970-1870	.002-.009	.008-.059		
		●	L	4	SW	MP3025	755-1165	.002-.009	.008-.059		
		●	M	1	MP	MC6115	805-1560	.003-.012	.012-.079		
		●	M	2	MP	MP3025	620-970	.003-.012	.012-.079		
		●	M	3	MV	MC6115	805-1560	.003-.012	.012-.079		
		●	M	4	MW	MC6115	805-1560	.004-.014	.031-.098		
		⊕	F	1	FP	MC6125	1050-1655	.002-.008	.008-.035		
		⊕	F	2	FV	MC6125	1050-1655	.002-.008	.008-.035		
		⊕	L	1	LP	MC6125	1050-1655	.002-.010	.008-.039		
		⊕	L	2	SV	MC6125	1050-1655	.002-.010	.008-.039		
		⊕	L	3	SW	MC6125	1050-1655	.002-.009	.008-.059		
		⊕	M	1	MP	MC6125	885-1380	.003-.012	.012-.079		
		⊕	M	2	MV	MC6125	885-1380	.003-.012	.012-.079		
		⊕	M	3	MW	MC6125	885-1380	.004-.014	.031-.098		
		Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	FP	NX2525	540-785	.002-.008	.008-.035
				●	F	2	FV	NX2525	540-785	.002-.008	.008-.035
●	F			3	R/L-F	MP3025	560-850	.002-.005	.004-.020		
●	L			1	LP	NX2525	540-785	.002-.010	.008-.039		
●	L			2	MV	MP3025	460-720	.003-.012	.012-.079		
●	L			3	Std	MP3025	460-720	.003-.012	.012-.079		
●	L			4	SV	MP3025	560-850	.002-.010	.008-.039		
●	L			5	SW	MP3025	560-850	.002-.009	.008-.059		
●	M			1	MP	NX2525	460-655	.003-.012	.012-.079		
●	M			2	MW	MP3025	460-720	.004-.014	.031-.098		
●	F			1	FP	MC6115	720-1380	.002-.008	.008-.035		
●	F			2	FP	MP3025	560-850	.002-.008	.008-.035		
●	F			3	FV	MC6115	720-1380	.002-.008	.008-.035		
●	F			4	FV	MP3025	560-850	.002-.008	.008-.035		
●	F			5	FV	NX3035	525-755	.002-.008	.008-.035		

A
TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
P									
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	L	1	LP	MC6115	720-1380	.002-.010	.008-.039
		●	L	2	LP	MP3025	560-850	.002-.010	.008-.039
		●	L	3	SW	MC6115	720-1380	.002-.009	.008-.059
		●	L	4	SW	MP3025	560-850	.002-.009	.008-.059
		●	M	1	MP	MC6125	655-1015	.003-.012	.012-.079
		●	M	2	MP	MC6115	590-1150	.003-.012	.012-.079
		●	M	3	MP	MP3025	460-720	.003-.012	.012-.079
		●	M	4	MV	MC6125	655-1015	.003-.012	.012-.079
		●	M	5	MV	MC6115	590-1150	.003-.012	.012-.079
		●	M	6	MW	MC6115	590-1150	.004-.014	.031-.098
		⊕	F	1	FP	MC6125	785-1215	.002-.008	.008-.035
		⊕	F	2	FV	MC6125	785-1215	.002-.008	.008-.035
		⊕	L	1	LP	MC6125	785-1215	.002-.010	.008-.039
		⊕	L	2	SV	MC6125	785-1215	.002-.010	.008-.039
		⊕	L	3	SW	MC6125	785-1215	.002-.009	.008-.059
		⊕	M	1	MP	MC6125	655-1015	.003-.012	.012-.079
		⊕	M	2	MV	MC6125	655-1015	.003-.012	.012-.079
		⊕	M	3	MW	MC6125	655-1015	.004-.014	.031-.098
Carbon Steel • Alloy Steel (AISI 4340)	280 | 350HB	●	F	1	FP	NX2525	375-560	.002-.008	.008-.035
		●	L	1	LP	NX2525	375-560	.002-.010	.008-.039
		●	M	1	MP	NX2525	310-460	.003-.012	.012-.079
		●	F	1	FP	MC6115	510-970	.002-.008	.008-.035
		●	F	2	FV	MC6115	510-970	.002-.008	.008-.035
		●	L	1	LP	MC6115	510-970	.002-.010	.008-.039
		●	M	1	MP	MC6115	425-805	.003-.012	.012-.079
		●	M	2	MP	MP3025	330-510	.003-.012	.012-.079
		●	M	3	MV	MC6115	425-805	.003-.012	.012-.079
		⊕	F	1	FP	MC6125	560-870	.002-.008	.008-.035
		⊕	F	2	FV	MC6125	560-870	.002-.008	.008-.035
		⊕	L	1	LP	MC6125	560-870	.002-.010	.008-.039
		⊕	M	1	MP	MC6125	460-720	.003-.012	.012-.079
		⊕	M	2	MV	MC6125	460-720	.003-.012	.012-.079

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Austenitic Stainless Steel (AISI 304, AISI 316)	≤200HB	●	F	1	FM	VP15TF	245—410	.002— .008	.008— .035
		●	F	2	Std	US735	230—440	.003— .012	.012— .079
		●	L	1	LM	MC7025	460—620	.002— .010	.008— .039
		●	L	2	Std	US735	230—440	.003— .012	.012— .079
		●	M	1	MM	MC7025	395—525	.003— .012	.012— .079
		●	F	1	FM	VP15TF	245—410	.002— .008	.008— .035
		●	F	2	Std	US735	230—440	.003— .012	.012— .079
		●	L	1	LM	MC7025	460—620	.002— .010	.008— .039
		●	L	2	Std	US735	230—440	.003— .012	.012— .079
		●	M	1	MM	MC7025	395—525	.003— .012	.012— .079
		⊕	F	1	FM	VP15TF	245—410	.002— .008	.008— .035
		⊕	F	2	Std	US735	230—440	.003— .012	.012— .079
		⊕	L	1	LM	MP7035	280—440	.002— .010	.008— .039
		⊕	L	2	LM	VP15TF	245—410	.002— .010	.008— .039
		⊕	L	3	Std	US735	230—440	.003— .012	.012— .079
		⊕	M	1	MM	MP7035	230—375	.003— .012	.012— .079
		⊕	M	2	MM	VP15TF	195—345	.003— .012	.012— .079
		Austenitic Stainless Steel (AISI 304LN, AISI 316LN)	>200HB	●	F	1	FM	VP15TF	195—345	.002— .008	.008— .035
●	F			2	Std	US735	195—360	.003— .012	.012— .079
●	L			1	LM	MC7025	395—525	.002— .010	.008— .039
●	L			2	Std	US735	195—360	.003— .012	.012— .079
●	M			1	MM	MC7025	330—425	.003— .012	.012— .079
●	F			1	FM	VP15TF	195—345	.002— .008	.008— .035
●	F			2	Std	US735	195—360	.003— .012	.012— .079
●	L			1	LM	MC7025	395—525	.002— .010	.008— .039
●	L			2	Std	US735	195—360	.003— .012	.012— .079
●	M			1	MM	MC7025	330—425	.003— .012	.012— .079
⊕	F			1	FM	VP15TF	195—345	.002— .008	.008— .035
⊕	F			2	Std	US735	195—360	.003— .012	.012— .079
⊕	L			1	LM	MP7035	230—375	.002— .010	.008— .039
⊕	L			2	LM	VP15TF	195—345	.002— .010	.008— .039
⊕	L			3	Std	US735	195—360	.003— .012	.012— .079
⊕	M			1	MM	MP7035	195—310	.003— .012	.012— .079
⊕	M			2	MM	VP15TF	165—295	.003— .012	.012— .079

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Two-phase Stainless Steel (AISI 329)	≤280HB	●	F	1	FM	VP15TF	165-280	.002-.008	.008-.035
		●	F	2	Std	US735	150-295	.003-.012	.012-.079
		●	L	1	LM	MC7025	310-425	.002-.010	.008-.039
		●	L	2	Std	US735	150-295	.003-.012	.012-.079
		●	M	1	MM	MC7025	260-345	.003-.012	.012-.079
		●	F	1	FM	VP15TF	165-280	.002-.008	.008-.035
		●	F	2	Std	US735	150-295	.003-.012	.012-.079
		●	L	1	LM	MC7025	310-425	.002-.010	.008-.039
		●	L	2	Std	US735	150-295	.003-.012	.012-.079
		●	M	1	MM	MC7025	260-345	.003-.012	.012-.079
		⊕	F	1	FM	VP15TF	165-280	.002-.008	.008-.035
		⊕	F	2	Std	US735	150-295	.003-.012	.012-.079
		⊕	L	1	LM	MP7035	180-295	.002-.010	.008-.039
		⊕	L	2	LM	VP15TF	165-280	.002-.010	.008-.039
		⊕	L	3	Std	US735	150-295	.003-.012	.012-.079
		⊕	M	1	MM	MP7035	150-245	.003-.012	.012-.079
⊕	M	2	MM	VP15TF	130-230	.003-.012	.012-.079		
Ferritic and Martensitic Stainless Steel (AISI 410, AISI 430)	≤200HB	●	F	1	FM	VP15TF	245-410	.002-.008	.008-.035
		●	F	2	Std	US735	230-440	.003-.012	.012-.079
		●	L	1	LM	MC7025	460-620	.002-.010	.008-.039
		●	L	2	Std	US735	230-440	.003-.012	.012-.079
		●	M	1	MM	MC7025	395-525	.003-.012	.012-.079
		●	F	1	FM	VP15TF	245-410	.002-.008	.008-.035
		●	F	2	Std	US735	230-440	.003-.012	.012-.079
		●	L	1	LM	MC7025	460-620	.002-.010	.008-.039
		●	L	2	Std	US735	230-440	.003-.012	.012-.079
		●	M	1	MM	MC7025	395-525	.003-.012	.012-.079
		⊕	F	1	FM	VP15TF	245-410	.002-.008	.008-.035
		⊕	F	2	Std	US735	230-440	.003-.012	.012-.079
		⊕	L	1	LM	MP7035	280-440	.002-.010	.008-.039
		⊕	L	2	LM	VP15TF	245-410	.002-.010	.008-.039
		⊕	L	3	Std	US735	230-440	.003-.012	.012-.079
		⊕	M	1	MM	MP7035	230-375	.003-.012	.012-.079
⊕	M	2	MM	VP15TF	195-345	.003-.012	.012-.079		
Ferritic and Martensitic Stainless Steel (AISI 431, AISI 420)	>200HB	●	F	1	FM	VP15TF	195-345	.002-.008	.008-.035
		●	F	2	Std	US735	195-360	.003-.012	.012-.079
		●	L	1	LM	MC7025	395-525	.002-.010	.008-.039
		●	L	2	Std	US735	195-360	.003-.012	.012-.079
		●	M	1	MM	MC7025	330-425	.003-.012	.012-.079
		●	F	1	FM	VP15TF	195-345	.002-.008	.008-.035
●	F	2	Std	US735	195-360	.003-.012	.012-.079		

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
M									
Ferritic and Martensitic Stainless Steel (AISI 431, AISI 420)	>200HB	☉	L	1	LM	MC7025	395–525	.002–.010	.008–.039
		☉	L	2	Std	US735	195–360	.003–.012	.012–.079
		☉	M	1	MM	MC7025	330–425	.003–.012	.012–.079
		☉	F	1	FM	VP15TF	195–345	.002–.008	.008–.035
		☉	F	2	Std	US735	195–360	.003–.012	.012–.079
		☉	L	1	LM	MP7035	230–375	.002–.010	.008–.039
		☉	L	2	LM	VP15TF	195–345	.002–.010	.008–.039
		☉	L	3	Std	US735	195–360	.003–.012	.012–.079
		☉	M	1	MM	MP7035	195–310	.003–.012	.012–.079
		☉	M	2	MM	VP15TF	165–295	.003–.012	.012–.079
Hardened Stainless Steel (AISI 630, AISI 631)	<450HB	☉	F	1	FM	VP15TF	130–230	.002–.008	.008–.035
		☉	F	2	FS	MP9005	360–490	.002–.005	.008–.055
		☉	F	3	Std	US735	130–245	.003–.010	.012–.079
		☉	L	1	LM	MC7025	245–310	.002–.008	.008–.039
		☉	L	2	LS(G)	MP9015	345–460	.002–.006	.012–.118
		☉	L	3	LS(M)	MP9015	345–460	.002–.008	.008–.039
		☉	L	4	Std	US735	130–245	.003–.010	.012–.079
		☉	M	1	MM	MC7025	195–260	.003–.010	.012–.079
		☉	M	2	MS	MP9015	280–395	.003–.010	.012–.079
		☉	M	3	RCMT	MP9015	280–395	.010–.018	.059–.118
		☉	F	1	FM	VP15TF	130–230	.002–.008	.008–.035
		☉	F	3	FS	MP9015	345–460	.002–.005	.008–.055
		☉	F	3	Std	US735	130–245	.003–.010	.012–.079
		☉	L	1	LM	MC7025	245–310	.002–.008	.008–.039
		☉	L	2	LS(G)	MP9015	345–460	.002–.006	.012–.118
		☉	L	3	LS(M)	MP9015	345–460	.002–.008	.008–.039
		☉	L	4	Std	US735	130–245	.003–.010	.012–.079
		☉	M	1	MM	MC7025	195–260	.003–.010	.012–.079
		☉	M	2	MS	MP9015	280–395	.003–.010	.012–.079
		☉	M	3	RCMT	MP9015	280–395	.010–.018	.059–.118
		☉	F	1	FM	VP15TF	130–230	.002–.008	.008–.035
		☉	F	2	FS	MP9025	230–280	.002–.005	.008–.055
		☉	F	3	Std	US735	130–245	.003–.010	.012–.079
		☉	L	1	LM	MP7035	150–245	.002–.008	.008–.039
		☉	L	2	LS(M)	MP9025	230–280	.002–.008	.008–.039
		☉	L	3	LM	VP15TF	130–230	.002–.008	.008–.039
		☉	L	4	LS(G)	MP9025	230–280	.002–.006	.012–.118
		☉	L	5	Std	US735	130–245	.003–.010	.012–.079
		☉	M	1	MM	MP7035	130–195	.003–.010	.012–.079
		☉	M	2	MS	MP9025	195–230	.003–.010	.012–.079
		☉	M	3	MM	VP15TF	115–195	.003–.010	.012–.079
		☉	M	4	RCMT	MP9025	195–230	.010–.018	.059–.118

A

TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

TURNING INSERTS

A

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)			
K											
Gray Cast Iron (AISI No 45 B)	≤350MPa	●	F	1	LK	MC5105	655-2000	.002-.010	.008-.039		
		●	F	2	LK	MC5115	590-1100	.002-.010	.008-.039		
		●	L	1	LK	MC5105	655-2000	.002-.010	.008-.039		
		●	L	2	LK	MC5115	590-1100	.002-.010	.008-.039		
		●	M	1	MK	MC5105	540-1670	.003-.012	.012-.079		
		●	M	2	MK	MC5115	490-920	.003-.012	.012-.079		
		●	F	1	LK	MC5105	655-2000	.002-.010	.008-.039		
		●	F	2	LK	MC5115	590-1100	.002-.010	.008-.039		
		●	L	1	LK	MC5105	655-2000	.002-.010	.008-.039		
		●	L	2	LK	MC5115	590-1100	.002-.010	.008-.039		
		●	L	3	SW	MC5115	590-1100	.002-.009	.008-.059		
		●	M	1	MK	MC5105	540-1670	.003-.012	.012-.079		
		●	M	2	MK	MC5115	490-920	.003-.012	.012-.079		
		●	M	3	Flat	MC5105	540-1670	.003-.012	.012-.079		
		●	M	4	Flat	MC5115	490-920	.003-.012	.012-.079		
		●	M	5	MV	MC5115	590-1100	.003-.012	.012-.079		
		●	M	6	MW	MC5115	490-920	.004-.014	.031-.098		
		⊕	F	1	LK	MC5115	590-1100	.002-.010	.008-.039		
		⊕	F	2	LK	MC5105	655-2000	.002-.010	.008-.039		
		⊕	L	1	LK	MC5115	590-1100	.002-.010	.008-.039		
		⊕	L	2	LK	MC5105	655-2000	.002-.010	.008-.039		
		⊕	M	1	MK	MC5115	490-920	.003-.012	.012-.079		
		⊕	M	2	MK	MC5105	540-1670	.003-.012	.012-.079		
		⊕	M	3	Flat	MC5115	490-920	.003-.012	.012-.079		
		⊕	M	4	Flat	MC5105	540-1670	.003-.012	.012-.079		
		Ductile Cast Iron	≤450MPa	●	F	1	LK	MC5115	560-1030	.002-.010	.008-.039
				●	F	2	LK	MC5105	620-1900	.002-.010	.008-.039
				●	L	1	LK	MC5115	560-1030	.002-.010	.008-.039
●	L			2	LK	MC5105	620-1900	.002-.010	.008-.039		
●	M			1	MK	MC5115	460-870	.003-.012	.012-.079		
●	M			2	MK	MC5105	510-1590	.003-.012	.012-.079		
●	F			1	LK	MC5115	560-1030	.002-.010	.008-.039		
●	F			2	LK	MC5125	295-590	.002-.010	.008-.039		
●	F			3	LK	MC5105	620-1900	.002-.010	.008-.039		
●	L			1	LK	MC5115	560-1030	.002-.010	.008-.039		
●	L			2	LK	MC5125	295-590	.002-.010	.008-.039		
●	L			3	LK	MC5105	620-1900	.002-.010	.008-.039		
●	L			4	MK	MC5115	460-870	.003-.012	.012-.079		
●	L			5	MK	MC5125	245-490	.003-.012	.012-.079		
●	L			6	MK	MC5105	510-1590	.003-.012	.012-.079		
●	L			7	SW	MC5115	560-1030	.002-.009	.008-.059		

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
K									
Ductile Cast Iron	≤450MPa	●	M	1	MK	MC5115	460—870	.003—.012	.012—.079
		●	M	2	MK	MC5105	510—1590	.003—.012	.012—.079
		●	M	3	Flat	MC5115	460—870	.003—.012	.012—.079
		●	M	4	Flat	MC5125	245—490	.003—.012	.012—.079
		●	M	5	Flat	MC5105	510—1590	.003—.012	.012—.079
		●	M	6	MV	MC5115	560—1030	.003—.012	.012—.079
		●	M	7	MW	MC5115	460—870	.004—.014	.031—.098
		⊕	F	1	LK	MC5125	295—590	.002—.010	.008—.039
		⊕	F	2	LK	MC5115	560—1030	.002—.010	.008—.039
		⊕	L	1	LK	MC5125	295—590	.002—.010	.008—.039
		⊕	L	2	LK	MC5115	560—1030	.002—.010	.008—.039
		⊕	M	1	MK	MC5125	245—490	.003—.012	.012—.079
	⊕	M	2	MK	MC5115	460—870	.003—.012	.012—.079	
	⊕	M	3	Flat	MC5125	245—490	.003—.012	.012—.079	
	●	F	1	LK	MC5115	510—935	.002—.010	.008—.039	
	●	F	2	LK	MC5105	560—1705	.002—.010	.008—.039	
	●	L	1	LK	MC5115	510—935	.002—.010	.008—.039	
	●	L	2	LK	MC5105	560—1705	.002—.010	.008—.039	
	●	M	1	MK	MC5115	410—770	.003—.012	.012—.079	
	●	M	2	MK	MC5105	460—1425	.003—.012	.012—.079	
	●	F	1	LK	MC5115	510—935	.002—.010	.008—.039	
	●	F	2	LK	MC5125	260—525	.002—.010	.008—.039	
	●	F	3	LK	MC5105	560—1705	.002—.010	.008—.039	
	●	L	1	LK	MC5115	510—935	.002—.010	.008—.039	
	●	L	2	LK	MC5125	260—525	.002—.010	.008—.039	
	●	L	3	LK	MC5105	560—1705	.002—.010	.008—.039	
	●	L	4	SW	MC5115	510—935	.002—.009	.008—.059	
	●	M	1	MK	MC5115	410—770	.003—.012	.012—.079	
	●	M	2	MK	MC5125	210—440	.003—.012	.012—.079	
	●	M	3	MK	MC5105	460—1425	.003—.012	.012—.079	
	●	M	4	MV	MC5115	510—935	.003—.012	.012—.079	
	●	M	5	MW	MC5115	410—770	.004—.014	.031—.098	
	⊕	F	1	LK	MC5125	260—525	.002—.010	.008—.039	
	⊕	F	2	LK	MC5115	510—935	.002—.010	.008—.039	
	⊕	L	1	LK	MC5125	260—525	.002—.010	.008—.039	
	⊕	L	2	LK	MC5115	510—935	.002—.010	.008—.039	
⊕	M	1	MK	MC5125	210—440	.003—.012	.012—.079		
⊕	M	2	MK	MC5115	410—770	.003—.012	.012—.079		

A

TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

7° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
N									
Aluminum Alloy (A6061, A7075)	Si<5%	●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		⊕	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
Aluminum Alloy (AC4B)	5%≤Si≤10%	●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		⊕	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
Aluminum Alloy (ADC12, A390)	Si>10%	●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		●	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118
		⊕	F	1	AZ	HTi10	985-2295	.004-.016	.008-.118

A

TURNING INSERTS

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
S									
Titanium Alloy (Ti-6Al-4V)	—	●	F	1	FS-P	MT9005	130–260	.002–.005	.008–.055
		●	F	2	FJ	RT9010	115–245	.002–.005	.008–.055
		●	L	1	LS-P	MT9005	130–260	.002–.006	.012–.118
		●	L	2	LS(M)	MT9005	130–260	.002–.008	.008–.039
		●	M	1	MS	MT9005	115–210	.003–.010	.012–.079
		●	M	2	RCMT	MT9005	115–210	.010–.018	.059–.118
		●	F	1	FS-P	MT9005	130–260	.002–.005	.008–.055
		●	F	2	FJ	RT9010	115–245	.002–.005	.008–.055
		●	L	1	LS-P	MT9005	130–260	.002–.006	.012–.118
		●	L	2	LS(M)	MT9005	130–260	.002–.008	.008–.039
		●	M	1	MS	MT9005	115–210	.003–.010	.012–.079
		●	M	2	RCMT	MT9005	115–210	.010–.018	.059–.118
		⊕	F	1	FS-P	MT9005	130–260	.002–.005	.008–.055
		⊕	F	2	FJ	RT9010	115–245	.002–.005	.008–.055
		⊕	L	1	LS-P	MT9005	130–260	.002–.006	.012–.118
		⊕	L	2	LS(M)	MT9005	130–260	.002–.008	.008–.039
		⊕	M	1	MS	MT9005	115–210	.003–.010	.012–.079
		⊕	M	2	RCMT	MT9015	100–195	.010–.018	.059–.118
Heat Resistant Alloy (Inconel718)	—	●	F	1	FS	MP9005	150–310	.002–.005	.008–.055
		●	F	2	FJ	VP10RT	65–150	.002–.005	.008–.055
		●	L	1	LS(G)	MP9005	150–310	.002–.006	.012–.118
		●	L	2	LS(M)	MP9005	150–310	.002–.008	.008–.039
		●	M	1	MS	MP9005	130–260	.003–.010	.012–.079
		●	M	2	RCMT	MP9005	130–260	.010–.018	.059–.118
		●	F	1	FS	MP9015	115–245	.002–.005	.008–.055
		●	F	2	FJ	VP10RT	65–150	.002–.005	.008–.055
		●	L	1	LS(G)	MP9015	115–245	.002–.006	.012–.118
		●	L	2	LS(M)	MP9015	115–245	.002–.008	.008–.039
		●	M	1	MS	MP9015	100–195	.003–.010	.012–.079
		●	M	2	RCMT	MP9015	100–195	.010–.018	.059–.118
		⊕	F	1	FS	MP9025	80–130	.002–.005	.008–.055
		⊕	F	2	FJ	VP10RT	65–150	.002–.005	.008–.055
		⊕	L	1	LS(M)	MP9025	80–130	.002–.008	.008–.039
		⊕	L	2	LS(G)	MP9025	80–130	.002–.006	.012–.118
		⊕	M	1	MS	MP9025	65–115	.003–.010	.012–.079
		⊕	M	2	RCMT	MP9025	65–115	.010–.018	.059–.118

A

TURNING INSERTS

TURNING INSERTS

RECOMMENDED CUTTING CONDITIONS

■ 11° POSITIVE INSERT TYPE

Breaker : Std : Standard Flat : Flat Top

TURNING INSERTS

A

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
P									
Mild Steel (AISI ASTM A283, AISI 1010)	≤180HB	●	F	1	R-R/L	NX2525	740-1050	.002-.010	.012-.059
		●	L	1	R-Std	NX2525	605-885	.003-.012	.012-.079
		●	M	1	R-Std	NX2525	605-885	.003-.012	.012-.079
		●	F	1	FV	MC6125	1050-1655	.002-.008	.008-.035
		●	F	2	R-R/L	NX2525	740-1050	.002-.010	.012-.059
		●	L	1	LP	MC6125	1050-1655	.002-.010	.008-.039
		●	L	2	R-Std	MC6115	805-1560	.003-.012	.012-.079
		●	L	3	R-Std	MP3025	620-970	.003-.012	.012-.079
		●	L	4	R-Std	NX3035	590-835	.003-.012	.012-.079
		●	M	1	MV	MC6125	885-1380	.003-.012	.012-.079
		●	M	2	MV	MC6115	805-1560	.003-.012	.012-.079
		●	M	3	R-Std	MC6125	885-1380	.003-.012	.012-.079
		●	M	4	R-Std	MP3025	620-970	.003-.012	.012-.079
		●	M	5	R-Std	NX3035	590-835	.003-.012	.012-.079
		⊕	F	1	R-R/L	UTi20T	375-540	.002-.010	.012-.059
		⊕	L	1	LP	MC6125	1050-1655	.002-.010	.008-.039
		⊕	L	2	R-Std	MC6125	885-1380	.003-.012	.012-.079
		⊕	L	3	N-Flat	UP20M	345-525	.003-.012	.012-.079
		⊕	M	1	MV	MC6125	885-1380	.003-.012	.012-.079
		⊕	M	2	R-Std	MC6125	885-1380	.003-.012	.012-.079
⊕	M	3	N-Flat	UP20M	345-525	.003-.012	.012-.079		
Carbon Steel • Alloy Steel (AISI 1045, AISI 4140)	180 | 280HB	●	F	1	R-R/L	NX2525	540-785	.002-.010	.012-.059
		●	L	1	R-Std	NX2525	460-655	.003-.012	.012-.079
		●	M	1	R-Std	NX2525	460-655	.003-.012	.012-.079
		●	F	1	FV	MC6125	785-1215	.002-.008	.008-.035
		●	F	2	R-R/L	NX2525	540-785	.002-.010	.012-.059
		●	L	1	LP	MC6125	785-1215	.002-.010	.008-.039
		●	L	2	R-Std	MC6115	590-1150	.003-.012	.012-.079
		●	L	3	R-Std	MC6125	655-1015	.003-.012	.012-.079
		●	L	4	R-Std	MP3025	460-720	.003-.012	.012-.079
		●	L	5	R-Std	NX3035	440-620	.003-.012	.012-.079
		●	M	1	MV	MC6125	655-1015	.003-.012	.012-.079
		●	M	2	R-Std	MC6115	590-1150	.003-.012	.012-.079
		●	M	3	R-Std	MC6125	655-1015	.003-.012	.012-.079
		●	M	4	R-Std	MP3025	460-720	.003-.012	.012-.079
		●	M	5	R-Std	NX3035	440-620	.003-.012	.012-.079
		⊕	F	1	R-R/L	UTi20T	280-395	.002-.010	.012-.059
		⊕	L	1	LP	MC6125	785-1215	.002-.010	.008-.039
		⊕	L	2	R-Std	MC6125	655-1015	.003-.012	.012-.079
		⊕	L	3	N-Flat	UP20M	260-395	.003-.012	.012-.079
		⊕	M	1	MV	MC6125	655-1015	.003-.012	.012-.079
⊕	M	2	R-Std	MC6125	655-1015	.003-.012	.012-.079		
⊕	M	3	N-Flat	UP20M	260-395	.003-.012	.012-.079		

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ⊕ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)			
K											
Gray Cast Iron (AISI No 45 B)	≤350MPa	●	F	1	R-R/L	NX2525	475–655	.002–.010	.012–.059		
		●	L	1	N-Flat	MC5105	540–1670	.003–.012	.012–.079		
		●	L	2	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		●	L	3	N-Flat	NX2525	395–540	.003–.012	.012–.079		
		●	L	4	R-Std	NX2525	395–540	.003–.012	.012–.079		
		●	M	1	N-Flat	MC5105	540–1670	.003–.012	.012–.079		
		●	M	2	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		●	M	3	N-Flat	NX2525	395–540	.003–.012	.012–.079		
		●	M	4	R-Std	NX2525	395–540	.003–.012	.012–.079		
		●	F	1	R-R/L	NX2525	475–655	.002–.010	.012–.059		
		●	F	2	R-R/L	HTi10	295–410	.002–.010	.012–.059		
		●	L	1	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		●	L	2	N-Flat	MC5105	540–1670	.003–.012	.012–.079		
		●	M	1	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		●	M	2	N-Flat	MC5105	540–1670	.003–.012	.012–.079		
		●	M	3	MV	MC5115	590–1100	.003–.012	.012–.079		
		⊕	F	1	R-R/L	UTi20T	230–345	.002–.010	.012–.059		
		⊕	L	1	N-Flat	MC5125	260–525	.003–.012	.012–.079		
		⊕	L	2	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		⊕	L	3	N-Flat	VP15TF	375–525	.003–.012	.012–.079		
		⊕	M	1	N-Flat	MC5125	260–525	.003–.012	.012–.079		
		⊕	M	2	N-Flat	MC5115	490–920	.003–.012	.012–.079		
		⊕	M	3	N-Flat	VP15TF	375–525	.003–.012	.012–.079		
		Ductile Cast Iron	≤450MPa	●	F	1	R-R/L	NX2525	460–620	.002–.010	.012–.059
				●	L	1	N-Flat	MC5115	460–870	.003–.012	.012–.079
				●	L	2	N-Flat	MC5105	510–1590	.003–.012	.012–.079
				●	L	3	N-Flat	NX2525	375–510	.003–.012	.012–.079
				●	L	4	R-Std	NX2525	375–510	.003–.012	.012–.079
●	M			1	N-Flat	MC5115	460–870	.003–.012	.012–.079		
●	M			2	N-Flat	MC5105	510–1590	.003–.012	.012–.079		
●	M			3	N-Flat	NX2525	375–510	.003–.012	.012–.079		
●	M			4	R-Std	NX2525	375–510	.003–.012	.012–.079		
●	F			1	R-R/L	NX2525	460–620	.002–.010	.012–.059		
●	F			2	R-R/L	HTi10	280–395	.002–.010	.012–.059		
●	L			1	N-Flat	MC5115	460–870	.003–.012	.012–.079		
●	L			2	N-Flat	MC5125	245–490	.003–.012	.012–.079		
●	L			3	N-Flat	MC5105	510–1590	.003–.012	.012–.079		
●	M			1	N-Flat	MC5115	460–870	.003–.012	.012–.079		
●	M			2	N-Flat	MC5125	245–490	.003–.012	.012–.079		
●	M			3	N-Flat	MC5105	510–1590	.003–.012	.012–.079		
●	M			4	MV	MC5115	560–1030	.003–.012	.012–.079		
⊕	F			1	R-R/L	UTi20T	210–330	.002–.010	.012–.059		
⊕	L			1	N-Flat	MC5125	245–490	.003–.012	.012–.079		
⊕	L			2	N-Flat	MC5115	460–870	.003–.012	.012–.079		
⊕	L			3	N-Flat	VP15TF	360–490	.003–.012	.012–.079		
⊕	M			1	N-Flat	MC5125	245–490	.003–.012	.012–.079		
⊕	M			2	N-Flat	MC5115	460–870	.003–.012	.012–.079		
⊕	M			3	N-Flat	VP15TF	360–490	.003–.012	.012–.079		

A

TURNING INSERTS

TURNING INSERTS

TURNING INSERTS

A

Work Material	Hardness	Cutting Mode	Priority	Breaker	Grade	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)	
K									
Ductile Cast Iron	≤800MPa	●	F	1	R-R/L	NX2525	410—560	.002— .010	.012— .059
		●	L	1	N-Flat	MC5115	410—770	.003— .012	.012— .079
		●	L	2	N-Flat	MC5105	460—1425	.003— .012	.012— .079
		●	L	3	N-Flat	NX2525	345—460	.003— .012	.012— .079
		●	L	4	R-Std	NX2525	345—460	.003— .012	.012— .079
		●	M	1	N-Flat	MC5115	410—770	.003— .012	.012— .079
		●	M	2	N-Flat	MC5105	460—1425	.003— .012	.012— .079
		●	M	3	N-Flat	NX2525	345—460	.003— .012	.012— .079
		●	M	4	R-Std	NX2525	345—460	.003— .012	.012— .079
		●	F	1	R-R/L	NX2525	410—560	.002— .010	.012— .059
		●	F	2	R-R/L	HTi10	245—360	.002— .010	.012— .059
		●	L	1	N-Flat	MC5115	410—770	.003— .012	.012— .079
		●	L	2	N-Flat	MC5125	210—440	.003— .012	.012— .079
		●	L	3	N-Flat	MC5105	460—1425	.003— .012	.012— .079
		●	M	1	N-Flat	MC5115	410—770	.003— .012	.012— .079
		●	M	2	N-Flat	MC5125	210—440	.003— .012	.012— .079
		●	M	3	N-Flat	MC5105	460—1425	.003— .012	.012— .079
		●	M	4	MV	MC5115	510—935	.003— .012	.012— .079
		✚	F	1	R-R/L	UTi20T	195—280	.002— .010	.012— .059
		✚	L	1	N-Flat	MC5125	210—440	.003— .012	.012— .079
		✚	L	2	N-Flat	MC5115	410—770	.003— .012	.012— .079
		✚	L	3	N-Flat	VP15TF	310—440	.003— .012	.012— .079
		✚	M	1	N-Flat	MC5125	210—440	.003— .012	.012— .079
		✚	M	2	N-Flat	MC5115	410—770	.003— .012	.012— .079
✚	M	3	N-Flat	VP15TF	310—440	.003— .012	.012— .079		

CUTTING CONDITIONS : ● : Stable Cutting ● : General Cutting ✚ : Unstable Cutting

CUTTING AREA : F : Finish Cutting L : Light Cutting M : Medium Cutting R : Rough Cutting H : Heavy Cutting

Memo

A series of horizontal dotted lines for writing, spanning the width of the page.

TURNING INSERTS [NEGATIVE]

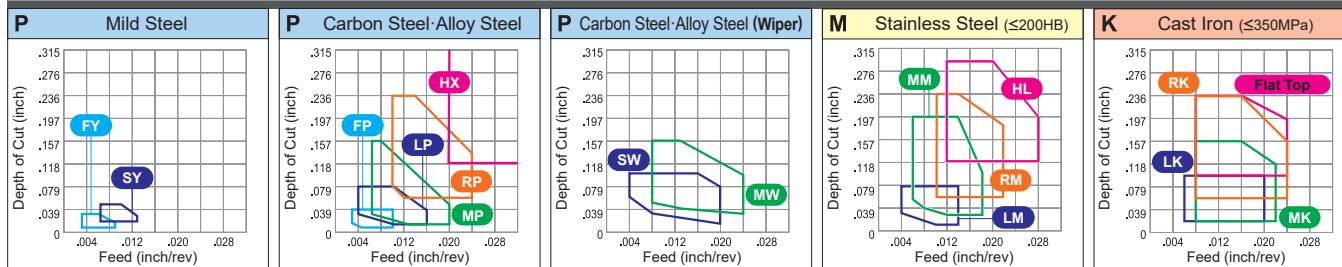
80° CN TYPE INSERTS WITH HOLE

CNMG 4 3 2 RS

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting --- Light Cutting --- Medium Cutting --- Rough Cutting --- Heavy Cutting ---



● : Stable Cutting (1st recommendation) ○ : Stable Cutting (2nd recommendation)
● : General Cutting (1st recommendation) ⊙ : General Cutting (2nd recommendation)
⊛ : Unstable Cutting (1st recommendation) ⊞ : Unstable Cutting (2nd recommendation)

Workpiece Material	Shape	Order Number	(ISO) Number	RE (inch)	Coated																Coated Cermet	Cermet	Carbide																							
					MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT1905	RT1910	MT9005	MT9015	TF-15		
					NEW	NEW											NEW	NEW								NEW																				
Steel	RS	CNMG432RS	CNMG120408-RS	.031															●	●																						●				
		CNMG433RS	CNMG120412-RS	.047																●	●																						●			
		CNMG434RS	CNMG120416-RS	.063																●	●																							●		
		CNMG543RS	CNMG160612-RS	.047																●	●																							●		
		CNMG544RS	CNMG160616-RS	.063																●	●																							●		
		CNMG643RS	CNMG190612-RS	.047																●	●																								●	
CNMG644RS	CNMG190616-RS	.063																●	●																									●		
Stainless Steel	GH	CNMG432GH	CNMG120408-GH	.031	●	●													●																											
		CNMG433GH	CNMG120412-GH	.047	●	●														●																										
		CNMG434GH	CNMG120416-GH	.063	●	●														●																										
		CNMG543GH	CNMG160612-GH	.047	●	●														●																										
		CNMG544GH	CNMG160616-GH	.063	●	●														●																										
		CNMG643GH	CNMG190612-GH	.047	●	●														●																										
CNMG644GH	CNMG190616-GH	.063	●	●														●																												
Cast Iron	GJ	CNMG432GJ	CNMG120408-GJ	.031																●			●	●																					●	
		CNMG433GJ	CNMG120412-GJ	.047																	●			●	●																				●	
		CNMG434GJ	CNMG120416-GJ	.063																	●			●	●																					●
		CNMG543GJ	CNMG160612-GJ	.047																	●			●	●																					●
		CNMG643GJ	CNMG190612-GJ	.047																	●			●	●																					●
		CNMG644GJ	CNMG190616-GJ	.063																	●			●	●																					●
Non-ferrous Metal	HX	CNMM432HX	CNMM120408-HX	.031			★	★																																						
		CNMM433HX	CNMM120412-HX	.047			★	★																																						
		CNMM543HX	CNMM160612-HX	.047			★	★																																						
		CNMM544HX	CNMM160616-HX	.063			★	★																																						
		CNMM643HX	CNMM190612-HX	.047			★	★	★																																					
		CNMM644HX	CNMM190616-HX	.063			★	★	★																																					
Heat resistant Alloy, Titanium Alloy	Heavy Cutting	CNMM646HX	CNMM190624-HX	.094			★	★	★																																					
		CNMM866HX	CNMM250924-HX	.094			★	★	★																																					

● = NEW

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

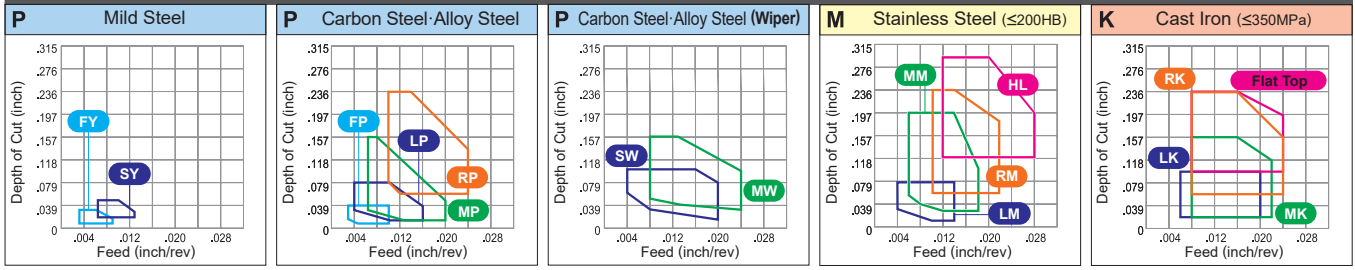
TURNING INSERTS [NEGATIVE]

55° DN TYPE INSERTS WITH HOLE

DNMG 4 3 0.5 FP
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting--- Rough Cutting--- Heavy Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)

Workpiece Material	Coated						Coated Cermet	Cermets		Carbide																																								
	NEW MC6115	NEW MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	NEW MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15										
Shape	Order Number	(ISO) Number	RE (inch)																																															
FP 	DNMG430.5FP	DNMG150402-FP	.008	●	●																						●																							
	DNMG431FP	DNMG150404-FP	.016	●	●																							●																						
	DNMG432FP	DNMG150408-FP	.031	●	●																							●																						
	DNMG433FP	DNMG150412-FP	.047	●	●																							●																						
	DNMG440.5FP	DNMG150602-FP	.008	●	●																							●																						
	DNMG441FP	DNMG150604-FP	.016	●	●																							●																						
	DNMG442FP	DNMG150608-FP	.031	●	●																							●																						
	DNMG443FP	DNMG150612-FP	.047	●	●																							●																						
FH 	DNMG430.5FH	DNMG150402-FH	.008																								●	●																						
	DNMG431FH	DNMG150404-FH	.016																								●	●																						
	DNMG432FH	DNMG150408-FH	.031																								●																							
	DNMG440.5FH	DNMG150602-FH	.008																								●																							
	DNMG441FH	DNMG150604-FH	.016																								●																							
FS 	DNMG431FS	DNMG150404-FS	.016																								●																							
	DNMG432FS	DNMG150408-FS	.031																								●																							
FS 	DNMG430.5FS	DNGG150402-FS	.008																																															
	DNMG431FS	DNGG150404-FS	.016																																															
	DNMG432FS	DNGG150408-FS	.031																																															
	DNMG441FS	DNGG150604-FS	.016																																															
	DNMG442FS	DNGG150608-FS	.031																																															
FY 	DNMG431FY	DNMG150404-FY	.016																								●	●																						
	DNMG432FY	DNMG150408-FY	.031																								●	●																						
	DNMG441FY	DNMG150604-FY	.016																								●																							
	DNMG442FY	DNMG150608-FY	.031																								●																							

● = NEW

● : USA Stock ★ : Stocked in Japan
 <10 inserts in one case>

TURNING INSERTS

NEG

WITH HOLE

C

D

R







S

T

V

W

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ○ : General Cutting (2nd recommendation) ✚ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel			M Stainless Steel			K Cast Iron			N Non-ferrous Metal			S Heat resistant Alloy, Titanium Alloy																
	Coated	Coated Cermets	Cermets	Carbide																									
	MC6115 NEW MC6125	MC6015 MC6025 MC6035	UH6400 MS6015	MC7015 MC7025 MP7035 US735	MS7025 NEW MC5105 NEW MC5115 MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005 NEW MS9025	VP05RT VP10RT VP15TF UP20M	MP3025 AP25N VP25N VP45N	NX2525 NX3035	UT120T HT105T HT110 RT9005 RT9010 MT9005 MT9015 TF-15														
Shape	Order Number	(ISO) Number	RE (inch)	Coated												Coated Cermets	Cermets	Carbide											
 Medium Cutting	MH	DNMG431MH	DNMG150404-MH	.016	●●																								
		DNMG432MH	DNMG150408-MH	.031	●●	●●																							
		DNMG433MH	DNMG150412-MH	.047	●●	●●	●●																						
		DNMG441MH	DNMG150604-MH	.016	●●	●●																							
		DNMG442MH	DNMG150608-MH	.031	●●	●●	●●																						
		DNMG443MH	DNMG150612-MH	.047	●●	●●	●●																						
Standard  Medium Cutting		DNMG431	DNMG150404	.016	●●	●●									●		★●	●											
		DNMG432	DNMG150408	.031	●●	●●	●●								●	●	★●	●											
		DNMG433	DNMG150412	.047	●●	●●	●●								●		★												
		DNMG434	DNMG150416	.063		●●	●●																						
		DNMG441	DNMG150604	.016	●●	●●											★		★										
		DNMG442	DNMG150608	.031	●●	●●	●●								●	★		★											
		DNMG443	DNMG150612	.047	●●	●●	●●								●														
		DNMG444	DNMG150616	.063		●●	●●																						
 Medium Cutting (Wiper)	*MW	DNMX432MW	DNMX150408-MW	.031		●																							
		DNMX433MW	DNMX150412-MW	.047		●					●●																		
		DNMX442MW	DNMX150608-MW	.031		●					●●																		
		DNMX443MW	DNMX150612-MW	.047		●					●●																		
R/L  Medium Cutting	R/L	DNGG431R	DNGG150404R	.016													★●	★	★										
		DNGG431L	DNGG150404L	.016													★●	★	★										
		DNGG432R	DNGG150408R	.031													★●	★											
		DNGG432L	DNGG150408L	.031													★●												
		DNGG441R	DNGG150604R	.016														★	★										
		DNGG441L	DNGG150604L	.016														★											
		DNGG442R	DNGG150608R	.031														★											
		DNGG442L	DNGG150608L	.031														★											
 Rough Cutting	RP	DNMG432RP	DNMG150408-RP	.031	●●	●●	●●																						
		DNMG433RP	DNMG150412-RP	.047	●●	●●	●●																						
		DNMG434RP	DNMG150416-RP	.063	●●	●●	●●																						
		DNMG442RP	DNMG150608-RP	.031	●●	●●	●●																						
		DNMG443RP	DNMG150612-RP	.047	●●	●●	●●																						
		DNMG444RP	DNMG150616-RP	.063	●●	●●	●●																						
 Rough Cutting	RM	DNMG432RM	DNMG150408-RM	.031				●●	●●																				
		DNMG433RM	DNMG150412-RM	.047				●●	●●																				
		DNMG434RM	DNMG150416-RM	.063				●●	●●																				
		DNMG442RM	DNMG150608-RM	.031				●●	●●																				
		DNMG443RM	DNMG150612-RM	.047				●●	●●																				
		DNMG444RM	DNMG150616-RM	.063				●●	●●																				

* Please refer to A032 before using the MW breaker (wiper insert).

● = NEW

EXTERNAL TURNING > C002
BORING > E002
CHIP BREAKER > A046
GRADES > A034
IDENTIFICATION > A002

A

TURNING INSERTS

NEG WITH HOLE

C

D

R




S

T

V

W

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⚡ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) Ⓞ : General Cutting (2nd recommendation) ⚡Ⓞ : Unstable Cutting (2nd recommendation)

Workpiece Material					Coated																						Coated	Cermet	Carbide																		
	P	M	K	N	S	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15		
	Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat resistant Alloy, Titanium Alloy	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
Shape	Order Number	(ISO) Number	RE (inch)																							Coated Cermet	Cermet																				
 Heavy Cutting	DNMM432HZ	DNMM150408-HZ	.031	●	⚡	○	Ⓞ	⚡Ⓞ	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	DNMM433HZ	DNMM150412-HZ	.047															●	●	●	●	●																									
	DNMM442HZ	DNMM150608-HZ	.031																●	●	●	●	●																								
	DNMM443HZ	DNMM150612-HZ	.047																●	●	●	●	●																								
 Flat Top	DNMA431	DNMA150404	.016															●	●	●	●	●																									
	DNMA432	DNMA150408	.031																●	●	●	●	●																								
	DNMA433	DNMA150412	.047																●	●	●	●	●																								
	DNMA441	DNMA150604	.016																●	●	●	●	●																								
	DNMA442	DNMA150608	.031																●	●	●	●	●																								
	DNMA443	DNMA150612	.047																●	●	●	●	●																								
 Flat Top	DNGA431	DNGA150404	.016																																												
	DNGA432	DNGA150408	.031																																												

● = NEW

TURNING INSERTS

NEG WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING	> C002	CHIP BREAKER	> A046
BORING	> E002	GRADES	> A034
		IDENTIFICATION	> A002

A121

TURNING INSERTS [NEGATIVE]

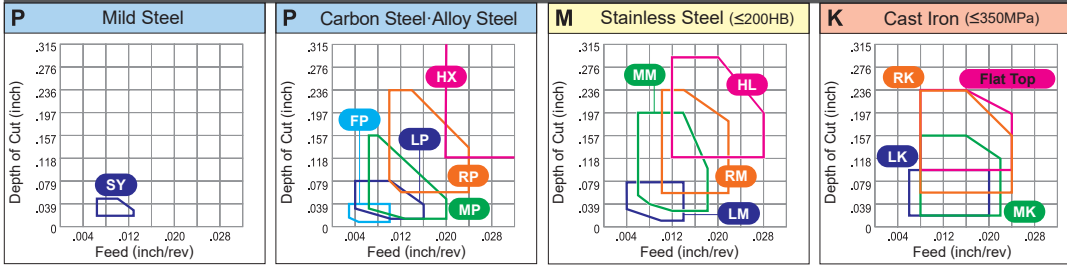
90° SN TYPE INSERTS WITH HOLE

SNMG 4 3 2 LK

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting--- Rough Cutting--- Heavy Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊗ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel				M Stainless Steel				K Cast Iron				N Non-ferrous Metal				S Heat resistant Alloy, Titanium Alloy																					
	Coated				Coated Cermet				Cermet				Carbide																									
	NEW MC6115	NEW MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	NEW MC5115	MC5125	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15
Shape	Order Number	(ISO) Number	RE (inch)																																			
LK Light Cutting	SNMG432LK	SNMG120408-LK	.031																																			
	SNMG433LK	SNMG120412-LK	.047																																			
SH Light Cutting	SNMG432SH	SNMG120408-SH	.031																																			
SA Light Cutting	SNMG431SA	SNMG120404-SA	.016																																			
	SNMG432SA	SNMG120408-SA	.031																																			
	SNMG433SA	SNMG120412-SA	.047																																			
SY Light Cutting	SNMG432SY	SNMG120408-SY	.031																																			
MP Medium Cutting	SNMG431MP	SNMG120404-MP	.016																																			
	SNMG432MP	SNMG120408-MP	.031																																			
	SNMG433MP	SNMG120412-MP	.047																																			

● = NEW

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S







T

V

W

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✦ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated												Coated Cermet		Cermet		Carbide																								
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15								
	Shape			NEW											NEW	NEW																																			
 Heavy Cutting	SNMM856HR	SNMM250724-HR	.094		★ ★																																														
	SNMM866HR	SNMM250924-HR	.094		★ ★																																														
 Heavy Cutting	SNMM644HV	SNMM190616-HV	.063		★ ★ ★																																														
	SNMM646HV	SNMM190624-HV	.094		★ ★ ★																																														
	SNMM856HV	SNMM250724-HV	.094		★ ★ ★																																														
	SNMM866HV	SNMM250924-HV	.094		★ ★ ★																																														
 Heavy Cutting	SNMM432HZ	SNMM120408-HZ	.031		★ ★																																														
	SNMM433HZ	SNMM120412-HZ	.047		★ ★																																														
	SNMM643HZ	SNMM190612-HZ	.047			★																																													
	SNMM644HZ	SNMM190616-HZ	.063			★																																													
 Heavy Cutting	SNMM543HM	SNMM150612-HM	.047		★ ★					★																																									
	SNMM643HM	SNMM190612-HM	.047		★ ★					★																																									
	SNMM644HM	SNMM190616-HM	.063		★ ★					★																																									
	SNMM646HM	SNMM190624-HM	.094		★ ★					★																																									
	SNMM856HM	SNMM250724-HM	.094		★ ★																																														
	SNMM866HM	SNMM250924-HM	.094		★ ★																																														
	SNMA321	SNMA090304	.016																																																
	SNMA322	SNMA090308	.031												● ● ● ●																																				
	SNMA432	SNMA120408	.031												★ ● ★ ● ●																																				
	SNMA433	SNMA120412	.047												● ● ● ● ●																																				
	SNMA434	SNMA120416	.063												★ ● ★ ● ●																																				
	SNMA543	SNMA150612	.047												● ● ● ● ★																																				
	SNMA544	SNMA150616	.063												★ ● ★ ● ●																																				
	SNMA643	SNMA190612	.047												● ● ● ● ●																																				
	SNGA321	SNGA090304	.016																																																
	SNGA431	SNGA120404	.016																																																
	SNGA432	SNGA120408	.031																																																

● = NEW

A

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
 BORING > E002

CHIP BREAKER > A046
 GRADES > A034
 IDENTIFICATION > A002

TURNING INSERTS [NEGATIVE]

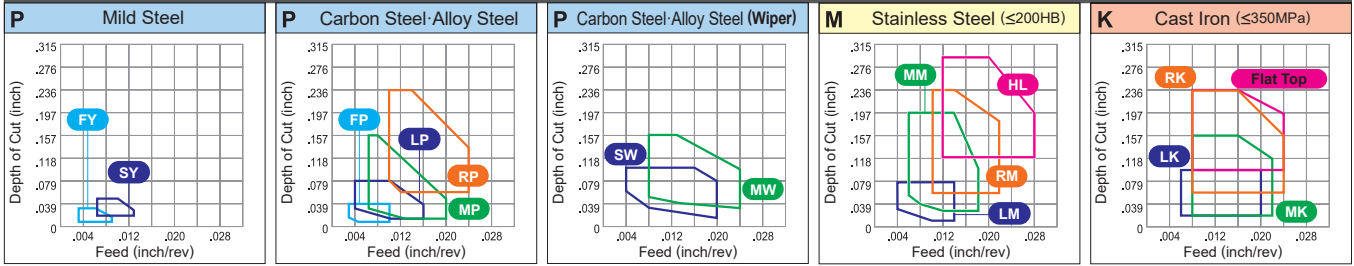
60° TN TYPE INSERTS WITH HOLE

TNMG 3 3 1 MA

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting--- Rough Cutting--- Heavy Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✖ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ◎ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	Shape	Order Number	(ISO) Number	RE (inch)	Coated										Coated Cermet	Cermet	Carbide																																									
					MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15														
					NEW	NEW										NEW	NEW								NEW																																	
Steel	MA	TNMG331MA	TNMG160404-MA	.016	●●	●●		●●	●●	●●		●●	★●	●●	●●	●●			●●																																							
		TNMG332MA	TNMG160408-MA	.031	●●	●●	●●	●●	●●		●●	●●		●●	★●	●●	●●			●●																																						
Stainless Steel	MA	TNMG333MA	TNMG160412-MA	.047	●●	●●	●●	●●	●●		●●	●●		●●	★●	●●	●●			●●																																						
		TNMG334MA	TNMG160416-MA	.063											★●	★●																																										
		TNMG432MA	TNMG220408-MA	.031	●●	●●	●●	●●	●●		●●	●●		●●	★●	●●	●●			●●																																						
		TNMG433MA	TNMG220412-MA	.047	●●	●●	●●	●●	●●		●●	●●		●●	★●	●●	●●			●●																																						
		TNMG434MA	TNMG220416-MA	.063											★●	★●				●●																																						
		TNMG542MA	TNMG270608-MA	.031	●●	●●																																																				
		TNMG543MA	TNMG270612-MA	.047	●●	●●								●●																																												
		TNMG544MA	TNMG270616-MA	.063																						●●	●●																															
		TNMG666MA	TNMG330924-MA	.094																						●●	●●																															
		Cast Iron	Standard	TNMG221	TNMG110304	.016		●●																																																		
TNMG222	TNMG110308			.031		●●																																																				
TNMG321	TNMG160304			.016		●●																																																				
TNMG322	TNMG160308			.031		●●																																																				
TNMG331	TNMG160404			.016	●●	●●	●●																							●●	●●																											
Non-ferrous Metal	Standard	TNMG332	TNMG160408	.031	●●	●●	●●	●●																																																		
		TNMG333	TNMG160412	.047	●●	●●	●●	●●																																																		
		TNMG334	TNMG160416	.063		●●	●●	●●																																																		
		TNMG431	TNMG220404	.016	●●	●●	●●	●●																																																		

● = NEW

TURNING INSERTS

NEG WITH HOLE

C
D
R
S
T
V
W

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

TURNING INSERTS [NEGATIVE]

60° TN TYPE INSERTS WITH HOLE

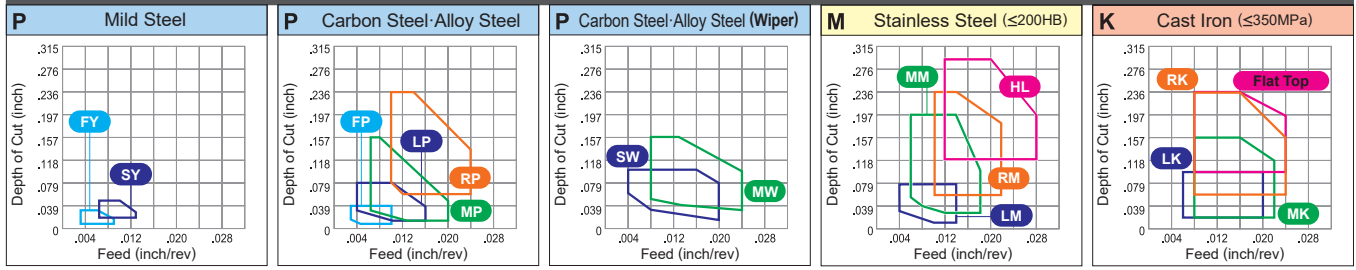
TNMG 3 3 2 RP
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

TURNING INSERTS

A

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting... Rough Cutting... Heavy Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✖ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊚ : General Cutting (2nd recommendation) ⊛ : Unstable Cutting (2nd recommendation)






Workpiece Material	Shape	Order Number	(ISO) Number	RE (inch)	Coated														Coated Cermet	Cermet	Carbide																							
					NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15
P Steel	RP	TNMG332RP	TNMG160408-RP	.031	●●●●																																							
		TNMG333RP	TNMG160412-RP	.047	●●●●																																							
		TNMG432RP	TNMG220408-RP	.031	●●●●																																							
		TNMG433RP	TNMG220412-RP	.047	●●●●																																							
		TNMG434RP	TNMG220416-RP	.063	●●●●																																							
Rough Cutting		TNMG543RP	TNMG270612-RP	.047	●●●●																																							
		TNMG544RP	TNMG270616-RP	.063	●●●●																																							
Rough Cutting	RM	TNMG332RM	TNMG160408-RM	.031				●●●																																				
		TNMG333RM	TNMG160412-RM	.047				●●●																																				
		TNMG432RM	TNMG220408-RM	.031				●●●																																				
		TNMG433RM	TNMG220412-RM	.047				●●●																																				
		TNMG434RM	TNMG220416-RM	.063				●●●																																				
Rough Cutting	RK	TNMG332RK	TNMG160408-RK	.031									★●●●																															
		TNMG333RK	TNMG160412-RK	.047									★●●●																															
		TNMG334RK	TNMG160416-RK	.063									★●●●																															
		TNMG432RK	TNMG220408-RK	.031									★●●●																															
		TNMG433RK	TNMG220412-RK	.047									★●●●																															
Rough Cutting	RS	TNMG332RS	TNMG160408-RS	.031														●●																						●				
		TNMG333RS	TNMG160412-RS	.047															●●																					●				
		TNMG432RS	TNMG220408-RS	.031															●●																					●				
		TNMG433RS	TNMG220412-RS	.047															●●																					●				

● = NEW

A136

● : USA Stock ★ : Stocked in Japan
 <10 inserts in one case>

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✦ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated												Coated Cermet		Cermet		Carbide																								
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15								
	Shape			NEW											NEW	NEW									NEW																										
 Rough Cutting	TNMG332GH	TNMG160408-GH	.031	●	●																																														
	TNMG333GH	TNMG160412-GH	.047	●	●																																														
	TNMG432GH	TNMG220408-GH	.031	●	●																																														
	TNMG433GH	TNMG220412-GH	.047	●	●																																														
	TNMG434GH	TNMG220416-GH	.063	●	●																																														
	TNMG543GH	TNMG270612-GH	.047	●	●																																														
	TNMG544GH	TNMG270616-GH	.063	●	●																																														
TNMG666GH	TNMG330924-GH	.094																																																	
 Heavy Cutting	TNMM332HL	TNMM160408-HL	.031			★	★																																												
	TNMM333HL	TNMM160412-HL	.047			★	★																																												
	TNMM432HL	TNMM220408-HL	.031			★	★																																												
	TNMM433HL	TNMM220412-HL	.047			★	★																																												
	TNMM434HL	TNMM220416-HL	.063			★	★																																												
 Heavy Cutting	TNMM332HZ	TNMM160408-HZ	.031			★	★																																												
	TNMM333HZ	TNMM160412-HZ	.047			★	★																																												
 Flat Top	TNMA331	TNMA160404	.016												★	★	★	●																																	
	TNMA332	TNMA160408	.031												★	★	★	●																																	
	TNMA333	TNMA160412	.047												★	★	★	●																																	
	TNMA334	TNMA160416	.063												★	★	★	●																																	
	TNMA335	TNMA160420	.079												★	★	★	●																																	
	TNMA431	TNMA220404	.016																																																
	TNMA432	TNMA220408	.031												★	●	★	●																																	
	TNMA433	TNMA220412	.047												★	★	★	●																																	
TNMA434	TNMA220416	.063												★	★	★	●																																		
 Flat Top	TNGA221	TNGA110304	.016																																																
	TNGA222	TNGA110308	.031																																																
	TNGA330.5	TNGA160402	.008																																																
	TNGA331	TNGA160404	.016																																																
	TNGA332	TNGA160408	.031																																																
	TNGA431	TNGA220404	.016																																																
TNGA432	TNGA220408	.031																																																	

● = NEW

A

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
 BORING > E002

CHIP BREAKER > A046
 GRADES > A034
 IDENTIFICATION > A002

TURNING INSERTS [NEGATIVE]



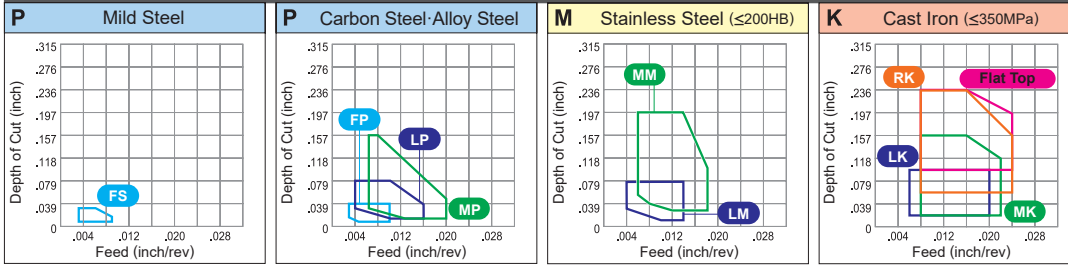
35° VN TYPE INSERTS WITH HOLE

VNMG 3 3 0.5 FP

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting--- Rough Cutting--- Heavy Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✖ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊗ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																Coated Cermet	Cermet	Carbide																								
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	MC5105	NEW MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15				
Shape	Order Number	(ISO) Number	RE (inch)																																													
FP 	VNMG330.5FP	VNMG160402-FP	.008	●●																								●	★																			
	VNMG331FP	VNMG160404-FP	.016	●●																								●	★																			
	VNMG332FP	VNMG160408-FP	.031	●●																								●	★																			
	VNMG333FP	VNMG160412-FP	.047	●●																								●	★																			
FH 	VNMG330.5FH	VNMG160402-FH	.008																								●	●●																				
	VNMG331FH	VNMG160404-FH	.016																								●★	★																				
	VNMG332FH	VNMG160408-FH	.031																								●★	★●																				
FS 	VNMG331FS	VNMG160404-FS	.016																								●	★																				
	VNMG332FS	VNMG160408-FS	.031																								●	★																				
FS 	VNMG333V5FS	VNMG1604V5-FS	.002																																													
	VNMG330.2FS	VNMG160401-FS	.004																																													
	VNMG330.5FS	VNMG160402-FS	.008																																													
	VNMG331FS	VNMG160404-FS	.016																																													
	VNMG332FS	VNMG160408-FS	.031																																													
FJ 	VNMG333V5FJ	VNMG1604V5-FJ	.002																									●																				
	VNMG330.2FJ	VNMG160401-FJ	.004																									●																				
	VNMG330.5FJ	VNMG160402-FJ	.008																									●																				
R/L-F 	VNMG330.5RF	VNMG160402R-F	.008																									●	●																			
	VNMG330.5LF	VNMG160402L-F	.008																									●	●																			
	VNMG331RF	VNMG160404R-F	.016																									●	●																			
	VNMG331LF	VNMG160404L-F	.016																									●	●																			

● = NEW

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

TURNING INSERTS

NEG

WITH HOLE

C

D

R









S

T

V

W

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✦ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated												Coated Cermet		Cermet		Carbide																								
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15								
	Shape			NEW											NEW	NEW								NEW																											
LP  Light Cutting	VNMG331LP	VNMG160404-LP	.016	●	●	●	●	●																																											
	VNMG332LP	VNMG160408-LP	.031	●	●	●	●																																												
LM  Light Cutting	VNMG331LM	VNMG160404-LM	.016							●	●	●																																							
	VNMG332LM	VNMG160408-LM	.031							●	●	●																																							
LK  Light Cutting	VNMG331LK	VNMG160404-LK	.016												●	★	●	●																																	
	VNMG332LK	VNMG160408-LK	.031												●	★	●	●																																	
LS  Light Cutting	VNMG330.5LS	VNMG160402-LS	.008																	●	●	●																													
	VNMG331LS	VNMG160404-LS	.016																		●	●	●																												
	VNMG332LS	VNMG160408-LS	.031																		●	●	●																												
LS  Light Cutting	VNMG330.5LS	VNMG160402-LS	.008																	●	●	●																													
	VNMG331LS	VNMG160404-LS	.016																		●	●	●																												
	VNMG332LS	VNMG160408-LS	.031																		●	●	●																												
SH  Light Cutting	VNMG331SH	VNMG160404-SH	.016	●	●	●																																													
	VNMG332SH	VNMG160408-SH	.031	●	●	●																																													
SA  Light Cutting	VNMG331SA	VNMG160404-SA	.016			●	●																																												
	VNMG332SA	VNMG160408-SA	.031			●	●																																												
MJ  Light Cutting	VNMG331MJ	VNMG160404-MJ	.016																		●	●	★																												
	VNMG332MJ	VNMG160408-MJ	.031																		●	●	★																												
	VNMG333MJ	VNMG160412-MJ	.047																		●	●	★																												

● = NEW

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A046
GRADES > A034
IDENTIFICATION > A002

A

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material			Coated																				Coated Cermet	Cermet	Carbide																														
	P	Steel	NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15														
	M	Stainless Steel																																																					
K	Cast Iron																																																						
N	Non-ferrous Metal																																																						
S	Heat resistant Alloy, Titanium Alloy																																																						
Shape	Order Number	(ISO) Number	RE (inch)																																																				
	VNMG331GK	VNMG160404-GK	.016																																																				
	VNMG332GK	VNMG160408-GK	.031																																																				
	VNMG333GK	VNMG160412-GK	.047																																																				
	Medium Cutting																																																						
	VNMG331GM	VNMG160404-GM	.016																																																				
	VNMG332GM	VNMG160408-GM	.031																																																				
Medium Cutting																																																							
	VNMG331MA	VNMG160404-MA	.016	●●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●																
	VNMG332MA	VNMG160408-MA	.031	●●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●															
Medium Cutting																																																							
	VNMG331MH	VNMG160404-MH	.016	●●																																																			
	VNMG332MH	VNMG160408-MH	.031	●●●●●																																																			
Medium Cutting																																																							
	VNMG331	VNMG160404	.016	●●●●●																					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	VNMG332	VNMG160408	.031	●●●●●																					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	VNMG333	VNMG160412	.047	●●●●●																					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
Medium Cutting																																																							
	VNGG331R	VNGG160404R	.016																							★●★	★●★																												
	VNGG331L	VNGG160404L	.016																							★●★	★●★																												
Medium Cutting																																																							
	VNMA331	VNMA160404	.016																							★●★●	★●★●																												
	VNMA332	VNMA160408	.031																							★●★●	★●★●																												
	VNMA333	VNMA160412	.047																							★●★●	★●★●																												
Medium Cutting																																																							
	VNGA331	VNGA160404	.016																																																★●				
	VNGA332	VNGA160408	.031																																																★●				
Medium Cutting																																																							

● = NEW

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A046
GRADES > A034
IDENTIFICATION > A002

A

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

TURNING INSERTS [NEGATIVE]

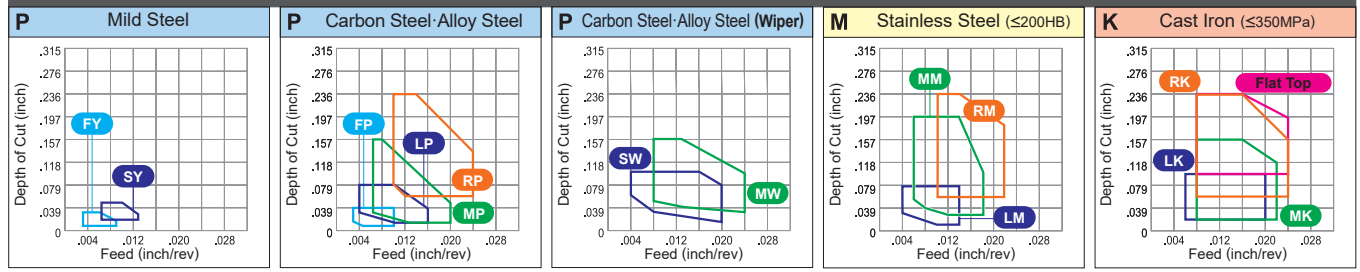
80° WN TYPE INSERTS WITH HOLE

WNMG 3 2.5 1 MP





Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting--- Rough Cutting--- Heavy Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⦿ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P	Steel	Coated																		Coated Cermet		Cermet		Carbide																															
	M	Stainless Steel																																																						
	K	Cast Iron																																																						
Shape	Order Number	(ISO) Number	RE (inch)																																																					
				NEW				NEW				NEW				NEW																																								
				MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15													
MP 	WNMG32.51MP	WNMG06T304-MP	.016	●	●	●																																																		
	WNMG32.52MP	WNMG06T308-MP	.031			●	●	●																																																
	WNMG32.53MP	WNMG06T312-MP	.047			●	●	●																																																
	WNMG331MP	WNMG060404-MP	.016			●	●	●																																																
	WNMG332MP	WNMG060408-MP	.031			●	●	●																																																
	WNMG333MP	WNMG060412-MP	.047			●	●	●																																																
	WNMG431MP	WNMG080404-MP	.016	●	●	●	●	●																																																
	WNMG432MP	WNMG080408-MP	.031	●	●	●	●	●																																																
WNMG433MP	WNMG080412-MP	.047	●	●	●	●	●																																																	
WNMG434MP	WNMG080416-MP	.063	●	●	●	●	●																																																	
MM 	WNMG332MM	WNMG060408-MM	.031							●	●	●																																												
	WNMG333MM	WNMG060412-MM	.047							●	●	●																																												
	WNMG432MM	WNMG080408-MM	.031							●	●	●																																												
	WNMG433MM	WNMG080412-MM	.047							●	●	●																																												
MK 	WNMG431MK	WNMG080404-MK	.016													●	●	●	●																																					
	WNMG432MK	WNMG080408-MK	.031													●	●	●	●																																					
	WNMG433MK	WNMG080412-MK	.047													●	●	●	●																																					
	WNMG434MK	WNMG080416-MK	.063													●	●	●	●																																					
*MS 	WNMG431MS	WNMG080404-MS	.016																		●	●	●																																	
	WNMG432MS	WNMG080408-MS	.031																		●	●	●	●																																
	WNMG433MS	WNMG080412-MS	.047																		●	●	●	●																																

* New design MS breaker : MP9005, MP9015, MP9025, MT9015

● = NEW

TURNING INSERTS [NEGATIVE]



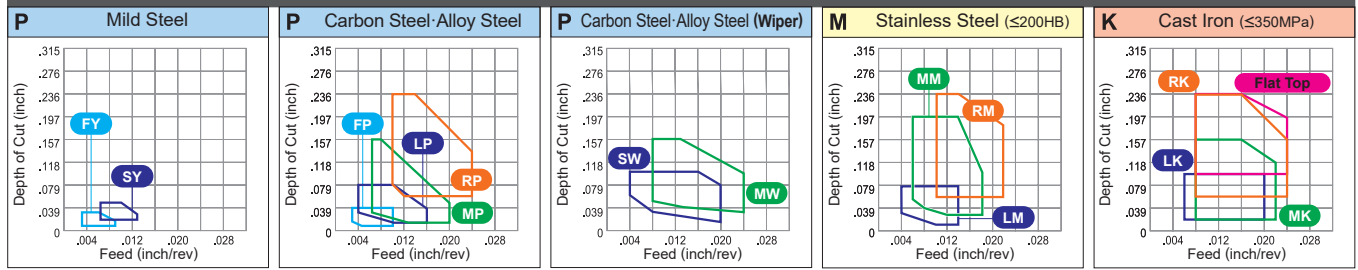
WN TYPE INSERTS WITH HOLE

WNMG 3 3 2 MW

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting... Rough Cutting... Heavy Cutting...






● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	Coated													Coated Cermet		Cermet		Carbide																																				
	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	MC5105	NEW MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15									
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
*MW Medium Cutting (Wiper)	WNMG332MW	WNMG060408-MW	.031	●	●																																																	
	WNMG333MW	WNMG060412-MW	.047	●	●																																																	
	WNMG432MW	WNMG080408-MW	.031	●	●	●	●																																															
	WNMG433MW	WNMG080412-MW	.047	●	●	●	●																																															
RP Rough Cutting	WNMG432RP	WNMG080408-RP	.031	●	●	●	●																																															
	WNMG433RP	WNMG080412-RP	.047	●	●	●	●																																															
RM Rough Cutting	WNMG332RM	WNMG060408-RM	.031					●	●	●																																												
	WNMG333RM	WNMG060412-RM	.047					●	●	●																																												
	WNMG432RM	WNMG080408-RM	.031					●	●	●																																												
	WNMG433RM	WNMG080412-RM	.047					●	●	●																																												
RK Rough Cutting	WNMG432RK	WNMG080408-RK	.031															●	●	●	●																																	
	WNMG433RK	WNMG080412-RK	.047																●	●	★	●	●																															
	WNMG434RK	WNMG080416-RK	.063																★	●	★	●																																
RS Rough Cutting	WNMG432RS	WNMG080408-RS	.031																					●	●																													
	WNMG433RS	WNMG080412-RS	.047																					●	●																													
	WNMG434RS	WNMG080416-RS	.063																					●	●																													
	WNMG543RS	WNMG100612-RS	.047																					●	●																													

* Please refer to A032 before using the MW breaker (wiper insert).

● = NEW

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)

Workpiece Material	P	Steel																															Shape	Order Number	(ISO) Number	RE (inch)	Coated												Coated Cermet	Cermet	Carbide			
	M	Stainless Steel	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N					NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15								
S	Heat resistant Alloy, Titanium Alloy																																																					
GH  Rough Cutting	WNMG432GH	WNMG080408-GH	.031	●	●									●																																								
	WNMG433GH	WNMG080412-GH	.047	●	●									●																																								
GJ  Rough Cutting	WNMG432GJ	WNMG080408-GJ	.031																		●				●																●													
	WNMG433GJ	WNMG080412-GJ	.047																			●			●																●													
	WNMG434GJ	WNMG080416-GJ	.063																			●			●																●													
	WNMG543GJ	WNMG100612-GJ	.047																						●																●													
Flat Top 	WNMA332	WNMA060408	.031													★	★	★	★	●																																		
	WNMA333	WNMA060412	.047														●	★	★	★	●																																	
	WNMA431	WNMA080404	.016														★	★	★	●																				★														
	WNMA432	WNMA080408	.031														●	●	●	●	●																					★												
	WNMA433	WNMA080412	.047														●	●	●	●	●																																	
	WNMA434	WNMA080416	.063														★	●	★	●	●																																	

● = NEW

A

TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING	> C002	CHIP BREAKER	> A046
BORING	> E002	GRADES	> A034
		IDENTIFICATION	> A002

TURNING INSERTS [NEGATIVE]

55° KN TYPE INSERTS WITHOUT HOLE

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)

TURNING INSERTS

A

NEG

Workpiece Material					Coated																				Coated Cermet	Cermet	Carbide																									
	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UTi20T	HTi05T	HTi10	RT9005	RT9010	MT9005	MT9015	TF15							
						●	⊕	○	⊕	⊕	●	●	●	⊕	⊕	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○				
	Order Number	(ISO) Number	RE (inch)																																																	
	KNUX160405RM1	KNUX160405R-M1	.020																																																	

-
-
-
-
-
-
-
-

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

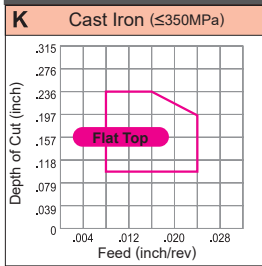
80° CN TYPE INSERTS WITHOUT HOLE

CNMN 4 3 2
 Size Thickness Corner Radius

*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet		Cermet	Carbide															
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	VP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
Flat Top	CNMN432	CNMN120408	.031																																				
	CNMN433	CNMN120412	.047																																				
	CNMN434	CNMN120416	.063																																				

● = NEW

A

TURNING INSERTS

NEG

WITHOUT HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > -
 BORING > -

CHIP BREAKER > A078
 GRADES > A034
 IDENTIFICATION > A002



60°

TN TYPE INSERTS WITHOUT HOLE

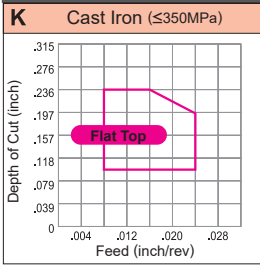
TNMN 3 2 2

Size Thickness Corner Radius

*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Heavy Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated													Coated Cermet		Cermet	Carbide																	
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
Flat Top	TNMN322	TNMN160308	.031																																				
	TNMN332	TNMN160408	.031																																				
	TNMN333	TNMN160412	.047																																				
	TNMN334	TNMN160416	.063																																				
	TNMN335	TNMN160420	.079																																				
	TNMN432	TNMN220408	.031																																				
	TNMN433	TNMN220412	.047																																				
Flat Top	TNG221	TNGN110304	.016																																				
	TNG222	TNGN110308	.031																																				
	TNG331	TNGN160404	.016																																				
	TNG332	TNGN160408	.031																																				

● = NEW

A

TURNING INSERTS

NEG

WITHOUT HOLE



EXTERNAL TURNING > -
BORING > -

CHIP BREAKER > A078
GRADES > A034
IDENTIFICATION > A002

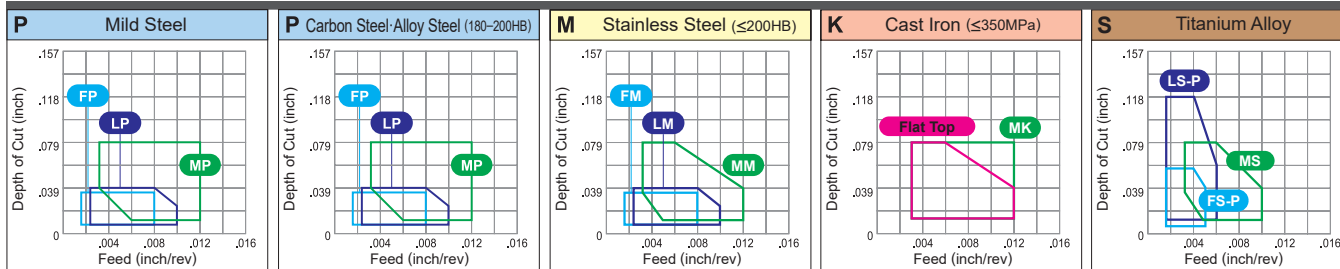
TURNING INSERTS [POSITIVE]

80° CC TYPE INSERTS WITH HOLE

CCMT **2** **1.5** **0.5** **FP**
Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting---



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ○ : Stable Cutting (2nd recommendation)
 ● : General Cutting (1st recommendation) ○ : General Cutting (2nd recommendation)
 ✖ : Unstable Cutting (1st recommendation) ✖ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated													Coated Cermet	Cermet	Carbide																																			
	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○																															
Shape	Order Number	(ISO) Number	RE (inch)	NEW MC6115	NEW MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	NEW MC5105	NEW MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15													
FP 	CCMT21.50.5FP	CCMT060202-FP	.008	●	●	●	●																																																	
	CCMT21.51FP	CCMT060204-FP	.016	●	●	●	●																																																	
	CCMT32.50.5FP	CCMT09T302-FP	.008	●	●	●	●																																																	
Finish Cutting	CCMT32.51FP	CCMT09T304-FP	.016	●	●	●	●																																																	
	CCMT32.52FP	CCMT09T308-FP	.031	●	●	●	●																																																	
FM 	CCMT21.50.5FM	CCMT060202-FM	.008																																																					
	CCMT21.51FM	CCMT060204-FM	.016																																																					
	CCMT32.50.5FM	CCMT09T302-FM	.008																																																					
Finish Cutting	CCMT32.51FM	CCMT09T304-FM	.016																																																					
	CCMT32.52FM	CCMT09T308-FM	.031																																																					
FS 	CCGT21.50.2MFS	CCGT060201M-FS	.004*																																																					
	CCGT21.50.5MFS	CCGT060202M-FS	.008*																																																					
	CCGT32.50.2MFS	CCGT09T301M-FS	.004*																																																					
Finish Cutting	CCGT32.51MFS	CCGT09T304M-FS	.016*																																																					
FS-P 	CCGT21.50.2MFS-P	CCGT060201M-FS-P	.004*																																																					
	CCGT21.50.5MFS-P	CCGT060202M-FS-P	.008*																																																					
	CCGT32.50.2MFS-P	CCGT09T301M-FS-P	.004*																																																					
Finish Cutting	CCGT32.51MFS-P	CCGT09T304M-FS-P	.016*																																																					
FV 	CCMT21.50.5FV	CCMT060202-FV	.008	●																																																				
	CCMT21.51FV	CCMT060204-FV	.016	●																																																				
	CCMT32.50.5FV	CCMT09T302-FV	.008	★																																																				
Finish Cutting	CCMT32.51FV	CCMT09T304-FV	.016	●																																																				
	CCMT32.52FV	CCMT09T308-FV	.031	●																																																				

* Indicates the maximum value of the corner R. For more details, see page D003.

● = NEW

TURNING INSERTS [POSITIVE]

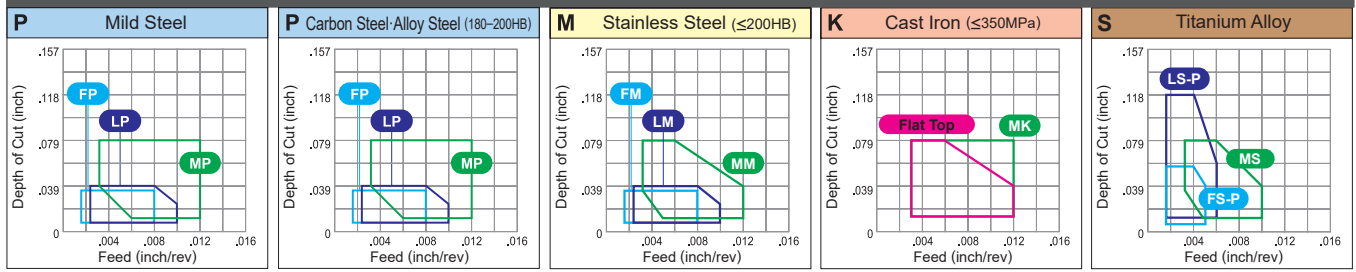
80° CC TYPE INSERTS WITH HOLE

CCGH 2 1.5 0.5 R F

Size Thickness Corner Radius R/L Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊖ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel				M Stainless Steel				K Cast Iron				N Non-ferrous Metal				S Heat resistant Alloy, Titanium Alloy																			
	Coated				Coated				Coated				Cement				Carbide																			
	NEW MC6115	NEW MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	NEW MC5115	MC5125	MC5005	MP9015	MP9025	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15
Shape	Order Number	(ISO) Number	RE (inch)																																	
R/L-F	CCGH21.50.5RF	CCGH060202R-F	.008																																	
	CCGH21.50.5LF	CCGH060202L-F	.008																																	
	CCGH21.51RF	CCGH060204R-F	.016																																	
	CCGH21.51LF	CCGH060204L-F	.016																																	
	CCGH21.50.5MRF	CCGH060202MR-F	.008*																																	
	CCGH21.50.5MLF	CCGH060202ML-F	.008*																																	
	CCGH21.51MRF	CCGH060204MR-F	.016*																																	
	CCGH21.51MLF	CCGH060204ML-F	.016*																																	
LP	NEW CCMT21.50.5LP	CCMT060202-LP	.008																																	
	CCMT21.51LP	CCMT060204-LP	.016																																	
	CCMT21.52LP	CCMT060208-LP	.031																																	
	CCMT32.51LP	CCMT09T304-LP	.016																																	
Light Cutting	CCMT32.52LP	CCMT09T308-LP	.031																																	
	CCMT21.51LM	CCMT060204-LM	.016																																	
	CCMT21.52LM	CCMT060208-LM	.031																																	
	CCMT32.51LM	CCMT09T304-LM	.016																																	
Light Cutting	CCMT32.52LM	CCMT09T308-LM	.031																																	
	CCMT21.50.5LS	CCMT060202-LS	.008																																	
	CCMT21.51LS	CCMT060204-LS	.016																																	
	CCMT32.50.5LS	CCMT09T302-LS	.008																																	
Light Cutting	CCMT32.51LS	CCMT09T304-LS	.016																																	
	CCMT32.52LS	CCMT09T308-LS	.031																																	
	CCGT21.50.2MLS	CCGT060201M-LS	.004*																																	
	CCGT21.50.5MLS	CCGT060202M-LS	.008*																																	
Light Cutting	CCGT32.50.2MLS	CCGT09T301M-LS	.004*																																	
	CCGT32.50.5MLS	CCGT09T302M-LS	.008*																																	
	CCGT32.51MLS	CCGT09T304M-LS	.016*																																	

* Indicates the maximum value of the corner R. For more details, see page D003.

● = NEW

TURNING INSERTS

POST 7°

WITH HOLE

C

D

R

S






T

V

W

X

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✖ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ✖ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated																Coated Cermet		Cermet		Carbide																			
	P	M	K	N	S	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15					
	Order Number	(ISO) Number	RE (inch)	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW					
 Light Cutting	CCGT21.50.2MLS-P	CCGT060201M-LS-P	.004*2																																															
	CCGT21.50.5MLS-P	CCGT060202M-LS-P	.008*2																																															
	CCGT32.50.2MLS-P	CCGT09T301M-LS-P	.004*2																																															
	CCGT32.50.5MLS-P	CCGT09T302M-LS-P	.008*2																																															
	CCGT32.51MLS-P	CCGT09T304M-LS-P	.016*2																																															
 Light Cutting	CCGT21.51MJ	CCGT060204-MJ	.016																																															
	CCGT32.52MJ	CCGT09T308-MJ	.031																																															
 Light Cutting	CCGT21.51MJ-P	CCGT060204-MJ-P	.016																																															
	CCGT32.52MJ-P	CCGT09T308-MJ-P	.031																																															
 Light Cutting	CCMH21.50.5SV	CCMH060202-SV	.008																																															
	CCMH21.51SV	CCMH060204-SV	.016																																															
 Light Cutting (Wiper)	*1 CCMT21.50.5SW	CCMT060202-SW	.008	●	★	●	●																																											
	CCMT21.51SW	CCMT060204-SW	.016	★	★	●	●																																											
	CCMT32.50.5SW	CCMT09T302-SW	.008	●	★	●	●																																											
	CCMT32.51SW	CCMT09T304-SW	.016	●	★	●	●																																											

*1 Please refer to page A032 before using the SW breaker (wiper insert). ● = NEW
*2 Indicates the maximum value of the corner R. For more details, see page D003.

A

TURNING INSERTS

POSI
7°
WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002 CHIP BREAKER > A064
BORING > E002 GRADES > A034
IDENTIFICATION > A002

- : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✦ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) Ⓞ : General Cutting (2nd recommendation) ✨ : Unstable Cutting (2nd recommendation)

Workpiece Material	P	Steel	● ✦ Ⓞ ✨	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨	●	○	Ⓞ	✨																
	M	Stainless Steel	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○															
Shape	Order Number	(ISO) Number	RE (inch)	Coated															Coated Cermet		Cermet	Carbide																												
				NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15							
	MP	NEW CCMT21.50.5MP	CCMT060202-MP	.008	●	●																																												
		CCMT21.51MP	CCMT060204-MP	.016	●	●	●																						●																					
		CCMT21.52MP	CCMT060208-MP	.031	●	●	●																						●																					
		NEW CCMT2.520.5MP	CCMT080302-MP	.008	★	★																																												
		NEW CCMT2.521MP	CCMT080304-MP	.016	★	★																																												
		NEW CCMT2.522MP	CCMT080308-MP	.031	★	★																																												
		NEW CCMT32.50.5MP	CCMT09T302-MP	.008	●	●																																												
		CCMT32.51MP	CCMT09T304-MP	.016	●	●	●																							●																				
		CCMT32.52MP	CCMT09T308-MP	.031	●	●	●																							●																				
		CCMT431MP	CCMT120404-MP	.016	●	●	●																							●																				
		CCMT432MP	CCMT120408-MP	.031	●	●	●																							●																				
		CCMT433MP	CCMT120412-MP	.047	★	★	●																						●																					
	MM	CCMT21.51MM	CCMT060204-MM	.016							●	●																																						
		CCMT21.52MM	CCMT060208-MM	.031							●	●																																						
		CCMT32.51MM	CCMT09T304-MM	.016							●	●																																						
		CCMT32.52MM	CCMT09T308-MM	.031							●	●																																						
		CCMT431MM	CCMT120404-MM	.016							●	●																																						
		CCMT432MM	CCMT120408-MM	.031							●	●																																						
	MK	CCMT21.51MK	CCMT060204-MK	.016																																														
		CCMT21.52MK	CCMT060208-MK	.031																																														
		CCMT32.51MK	CCMT09T304-MK	.016																																														
		CCMT32.52MK	CCMT09T308-MK	.031																																														
		CCMT431MK	CCMT120404-MK	.016																																														
		CCMT432MK	CCMT120408-MK	.031																																														
	MS	CCMT21.50.5MS	CCMT060202-MS	.008																																														
		CCMT21.51MS	CCMT060204-MS	.016																																														
		CCMT21.52MS	CCMT060208-MS	.031																																														
		CCMT32.50.5MS	CCMT09T302-MS	.008																																														
		CCMT32.51MS	CCMT09T304-MS	.016																																														
		CCMT32.52MS	CCMT09T308-MS	.031																																														
		CCMT431MS	CCMT120404-MS	.016																																														
		CCMT432MS	CCMT120408-MS	.031																																														
CCMT433MS	CCMT120412-MS	.047																																																

● = NEW

A

TURNING INSERTS

POSI
7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A064
GRADES > A034
IDENTIFICATION > A002

TURNING INSERTS [POSITIVE]

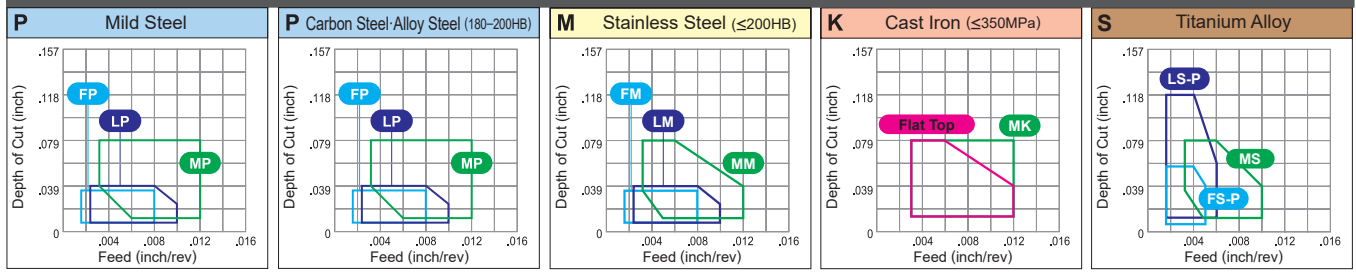
80° CC TYPE INSERTS WITH HOLE

CCMT 2 1.5 0.5

Size Thickness Corner Radius
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ○ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)




Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated												Coated Cermet	Cermet	Carbide																															
	● ⊕ ○	● ⊕ ○	● ⊕ ○	● ⊕ ○	● ⊕ ○	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15							
Shape	Order Number	(ISO) Number	RE (inch)																																																
Standard	CCMT21.50.5	CCMT060202	.008																																																
	CCMT21.51	CCMT060204	.016																																																
	CCMT21.52	CCMT060208	.031																																																
	CCMT2.521	CCMT080304	.016																																																
	CCMT2.522	CCMT080308	.031																																																
	CCMT32.50.5	CCMT09T302	.008																																																
	CCMT32.51	CCMT09T304	.016																																																
	CCMT32.52	CCMT09T308	.031																																																
	CCMT431	CCMT120404	.016																																																
	CCMT432	CCMT120408	.031																																																
CCMT433	CCMT120412	.047																																																	
Medium Cutting	MV	CCMH21.50.5MV	CCMH060202-MV	.008		★																																													
		CCMH21.51MV	CCMH060204-MV	.016		★																																													
Medium Cutting (Wiper)	*MW	CCMT21.51MW	CCMT060204-MW	.016		★	★																																												
		CCMT21.52MW	CCMT060208-MW	.031		★	★																																												
		CCMT32.51MW	CCMT09T304-MW	.016		★	★																																												
		CCMT32.52MW	CCMT09T308-MW	.031		★	★																																												
		CCMT431MW	CCMT120404-MW	.016		★	★																																												
	CCMT432MW	CCMT120408-MW	.031		★	★																																													

* Please refer to A032 before using the MW breaker (wiper insert).

● : USA Stock ★ : Stocked in Japan <10 inserts in one case>



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊕ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel				M Stainless Steel				K Cast Iron				N Non-ferrous Metal				S Heat resistant Alloy, Titanium Alloy				Coated										Coated Cermet		Cermet	Carbide																					
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15												
SMG  Medium Cutting	CCGT21.50.2MSMG	CCGT060201M-SMG	.004*																																																				
	CCGT21.50.5MSMG	CCGT060202M-SMG	.008*																																																				
	CCGT21.51MSMG	CCGT060204M-SMG	.016*																																																				
	CCGT32.50.2MSMG	CCGT09T301M-SMG	.004*																																																				
	CCGT32.50.5MSMG	CCGT09T302M-SMG	.008*																																																				
	CCGT32.51MSMG	CCGT09T304M-SMG	.016*																																																				
Flat Top 	CCMW21.50.5	CCMW060202	.008																																																				
	CCMW21.51	CCMW060204	.016																																																				
	CCMW21.52	CCMW060208	.031																																																				
	CCMW32.51	CCMW09T304	.016																																																				
	CCMW32.52	CCMW09T308	.031																																																				
	CCMW32.53	CCMW09T312	.047																																																				
	CCMW431	CCMW120404	.016																																																				
	CCMW432	CCMW120408	.031																																																				
	CCMW433	CCMW120412	.047																																																				
Flat Top 	CCGW21.5V0	CCGW060200	0																																																				
	CCGW21.5V5	CCGW0602V5	.002																																																				
	CCGW21.50.5	CCGW060202	.008																																																				
	CCGW21.51	CCGW060204	.016																																																				
	CCGW21.52	CCGW060208	.031																																																				
	CCGW32.5V0	CCGW09T300	0																																																				
	CCGW32.5V5	CCGW09T3V5	.002																																																				
	CCGW21.50.5E	CCGW060202E	.008																																																				
	CCGW21.51E	CCGW060204E	.016																																																				
	CCGW21.52E	CCGW060208E	.031																																																				

* Indicates the maximum value of the corner R. For more details, see page D003.

A

TURNING INSERTS

POSI
7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A064
GRADES > A034
IDENTIFICATION > A002

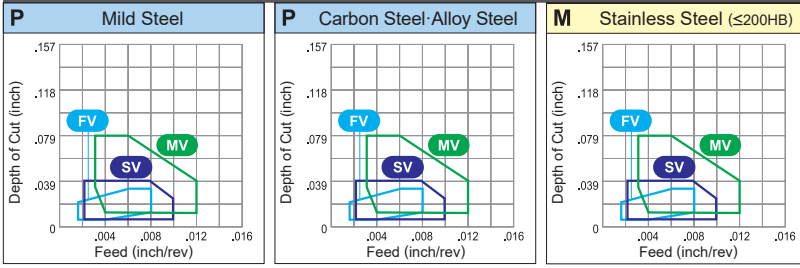
TURNING INSERTS [POSITIVE]

80° CP TYPE INSERTS WITH HOLE

CPMH 2.5 1.5 0.5 FV
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated												Coated Cermet	Cermet	Carbide																			
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
FV Finish Cutting	CPMH2.51.50.5FV	CPMH080202-FV	.008	★																																			
	CPMH2.51.51FV	CPMH080204-FV	.016	★																																			
	CPMH320.5FV	CPMH090302-FV	.008	★																																			
	CPMH321FV	CPMH090304-FV	.016	★																																			
	CPMH322FV	CPMH090308-FV	.031	★																																			
Standard Finish Cutting	CPGT2.51.50.5	CPGT080202	.008																																				
	CPGT2.51.51	CPGT080204	.016																																				
	CPGT320.5	CPGT090302	.008																																				
	CPGT321	CPGT090304	.016																																				
R/L-F Finish Cutting	CPMH2.51.51RF	CPMH080204R-F	.016																																				
	CPMH2.51.51LF	CPMH080204L-F	.016																																				
	CPMH321RF	CPMH090304R-F	.016																																				
	CPMH321LF	CPMH090304L-F	.016																																				
R/L-F Finish Cutting	CPGT2.51.51RF	CPGT080204R-F	.016																																				
	CPGT2.51.51LF	CPGT080204L-F	.016																																				
	CPGT320.5RF	CPGT090302R-F	.008																																				
	CPGT320.5LF	CPGT090302L-F	.008																																				
	CPGT321RF	CPGT090304R-F	.016																																				
	CPGT321LF	CPGT090304L-F	.016																																				
SQ Finish Cutting	CPMT21.50.5SQ	CPMT060202-SQ	.008																																				
	CPMT21.51SQ	CPMT060204-SQ	.016																																				
	CPMT21.52SQ	CPMT060208-SQ	.031																																				
	CPMT32.50.5SQ	CPMT09T302-SQ	.008																																				
	CPMT32.51SQ	CPMT09T304-SQ	.016																																				
	CPMT32.52SQ	CPMT09T308-SQ	.031																																				

TURNING INSERTS

POST 11°

WITH HOLE

C

D

R

S

T

V

W

X

TURNING INSERTS [POSITIVE]

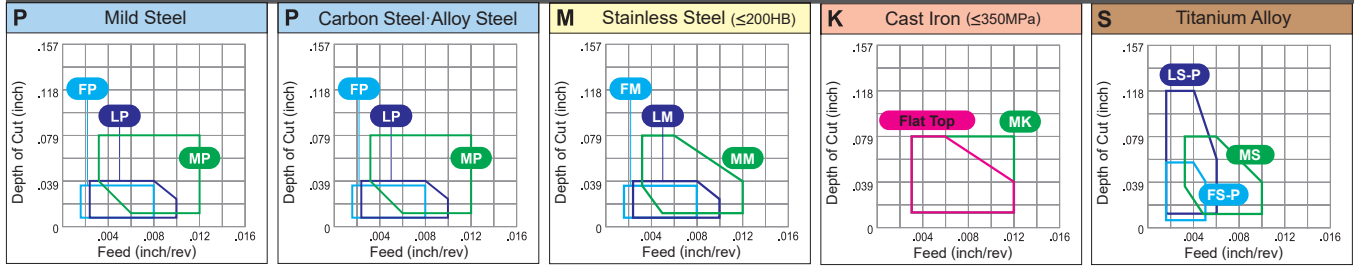


DC TYPE INSERTS WITH HOLE

DCMT 2 1.5 0.5 FP
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting---



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Shape	Order Number	(ISO) Number	RE (inch)	Coated											Coated Cermet	Cermets		Carbide																																
				MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15								
				Steel				Stainless Steel											Cast Iron	Non-ferrous Metal	Heat resistant Alloy, Titanium Alloy																													
FP 	DCMT21.50.5FP	DCMT070202-FP	.008	●●●●																						●																								
Finish Cutting	DCMT21.51FP	DCMT070204-FP	.016	●●●●																							●																							
	DCMT32.50.5FP	DCMT11T302-FP	.008	●●●●																							●																							
Finish Cutting	DCMT32.51FP	DCMT11T304-FP	.016	●●●●																							●																							
	DCMT32.52FP	DCMT11T308-FP	.031	●●●●																							●																							
FM 	DCMT21.50.5FM	DCMT070202-FM	.008																							●																								
Finish Cutting	DCMT21.51FM	DCMT070204-FM	.016																							●																								
	DCMT32.50.5FM	DCMT11T302-FM	.008																							●																								
	DCMT32.51FM	DCMT11T304-FM	.016																							●																								
	DCMT32.52FM	DCMT11T308-FM	.031																							●																								
FS 	DCGT21.50.2MFS	DCGT070201M-FS	.004*																							●●●																								
Finish Cutting	DCGT21.50.5MFS	DCGT070202M-FS	.008*																							●●●																								
	NEW DCGT21.51MFS	DCGT070204M-FS	.016*																							●●●																								
	DCGT32.50.2MFS	DCGT11T301M-FS	.004*																							●●●																								
	DCGT32.50.5MFS	DCGT11T302M-FS	.008*																							●●●																								
	NEW DCGT32.51MFS	DCGT11T304M-FS	.016*																							●●●																								
FS-P 	DCGT21.50.2MFS-P	DCGT070201M-FS-P	.004*																								●																							
Finish Cutting	DCGT21.50.5MFS-P	DCGT070202M-FS-P	.008*																							●																								
	NEW DCGT21.51MFS-P	DCGT070204M-FS-P	.016*																						●																									
	DCGT32.50.2MFS-P	DCGT11T301M-FS-P	.004*																						●																									
	DCGT32.50.5MFS-P	DCGT11T302M-FS-P	.008*																						●																									
	NEW DCGT32.51MFS-P	DCGT11T304M-FS-P	.016*																						●																									
FV 	DCMT21.50.5FV	DCMT070202-FV	.008	★ ★																						●																								
Finish Cutting	DCMT21.51FV	DCMT070204-FV	.016	★ ●																					●																									
	DCMT21.52FV	DCMT070208-FV	.031	★																					●																									
	DCMT32.50.5FV	DCMT11T302-FV	.008	★																						●																								
	DCMT32.51FV	DCMT11T304-FV	.016	★ ●																						●																								
	DCMT32.52FV	DCMT11T308-FV	.031	★ ●																						●																								

* Indicates the maximum value of the corner R. For more details, see page D003.

● = NEW

TURNING INSERTS [POSITIVE]

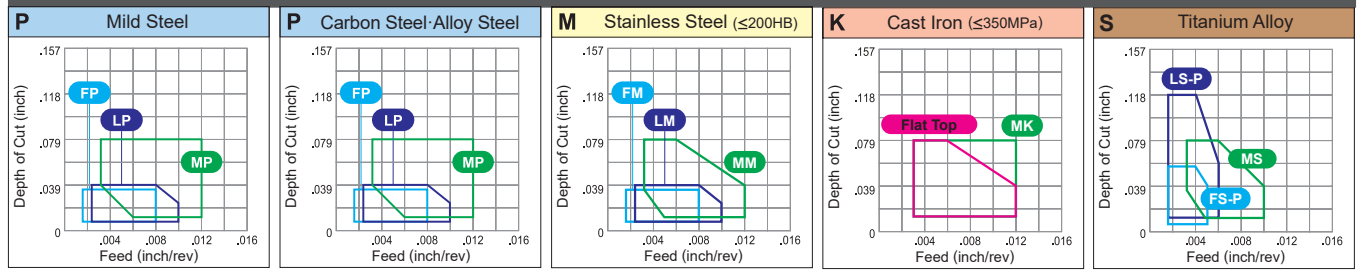
55° DC TYPE INSERTS WITH HOLE

DCMT 2 1.5 1 MK

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting---



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ○ : Stable Cutting (2nd recommendation)
● : General Cutting (1st recommendation) ○ : General Cutting (2nd recommendation)
⊕ : Unstable Cutting (1st recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																Coated Cermet		Cermet	Carbide														
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
 Medium Cutting	DCMT21.51MK	DCMT070204-MK	.016																																				
	DCMT21.52MK	DCMT070208-MK	.031																																				
	DCMT32.51MK	DCMT11T304-MK	.016																																				
	DCMT32.52MK	DCMT11T308-MK	.031																																				
	DCMT431MK	DCMT150404-MK	.016																																				
	DCMT432MK	DCMT150408-MK	.031																																				
 Medium Cutting	DCMT21.51MS	DCMT070204-MS	.016																																				
	DCMT21.52MS	DCMT070208-MS	.031																																				
	DCMT32.51MS	DCMT11T304-MS	.016																																				
	DCMT32.52MS	DCMT11T308-MS	.031																																				
	DCMT32.53MS	DCMT11T312-MS	.047																																				
Standard Medium Cutting	DCMT21.50.5	DCMT070202	.008																																				
	DCMT21.51	DCMT070204	.016																																				
	DCMT21.52	DCMT070208	.031																																				
	DCMT32.50.5	DCMT11T302	.008																																				
	DCMT32.51	DCMT11T304	.016																																				
	DCMT32.52	DCMT11T308	.031																																				
	DCMT431	DCMT150404	.016																																				
DCMT432	DCMT150408	.031																																					
 Medium Cutting	DCMT21.50.5MV	DCMT070202-MV	.008																																				
	DCMT21.51MV	DCMT070204-MV	.016																																				
	DCMT21.52MV	DCMT070208-MV	.031																																				
	DCMT32.50.5MV	DCMT11T302-MV	.008																																				
	DCMT32.51MV	DCMT11T304-MV	.016																																				
	DCMT32.52MV	DCMT11T308-MV	.031																																				

● = NEW

TURNING INSERTS

WITH HOLE

C

D

R

S

T

V

W

X

TURNING INSERTS [POSITIVE]



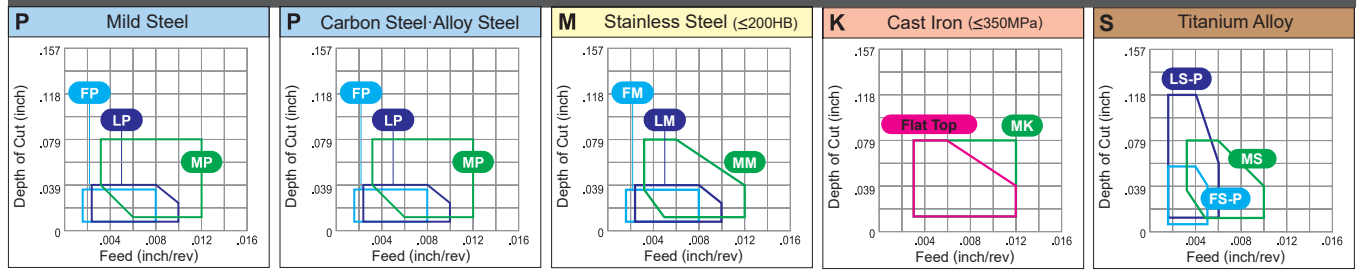
DC TYPE INSERTS WITH HOLE

DCET 2 1.5 V0 R SN

Size Thickness Corner Radius R/L Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting---



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet	Cermet	Carbide																
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
R/L-SN	DCET21.5V0RSN	DCET070200R-SN	.000*2																																				
	DCET21.5V0LSN	DCET070200L-SN	.000*2																																				
	DCET21.5V3RSN	DCET0702V3R-SN	.001*2																																				
	DCET21.5V3LSN	DCET0702V3L-SN	.001*2																																				
	DCET21.50.2RSN	DCET070201R-SN	.004*2																																				
	DCET21.50.2LSN	DCET070201L-SN	.004*2																																				
	DCET21.50.5RSN	DCET070202R-SN	.008*2																																				
	DCET21.50.5LSN	DCET070202L-SN	.008*2																																				
	DCET21.51RSN	DCET070204R-SN	.016*2																																				
	DCET21.51LSN	DCET070204L-SN	.016*2																																				
	DCET32.5V0RSN	DCET11T300R-SN	0*2																																				
	DCET32.5V0LSN	DCET11T300L-SN	0*2																																				
	DCET32.5V3RSN	DCET11T3V3R-SN	.001*2																																				
	DCET32.5V3LSN	DCET11T3V3L-SN	.001*2																																				
	DCET32.50.2RSN	DCET11T301R-SN	.004*2																																				
	DCET32.50.2LSN	DCET11T301L-SN	.004*2																																				
	DCET32.50.5RSN	DCET11T302R-SN	.008*2																																				
	DCET32.50.5LSN	DCET11T302L-SN	.008*2																																				
	DCET32.51RSN	DCET11T304R-SN	.016*2																																				
	DCET32.51LSN	DCET11T304L-SN	.016*2																																				
*1R/LW-SN	DCET21.5V3RWSN	DCET0702V3RW-SN	.001*2																																				
	DCET21.5V3LWSN	DCET0702V3LW-SN	.001*2																																				
	DCET32.5V3RWSN	DCET11T3V3RW-SN	.001*2																																				
	DCET32.5V3LWSN	DCET11T3V3LW-SN	.001*2																																				

*1 Please refer to page A032 before using the R/LW SN breaker (wiper insert).
*2 Indicates the maximum value of the corner R. For more details, see page D003.

TURNING INSERTS

POST 7° WITH HOLE

C

D

R

S

T

V

W

X

TURNING INSERTS [POSITIVE]



55° DE TYPE INSERTS WITH HOLE

DEGX 4 3 0.5 R F
 Size Thickness Corner Radius R/L Chip Breaker
 *Please refer to page A002.

TURNING INSERTS

A

POST 20°

WITH HOLE

C

R

S

T

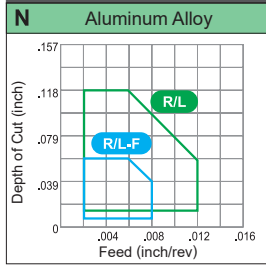
V

W

X

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- R/L-F Medium Cutting--- R/L



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P	Steel			● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																																		
	M	Stainless Steel			● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																																		
	K	Cast Iron			● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																																		
		N	Non-ferrous Metal			● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																																	
		S	Heat resistant Alloy, Titanium Alloy			● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																																	
Shape	Order Number	(ISO) Number	RE (inch)	Coated																Coated Cermet			Cermet	Carbide																															
				NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	VP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15												
R/L-F 	DEGX430.5RF	DEGX150402R-F	.008	● ⊕ ○ ⊙ ⊗ ⊚ ⊛ ⊜ ⊝ ⊞ ⊟ ⊠ ⊡ ⊢ ⊣ ⊤ ⊥ ⊦ ⊧ ⊨ ⊩ ⊪ ⊫ ⊬ ⊭ ⊮ ⊯ ⊰ ⊱ ⊲ ⊳ ⊴ ⊵ ⊶ ⊷ ⊸ ⊹ ⊺ ⊻ ⊼ ⊽ ⊾ ⊿																																	★																		
	DEGX430.5LF	DEGX150402L-F	.008																																		★																		
	DEGX431RF	DEGX150404R-F	.016																																		★																		
	DEGX431LF	DEGX150404L-F	.016																																		★																		
R/L 	DEGX430.5R	DEGX150402R	.008																																																				
	DEGX430.5L	DEGX150402L	.008																																																				
	DEGX431R	DEGX150404R	.016																																																				
	DEGX431L	DEGX150404L	.016																																																				
	DEGX432R	DEGX150408R	.031																																																				

● : USA Stock ★ : Stocked in Japan <10 inserts in one case>

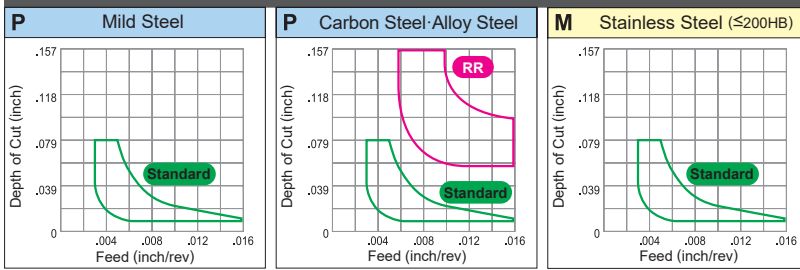
RC TYPE INSERTS WITH HOLE

RCGT 08 03 M0 AZ

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting... ● Heavy Cutting... ●



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																Coated Cermet	Cermet	Carbide																						
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15	
Shape	Order Number	(ISO) Number	IC (mm)																																											
AZ Medium Cutting-Finish Cutting	RCGT0803M0-AZ	RCGT0803M0-AZ	.315																																											
	RCGT10T3M0-AZ	RCGT10T3M0-AZ	.394																																											
Standard Medium Cutting	RCMT0602M0	RCMT0602M0	.236	★ ★																									●	★ ● ★																
	RCMT0803M0	RCMT0803M0	.315	★ ●	★																									●	★ ● ★															
	NEW RCMT10T3M0	RCMT10T3M0	.394																																											
	NEW RCMT1204M0	RCMT1204M0	.472																																											
Standard Medium Cutting	NEW RCMT1606M0	RCMT1606M0	.630																																											
	RCMX1003M0	RCMX1003M0	.394	★ ★ ★	★	★																					●	★ ★																		
	RCMX1204M0	RCMX1204M0	.472	★ ★ ★	★	●	●	★	★ ★	●	★ ●																																			
	RCMX1606M0	RCMX1606M0	.630	★ ★ ★	★	★	★	★	★	★ ★																																				
	RCMX2006M0	RCMX2006M0	.787	★ ★	★	★	★	★	★	★ ★																																				
RR Heavy Cutting	RCMX2507M0	RCMX2507M0	.984																																											
	RCMX1606M0-RR	RCMX1606M0-RR	.630	★ ★ ★	★	★	★	★																																						
	RCMX2006M0-RR	RCMX2006M0-RR	.787	★ ★	★	★	★	★																																						
	RCMX2507M0-RR	RCMX2507M0-RR	.984		★	★	★																																							

● = NEW

A

TURNING INSERTS

POSI 7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
BORING > -

CHIP BREAKER > A064
GRADES > A034
IDENTIFICATION > A002

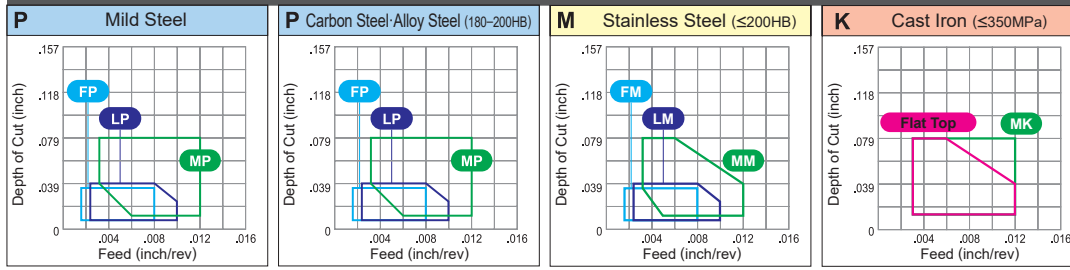
TURNING INSERTS [POSITIVE]

90° SC TYPE INSERTS WITH HOLE

SCMT 3 2.5 1 FP
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- Light Cutting--- Medium Cutting---



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet	Cermet	Carbide														
						NEW MC6115	MC6125	MC6015	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																		
FP 	SCMT32.51FP	SCMT09T304-FP	.016	★ ★ ● ●																																	
	SCMT32.52FP	SCMT09T308-FP	.031	★ ★ ● ●																																	
FM 	SCMT32.51FM	SCMT09T304-FM	.016																																		
	SCMT32.52FM	SCMT09T308-FM	.031																																		
FV 	SCMT32.51FV	SCMT09T304-FV	.016	★																																	
LP 	SCMT32.51LP	SCMT09T304-LP	.016	★ ★ ● ●																																	
	SCMT32.52LP	SCMT09T308-LP	.031	★ ★ ● ●																																	
LM 	SCMT32.51LM	SCMT09T304-LM	.016		● ●																																
	SCMT32.52LM	SCMT09T308-LM	.031		● ●																																
MP 	SCMT32.51MP	SCMT09T304-MP	.016	★ ● ● ●																																	
	SCMT32.52MP	SCMT09T308-MP	.031	● ● ● ●																																	
	SCMT431MP	SCMT120404-MP	.016	★ ★ ● ●																																	
	SCMT432MP	SCMT120408-MP	.031	★ ● ● ●																																	
	NEW SCMT433MP	SCMT120412-MP	.047	★ ★																																	

TURNING INSERTS

POST 7°

WITH HOLE

C

D

R

S






T

V

W

X

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel					M Stainless Steel					K Cast Iron					N Non-ferrous Metal					S Heat resistant Alloy, Titanium Alloy																													
	●	●	○	⊕	⊗	●	●	○	⊕	⊗	●	●	○	⊕	⊗	●	●	○	⊕	⊗	●	●	○	⊕	⊗																									
Shape	Order Number	(ISO) Number	RE (inch)	Coated										Coated Cermet	Cermet	Carbide																																		
				NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15							
MM  Medium Cutting	SCMT32.51MM	SCMT09T304-MM	.016										●	●												●																								
	SCMT32.52MM	SCMT09T308-MM	.031										●	●												●																								
	SCMT431MM	SCMT120404-MM	.016										●	●												●																								
	SCMT432MM	SCMT120408-MM	.031										●	●												●																								
MK  Medium Cutting	SCMT32.51MK	SCMT09T304-MK	.016														●	●																																
	SCMT32.52MK	SCMT09T308-MK	.031														●	●																																
	SCMT431MK	SCMT120404-MK	.016														●	●																																
	SCMT432MK	SCMT120408-MK	.031														●	●																																
MS  Medium Cutting	SCMT32.51MS	SCMT09T304-MS	.016															●	●																													●		
	SCMT32.52MS	SCMT09T308-MS	.031																●	●																											●			
	SCMT431MS	SCMT120404-MS	.016																●	●																											●			
	SCMT432MS	SCMT120408-MS	.031																●	●																												●		
	SCMT433MS	SCMT120412-MS	.047																●	●																											●			
Standard  Medium Cutting	SCMT32.51	SCMT09T304	.016																●								●																							
	SCMT32.52	SCMT09T308	.031																	●							●																							
	SCMT431	SCMT120404	.016																	●							●																							
	SCMT432	SCMT120408	.031																	●							●																							
Flat Top 	SCMW32.51	SCMW09T304	.016															●	●																															
	SCMW32.52	SCMW09T308	.031																	●	●																													
	SCMW432	SCMW120408	.031																	●	●																													

● = NEW

A

TURNING INSERTS

POSI 7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
 BORING > E002

CHIP BREAKER > A064
 GRADES > A034
 IDENTIFICATION > A002

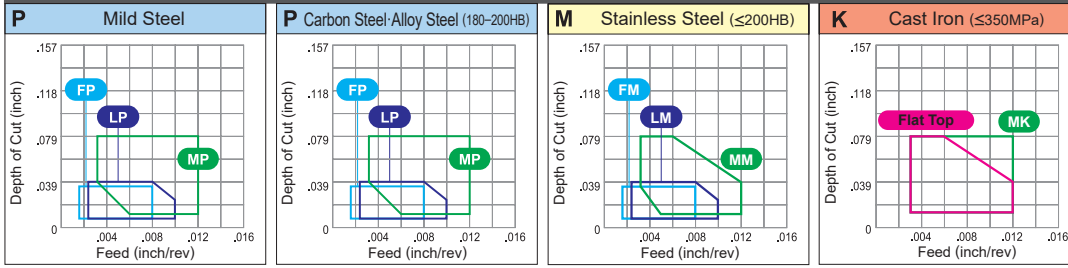
60° TC TYPE INSERTS WITH HOLE

TCMT 1.8 1.5 0.5 FP

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ○ : General Cutting (2nd recommendation) ✚ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																	Coated Cermet	Cermet	Carbide																												
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005	MS9025	VP05RT	VP10RT	VP15TF	VP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF15								
FP Finish Cutting	TCMT1.81.50.5FP	TCMT090202-FP	.008	★	★	●	●																		●																												
	TCMT1.81.51FP	TCMT090204-FP	.016	●	★	●	●																		●																												
	TCMT21.50.5FP	TCMT110202-FP	.008	●	●	●	●																		●																												
	TCMT21.51FP	TCMT110204-FP	.016	●	●	●	●																		●																												
	TCMT32.51FP	TCMT16T304-FP	.016	★	★	●	●																		●																												
	FM Finish Cutting	TCMT1.81.50.5FM	TCMT090202-FM	.008																																																	
TCMT1.81.51FM		TCMT090204-FM	.016																																																		
TCMT21.50.5FM		TCMT110202-FM	.008																																																		
TCMT21.51FM		TCMT110204-FM	.016																																																		
TCMT32.51FM		TCMT16T304-FM	.016																																																		
FV Finish Cutting		TCMT21.51FV	TCMT110204-FV	.016	●																								●	★	★	●																					
	TCMT32.51FV	TCMT16T304-FV	.016	★																									●		★	●																					
	FJ-P Finish Cutting	TCGT21.5V5FJ-P	TCGT1102V5-FJ-P	.002																																																	
		TCGT21.50.2FJ-P	TCGT110201-FJ-P	.004																																																	
		TCGT21.50.5FJ-P	TCGT110202-FJ-P	.008																																																	
		TCGT32.5V5FJ-P	TCGT16T3V5-FJ-P	.002																																																	
TCGT32.50.2FJ-P		TCGT16T301-FJ-P	.004																																																		
TCGT32.50.5FJ-P		TCGT16T302-FJ-P	.008																																																		
AZ Medium Cutting-Finish Cutting	TCGT21.50.5AZ	TCGT110202-AZ	.008																																																		
	TCGT21.51AZ	TCGT110204-AZ	.016																																																		
	TCGT21.52AZ	TCGT110208-AZ	.031																																																		
	TCGT32.50.5AZ	TCGT16T302-AZ	.008																																																		
	TCGT32.51AZ	TCGT16T304-AZ	.016																																																		
	TCGT32.52AZ	TCGT16T308-AZ	.031																																																		

EXTERNAL TURNING > C002
BORING > E002

CHIP BREAKER > A064
GRADES > A034
IDENTIFICATION > A002



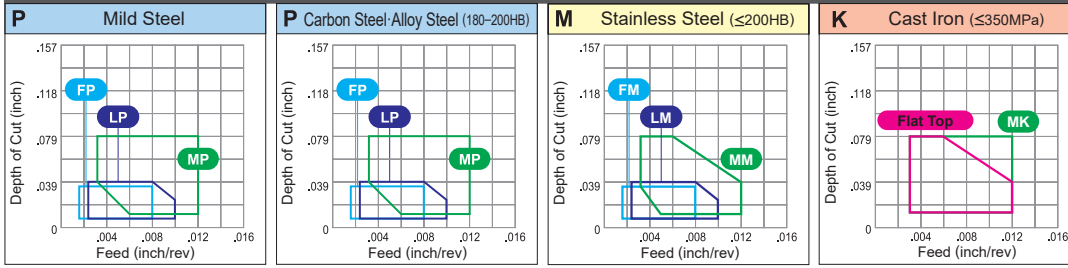
TURNING INSERTS [POSITIVE]



TCGT 1.2 1 V3 L F
 Size Thickness Corner Radius R/L Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																Coated Cermet		Cermets				Carbide										
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																			
R/L-F	TCGT1.21V3LF	TCGT0601V3L-F	.001																																			
	TCGT1.210.2LF	TCGT060101L-F	.004																																			
	TCGT1.210.5RF	TCGT060102R-F	.008																																			
	TCGT1.210.5LF	TCGT060102L-F	.008																																			
	TCGT1.211RF	TCGT060104R-F	.016																																			
	TCGT1.211LF	TCGT060104L-F	.016																																			
	TCGT1.210.2MRF	TCGT060101MR-F	.004*																																			
	TCGT1.210.2MLF	TCGT060101ML-F	.004*																																			
	TCGT1.210.5MRF	TCGT060102MR-F	.008*																																			
	TCGT1.210.5MLF	TCGT060102ML-F	.008*																																			
	TCGT1.211MRF	TCGT060104MR-F	.016*																																			
	TCGT1.211MLF	TCGT060104ML-F	.016*																																			
LP	TCMT1.81.51LP	TCMT090204-LP	.016																																			
	TCMT1.81.52LP	TCMT090208-LP	.031																																			
	TCMT21.51LP	TCMT110204-LP	.016																																			
	TCMT21.52LP	TCMT110208-LP	.031																																			
	TCMT32.51LP	TCMT16T304-LP	.016																																			
Light Cutting	TCMT32.52LP	TCMT16T308-LP	.031																																			
	TCMT1.81.51LM	TCMT090204-LM	.016																																			
LM	TCMT1.81.52LM	TCMT090208-LM	.031																																			
	TCMT21.51LM	TCMT110204-LM	.016																																			
	TCMT21.52LM	TCMT110208-LM	.031																																			
	TCMT32.51LM	TCMT16T304-LM	.016																																			
	TCMT32.52LM	TCMT16T308-LM	.031																																			
Light Cutting	TCMT1.81.50.5LS	TCMT090202-LS	.008																																			
	TCMT21.50.5LS	TCMT110202-LS	.008																																			

* Indicates the maximum value of the corner R. For more details, see page D003.

● = NEW

TURNING INSERTS

POST 7°

WITH HOLE

C

D

R

S

T

V

W

X

TURNING INSERTS [POSITIVE]

60° TC TYPE INSERTS WITH HOLE

TCMT 1.5 1.5 1

Size Thickness Corner Radius

*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...

TURNING INSERTS

WITH HOLE

C

D

R

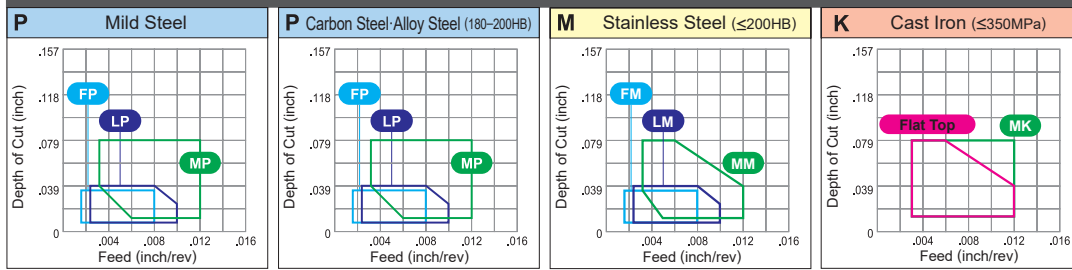
S

T

V

W

X



● : Stable Cutting (1st recommendation) ○ : Stable Cutting (2nd recommendation)
 ● : General Cutting (1st recommendation) ○ : General Cutting (2nd recommendation)
 ⊕ : Unstable Cutting (1st recommendation) ⊕ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel				M Stainless Steel				K Cast Iron				N Non-ferrous Metal				S Heat resistant Alloy, Titanium Alloy																										
	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○																							
Shape	Order Number	(ISO) Number	RE (inch)	Coated												Coated Cermet		Cermets		Carbides																							
				NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	MC5105	NEW MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15
Standard	TCMT1.51.51	TCMT080204	.016														●					●	●									●	★										
	TCMT1.81.51	TCMT090204	.016								★																						●	★	★	●							
	TCMT2.50.5	TCMT110202	.008								●																																
	TCMT2.51	TCMT110204	.016								●																								★	●							
	TCMT2.52	TCMT110208	.031								●																								★	●							
	TCMT2.520.5	TCMT130302	.008																																								
	TCMT2.521	TCMT130304	.016									●																									●						
Medium Cutting	TCMT32.51	TCMT16T304	.016								●																							★	●	●							
	TCMT32.52	TCMT16T308	.031								●																							★	●	●							
Flat Top	TCMW2.51	TCMW110204	.016																																								
	TCMW2.521	TCMW130304	.016																																			★					
	TCMW32.51	TCMW16T304	.016																																						★		
	TCMW32.52	TCMW16T308	.031																																							★	
	TCMW32.53	TCMW16T312	.047																																								
Flat Top	TCGW21.51	TCGW110204	.016																																								
	TCGW21.51E	TCGW110204E	.016																																							★	
	TCGW21.52	TCGW110208	.031																																							★	
	TCGW21.52E	TCGW110208E	.031																																							★	

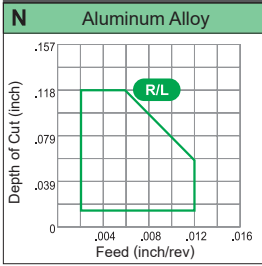
● : USA Stock ★ : Stocked in Japan <10 inserts in one case>

60° TE TYPE INSERTS WITH HOLE

TEGX 3 2 0.5 R
 Size Thickness Corner Radius R/L
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Medium Cutting... ●



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ○ : General Cutting (2nd recommendation) ✚ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel				M Stainless Steel				K Cast Iron				N Non-ferrous Metal				S Heat resistant Alloy, Titanium Alloy																															
	Coated																Coated Cermet		Cermets	Carbide																												
	Shape	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005	MS9025	VP05RT	VP10RT	VP15TF	VP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT10	RT9005	RT9010	MT9005	MT9015	TF-15				
 R/L Medium Cutting (For Aluminium Alloy)	TEGX320.5R	TEGX160302R	.008																																													
	TEGX320.5L	TEGX160302L	.008																																													
	TEGX321R	TEGX160304R	.016																																													
	TEGX321L	TEGX160304L	.016																																													

A

TURNING INSERTS

POSI 20°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
 BORING > E002

CHIP BREAKER > A076
 GRADES > A034
 IDENTIFICATION > A002

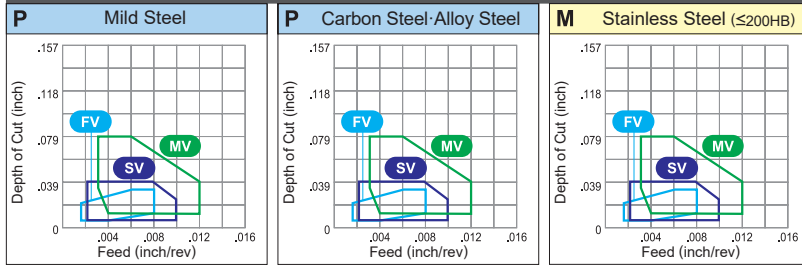
TURNING INSERTS [POSITIVE]

60° TP TYPE INSERTS WITH HOLE

TPMH 1.5 1.5 0.5 FV
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet	Cermat	Carbide																						
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15
						RE (inch)	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW		
FV	TPMH1.51.50.5FV	TPMH080202-FV	.008	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	TPMH1.51.51FV	TPMH080204-FV	.016	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	TPMH1.81.50.5FV	TPMH090202-FV	.008	●																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH1.81.51FV	TPMH090204-FV	.016	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH220.5FV	TPMH110302-FV	.008	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH221FV	TPMH110304-FV	.016	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH222FV	TPMH110308-FV	.031	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH320.5FV	TPMH160302-FV	.008	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH321FV	TPMH160304-FV	.016	★																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPMH322FV	TPMH160308-FV	.031	●																						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
R/L-FS	TPGH1.51.50.5RFS	TPGH080202R-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPGH1.51.50.5LFS	TPGH080202L-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	TPGH1.51.51RFS	TPGH080204R-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH1.51.51LFS	TPGH080204L-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH1.81.50.5RFS	TPGH090202R-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH1.81.50.5LFS	TPGH090202L-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH1.81.51RFS	TPGH090204R-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH1.81.51LFS	TPGH090204L-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH220.5RFS	TPGH110302R-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH220.5LFS	TPGH110302L-FS	.008																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH221RFS	TPGH110304R-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH221LFS	TPGH110304L-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH321RFS	TPGH160304R-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH321LFS	TPGH160304L-FS	.016																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH322RFS	TPGH160308R-FS	.031																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
	TPGH322LFS	TPGH160308L-FS	.031																							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

TURNING INSERTS

POST 11° WITH HOLE

C

D

R

S

T

V

W

X

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✦ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated												Coated Cermet		Cermet		Carbide																												
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15												
	Shape			NEW											NEW	NEW									NEW																														
Finish Cutting	SQ	TPMT1.81.51SQ	TPMT090204-SQ	.016																																																			
		TPMT21.50.5SQ	TPMT110202-SQ	.008																																																			
		TPMT21.51SQ	TPMT110204-SQ	.016																																																			
		TPMT21.52SQ	TPMT110208-SQ	.031																																																			
		TPMT32.51SQ	TPMT16T304-SQ	.016																																																			
Finish Cutting	R/L	TPGX1.51.50.5R	TPGX080202R	.008																																																			
		TPGX1.51.50.5L	TPGX080202L	.008																																																			
		TPGX1.51.51R	TPGX080204R	.016																																																			
		TPGX1.51.51L	TPGX080204L	.016																																																			
		TPGX1.81.50.5R	TPGX090202R	.008																																																			
		TPGX1.81.50.5L	TPGX090202L	.008																																																			
		TPGX1.81.51R	TPGX090204R	.016																																																			
		TPGX1.81.51L	TPGX090204L	.016																																																			
		TPGX1.81.52R	TPGX090208R	.031																																																			
		TPGX1.81.52L	TPGX090208L	.031																																																			
		TPGX220.5L	TPGX110302L	.008																																																			
		TPGX221R	TPGX110304R	.016																																																			
		TPGX221L	TPGX110304L	.016																																																			
		TPGX222R	TPGX110308R	.031																																																			
		TPGX222L	TPGX110308L	.031																																																			
Finish Cutting	L	TPMX1.81.51L	TPMX090204L	.016																																																			
		TPMX221L	TPMX110304L	.016																																																			
Light Cutting	LP	TPMH1.51.50.5LP	TPMH080202-LP	.008	★																																																		
		TPMH1.51.51LP	TPMH080204-LP	.016	★																																																		
		TPMH1.81.50.5LP	TPMH090202-LP	.008	★																																																		
		TPMH1.81.51LP	TPMH090204-LP	.016	★																																																		
		TPMH220.5LP	TPMH110302-LP	.008	★																																																		
		TPMH221LP	TPMH110304-LP	.016	★																																																		
		TPMH222LP	TPMH110308-LP	.031	★																																																		
		TPMH320.5LP	TPMH160302-LP	.008	★																																																		
		TPMH321LP	TPMH160304-LP	.016	●																																																		
TPMH322LP	TPMH160308-LP	.031	●																																																				

A

TURNING INSERTS

POSI 11°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > -

BORING > E002

CHIP BREAKER > A072

GRADES > A034

IDENTIFICATION > A002

TURNING INSERTS [POSITIVE]



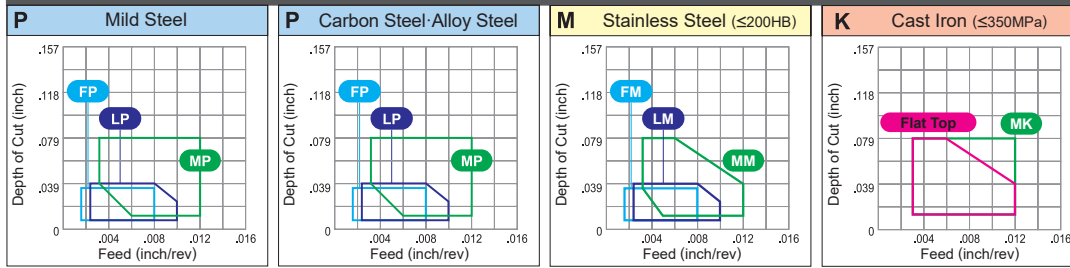
35° VB TYPE INSERTS WITH HOLE

VBMT 2 2 0.5 FP

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy																															
	●	⊕	○	⊙	●	⊕	○	⊙	●	⊕	○	⊙																												
	○	⊙	●	⊕	○	⊙	●	⊕	○	⊙	●	⊕																												
Shape	Order Number	(ISO) Number	RE (inch)	Coated										Coated Cermet	Cermet	Carbide																								
				NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005
FP 	VBMT220.5FP	VBMT110302-FP	.008	●●●●													●	●																						
	VBMT221FP	VBMT110304-FP	.016	●●●●														●	●																					
	VBMT222FP	VBMT110308-FP	.031	●●●●														●	●																					
	VBMT331FP	VBMT160404-FP	.016	●●●●														●	●																					
	VBMT332FP	VBMT160408-FP	.031	★●●●														●	●																					
FM 	VBMT220.5FM	VBMT110302-FM	.008																																					
	VBMT221FM	VBMT110304-FM	.016																																					
	VBMT222FM	VBMT110308-FM	.031																																					
	VBMT331FM	VBMT160404-FM	.016																																					
	VBMT332FM	VBMT160408-FM	.031																																					
FV 	VBMT221FV	VBMT110304-FV	.016	★																																				
	VBMT222FV	VBMT110308-FV	.031	★																																				
	VBMT331FV	VBMT160404-FV	.016	★																																				
	VBMT332FV	VBMT160408-FV	.031	★																																				
FJ 	VBGT33V5FJ	VBGT1604V5-FJ	.002																																					
	VBGT330.2FJ	VBGT160401-FJ	.004																																					
	VBGT330.5FJ	VBGT160402-FJ	.008																																					
FJ-P 	VBGT33V5FJ-P	VBGT1604V5-FJ-P	.002																																					
	VBGT330.2FJ-P	VBGT160401-FJ-P	.004																																					
	VBGT330.5FJ-P	VBGT160402-FJ-P	.008																																					

TURNING INSERTS

POST 5°

WITH HOLE

C

D

R

S

T

V

W

X

TURNING INSERTS [POSITIVE]



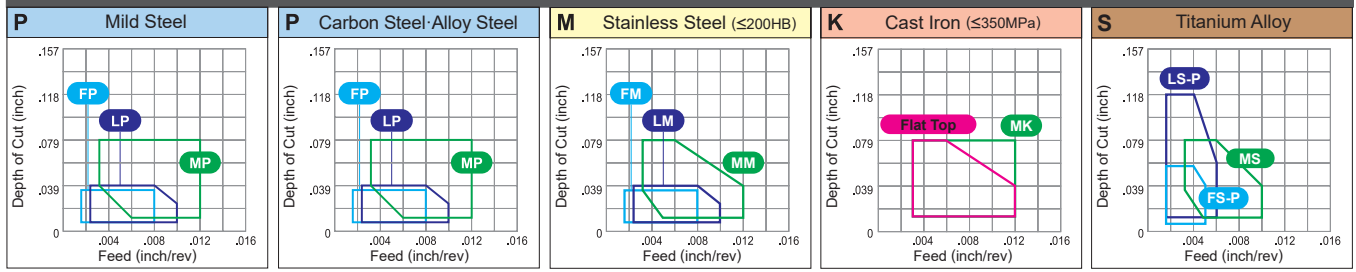
35° VC TYPE INSERTS WITH HOLE

VCMT 2 2 0.5 FP

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊖ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

TURNING INSERTS

WITH HOLE

C

D

R

S

T

V

W

X

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																	Coated Cermet	Cermet	Carbide													
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																			
FP	VCMT220.5FP	VCMT110302-FP	.008	★ ★ ● ●																																		
	VCMT221FP	VCMT110304-FP	.016	● ● ● ●																																		
	VCMT331FP	VCMT160404-FP	.016	● ● ● ●																																		
	VCMT332FP	VCMT160408-FP	.031	★ ★ ● ●																																		
FM	VCMT220.5FM	VCMT110302-FM	.008																																			
	VCMT221FM	VCMT110304-FM	.016																																			
	VCMT331FM	VCMT160404-FM	.016																																			
	VCMT332FM	VCMT160408-FM	.031																																			
FV	VCMT1.51.50.5FV	VCMT080202-FV	.008	● ●																																		
	VCMT1.51.51FV	VCMT080204-FV	.016	● ●																																		
	VCMT331FV	VCMT160404-FV	.016	★ ●																																		
	VCMT332FV	VCMT160408-FV	.031	★ ●																																		
AZ	VCGT331AZ	VCGT160404-AZ	.016																																			
	VCGT332AZ	VCGT160408-AZ	.031																																			
	VCGT333AZ	VCGT160412-AZ	.047																																			
R/L-F	VCGT1.51.50.5RF	VCGT080202R-F	.008	● ●																																		
	VCGT1.51.50.5LF	VCGT080202L-F	.008	● ●																																		
	VCGT1.51.51RF	VCGT080204R-F	.016	● ●																																		
	VCGT1.51.51LF	VCGT080204L-F	.016	● ●																																		

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

TURNING INSERTS [POSITIVE]



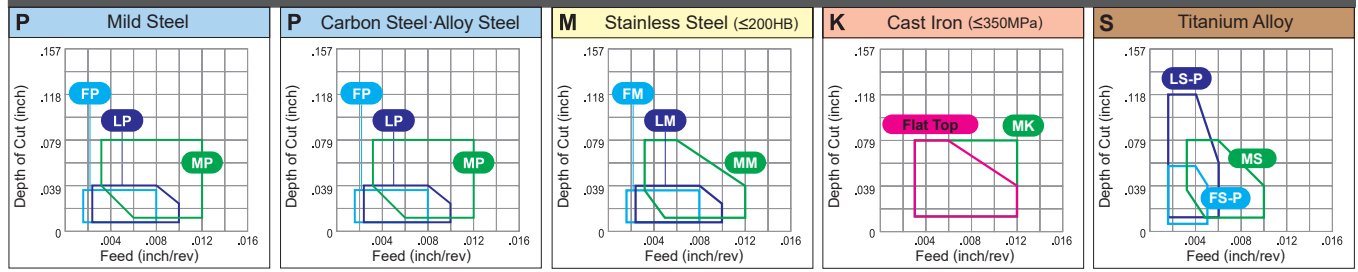
35° VC TYPE INSERTS WITH HOLE

VCMT 3 3 1 MM

Size Thickness Corner Radius Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Light Cutting... Medium Cutting...



FS, LS : G class inserts

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

TURNING INSERTS

A

POST 7°

WITH HOLE

C

D

R

S

T

V

W

X

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet	Cermet	Carbide															
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																			
	MM VCMT331MM	VCMT160404-MM	.016																																			
	VCMT332MM	VCMT160408-MM	.031																																			
	VCMT333MM	VCMT160412-MM	.047																																			
Medium Cutting																																						
	MK VCMT331MK	VCMT160404-MK	.016																																			
	VCMT332MK	VCMT160408-MK	.031																																			
Medium Cutting																																						
	MS VCMT220.5MS	VCMT110302-MS	.008																																			
	VCMT221MS	VCMT110304-MS	.016																																			
	VCMT222MS	VCMT110308-MS	.031																																			
	VCMT331MS	VCMT160404-MS	.016																																			
	VCMT332MS	VCMT160408-MS	.031																																			
Medium Cutting																																						
Standard	VCMT221	VCMT110304	.016																																			
	VCMT331	VCMT160404	.016																																			
	VCMT332	VCMT160408	.031																																			
	VCMT333	VCMT160412	.047																																			
Medium Cutting																																						
	MV VCMT1.51.50.5MV	VCMT080202-MV	.008																																			
	VCMT1.51.51MV	VCMT080204-MV	.016																																			
Medium Cutting																																						
Flat Top	VCMW221	VCMW110304	.016																																			
	VCMW331	VCMW160404	.016																																			
	VCMW332	VCMW160408	.031																																			

● = NEW

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

TURNING INSERTS [POSITIVE]



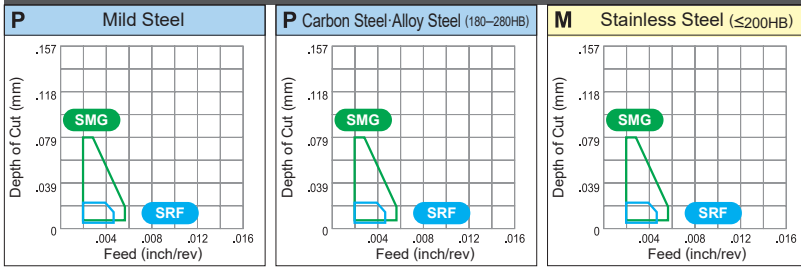
35° VP TYPE INSERTS WITH HOLE

VPET 1.5 1.5 0.2 R SRF

Size Thickness Corner Radius R/L Chip Breaker
*Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting--- ● Medium Cutting--- ●



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
○ : Stable Cutting (2nd recommendation) ⊖ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated																	Coated Cermet		Cermets		Carbide												
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	VP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
R/L-SRF	VPET1.51.50.2RSRF	VPET080201R-SRF	.004*																																				
	VPET1.51.50.2LSRF	VPET080201L-SRF	.004*																																				
	VPET1.51.50.5RSRF	VPET080202R-SRF	.008*																																				
	VPET1.51.50.5LSRF	VPET080202L-SRF	.008*																																				
	VPET22V3RSRF	VPET1103V3R-SRF	.001*																																				
	VPET22V3LSRF	VPET1103V3L-SRF	.001*																																				
	VPET220.2RSRF	VPET110301R-SRF	.004*																																				
	VPET220.2LSRF	VPET110301L-SRF	.004*																																				
	VPET220.5RSRF	VPET110302R-SRF	.008*																																				
	VPET220.5LSRF	VPET110302L-SRF	.008*																																				
SMG	VPGT1.51.50.2MSMG	VPGT080201M-SMG	.004*																																				
	VPGT1.51.50.5MSMG	VPGT080202M-SMG	.008*																																				
	VPGT220.2MSMG	VPGT110301M-SMG	.004*																																				
	VPGT220.5MSMG	VPGT110302M-SMG	.008*																																				

* Indicates the maximum value of the corner R. For more details, see page D003.

TURNING INSERTS

A

POST 11°

WITH HOLE

C

D

R

S



T

V

W

X

● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ✚ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊕ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel		M Stainless Steel		K Cast Iron		N Non-ferrous Metal		S Heat resistant Alloy, Titanium Alloy		Coated														Coated Cermet		Cermet		Carbide																									
	Order Number	(ISO) Number	RE (inch)	MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T	HT110	RT9005	RT9010	MT9005	MT9015	TF-15											
	Shape			NEW											NEW	NEW								NEW																														
MP  Medium Cutting	WCMT1.210.5MP	WCMT020102-MP	.008	●●																																																		
	WCMT1.211MP	WCMT020104-MP	.016	●●																																																		
	WCMT1.51.50.5MP	WCMTL30202-MP	.008	●●																																																		
	WCMT1.51.51MP	WCMTL30204-MP	.016	●●																																																		
	WCMT21.50.5MP	WCMT040202-MP	.008	●●																																																		
	WCMT21.51MP	WCMT040204-MP	.016	●●																																																		
	WCMT21.52MP	WCMT040208-MP	.031	●●																																																		
	WCMT32.51MP	WCMT06T304-MP	.016	●●																																																		
WCMT32.52MP	WCMT06T308-MP	.031	●●																																																			
Standard  Medium Cutting	WCMT1.210.5	WCMT020102	.008																																																			
	WCMT1.211	WCMT020104	.016																																																			
	WCMT1.51.50.5	WCMTL30202	.008																																																			
	WCMT1.51.51	WCMTL30204	.016																																																			
	WCMT21.50.5	WCMT040202	.008																																																			
	WCMT21.51	WCMT040204	.016																																																			
	WCMT32.51	WCMT06T304	.016																																																			
	WCMT32.52	WCMT06T308	.031																																																			

A

TURNING INSERTS

POSI
7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
 BORING > E002
 CHIP BREAKER > A064
 GRADES > A034
 IDENTIFICATION > A002

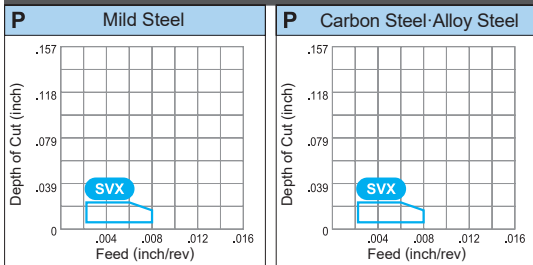


25° XC TYPE INSERTS WITH HOLE

XCMT 2 2 0.5 SVX
 Size Thickness Corner Radius Chip Breaker
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... ●



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊖ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet	Cermet	Carbide																
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UTi20T	HTi05T
Shape	Order Number	(ISO) Number	RE (inch)																																				
SVX 	XCMT220.5SVX	XCMT150302-SVX	.008																																				
	XCMT221SVX	XCMT150304-SVX	.016																																				
	XCMT222SVX	XCMT150308-SVX	.031																																				
Finish Cutting																																							

A

TURNING INSERTS

POSI 7°

WITH HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > C002
 BORING > E002

CHIP BREAKER > A064
 GRADES > A034
 IDENTIFICATION > A002

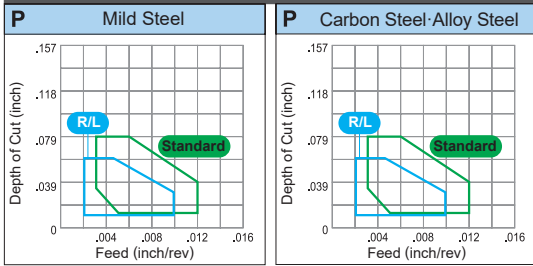


TP TYPE INSERTS WITHOUT HOLE

TPGR 2 2 1 R
 Size Thickness Corner Radius R/L
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... Medium Cutting...



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet		Cermets		Carbide														
						NEW MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	NEW MS7025	NEW MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US905	NEW MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
 Finish Cutting	TPGR221R	TPGR110304R	.016																																				
	TPGR221L	TPGR110304L	.016																																				
	TPGR321R	TPGR160304R	.016																																				
	TPGR321L	TPGR160304L	.016																																				
	TPGR322R	TPGR160308R	.031																																				
 Standard	TPMR1.81.50.5	TPMR090202	.008																																				
	TPMR1.81.51	TPMR090204	.016																																				
	TPMR1.81.52	TPMR090208	.031																																				
	TPMR220.5	TPMR110302	.008																																				
	TPMR221	TPMR110304	.016	●●																																			
 Medium Cutting	TPMR222	TPMR110308	.031	●★																																			
	TPMR321	TPMR160304	.016	●●																																			
	TPMR322	TPMR160308	.031	●●																																			
	TPMR323	TPMR160312	.047	★●																																			
	 Flat Top	TPMN221	TPMN110304	.016	★																																		
TPMN222		TPMN110308	.031	★																																			
TPMN321		TPMN160304	.016	★																																			
TPMN322		TPMN160308	.031	●																																			
TPMN323		TPMN160312	.047	★																																			
TPMN325		TPMN160320	.079																																				
TPMN431		TPMN220404	.016	●																																			
TPMN432		TPMN220408	.031	●																																			
TPMN433		TPMN220412	.047	●																																			

TURNING INSERTS

POSITIVE 11°

WITHOUT HOLE

C

D

R

S

T

V

W

X

EXTERNAL TURNING > -
 BORING > -
 CHIP BREAKER > A078
 GRADES > A034
 IDENTIFICATION > A002

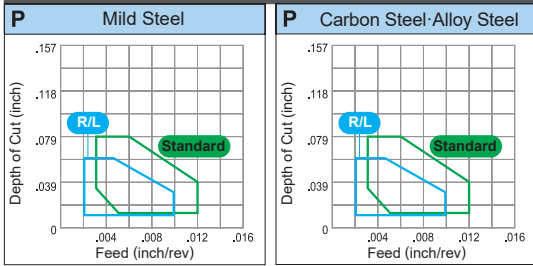
TURNING INSERTS [POSITIVE]

60° TP TYPE INSERTS WITHOUT HOLE

TPG **2 2 0.5**
 Size Thickness Corner Radius
 *Please refer to page A002.

CHIP CONTROL RANGE FOR WORK MATERIALS

Finish Cutting... ● Medium Cutting... ●



● : Stable Cutting (1st recommendation) ● : General Cutting (1st recommendation) ⊕ : Unstable Cutting (1st recommendation)
 ○ : Stable Cutting (2nd recommendation) ⊙ : General Cutting (2nd recommendation) ⊗ : Unstable Cutting (2nd recommendation)

Workpiece Material	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metal	S Heat resistant Alloy, Titanium Alloy	Coated															Coated Cermet		Cermets		Carbide														
						MC6115	MC6125	MC6015	MC6025	MC6035	UH6400	MS6015	MC7015	MC7025	MP7035	US735	MS7025	MC5105	MC5115	MC5125	MC5005	MC5015	MP9005	MP9015	MP9025	US9005	MS9025	VP05RT	VP10RT	VP15TF	UP20M	MP3025	AP25N	VP25N	VP45N	NX2525	NX3035	UT120T	HT105T
Shape	Order Number	(ISO) Number	RE (inch)																																				
Flat Top	TPG220.5	TPGN110302	.008																																				
	TPG221	TPGN110304	.016																																				
	TPG222	TPGN110308	.031																																				
	TPG320.5	TPGN160302	.008																																				
	TPG321	TPGN160304	.016																																				
	TPG322	TPGN160308	.031																																				
	TPG323	TPGN160312	.047																																				
	TPG324	TPGN160316	.063																																				
	TPG332	TPGN160408	.031																																				
	TPG431	TPGN220404	.016																																				
TPG432	TPGN220408	.031																																					

TURNING INSERTS

POST 11°

WITHOUT HOLE

C

D

R

S

T

V

W

X

Memo

A series of horizontal dotted lines for writing.